

UPPER COLUMBIA RIVER

FINAL Bossburg Flat Beach Refined Sediment and Soil Study Data Summary Report

Prepared for
Teck American Incorporated
P.O. Box 3087
Spokane, WA 99220-3087

Prepared by



200 West Mercer, Suite 401
Seattle, WA 98119

In Association and Consultation with
Exponent
Parametrix, Inc.

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ACRONYMS AND ABBREVIATIONS

ACG	analytical concentration goal
ALS	ALS Environmental
C	Celsius
CCT	Confederated Tribes of the Colville Reservation
CEC	cation exchange capacity
COC	chain-of-custody
DQO	data quality objective
DU	decision unit
Eco-SSL	ecological soil screening level
ESI	Environmental Standards, Inc.
EPA	U.S. Environmental Protection Agency
FSP	field sampling plan
GPS	global positioning system
ICP	inductively coupled plasma
ICS	incremental composite sampling
ID	identification
ITRC	Interstate Technology & Regulatory Council
IVBA	<i>in vitro</i> bioaccessibility assay
LCS	laboratory control sample
LOE	level of effort
MDL	method detection limit
MQO	measurement quality objective
MRL	method reporting limit
MS/MSD	matrix spike/matrix spike duplicate
NIST	National Institute of Standards and Technology
%D	percent difference
QA	quality assurance
QC	quality control
QAPP	quality assurance project plan
RBA	relative bioavailability

RBC	risk-based concentration
RI/FS	remedial investigation/feasibility study
RL	reporting limit
RM	river mile
RPD	relative percent difference
RSD	relative standard deviation
SDG	sample delivery group
SDU	sediment decision unit
SOP	standard operating procedure
SRC	Syracuse Research Corporation
START	Superfund Technical Assessment and Response Team
TAL	target analyte list
TAI	Teck American Incorporated
TOC	total organic carbon
UCR	Upper Columbia River
UDU	upland decision unit
USBR	U.S. Bureau of Reclamation
XRF	x-ray fluorescence
YAM	Young America Mill

UNITS OF MEASURE

cm	centimeter(s)
ft	foot/feet
gal.	gallon(s)
m	meter(s)
me/100 gm	milliequivalents per 100 grams
mg/kg	milligrams per kilogram
mm	millimeter(s)
μm	micrometer(s)

1 INTRODUCTION

This report presents the results of the Bossburg Flat Beach refined sediment and soil study (herein referred to as the study) conducted by Teck American, Incorporated (TAI) for the Upper Columbia River (UCR) Site, herein referred to as the Site.¹ The study was planned to determine if the former Young America Mill (YAM) and mining operations, including the former cable ferry landing, are polluting the Bossburg Flat Beach and downstream to Evans Campground Beach (USEPA 2014a). Elevated lead concentrations were identified during sampling activities associated with the beach sediment study conducted by TAI (Integral 2014). Subsequent investigations conducted by the U.S. Environmental Protection Agency (EPA) under the Superfund Technical Assessment and Response Team (START) program at an adjacent site (i.e., the Young America Mine and Mill site) identified elevated metal (i.e., lead) concentrations associated with historical mining and milling activities (Wolff et al. 2008; Emerson 2012; TechLaw 2012a,b; USEPA 2012a).

Sampling and analyses were conducted under the EPA-approved quality assurance project plan (QAPP) for the study (HDR et al. 2015a) and Amendment No. 1 to the QAPP (HDR et al. 2015b). The study was conducted as part of the remedial investigation and feasibility study (RI/FS) for the Site. The objective of the study was to generate data to refine exposure estimates and further inform risk evaluations for both human health and ecological receptors associated with nearshore sediments and soil adjacent to and downgradient of the YAM site.

To meet the study objectives, data on concentrations of target analyte list (TAL) metals² and the bioaccessibility of lead and arsenic (using the *in vitro* bioaccessibility assay [IVBA]) in nearshore sediment and soil were collected from areas near the YAM site, the former cable ferry landings, and along the east riverbank from Bossburg Flat Beach (river mile [RM] 716 to Evans Campground Beach [RM 710]). Beach sediment and soil sampling activities for this study were performed between April 14 and May 8, 2015.

¹ The Site, as defined in the June 2, 2006, Settlement Agreement (USEPA 2006a), is “the areal extent of hazardous substances contamination within the United States in or adjacent to the Upper Columbia River, including the Franklin D. Roosevelt Lake (“Lake Roosevelt”), from the border between the United States and Canada downstream to the Grand Coulee Dam, and all suitable areas in proximity to such contamination necessary for implementation of the response actions...”

² TAL metals include aluminum, antimony, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, selenium, silver, sodium, thallium, vanadium, and zinc (USEPA 2015a) (see <http://www.epa.gov/superfund/programs/clp/ismtarget.htm>).

1.1 STUDY PURPOSE AND DATA QUALITY OBJECTIVES

The purpose of the Bossburg Flat Beach refined sediment and soil study was to further define exposure estimates and inform risk evaluations of human health and ecological receptors associated with nearshore sediment and soil adjacent to and downstream of the YAM site and at Evans Campground Beach (HDR et al. 2015a). Sediment and soil sampling was focused on a relatively small area of the Site, specifically areas surrounding mining and mill operations, former cable ferry landings, and along two public beaches adjacent to the UCR (i.e., Bossburg Flat Beach and Evans Campground Beach) (Map 1-1).

The Bossburg Flat Beach refined sediment and soil study was designed using EPA's seven-step data quality objective (DQO) process (USEPA 2006b), as described in detail in the QAPP (HDR et al. 2015a). The primary questions developed to meet the goals of the study were:

- Do TAL metals in nearshore sediment and soil located between RM 710 and RM 716 occur at concentrations that might present unacceptable risks to people or ecological receptors?
- What is the spatial extent of contamination in the areas identified above?

1.2 REPORT ORGANIZATION

This report is organized into the following sections:

- **Section 1 – Introduction.** This section provides background information, identifies the purpose of the study, and outlines the organization of the report.
- **Section 2 – Study Design and Methods.** This section describes the study design and discusses the methods used for selecting sampling locations, collecting samples, and conducting field and laboratory analyses.
- **Section 3 – Quality Assurance Project Plan Modifications and Deviations.** This section discusses modifications to and deviations from the QAPP.
- **Section 4 – Validation Assessment.** This section provides a summary of the validation assessment of the analytical results of the study samples.
- **Section 5 – Results.** This section presents a summary of the field and analytical results.
- **Section 6 – Summary.** This section presents a summary of the study.
- **Section 7 – References.** This section presents bibliographic information for the documents cited in this report.

Figures, maps, and data tables are provided following Section 7. Appendix A and the raw data are provided in electronic format (provided on CD-ROM). Data may also be obtained directly from the project database, accessible at: <http://teck-ucr.exponent.com>.

2 STUDY DESIGN AND METHODS

This section summarizes the study design and methods (including field collection and laboratory methods) used for the study. Additional details of the study implementation are presented in the QAPP (HDR et al. 2015a).

2.1 STUDY DESIGN

The overall sampling design is presented in this section, followed by details on the identification of target decision units (DUs) and specific sampling locations. Additional details on the study design are presented in Section B of the QAPP (HDR et al. 2015a).

2.1.1 Overall Design

Predetermined DUs at Bossburg Flat Beach (RM 716) and Evans Campground Beach (RM 710) were established for the collection of nearshore sediment and soil samples (samples collected from sediment DUs and soil DUs, respectively). In addition, two areas associated with the former cable ferry landings near the YAM site (F-01 and F-02) were designated for the collection of sediment samples. The DUs and areas designated for sampling are shown on Map 2-1.³ Samples were collected using both incremental composite sampling (ICS) and discrete sampling methodologies. The following types of samples were collected:

- Composite samples using ICS methods (ITRC 2012) to support the evaluation of the spatial distribution of TAL metals in the surface layer (0 to 15 cm) of nearshore sediment and soil.
- Discrete surface samples (0 to 15 cm) analyzed in the field laboratory using a handheld x-ray fluorescence (XRF) analyzer to determine lead concentrations in order to support an evaluation of the spatial extent of lead concentrations within each sediment and soil DU.⁴

³ The location of the former cable ferry landing on the west bank of the UCR was not precisely known when the QAPP was developed. The location of area F-02 on Map 2-1 reflects the presumed location of the former cable ferry landing. However, information obtained from the Confederated Tribes of the Colville Reservation in May 2015 identifies a location upriver from F-02 as the likely site for the ferry landing. This information is noted in the daily field report for May 6, 2015 attached to the field investigation summary report (Appendix A). This location is noted on the map.

⁴ A minimum of 20 percent of the field XRF samples were sent to the analytical laboratory for confirmation of the field laboratory analysis.

- Discrete core samples to support evaluation of the vertical distribution of TAL metals in the surface layer (0 to 15 cm) and subsurface layers (15 to 30 cm and 30 to 45 cm) of nearshore sediment and soil.

Table 2-1 provides the number of samples planned for each sample type. The sampling locations are listed in Tables 2-2a through 2-2c and are shown on Maps 2-2 and 2-3. In consultation with EPA, TAI agreed to use the handheld XRF analyzer to collect *in situ* measurements of lead at locations in three sediment DUs. Although not part of the original sample design, these additional XRF measurements were collected to aid in determining the approximate location of the west bank ferry landing. The decision was made during the field event. Additional information is provided in the discussion in Section 2.2.2.2.

The QAPP (HDR et al. 2015a) included detailed information regarding how the sampling areas were defined and selected; brief summaries (by area type) are provided in Section 2.1.2.

Each sediment and soil sample collected using ICS and coring methods was submitted to the analytical laboratory for processing. Samples were homogenized, sieved into two fractions (< 2-mm [sediment and soil] fractions and < 250- μ m [sediment] or < 150- μ m [soil] fractions) and subsampled at the analytical laboratory. Analytical data from the < 2-mm fraction may be used for the evaluation of risk to ecological receptors, and data from the < 250- and < 150- μ m fractions of sediment and soil, respectively, may be used for the evaluation of risk to human receptors.

The field laboratory XRF samples for sediment and soil were dried and sieved to < 2 mm in the field laboratory prior to using the handheld XRF analyzer to measure lead concentrations.

The following measurements and analyses were performed on samples collected using ICS methods and on individual core samples collected from the DUs (Table 2-3):

- Grain size distribution, pH,⁵ and percent solids of bulk sediment and soil samples (i.e., whole sample prior to sieving)
- Conventional parameters—percent solids and total organic carbon (TOC) in the < 2-mm fraction for both sediment and soil samples
- Cation exchange capacity (CEC) in the < 2-mm fraction for soil samples

⁵ pH was measured in the bulk sample rather than in the < 2-mm sediment and soil fraction as specified in the QAPP (HDR et al. 2015a) so that the measurement would not be influenced (i.e., altered) by the soil drying and sieving process.

- TAL metals in the < 2-mm and < 250- μm fractions for sediment samples and the < 2-mm and < 150- μm fractions for soil samples
- IVBA for lead and arsenic in the < 250- μm fraction for sediment samples and the < 150- μm fraction for soil samples

In addition, a handheld XRF analyzer was used to measure lead concentrations, both in the field laboratory on dried and sieved (< 2-mm) samples (i.e., field laboratory XRF samples) and *in situ* at select locations (see Section 2.2.2.2 for details).

Geochemical parameters (i.e., pH, CEC, and TOC) were analyzed in the < 2-mm sediment and soil fractions because these parameters may affect the ability of organisms to take up metals from soils (e.g., Checkai et al. 2014; Smolders et al. 2009). Site-specific adjustments may be made in the baseline ecological risk assessment for copper, nickel, zinc, cobalt, and molybdenum bioavailability using data for these parameters.⁶ However, this report does not include adjusted values for these metals.

The IVBA results in the < 250- μm fraction for sediment and < 150- μm fraction for soil have been used to calculate site-specific oral relative bioavailability (RBA) values for arsenic and lead in sediment and soil. At the time the QAPP was approved, IVBA for arsenic was undergoing EPA validation. EPA requested the use of IVBA for arsenic analysis in the study so that site-specific RBA adjustments for arsenic could be calculated if the method was approved for use (USEPA 2014b). According to EPA guidance for adjusting soil availability, the default RBA for arsenic of 60 percent should only be used if site-specific assessments for arsenic are not feasible.⁷ At the writing of this DSR, a validated method using IVBA to calculate site-specific oral RBA values for arsenic has been published by Bradham et al. (2015). EPA has agreed that the intent for this study is to conduct the site-specific calculation (pers. comm. Johnson and Stifelman 2016).

Soil screening levels (i.e., ecological soil screening levels [Eco-SSLs] and human soil screening levels) were presented in the QAPP (HDR et al. 2015a). The Eco-SSLs are the lowest of the screening levels adopted by EPA for plants, soil invertebrates, birds, and mammals (USEPA 2010b).⁸ The human health soil screening levels presented in the QAPP were derived by Syracuse Research Corporation (SRC 2013) and represent residential risk-

⁶ A simplified Microsoft Excel®-based calculator for conducting the site-specific bioavailability adjustments is available at the following website:

<http://www.arche-consulting.be/metal-csa-toolbox/soil-pnec-calculator/>

⁷ EPA guidance for adjusting soil bioavailability is at the following website:

<https://www.epa.gov/superfund/soil-bioavailability-superfund-sites-guidance>

⁸ According to EPA (USEPA 2010b), the metals with Eco-SSLs are those that typically exist as cationic species.

based screening levels for soil.⁹ With the exception of antimony, arsenic, and mercury, all the the SRC (2013) screening levels were calculated using EPA's regional screening level calculator and default values.¹⁰ SRC (2013) adjusted the screening levels for antimony and mercury to reflect changes to the default referene dose values for those metals. SRC (2013) also adjusted the human health screening level for arsenic for natural background.¹¹

2.1.2 Identification of Target Decision Units and Sampling Locations

Locations of sampling activities were determined by considering site-specific factors, including 1) proximity to areas of interest, 2) reservoir water-level management, and 3) previous site measurements (e.g., lead concentrations measured in the laboratory and in the field [using XRF]). Approximate locations of targeted sampling areas were guided by objectives specified in EPA's level of effort (LOE) letter (USEPA 2012b) and comments provided by EPA (USEPA 2013a) during the preparation of the QAPP (HDR et al. 2015a). Based on EPA's specifications in the LOE letter, the sediment sampling approach was designed to be a shore-based effort in which sediment exposed above the water line during a period of reservoir drawdown would be sampled, with the lowest elevation being 1,250 ft.¹²

Locations in 10 sediment DUs and 6 soil DUs for a total of 16 DUs were targeted for sampling (Map 2-1). In addition to the DUs, two areas near the former cable ferry landings (F-01 on the east bank and F-02 on the west bank) were targeted for the collection of sediment cores.

The following subsections describe the identification of target sampling locations for the different types of samples.

⁹ According to EPA (USEPA 2012c), the 400-mg/kg lead screening level is set based on an assumption of long-term daily exposure over many years.

¹⁰ The comparison with screening values provided in this data report is for screening purposes only. The screening levels do not represent cleanup or action levels (USEPA 2002, 2003).

¹¹ The human health screening level for arsenic was based on the 2012 default residential soil screening level for arsenic for a one in one million risk level added to the estimate of the concentration of arsenic in natural background (9 mg/kg). Since SRC's development of this screening level, EPA's 2012 default arsenic screening level (0.39 mg/kg) has been updated to include a default oral relative bioavailability assumption of 0.6, or 60 percent, for arsenic in soil (USEPA 2015b). The current default arsenic screening level is 0.68 mg/kg. Therefore, for the purpose of this report, the screening value for arsenic of 9.68 mg/kg was used.

¹² As noted in Section 2.2.1, the reservoir drawdown was less than anticipated for the majority of the sampling effort.

2.1.2.1 Incremental Composite Sampling Locations

ICS locations for surface sediment and soil were established using an approach consistent with ICS methodology (ITRC 2012) and described in detail in the QAPP (HDR et al. 2015a). ICS locations were randomly selected subject to both maximum and minimum spacing constraints so that the proposed ICS locations were situated throughout each DU. As part of the sampling design, reserve locations were identified in each DU to mitigate sample collection challenges in specific areas (e.g., coarse substrate, steep slopes, higher than anticipated water level) and in consideration of culturally sensitive areas.

Incremental samples (i.e., increments) were collected from the top 15 cm of sediment or soil at 30 increment locations within each DU (or 90 increment locations if the DU was sampled in triplicate). The 30 increments were then composited into one sample that represented the entire DU and sent to the laboratory for processing.

Tables A7-1a and A7-1b in the QAPP (HDR et al. 2015a) identified the primary and reserve increment locations in the sediment DUs and soil DUs, respectively.

2.1.2.2 Field Laboratory XRF Sampling Locations

Proposed field laboratory XRF sampling locations¹³ were identified using regular grid design factors in consideration of geographical configurations in the DUs to support an evaluation of the areal extent of lead contamination and spatial trends. In larger, flatter DUs (e.g., sediment DUs SDU-01 and SDU-02 and soil DUs UDU-01 through UDU-04¹⁴), distances between proposed XRF sampling locations were determined using a statistical approach described by Gilbert (1987). In the soil DU where the slope was greater than 30 percent (UDU-05), a finer grid pattern was used to select a greater number of locations in the event that slope constraints precluded sample collection at all of the selected XRF locations. In narrow DUs (e.g., sediment DUs SDU-04 and SDU-08), XRF sampling locations were placed at regular distances in an upstream-to-downstream orientation. As for ICS locations, reserve field laboratory XRF locations were identified in the event that primary locations could not be sampled. The primary and reserve field laboratory XRF locations for the sediment DUs and soil DUs were identified in Tables A7-1c and A7-1d,

¹³ Field laboratory XRF samples were analyzed in the field laboratory. The decision to collect *in situ* XRF measurements was made during the field effort and was not originally part of the study design in the QAPP (HDR et al. 2015a). Locations for collection of *in situ* XRF measurements are discussed in Section 2.2.

¹⁴ The location and sample identifications included a prefix to indicate whether the location/sample was for sediment (i.e. SDU for sediment decision unit) or soil (i.e., UDU for upland decision unit).

respectively, in the QAPP (HDR et al. 2015a). The spatial distribution of the field laboratory XRF locations is shown on Figures A7-8 and A7-9 of the QAPP.

2.1.2.3 Core Sampling Locations

Sediment and soil core sampling locations were judgment-based and determined in the field in consultation with EPA oversight crews using results from the field laboratory XRF measurements to guide the selection process. To support an evaluation of the vertical extent of contamination, sediment and soil core samples were collected from the surface interval (0 to 15 cm) and two subsurface intervals (15 to 30 cm and 30 to 45 cm).

2.2 FIELD METHODS AND ACTIVITIES

The sampling program for the study was outlined in the QAPP (HDR et al. 2015a), which included the field sampling plan (FSP) as Appendix A. The FSP detailed the procedures and methods for sample collection and processing; field quality control (QC); sample documentation, packaging, and transport; field documentation; laboratory analysis; and data management and reporting.

Field sampling was conducted by AECOM between April 14 and May 8, 2015. Sampling activities were conducted under the direct oversight of EPA or their authorized representatives. Cultural resource monitors from the Confederated Tribes of the Colville Reservation (CCT) and/or the National Park Service were also present during sampling activities to provide oversight for the protection of cultural artifacts in accordance with the protocols outlined in the cultural resources coordination plan (Appendix B of the QAPP [HDR et al. 2015a]). The sampling locations, sample collection methods, and field documentation are presented in the field investigation summary report, which is included as Appendix A to this report. Field changes and deviations from the QAPP are also detailed in the field investigation summary report (Appendix A) and summarized in Section 3.1.

2.2.1 Sampling Locations

All of the targeted 10 sediment DUs and 6 soil DUs identified in the QAPP (HDR et al. 2015a) were sampled using ICS methodology (ITRC 2012). The targeted field laboratory XRF samples identified in the QAPP were also collected. Only one of the two targeted areas near the former cable ferry landings (i.e., F-01) could be sampled. Due to cultural sensitivities, no samples were collected from the west bank area (F-02) and no sediment cores were collected from SDU-09.

During most of the field event, the water elevation in the reservoir was higher than the lowest elevation of 1,250 ft specified in EPA's LOE letter (USEPA 2012b). Drawdown was less than expected because of low snowpack conditions, and portions of several of the sediment DUs (SDU-04, SDU-07, SDU-08, SDU-09, and SDU-10) were inundated by water when sampling activities began. Water elevation ranged from a high of 1252.7 ft at the time sampling started on April 14, 2015, to a low of 1249.2 ft on May 4, 2015. Boundaries for the affected sediment DUs (SDU-04, SDU-07, and SDU-08) were modified to accommodate the higher than expected water level. These revisions were documented in change requests summarized in Section 3.1.1 and attached to the field investigation summary report (Appendix A). The modified boundary for SDU-07 included two polygons, because the center of the DU was inundated and only the eastern and western portions of SDU-07 remained accessible. A map showing the original and final configurations for SDU-07 is provided in Change Request No. 5 (attached to the field investigation summary report [Appendix A]).

Additional revisions to sampling locations were also documented on change request forms. These changes include:

- Repositioning the western boundary of UDU-05 to avoid sampling the railroad right-of-way
- Avoiding steep slopes (greater than 30 percent) in several sediment DUs due to unsafe sampling conditions
- Resizing UDU-06 to be wholly located on U.S. Bureau of Reclamation (USBR) land and relocating ICS and field laboratory XRF locations within the resized DU because an access agreement with the private landowner could not be obtained.

Table 2-1 lists actual samples collected by DU or area, and Tables 2-2a through 2-2c provide coordinates for ICS, *in situ* XRF, and core samples, respectively. The sampling locations are shown on Maps 2-2 and 2-3.

2.2.2 Sample Collection

This section summarizes the methods used for collecting and processing sediment and soil samples, which were carried out in accordance with the QAPP (HDR et al. 2015a) and FSP (Appendix A of the QAPP).

2.2.2.1 Incremental Composite Samples

Within each DU, increments were collected at predetermined locations using ICS methods in accordance with the QAPP (HDR et al. 2015a). If possible, the increment location was placed within 2 meters (m) of the global positioning system (GPS) increment coordinates

specified in Tables A1a and A1b of the QAPP. If an increment could not be collected within 2 m of the predetermined location, a reserve location was used. Once the location had been cleared of any surface debris, an increment was collected from the top 0 to 15 cm of sediment or soil using a 4-cm-diameter coring tool.¹⁵ Each increment was placed in a clean, dedicated plastic Ziploc® storage bag and examined for cultural materials by a cultural resource monitor and/or archaeologist.

Once the sample had passed the cultural inspection¹⁶, it was transferred into a labeled 5-gal. bucket that contained previously collected increments from the DU. Labels included an alphanumeric sample identification (ID) (see Section 2.2.4), the sampler's initials, and the sampling date and time. If all 30 increments for a DU were collected within a day, the field supervisor (or someone designated by the field supervisor) verified that all 30 increments in the Ziploc bags were present. The 30 bags were then emptied into the bucket and the composite sample was placed on ice until shipment to the analytical laboratory. If all 30 increments could not be collected in one day, then the Ziploc bags with increments from the first day were stored in the bucket labeled as BUCKET 1 at 4°C, ±2°C, until all increments from that DU could be collected. Increments from subsequent days were placed in appropriately labeled buckets (e.g., BUCKET 2). After all 30 increments from a DU were collected, they were combined into one bucket and the final count was verified. The 30 bags were then emptied into one bucket and the composite sample was placed on ice until shipment to the analytical laboratory.

Field observations and sampling activities were recorded in the field notebook and on a tablet computer. Sample collection equipment was grossly decontaminated (i.e., brushed off) between increments at the same DU and fully decontaminated between DUs in accordance with the procedures detailed in Appendix A of the QAPP (HDR et al. 2015a). Samples were placed on ice until shipment to the analytical laboratory. Chain-of-custody (COC) forms were completed to enable the tracking of all samples, as described in detail in the QAPP. Field observations, records of sampling activities, and completed COC forms are provided in the field investigation summary report (Appendix A).

In total, 26 samples were collected using ICS methods from the 16 DUs (i.e., 10 sediment DUs and 6 soil DUs). Samples were collected in triplicate from 4 sediment DUs and 1 soil

¹⁵ In consultation with EPA oversight, a stainless-steel hand auger or shovel was used to collect samples at a number of locations due to rocky conditions that prevented the use of the coring tool (see Section 3.1.2).

¹⁶ Information on samples not passing cultural inspection (e.g., SDU-09A-R06, UDU-01-19, UDU-02-27) is provided in Appendix I of the field investigation summary report (Appendix A to this report). Increments that did not pass cultural inspection were returned to the sampling location and the sample location was moved.

DU. Including all triplicate samples, a total of 18 composite sediment samples and 8 composite soil samples were collected (Table 2-1).

2.2.2.2 XRF Samples and Measurements

XRF samples were collected at predetermined locations using methods specified in the QAPP (HDR et al. 2015a). If possible, the sampling location was placed within 2 m of the GPS coordinates specified in Tables A1c and A1d of the QAPP. If a sample could not be collected within 2 m of the targeted location, a reserve location was used. Once the location had been cleared of any surface debris, a sample was collected from the top 0 to 15 cm of sediment or soil using a 4-cm-diameter coring tool. Each sample was placed in a clean, dedicated Ziploc bag and examined for cultural materials by a cultural resource monitor and/or archaeologist. Once the sample had passed the cultural inspection, it was transported to the field analysis area where it was dried. Although the QAPP specified that samples would be air dried, the method was revised to oven-drying to reduce the drying time in order to facilitate the selection of core sampling locations (Change Request No. 3; see Section 3.1.1). Once dry, the sample was sieved using a decontaminated 2-mm screen and then fully homogenized. The sample was placed in a clear plastic bag, the soil was slightly compacted, and the window of the XRF analyzer was placed directly on the plastic bag for 120 seconds to measure the lead concentration in the sediment or soil. Three measurements were taken, and if the three values did not fall within 35 percent of the average value, the sample was re-homogenized, and the XRF measurements were repeated. At 20 percent of the locations, subsamples of the sieved field laboratory XRF samples were collected for confirmatory analysis at the analytical laboratory. The samples submitted for confirmatory analysis were selected in conjunction with EPA oversight personnel.

Sample labeling, field activity documentation, and sample storage and tracking prior to shipment to the analytical laboratory were carried out for the ICS samples, as described above in Section 2.2.2.1. Sampling equipment was fully decontaminated between XRF sampling locations.

In total, 55 XRF samples were collected from the sediment DUs and 44 XRF samples were collected from the soil DUs. These samples were analyzed for lead in the field laboratory using the handheld XRF analyzer (field laboratory XRF samples indicated in Table 2-1).

During the field event, EPA and TAI agreed to use the handheld XRF analyzer for the *in situ* measurement of lead concentrations in three of the sediment DUs (SDU-07, SDU-09, and SDU-10). As documented in Change Request No. 6 (see Section 3.1.1), *in situ* XRF measurements were taken at 30 increment locations in both SDU-09 (specifically

increments for the triplicate sample SDU-09A) and in SDU-10 to aid in locating the approximate position of the west bank former cable ferry landing. Information obtained from the CCT provided coordinates for a location at the north end of SDU-09 thought to be the likely site for the ferry landing (approximate location shown on Map 2-2). In addition, field crew observed a rusted steel cable on the northern end of SDU-09 in line with the coordinates provided by the CCT. This information is noted in the daily field report for May 6, 2015, attached to the field investigation summary report (Appendix A). *In situ* XRF measurements for lead were also conducted at 30 locations in recently exposed sediment from SDU-07. This sediment had been inundated during ICS and field XRF sampling (see deviations in Section 3.1.2).

2.2.2.3 Core Samples

Sediment and soil core samples were collected at locations selected by EPA after review of the field laboratory XRF results. EPA's decision criteria for selection of core sampling locations were communicated to AECOM on April 14, 2015 (summarized in AECOM's daily field report [Appendix B of Appendix A]), and are as follows:

1. Locations with the three highest XRF measurements higher than 400 mg/kg or
2. Locations where one or two XRF measurements exceed 400 mg/kg and additional location(s) based on visual observations of potential areas of interest or
3. Locations randomly selected (using a random number generator) in DUs with no XRF measurements higher than 400 mg/kg and no location chosen due to lack of visual evidence.

Once the location had been cleared of any surface debris, core samples were collected from the surface interval (0 to 15 cm) and two subsurface intervals (15 to 30 cm and 30 to 45 cm) using a coring tool.¹⁷ Each core sample was placed in a clean, dedicated Ziploc bag and examined for cultural materials by a cultural resource monitor. Once the core sample had passed the cultural inspection, the sample was labeled for submittal to the analytical laboratory.

Sample labeling, field activity documentation, and sample storage and tracking prior to shipment to the analytical laboratory were carried out as described for ICS samples in Section 2.2.2.1. Sampling equipment was decontaminated between each sampling location.

¹⁷ At two locations in UDU-04 with coarse substrate, it was not possible to advance the core the full 45 cm. At those locations (i.e., UDU-04-COR-01-003 and UDU-04-COR-03-003), the core was advanced as far as possible. This deviation is noted in Section 3.1.2. The actual depth is noted in the field investigation summary report (Appendix A).

In total, 135 discrete core samples were collected from 8 of the 10 sediment DUs, all of the 6 soil DUs, and the former cable ferry landing area F-01. A total of 27 sediment cores and 18 soil cores were collected, and 3 samples were generated from each core (one from each of three depth intervals) (Table 2-1).

2.2.3 Field Quality Control Samples

Field QC samples included field triplicate samples (for samples collected using ICS methods), field split samples, EPA split samples, confirmatory XRF samples, and equipment rinsate blanks. Field triplicate samples were collected to assess the precision of the ICS sampling method. Field and EPA split samples were collected to assess the homogeneity of samples collected in the field. Confirmatory XRF samples were submitted to the analytical laboratory to assess the lead concentrations measured in the field laboratory using the handheld XRF analyzer (i.e., the field laboratory XRF samples). Equipment rinsate blank samples were collected to evaluate equipment decontamination procedures. The number of each type of field QC sample is as follows:

- 5 field triplicate ICS samples for a total of 15 ICS samples (5 A samples, 5 B samples, and 5 C samples, each composed of 30 increments)
- 3 field split ICS samples
- 4 EPA split ICS samples
- 24 confirmatory XRF samples
- 2 field split confirmatory XRF samples
- 3 EPA split confirmatory XRF samples
- 14 field split core samples
- 20 EPA split core samples
- 50 equipment rinsate blank samples.

The sampling locations for field triplicate, field split, EPA split, and confirmatory XRF samples are presented in Tables 2-2a through 2-2c.

In addition, certified reference materials¹⁸ were used to verify the calibration of the handheld XRF analyzer. Calibration verification was conducted at the beginning and end of the day when the handheld XRF analyzer was used.

¹⁸ Certified reference materials were used to verify calibration of the handheld XRF analyzer at low, medium, and high concentrations of lead. Lead concentrations in the reference materials used were 17.3 mg/kg in National Institute of Standards and Technology (NIST) 2709a, 1,400 mg/kg in NIST 2711a, and 5,770 mg/kg in NIST 2780.

EPA split samples were selected by EPA for chemical analysis as part of their quality assurance/quality control (QA/QC) program (CH2M HILL 2015). Both field and EPA split samples for each sample type were prepared by the analytical laboratory, ALS Environmental (ALS) in Kelso, Washington, as described in Section 2.3.

2.2.4 Sample IDs and Labeling

Sample containers were labeled with the project name, sample ID, collection date and time, sampler's initials, and laboratory analyses. All sediment and soil samples were identified and labeled according to methods presented in the FSP (Appendix A of the QAPP [HDR et al. 2015a]). Sample IDs included a prefix to indicate the sample DU (i.e., SDU for sediment or UDU for soil), followed by the collection method identifier (ICS, XRF, or COR), the ICS replicate identifier (A, B, or C), the XRF location or core number, and the core interval number (001 for 0 to 15 cm, 002 for 15 to 30 cm, and 003 for 30 to 45 cm). Equipment rinsate sample identifiers included the sample DU followed by "ER."

2.3 LABORATORY METHODS

Sediment and soil samples were shipped to ALS for chemical analysis. Upon receipt by the laboratory, samples were refrigerated until processing according to the QAPP (HDR et al. 2015a). All ICS and core samples were first homogenized and analyzed for grain size, pH, and percent solids, and then the remaining sample was air dried, homogenized, and apportioned for sieving into two fractions for sediment (i.e., < 2 mm and < 250 μm) and two fractions for soil (i.e., < 2 mm and < 150 μm).

ICS samples were processed and subsampled according to the Interstate Technology & Regulatory Council (ITRC) guidance (ITRC 2012) and the laboratory's standard operating procedure (SOP) provided as Attachment A of Amendment No. 1 to the QAPP (HDR et al. 2015a) followed by analysis.

Table 2-4 summarizes the analyses conducted on the samples, which were consistent with those described in the study design discussed in Section 2.1. Samples collected for this study were analyzed according to standard EPA-approved analytical and preparation/digestion methods, as detailed in Table A7-2 of the QAPP (HDR et al. 2015a) and Amendment No. 1 to the QAPP (HDR et al. 2015b). Laboratory deviations from the QAPP are discussed in Section 3.2.

Field split samples were generated for a subset of DUs and XRF and core sampling locations to assess the homogeneity of samples collected in the field. ALS conducted the sample homogenization and took two aliquots of samples from the homogenized

sediment or soil to generate an original sample and a field split sample (3 ICS samples, 2 XRF confirmatory samples, and 14 core samples). The samples selected for preparation of field split samples were identified by the field crew on the COC forms. Field split samples were assigned their own unique fictitious sample IDs (i.e., BOSS-###) (HDR et al. 2015b). Both the original and the field split samples were analyzed according to standard EPA-approved analytical and preparation/digestion methods, as detailed in Table A7-2 of the QAPP (HDR et al. 2015a) and Amendment No. 1 to the QAPP (HDR et al. 2015b). The 50 equipment rinsate blank samples collected in the field were analyzed for TAL metals. EPA split samples were also prepared by ALS after homogenization using ICS methods for subsampling and were provided to EPA for separate analysis by Manchester Environmental Laboratory (CH2M HILL 2015; HDR et al. 2015a).

The laboratory generated 40 experimental blanks for equipment used in the sieving process to identify possible contamination from the laboratory. These samples were collected for each incremental sampling event in the laboratory and were analyzed for TAL metals. The experimental sand blanks were also processed in compliance with ICS procedures and equipment as follows: one acid-washed sand blank, and one sand blank for each sieve size (< 2 mm, < 250 μm , and < 150 μm).

The following additional laboratory QC analyses were performed:

- Matrix spike/matrix spike duplicate samples were analyzed to assess the accuracy of the analyses at the frequency of once every 20 samples.
- Laboratory duplicates were performed to evaluate the reproducibility between individual measurements (i.e., analytical precision) at the rate of 1 per 20 samples, or one per sample delivery group (SDG), whichever was greater.

3 QUALITY ASSURANCE PROJECT PLAN MODIFICATIONS AND DEVIATIONS

3.1 FIELD CHANGES AND DEVIATIONS

Procedures presented in the QAPP (HDR et al. 2015a) were followed to the extent possible during implementation of the study. Modifications to the QAPP were categorized as either “changes” or “deviations.” Changes and deviations are summarized in the field investigation summary report (Appendix A).

The sampling changes and deviations are not expected to affect the quality of the results or sample completeness. The majority of the changes and deviations consisted of the relocation of samples due to access or safety concerns or minor procedural modifications in response to unexpected field conditions.

3.1.1 Change Requests

Changes that were identified prior to the initiation of field work and during implementation of the study were documented on change request forms. Eight change request forms were prepared, submitted, and approved by EPA. The EPA-approved forms are included in the field investigation summary report (Appendix A).

The following types of changes were documented in the change request forms:

- Change Request No. 1 involved the revision of the western boundary of UDU-05 and associated ICS and XRF sampling locations to avoid sampling on the railroad right-of-way.
- Change Request No. 2 involved the repositioning of three XRF sampling locations within UDU-01 (i.e., UDU-01-XRF-04, UDU-01-XRF-05, and UDU-01-XRF-06) because the original coordinates specified in the QAPP (HDR et al. 2015a) were found to be located outside the boundaries of UDU-01.
- Change Request No. 3 authorized the use of an oven to dry the field XRF samples prior to field analysis because the XRF samples did not air dry in a reasonable amount of time to facilitate the selection of core sampling locations.
- Change Request No. 4 authorized modification of the sample handling procedures for “wet” samples. Upon the request of the EPA technical observer, increments determined to be “wet” were shipped to the laboratory in a clean, dedicated Ziploc bag. Increments were air dried and weighed. Six increments (i.e., SDU-05-19, SDU-10-R05, UDU-06-04, UDU-06-16, UDU-06-17, and UDU-06-28) were

affected by this change request. After consultation between EPA and TAI following review of the mass of increments after drying, the laboratory prepared a composite of the dried increments. Documentation of the mass of the “wet” increments after drying, as well as procedures for compositing, are provided in the laboratory reports (available on the Downloads page in the project database [<http://teck-ucr.exponent.com>]).

- Change Request No. 5 modified the boundaries of three DUs (i.e., SDU-04, SDU-07, and SDU-08) to avoid areas that were inundated by the lake or located on steep slopes (greater than 30 percent), which were deemed unsafe to sample. In addition, this change request authorized the collection of triplicate ICS samples at SDU-07 because triplicate samples could not be obtained from SDU-09 as originally planned due to cultural sensitivities.
- Change Request No. 6 authorized additional *in situ* analysis of lead using a handheld XRF analyzer at two DUs (i.e., SDU-09 and SDU-10). This work was intended to aid in the approximate locating of the west bank cable ferry landing and was not intended to provide “definitive” data.
- Change Request No. 7 provided supplemental field procedures in the event that primary and reserve ICS locations could not be sampled. Using these procedures, a new sampling location could be selected by moving in an upland direction perpendicular to the water’s edge from the inundated/rejected sampling location, until a new acceptable location on dry land was found. This procedure was used for 8 locations within SDU-09 and 10 locations within SDU-10.
- Change Request No. 8 authorized the resizing of UDU-06 and repositioning of locations for the collection of ICS increments and field laboratory XRF samples within the boundaries of USBR land. The redistribution of sampling locations within UDU-06 that were originally located on private land was necessary because an access agreement with the private landowner could not be obtained.

3.1.2 Deviations

After consultation with and approval by EPA, deviations from the QAPP (HDR et al. 2015a) and Amendment No. 1 to the QAPP (HDR et al. 2015b) identified during the study were implemented as follows:

- Stainless-steel hand augers or plastic scoops were used to collect samples at several locations due to rocky conditions that prevented the use of the coring tool.

- Additional confirmatory XRF samples were submitted to the analytical laboratory to cover a broader range of lead concentrations as measured by the XRF analyzer for the field laboratory XRF samples.
- *In situ* XRF sampling was conducted at SDU-07 after ICS and field laboratory XRF sampling had been completed, because the water level dropped and exposed sediment that had been inundated during ICS and field laboratory XRF sampling. EPA and TAI agreed to conduct the *in situ* XRF sampling rather than collect additional ICS and field laboratory XRF samples. The *in situ* XRF measurements were made at locations along the recently exposed shoreline to obtain information about lead concentrations in areas within the original boundary of SDU-07 that could not be sampled earlier in the field program because of the elevated water level. Core samples were not collected from SDU-09 and F-02 due to cultural sensitivities.
- Because the core sampling met with refusal after multiple attempts,¹⁹ the full 30-to-45-cm interval for UDU-04-COR-01-003 and UDU-04-COR-03-003²⁰ could not be collected because of the presence of cobbles; instead, samples were collected from the 30-to-36-cm interval for UDU-04-COR-01-003 and the 30-to-43-cm interval for UDU-04-COR-03-003.

3.2 LABORATORY CHANGES AND DEVIATIONS

Laboratory methods included one change related to procedures specified in the QAPP (HDR et al. 2015a). The QAPP stated that pH would be measured in the < 2-mm fraction of sediment and soil; however, prior to sample collection, the decision was made to analyze sediment and soil pH in the bulk fraction rather than the < 2-mm fraction so that the measurement would not be altered by the drying and sieving process. No laboratory method deviations were noted in the data validation reports (available on the Downloads page in the project database [<http://teck-ucr.exponent.com>]).

¹⁹ As presented in the field investigation summary report, six and then five attempts were made at UDU-04-COR-01-003 and UDU-04-COR-03-003, respectively, each attempt meeting refusal due to the presence of cobbles.

²⁰ The field investigation summary report (Appendix A) makes note of only one core that met refusal before reaching 45 cm (i.e., UDU-04-COR-01-003). The second core (i.e., UDU-04-COR-03-003) is documented in Appendix I, Core Sampling Report, of the field investigation summary report (Appendix A).

4 VALIDATION ASSESSMENT

Data validation was performed by Environmental Standards, Inc. (ESI), of Valley Forge, Pennsylvania, in accordance with the QAPP (HDR et al. 2015a) based on EPA guidance from the following documents:

- *Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use* (EPA 540-R-08-005) (USEPA 2009)
- *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review* (EPA 540-R-10-011) (USEPA 2010a).

Stage 2B validation was conducted for the majority of the data. Data for approximately 18 percent of the samples underwent Stage 4 validation, which is in accordance with the QAPP (HDR et al. 2015a). Data were qualified, as needed, based on an evaluation of the following laboratory and field QC criteria:

- Holding times
- Initial and continuing calibration results
- Laboratory and equipment rinsate blank concentrations
- Matrix spike/matrix spike duplicates (MS/MSDs)
- Recoveries of laboratory control samples (LCS)
- Laboratory duplicate relative percent differences (RPDs)
- Field split sample RPDs and field triplicate sample relative standard deviations (RSDs)²¹
- Interference check samples
- Serial dilutions
- Internal standards.

ESI data validation reports are available on the Downloads page of the project database (<http://teck-ucr.exponent.com>). The results of the data validation for overall data quality

²¹ The QAPP (HDR et al. 2015a) stated that results for field split samples and field triplicate samples would be evaluated using control limits of 35 percent but that data would not be qualified as estimated if the measurement quality objectives (MQOs) were exceeded. To be consistent with previous data collection efforts, however, field split sample RPDs and field triplicate sample RSDs from the Bossburg Flat Beach refined sediment and soil study that exceeded 35 percent were qualified as estimated (“J” flagged) (see Section 4.1 for a description of qualifiers).

of chemistry results, sample transport and holding times, and data validation results are summarized in Sections 4.1, 4.2, and 4.3, respectively.

4.1 OVERALL DATA QUALITY

Sediment and soil chemistry data meet quality requirements in accordance with the QAPP (HDR et al. 2015a). A summary of the qualifiers assigned to the metals and conventionals (i.e., pH, TOC, CEC, percent moisture, and grain size) parameter data are presented by sampling method in Tables 4-1 through 4-6. All data are usable with the qualifiers presented, except for results for IVBA arsenic and IVBA lead in 1 sample and for total arsenic and total lead in 4 samples (see Sections 4.6 and 4.7). The data qualifiers were applied by ESI and included the following:

- "J"—The concentration was considered to be estimated due to one or more of the following: exceedance of project-specific holding time; analytical interference; LCS, MS/MSD, or reporting limit (RL) standard recovery not within acceptable range; high percent difference (%D), RPD, or RSD for field or laboratory QC; concentration between the method detection limit (MDL) and the method reporting limit (MRL); or for bioaccessibility percentages, if the calculation used qualified metals results.
- "R"—The data point was unusable (i.e., rejected).
- "U"—The analyte was not detected at or above the MDL.
- "UJ"—The analyte was not detected, but the detection limit was likely higher than reported due to low bias.
- "U*"—The analyte was considered "not detected" because a similar concentration was detected in an associated blank sample. ESI considered sample weight, percent solids, and dilution factor when evaluating blank contamination. For results qualified "U*", the MDL was changed to the concentration of the method blank.

The following sections discuss the data review findings and reasons qualifiers were applied by the data validator. Laboratory QC samples (e.g., laboratory duplicate, matrix spike, and matrix spike duplicate samples) were included in the validation assessment, and are, therefore, also included in the qualifier counts below. Tables 4-1 through 4-6 show both the numbers of qualifiers applied by the analytical laboratory and the number of qualifiers applied by the data validator.

IVBA data are reported in the tables as percent bioaccessible based on the concentrations detected in the sediment or soil sample and in a liquid extract²². The qualifiers detailed in Section 4 apply to the IVBA soil concentrations (as opposed to the reported bioaccessibility percentages), unless otherwise indicated.

The following subsections summarize the data validation results for sample transport and holding times, equipment blanks and experimental blanks, sediment ICS data, soil ICS data, sediment and soil XRF data, sediment core data, and soil core data.

4.2 SAMPLE TRANSPORT AND HOLDING TIMES

There were no sample transport issues or exceedances of sample transport holding times. Sample holding times were not exceeded, with the exception of pH for 2 sediment ICS samples. The QAPP-specified holding times from sampling to analysis were not exceeded, with the exception that the 7-day holding time for pH was exceeded for 2 sediment ICS samples. These samples were qualified as estimated ("J" flagged).

A procedural error at the analytical laboratory caused a high bias for CEC analysis in 4 soil core samples. The samples were not reanalyzed within the QAPP-specified (HDR et al. 2015a) holding time of 14 days from sampling to analysis. These samples were qualified as estimated ("J" flagged).

4.3 EQUIPMENT BLANKS AND EXPERIMENTAL BLANKS

This section summarizes the number of equipment blank and experimental blank concentrations qualified by ESI (Table 4-1), including laboratory QC samples. Qualifiers were applied as needed based on an evaluation of various QC factors (e.g., LCS and MS recoveries, laboratory blank concentrations, and duplicate RPDs), as detailed in the subsections below.

4.3.1 Calibration

All calibration standard concentrations for analyses of equipment blanks and experimental blanks were within control limits.

²² Bioaccessibility percentages calculated from qualified data were qualified as estimated ("J" flagged).

4.3.2 Blanks

Experimental blank concentrations were qualified as estimated ("J" flagged) due to negative instrument bias in an associated calibration blank for iron in 20 samples. Non-detected experimental blank concentrations were qualified "UJ" due to negative instrument bias in an associated calibration blank for iron in 13 samples. All calibration and preparation blanks for analyses of equipment blanks were within control limits.

4.3.3 Matrix Spikes

All MS/MSD concentrations for analyses of equipment blanks and experimental blanks were within control limits.

4.3.4 Laboratory Control Samples

All LCS sample concentrations for analyses of equipment blanks and experimental blanks were within control limits.

4.3.5 Laboratory Duplicates

All laboratory duplicate concentrations for analyses of equipment blanks and experimental blanks were within control limits.

4.3.6 Interference Check Samples

All interference check concentrations for analyses of equipment blanks and experimental blanks were within control limits.

4.3.7 Serial Dilutions

Equipment blank concentrations were qualified as estimated ("J" flagged) due to a high serial dilution percent difference for calcium in 30 samples, lead in 2 samples, and magnesium in 20 samples. All serial dilutions for analyses of experimental blanks were within control limits.

4.3.8 Internal Standards

All internal standard concentrations for analyses of equipment blanks and experimental blanks were within control limits.

4.4 SEDIMENT ICS DATA

This section summarizes the number of sediment ICS concentrations qualified by ESI (Table 4-2), which includes laboratory QC samples. Qualifiers were applied as needed

based on an evaluation of various QC factors (e.g., LCS and MS recoveries, laboratory blank concentrations, and duplicate RPDs), as detailed in the subsections below.

4.4.1 Calibration

All calibration standard concentrations for analyses of sediment ICS samples were within control limits.

4.4.2 Blanks

All calibration and preparation blanks for analyses of sediment ICS samples were within control limits.

4.4.3 Matrix Spikes

Sediment ICS concentrations were qualified as estimated ("J" flagged) due to MS/MSD recoveries that were not within control limits for antimony in 40 samples and IVBA lead in 2 samples.

Low recoveries are typical for antimony analysis due to poor solubility of some compounds during sample extraction when sample digestion occurs without the addition of hydrochloric acid (HCl) (USEPA 2013b). EPA Method 3050B does not include HCl in the digestion acid because high chloride matrices can result in the formation of molecular interferences in ICP-MS, especially for arsenic and vanadium. However, the lack of HCl can lead to insoluble precipitates that result in poor recover of antimony.

4.4.4 Laboratory Control Samples

Sediment ICS concentrations were qualified as estimated ("J" flagged) due to LCS recoveries that were not within control limits for thallium in 4 samples.

4.4.5 Laboratory Duplicates, Field Split Samples, and Field Triplicate Samples

Sediment ICS concentrations were qualified as estimated ("J" flagged) due to a field split sample RPD that was not within control limits for mercury in 2 samples.

Sediment ICS concentrations were qualified as estimated ("J" flagged) due to field triplicate sample RSDs that were not within control limits for cadmium in 6 samples, calcium in 6 samples, mercury in 9 samples, silver in 3 samples, and TOC in 3 samples.

4.4.6 Interference Check Samples

Sediment ICS concentrations were qualified as estimated ("J" flagged) due to inductively coupled plasma (ICP) interference for magnesium in 19 samples and sodium in 3 samples.

4.4.7 Serial Dilutions

Sediment ICS concentrations were qualified as estimated ("J" flagged) due to a high serial dilution percent difference for calcium in 18 samples, copper in 18 samples, iron in 18 samples, and lead in 4 samples.

4.4.8 Internal Standards

All internal standard concentrations for analyses of sediment ICS samples were within control limits.

4.5 SOIL ICS DATA

This section summarizes the number of soil ICS concentrations qualified by ESI (Table 4-3), which includes laboratory QC samples. Qualifiers were applied as needed based on an evaluation of various QC factors (e.g., LCS and MS recoveries, laboratory blank concentrations, and duplicate RPDs), as detailed in the subsections below.

4.5.1 Calibration

All calibration standard concentrations for analyses of soil ICS samples were within control limits.

4.5.2 Blanks

All calibration and preparation blanks for analyses of soil ICS samples were within control limits.

4.5.3 Matrix Spikes

Soil ICS concentrations were qualified as estimated ("J" flagged) due to MS/MSD recoveries that were not within control limits for antimony in 18 samples and IVBA lead in 7 samples.

Low recoveries are typical for antimony analysis due to poor solubility of some compounds during sample extraction when sample digestion occurs without the addition of HCl (USEPA 2013b). EPA Method 3050B does not include HCl in the digestion acid because high chloride matrices can result in the formation of molecular interferences in

ICP-MS, especially for arsenic and vanadium. However, the lack of HCl can lead to insoluble precipitates that result in poor recover of antimony.

4.5.4 Laboratory Control Samples

All laboratory control sample concentrations for analyses of soil ICS samples were within control limits.

4.5.5 Laboratory Duplicates, Field Split Samples, and Field Triplicate Samples

Soil ICS concentrations were qualified as estimated ("J" flagged) due to field triplicate sample RSDs that were not within control limits for lead in 6 samples, IVBA lead in 3 samples, and silver in 6 samples.

4.5.6 Interference Check Samples

Soil ICS concentrations were qualified as estimated ("J" flagged) due to ICP interference for magnesium in 4 samples.

4.5.7 Serial Dilutions

Soil ICS concentrations were qualified as estimated ("J" flagged) due to high serial dilution percent difference for IVBA lead in 2 samples.

4.5.8 Internal Standards

All internal standard concentrations for analyses of soil ICS samples were within control limits.

4.6 SEDIMENT AND SOIL CONFIRMATORY XRF DATA

ESI conducted a comprehensive review of the sediment and soil confirmatory XRF data, including an evaluation of various QC factors (e.g., instrument calibrations, blanks, LCS and MS recoveries, duplicate RPDs, interference checks, serial dilutions, and internal standards) summarized in Table 4-4. There were no data usability issues, and qualification of these data was not warranted. Therefore, a qualifier summary table for confirmatory XRF data is not included in this report.

4.7 SEDIMENT CORE DATA

This section summarizes the number of sediment core concentrations qualified by ESI (Table 4-5), which includes laboratory QC samples. Qualifiers were applied as needed based on an evaluation of various QC factors (e.g., LCS and MS recoveries, laboratory blank concentrations, and duplicate RPDs), as detailed in the subsections below.

The following two separate incidents related to sediment core samples were identified during data validation:

- The data package submitted by the analytical laboratory to undergo validation was missing the bench sheets for SDG K1504670 that identified the dates on which the 22 sediment core samples in that SDG were dried and sieved. As a result, it was not possible for ESI to associate the samples with sieve blanks. However, because the sieve blank results for the whole project showed an overall lack of contamination, the data validator determined that qualification was not necessary. With the exception of the dates samples were dried and sieved, all other information from the missing bench sheets was available for the validator to review because the laboratory transcribed handwritten weights recorded during the drying and sieving process to electronic log sheets, which were included in the data validation package. According to communication from the laboratory, the missing bench sheets were available at the time the electronic log sheets were prepared as well as during QA review. Based on this information, which is documented in the data validation report (available on the Downloads page in the project database [<http://teck-ucr.exponent.com>]), ESI was able to determine that the affected samples were properly processed and dried. The affected samples are as follows:

- SDU-05-COR-01-001-2mm
- SDU-05-COR-01-001-250 μ m
- SDU-05-COR-01-002-2mm
- SDU-05-COR-01-002-250 μ m
- SDU-05-COR-01-003-2mm
- SDU-05-COR-01-003-250 μ m
- SDU-05-COR-02-001-2mm
- SDU-05-COR-02-001-250 μ m
- SDU-05-COR-02-002-2mm
- SDU-05-COR-02-002-250 μ m
- SDU-05-COR-02-003-2mm
- SDU-05-COR-02-003-250 μ m
- SDU-05-COR-03-001-2mm
- SDU-05-COR-03-001-250 μ m
- SDU-05-COR-03-002-2mm
- SDU-05-COR-03-002-250 μ m
- SDU-05-COR-03-003-2mm
- SDU-05-COR-03-003-250 μ m
- BOSS-009-2mm
- BOSS-009-250 μ m
- BOSS-010-2mm
- BOSS-010-250 μ m.

- The initial IVBA arsenic and IVBA lead results for samples SDU-03-COR-02-001-250µm, SDU-03-COR-02-003-250µm, and SDU-08-COR-01-003-250µm were higher than the corresponding total arsenic and total lead results. ALS reanalyzed the samples and determined that the original total arsenic and total lead results were anomalous. IVBA results for lead and arsenic after reanalysis were less than the total lead and arsenic results. The analytical laboratory reported both the original and reanalyzed results for these samples. The sample IDs for the reanalyzed results were identified with an "R" suffix. ESI qualified the anomalous results and associated bioaccessibility percentages for these 3 samples as rejected ("R" flagged).²³ All results associated with the anomalous results were marked as not reportable in the project database, so only one result per sample and analyte is reported.

4.7.1 Calibration

All calibration standard concentrations for analyses of sediment core samples were within control limits.

4.7.2 Blanks

Sediment core concentrations were qualified as non-detected ("U*" flagged) due to the presence of the analyte at similar concentrations in an associated laboratory blank for antimony in 2 samples and thallium in 5 samples.

4.7.3 Matrix Spikes

Sediment core concentrations were qualified as estimated ("J" flagged) due to MS/MSD recoveries that were not within control limits for the following analytes and number of samples:

- Antimony – 176
- IVBA lead – 29
- Lead – 18
- Mercury – 60
- Potassium – 20
- Zinc – 20.

²³ Samples labeled with an "R" suffix were reanalyzed and samples that were "R" flagged were rejected.

4.7.4 Laboratory Control Samples

Sediment core concentrations were qualified as estimated ("J" flagged) due to LCS recoveries that were not within control limits for antimony in 2 samples and thallium in 2 samples.

4.7.5 Laboratory Duplicates, Field Split Samples, and Field Triplicate Samples

Sediment core concentrations were qualified as estimated ("J" flagged) due to a field split sample RPD that was not within control limits for the following analytes and number of samples:

- Aluminum – 2
- Barium – 2
- Calcium – 2
- Cobalt – 2
- Copper – 2
- Magnesium – 2
- Selenium – 2
- Silver – 2
- TOC – 2.

The high field split RPDs for aluminum, barium, calcium, cobalt, copper, magnesium, selenium, and silver resulted from samples SDU-07-COR-03-002-250 μ m and BOSS-013-250 μ m. The high field split RPD for TOC resulted from samples SDU-01-COR-03-003-2mm and BOSS-006-2mm.

4.7.6 Interference Check Samples

Sediment core concentrations were qualified as estimated ("J" flagged) due to ICP interference for magnesium in 44 samples and sodium in 22 samples.

4.7.7 Serial Dilutions

Sediment core concentrations were qualified as estimated ("J" flagged) due to high serial dilution percent difference for the following analytes and number of samples:

- Beryllium – 18
- Calcium – 60
- Iron – 100
- IVBA lead – 13
- Lead – 2
- Manganese – 40.

4.7.8 Internal Standards

All internal standard concentrations for analyses of sediment core samples were within control limits.

4.8 SOIL CORE DATA

This section summarizes the number of soil core concentrations qualified by ESI (Table 4-6), which includes laboratory QC samples. Qualifiers were applied as needed based on an evaluation of various QC factors (e.g., LCS and MS recoveries, laboratory blank concentrations, and duplicate RPDs), as detailed in the subsections below.

The initial IVBA lead results for samples UDU-03-COR-01-003-150 μ m and UDU-04-COR-01-003-150 μ m were higher than the corresponding total lead results. ALS reanalyzed the samples and determined that the original IVBA metals result for sample UDU-03-COR-01-003-150 μ m and the original total metals result for UDU-04-COR-01-003-150 μ m were anomalous. IVBA results for lead after reanalysis were less than the total lead results. ALS reported both the original and reanalyzed results for these samples. The sample IDs for the reanalyzed results were identified with an "R" suffix. ESI qualified both the anomalous results and the bioaccessibility percentages that were calculated from those results as rejected ("R" flagged).²⁴ All results associated with the anomalous results were marked as not reportable in the project database, so only one result per sample and analyte is reported.

4.8.1 Calibration

All calibration standard concentrations for analyses of soil core samples were within control limits.

4.8.2 Blanks

Soil core concentrations were qualified as non-detected ("U*" flagged) due to the presence of the analyte at similar concentrations in an associated laboratory blank for CEC in 1 sample and thallium in 3 samples.

4.8.3 Matrix Spikes

Soil core concentrations were qualified as estimated ("J" flagged) due to MS/MSD recoveries that were not within control limits for antimony in 120 samples, IVBA lead in 8 samples, and lead in 2 samples.

²⁴ Samples labeled with an "R" suffix were reanalyzed and samples that were "R" flagged were rejected.

4.8.4 Laboratory Control Samples

Soil core concentrations were qualified as estimated ("J" flagged) due to LCS recoveries that were not within control limits for antimony in 22 samples.

4.8.5 Laboratory Duplicates, Field Split Samples, and Field Triplicate Samples

All laboratory duplicate and field split sample RPDs and field triplicate sample RSDs for analyses of soil core samples were within control limits.

4.8.6 Interference Check Samples

Soil core concentrations were qualified as estimated ("J" flagged) due to ICP interference for magnesium in 5 samples, potassium in 24 samples, and sodium in 1 sample.

4.8.7 Serial Dilutions

Soil core concentrations were qualified as estimated ("J" flagged) due to high serial dilution percent difference for cobalt in 20 samples, iron in 18 samples, IVBA lead in 12 samples, magnesium in 18 samples, and thallium in 17 samples.

4.8.8 Internal Standards

All internal standard concentrations for analyses of soil core samples were within control limits.

5 RESULTS

This section includes summary statistics for all usable data, an evaluation of field QC samples (i.e., field split samples and field triplicate samples), and a summary of method reporting limits for non-detected samples. Summary statistics for sediment and soil samples are presented for ICS, XRF, and core data and include the number of detected values and the minimum, maximum, and mean values for each analyte. Summary statistics are presented in Tables 5-1 through 5-3 for ICS, XRF, and core samples, respectively. Rejected data (see Section 4) were not used in the data summaries; however, all data are included in the project database.

Figures 5-1 through 5-6 present results on samples collected using ICS methods. Results for conventional parameters are presented in Figures 5-1a through 5-1c, 5-2a through 5-2c, and 5-3 for bulk sediment and soil, < 2-mm sediment and soil fractions, and < 250- μm sediment and < 150- μm soil fractions, respectively. Results for TAL metals are presented in Figures 5-4a through 5-4w for the < 2-mm sediment and soil fractions, and 5-5a through 5-5w for the < 250- μm sediment and < 150- μm soil fractions. IVBA results for arsenic and lead in the < 250- μm sediment and < 150- μm soil fractions are presented in Figures 5-6a and 5-6b, respectively.

Table 5-4 and Figure 5-7 present results for lead measured in the < 2-mm fraction of sediment and soil in the field laboratory using the handheld XRF analyzer. Results of the *in situ* analysis of lead in three sediment DUs (SDU-07, SDU-09, and SDU-10) are shown in Figure 5-8; the spatial distribution of the *in situ* XRF lead measurements are provided on Maps 5-1 and 5-2. Field laboratory XRF results are provided in Appendix F of the Field Investigation Summary Report (Appendix A to this data summary report).

Sediment and soil XRF locations selected for the collection of core samples are indicated in Table 5-4. Results for the analysis of core samples are presented in Figures 5-9 through 5-14. Results for conventional parameters are presented in Figures 5-9a through 5-9f, 5-10a through 5-10e, and 5-11a and 5-11b for bulk sediment and soil, < 2-mm sediment and soil fractions, and < 250- μm sediment and < 150- μm soil fractions, respectively. Results for TAL metals are presented in Figures 5-12a through 5-12at for the < 2-mm sediment and soil fractions, and Figures 5-13a through 5-13at for the < 250- μm sediment and < 150- μm soil fractions. IVBA results for arsenic and lead in the < 250- μm sediment and < 150- μm soil fractions are presented in Figures 5-14a through 5-14d, respectively.

In accordance with the draft data management plan (Exponent 2010), field split and field triplicate samples were averaged prior to the calculation of summary statistics (detected values were averaged; if there were no detected values, the minimum detection limit is reported). In the summary statistics, non-detected results are represented in calculations

as one-half of the MDL. Data for EPA split samples, equipment rinsate blanks, and laboratory QA/QC samples, such as MS/MSDs, are not included in the data summaries.

The QAPP (HDR et al. 2015a) identified risk-based concentrations (RBCs) for sediment and soil that were used to derive analytical concentration goals (ACGs) for TAL metals, IVBA lead, and IVBA arsenic. The MRLs for non-detected results were compared with the ACGs, as summarized in Section 5.3.

5.1 SUMMARY STATISTICS

This section discusses summary statistics for sediment and soil ICS, XRF, and core samples.

5.1.1 Sediment and Soil ICS Samples

Samples were collected using ICS methods from 10 DUs for sediment and 6 DUs for soil. Summary statistics for sediment and soil ICS samples are presented in Table 5-1a for bulk samples, Table 5-1b for the < 2-mm fraction, and Table 5-1c for the < 250- μ m fraction (for sediment) and < 150- μ m fraction (for soil). Data are organized by analyte group (i.e., conventional parameters, TAL metals, and IVBA, as applicable). IVBA data are reported as percent bioaccessible.

5.1.2 Sediment and Soil XRF Sample Measurements

Field laboratory XRF samples were collected from 10 sediment and 6 soil DUs for a total of 99 field laboratory XRF samples, which were analyzed in the field laboratory for lead. In addition, *in situ* XRF measurements for lead were taken for a number of locations in 3 sediment DUs. Summary statistics for the field laboratory and *in situ* XRF samples are provided in Table 5-2a. Lead concentrations measured *in situ* in SDU-07, SDU-09, and SDU-10 using the handheld XRF analyzer are presented on Maps 5-1 and 5-2. Confirmatory XRF samples for 12 sediment samples and 12 soil samples were sent to the analytical laboratory to confirm the field laboratory XRF results.²⁵ Summary statistics for confirmatory XRF samples are presented in Table 5-2b.

5.1.3 Sediment and Soil Core Samples

Core samples were collected at three locations within each of 8 sediment DUs and area F-01 and at three locations within each of 6 soil DUs. Three depth intervals (i.e., 0 to 15 cm,

²⁵ The number of confirmatory XRF samples was increased from 20 (20 percent of the 99 field XRF samples collected) to 24 so that a broader range of lead concentrations measured by the XRF analyzer could undergo confirmation by ALS. This deviation is documented in Section 3.1.2.

15 to 30 cm, and 30 to 45 cm) were targeted in each core. Summary statistics for core samples are presented in Table 5-3a for bulk samples, Table 5-3b for the < 2-mm fraction, and Table 5-3c for the < 250- μm fraction (for sediment) and < 150- μm fraction (for soil). Data are organized by analyte group (i.e., conventional parameters, TAL metals, and IVBA, as applicable). IVBA data are reported as percent bioaccessible.

5.2 FIELD QC SUMMARY

This section discusses field split sample RPDs for sediment and soil ICS, core, and XRF samples, as well as field triplicate sample RSDs for sediment and soil ICS samples. A control limit of 35 percent was used to evaluate RPDs and RSDs (HDR et al. 2015a). The majority of grain size analysis RPD exceedances were for the three largest size fractions (i.e., coarse sand, very coarse sand, and gravel) and for fractions that made up less than 10 percent of the total composition. All of the grain size RSD exceedances were for gravel.

5.2.1 Sediment ICS samples

Field split sample RPDs and field triplicate sample RSDs for sediment ICS samples are summarized in Tables 5-5a through 5-5c. Two field split samples and four field triplicate samples were collected for sediment.

Field split sample RPDs greater than 35 percent are as follows (summarized by fraction):

- Bulk sediment
 - Grain size – 3 (i.e., clay, medium sand, and gravel) out of 16 data points (18.8 percent)
 - Other conventional parameters – 0 out of 4 data points
- < 2-mm fraction
 - Conventional parameters – 0 out of 4 data points
 - Metals – 1 (i.e., mercury) out of 46 data points (2.2 percent)
- < 250- μm fraction
 - Conventional parameters – 0 out of 2 data points
 - Metals – 0 out of 46 data points
 - IVBA – 0 out of 4 data points.

Field triplicate sample RSDs greater than 35 percent are as follows (summarized by fraction):

- Bulk sediment
 - Grain size – 3 (i.e., gravel) out of 32 data points (9.4 percent)

- Other conventional parameters – 0 out of 8 data points
- <2-mm fraction
 - Conventional parameters – 0 out of 8 data points
 - Metals – 3 (i.e., calcium and mercury) out of 92 data points (3.3 percent)
- <250- μ m fraction
 - Conventional parameters – 0 out of 4 data points
 - Metals – 2 (i.e., cadmium and calcium) out of 92 data points (2.2 percent)
 - IVBA – 0 out of 8 data points.

5.2.2 Soil ICS Samples

Field split sample RPDs and field triplicate sample RSDs for soil ICS samples are summarized in Tables 5-5a through 5-5c. One field split sample and one field triplicate sample were collected for soil. No field split sample RPDs were greater than 35 percent.

Field triplicate sample RSDs greater than 35 percent are as follows (summarized by fraction):

- Bulk soil
 - Grain size – 1 (i.e., gravel) out of 8 data points (12.5 percent)
 - Other conventional parameters – 0 out of 2 data points
- <2-mm fraction
 - Conventional parameters – 0 out of 3 data points
 - Metals – 2 (i.e., lead and silver) out of 23 data points (8.7 percent)
- <150- μ m fraction
 - Conventional parameters – 0 out of 1 data point
 - Metals – 2 (i.e., lead and silver) out of 23 data points (8.7 percent)
 - IVBA – 0 out of 2 data points.

5.2.3 Confirmatory XRF Samples

Neither of the two field split confirmatory XRF samples (one each for sediment and soil) had RPDs greater than 35 percent.

5.2.4 Sediment and Soil Field and Confirmatory XRF Samples

Table 5-6a provides a comparison of the field XRF results and the confirmatory XRF results for sediment and soil samples that had confirmatory analysis (12 each for sediment and soil). The RPDs for this comparison are summarized by DU in Table 5-6b. For

sediment XRF samples, no RPDs exceeded 35 percent. For soil XRF samples, three RPDs (25 percent of the total number of samples) were greater than 35 percent. RPD exceedances ranged from 44.5 to 63.2 percent. For each of the three exceedances, the confirmatory laboratory result was lower than the field laboratory result.

5.2.5 Sediment Core Samples

Field split sample RPDs for sediment core samples are summarized in Tables 5-7a through 5-7c. Eight field split samples were collected for sediment cores.

Field split sample RPDs greater than 35 percent are as follows (summarized by fraction):

- Bulk sediment
 - Grain size – 16 out of 64 data points (25.0 percent)
- Other conventional parameters – 0 out of 16 data points < 2-mm fraction
 - Conventional parameters – 1 out of 16 data points (6.3 percent)
 - Metals – 0 out of 184 data points
- < 250- μ m fraction
 - Conventional parameters – 0 out of 8 data points
 - Metals – 8 out of 184 data points (4.3 percent)
 - IVBA – 0 out of 16 data points.

5.2.6 Soil Core Samples

Field split sample RPDs for soil core samples are summarized in Tables 5-7a through 5-7c. Six field split samples were collected for soil cores.

Field split sample RPDs greater than 35 percent are as follows (summarized by fraction):

- Bulk soil
 - Grain size – 16 out of 48 data points (33.3 percent)
 - Other conventional parameters – 0 out of 12 data points
- < 2-mm fraction
 - Conventional parameters – 0 out of 18 data points
 - Metals – 0 out of 138 data points
- < 150- μ m fraction
 - Conventional parameters – 0 out of 6 data points
 - Metals – 0 out of 138 data points
 - IVBA – 0 out of 12 data points.

5.3 EVALUATION OF REPORTING LIMITS FOR NON-DETECTED SAMPLES

Target MRLs and ACGs for TAL metals were included in the QAPP (HDR et al. 2015a). Actual MRLs for non-detected results (applicable only to antimony, selenium, and thallium for sediment core samples and selenium and thallium for soil core samples) are presented in Table 5-8. All non-detected data points are less than the corresponding ACG. The QAPP also included a target MRL for TOC and target MRLs and ACGs for IVBA; however, there were no non-detected results for these analytes.

5.4 COMPARISON WITH SCREENING LEVELS

Data were compared with conservative screening levels protective of ecological receptors and human health. This section summarizes the comparisons of sediment and soil results with ecological and human health screening levels. These comparisons are for screening purposes only. The screening levels do not represent cleanup or action levels (USEPA 2002; 2003).

5.4.1 Ecological Screening Levels

Results from the <2-mm fraction of sediment and soil were compared with Eco-SSLs using the values presented in the QAPP (HDR et al. 2015a), which were the lowest of the screening levels adopted by EPA for plants, soil invertebrates, birds, and mammals (USEPA 2010b).²⁶ Eco-SSLs were available for 15 of the 23 metals analyzed in the study.²⁷ Figures 5-4 and 5-12 present a comparison of metals concentrations in sediment and soil ICS and core samples in each DU with ecological screening levels, when available. Comparisons with ecological screening levels are discussed in the following subsections.

5.4.1.1 Sediment and Soil ICS Samples

Comparisons of available Eco-SSLs with metals data in ICS samples from the sediment and soil DUs are presented in Table 5-9a. Of the 10 sediment and 6 soil DUs sampled, none had concentrations greater than the Eco-SSL for arsenic (18 mg/kg), beryllium (21 mg/kg), cobalt (13 mg/kg), nickel (38 mg/kg), or silver (4.2 mg/kg). In addition, none of the soil DUs had concentrations greater than the Eco-SSL for barium (330 mg/kg) or chromium (26 mg/kg). All sediment and soil DUs had concentrations greater than the Eco-

²⁶ Eco-SSLs exist for metals that are typically present as cations and can form complexes with inorganic material in soil.

²⁷ Metals with Eco-SSLs are antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, manganese, nickel, selenium, silver, vanadium, and zinc.

SSL for cadmium (0.36 mg/kg), lead (11 mg/kg), vanadium (7.8 mg/kg), and zinc (46 mg/kg). In addition, all soil DUs had concentrations greater than the Eco-SSL for antimony (0.27 mg/kg) and manganese (220 mg/kg). Some of the sediment and soil DUs had concentrations greater than the Eco-SSLs for the remaining metals as follows: 9 sediment DUs for antimony (0.27 mg/kg), 4 sediment DUs for barium, 3 sediment DUs for chromium, 6 sediment DUs and 1 soil DU for copper (28 mg/kg), 6 sediment DUs for manganese, and 5 sediment DUs and 1 soil DU for selenium (0.52 mg/kg).

5.4.1.2 Sediment and Soil Core Samples

Comparisons of available Eco-SSLs with metals data in core samples from sediment and soil DUs are presented in Table 5-9b. Three sediment cores, each with three sampling depths, were collected in sediment and 6 soil DUs for a total of 81 sediment and 54 soil core samples. None of the sediment or soil core samples had concentrations greater than the Eco-SSL for beryllium (21 mg/kg). In addition, none of the sediment core samples had concentrations greater than the Eco-SSL for cobalt (13 mg/kg) or nickel (38 mg/kg), and none of the soil core samples had concentrations greater than the Eco-SSL for barium (330 mg/kg) or silver (4.2 mg/kg). All sediment and soil core samples had concentrations greater than the Eco-SSL for vanadium (7.8 mg/kg). Some of the sediment and soil core samples had concentrations greater than the Eco-SSLs for the remaining metals as follows: 64 sediment and 43 soil core samples for antimony (0.27 mg/kg), 7 sediment and 1 soil core sample for arsenic (18 mg/kg), 45 sediment core samples for barium, 69 sediment and 44 soil core samples for cadmium (0.36 mg/kg), 29 sediment and 9 soil core samples for chromium (26 mg/kg), 4 soil core samples for cobalt, 48 sediment and 7 soil core samples for copper (28 mg/kg), 75 sediment and 51 soil core samples for lead (11 mg/kg), 66 sediment and 51 soil core samples for manganese (220 mg/kg), 5 soil core samples for nickel, 45 sediment and 3 soil core samples for selenium (0.52 mg/kg), 2 sediment core samples for silver, and 77 sediment and 48 soil core samples for zinc (46 mg/kg).

5.4.2 Human Health Screening Levels

Results from the < 250- μ m fraction of sediment and the < 150- μ m fraction of soil were compared to human health screening levels presented in the QAPP (HDR et al. 2015a). Human health screening levels were available for 19 of the 23 TAL metals analyzed and

are listed in Tables 5-10a and 5-10b.^{28,29} Four of the TAL metals (calcium, magnesium, potassium, and sodium) are essential nutrients and do not have human health screening levels. Figures 5-5 and 5-13 present the metals data compared with human health screening levels for those metals with human health RBCs. Maps 5-3 through 5-6 provide a spatial representation of arsenic and lead concentrations that are greater than the human health RBCs. Data were adjusted for site-specific RBA prior to comparison.³⁰ Comparisons to human health screening levels are discussed in the following subsections.

5.4.2.1 Sediment and Soil ICS Samples

Comparisons of available human health screening levels with metals data in ICS samples from the sediment and soil DUs are presented in Table 5-10a. Of the 10 sediment and 6 soil DUs sampled, none had concentrations greater than the human health screening level for any metal, with the exception of lead. Two soil DUs had concentrations greater than the human health screening level for lead (400 mg/kg).

5.4.2.2 Sediment and Soil Core Samples

Comparisons of available human health screening levels with metals data in core samples from sediment and soil DUs are presented in Table 5-10b. Three sediment cores, each with three sampling depths, were collected in 9 sediment and 6 soil DUs for a total of 81 sediment and 54 soil core samples. None of the sediment or soil core samples had concentrations greater than the human health screening levels for any metals other than arsenic, lead, and thallium. Sediment and soil core samples that had concentrations greater than the human health screening levels are as follows: 1 soil core sample for arsenic (9.68 mg/kg), 19 sediment and 11 soil core samples for lead (400 mg/kg), and 8 sediment samples and 1 soil sample for thallium (0.782 mg/kg).

²⁸ The following metals were used for the comparison of screening levels with the < 250- μ m fraction of sediment and the < 150- μ m fraction of soil: aluminum, antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, iron, lead, manganese, mercury, nickel, selenium, silver, thallium, vanadium, and zinc.

²⁹ The human health screening level for arsenic is based on the default residential soil screening level for a 1 in 1 million risk level adjusted for the default RBA of 60 percent (EPA 2015) plus an estimate of the concentrations of arsenic in natural background (9 mg/kg).

³⁰ The human health screening level for lead includes a default RBA adjustment of 60 percent (EPA 2015). To ensure appropriate comparison of lead concentrations at the Site to the lead screening level, sediment and soil concentrations are multiplied by the ratio of the site-specific lead RBA value to EPA's default RBA.

6 SUMMARY

The purpose of this study was to collect additional data on concentrations of TAL metals in nearshore sediment and soil in the vicinity of the YAM site. This information may be used to further define exposure estimates and inform risk evaluations of human health and ecological receptors. The study was focused on a small portion of the Site, specifically areas surrounding former mining and mill operations, a former cable ferry landing, and areas along Bossburg Flat Beach and Evans Campground Beach, which are located at RM 716 and 710, respectively.

The sampling design, as described in the QAPP (HDR et al. 2015a), combined the use of composite and discrete sampling approaches. Samples were collected between April 14 and May 8, 2015, under the direct oversight of EPA or their authorized representatives. In consultation with EPA, planned sampling were adjusted in some locations to account for the higher-than-anticipated lake water levels, unsafe terrain, or access denial by landowner. In some instances, adjustments to planned sampling locations were made due to cultural sensitivities.

Composite samples were collected using ICS methodology whereby increments were collected from the top 15 cm of sediment or soil at 30 increment locations within each DU. A total of 26 composite samples were collected from the 10 sediment DUs and 6 soil DUs, including field triplicate samples from 4 sediment DUs and 1 soil DU. The number of samples collected and analyzed using ICS methods met the targets in the QAPP (HDR et al. 2015a).

A handheld XRF analyzer was used to evaluate the spatial distribution of lead concentrations and to guide the selection of core locations. Field laboratory XRF samples were collected from the top 15 cm in the 10 sediment DUs and 6 soil DUs; 100 percent of the targeted XRF samples were collected as specified in the QAPP (HDR et al. 2015a). Samples were transported to the field laboratory where they were dried in an oven and sieved to < 2 mm prior to measuring lead concentrations with the XRF analyzer. Triplicate measurements were taken for each of the 99 field laboratory XRF samples, which confirmed the precision of the XRF readings.³¹ Twenty-four of the field laboratory XRF samples were sent to the analytical laboratory to confirm the accuracy of the lead concentrations measured using the handheld XRF analyzer. Results of the confirmatory

³¹ After 4 samples that had initially exceeded the 35 percent criterion were reanalyzed, all triplicate samples were below the 35 percent criterion.

analyses indicated that, in general, lead concentrations measured in the field laboratory were consistent with the confirmatory analyses and should be considered reliable.³²

The use of XRF was expanded during the field event to include *in situ* XRF measurement of lead concentrations in three sediment DUs. *In situ* XRF measurements were taken at increment locations in SDU-09 (specifically, increment locations for the triplicate sample SDU-09A) and SDU-10 to aid in locating the approximate position of the west bank ferry landing. *In situ* XRF was also conducted in SDU-07 to measure lead concentrations in recently exposed sediment after a drop in water level exposed sediment that had been inundated after ICS and field laboratory XRF sampling had already been completed.

Cores were advanced as planned in 15 of the sediment and soil DUs (coring was not planned in SDU-10) and in the former cable ferry landing area F-01 (on the east bank). Core samples were not collected in F-02 on the west bank due to cultural resource concerns in the area. Core locations within the DUs and F-01 were selected in consultation with EPA based on results of the field XRF measurements. To support an evaluation of the vertical extent of TAL metals concentrations, sediment and core samples were collected from the surface interval (0 to 15 cm) and two subsurface intervals (15 to 30 cm and 30 to 45 cm). In total, 45 cores were advanced, and 3 samples were generated from each core for a total of 135 samples.

QA and validation of sediment and soil chemistry data were performed in accordance with the QAPP (HDR et al. 2015a). Qualifiers were assigned to the metals and conventional parameter data, as appropriate. All data are usable with the qualifiers presented, except for results for IVBA arsenic and IVBA lead in 1 sample and for total arsenic and total lead in 4 samples. Data meet the quality requirements outlined in the QAPP (HDR et al. 2015a). The MRLs for all non-detected data points for metals were less than the ACG. For conventional parameters, only CEC in 1 core sample was non-detected. All other conventional parameters were detected in all samples.

DU-specific sampling results representing an estimate of the mean analyte concentration for each sampling area and discrete core sampling results covering three sampling depths were compared with conservative screening levels. Results from the < 2-mm sediment and soil fractions were compared with Eco-SSLs, and results from the < 250 µm sediment and < 150 µm soil fractions were compared with residential risk-based screening levels. For the ecological screening, at least 1 DU and 1 core sample had concentrations greater than the Eco-SSL for all of the TAL metals except beryllium. For the human health screening, only arsenic, lead, and thallium were at concentrations greater than the screening levels.

³² Field XRF measurements for lead were within 35 percent of the confirmatory results for all samples collected in the sediment DUs and for 9 of 12 samples collected in the soil DUs.

Arsenic and lead concentrations were adjusted for site-specific RBA adjusted prior to comparing to screening levels. Arsenic was adjusted for 60 percent soil arsenic oral RBA, and lead was adjusted by the ratio of site-specific RBA to EPA's default RBA.

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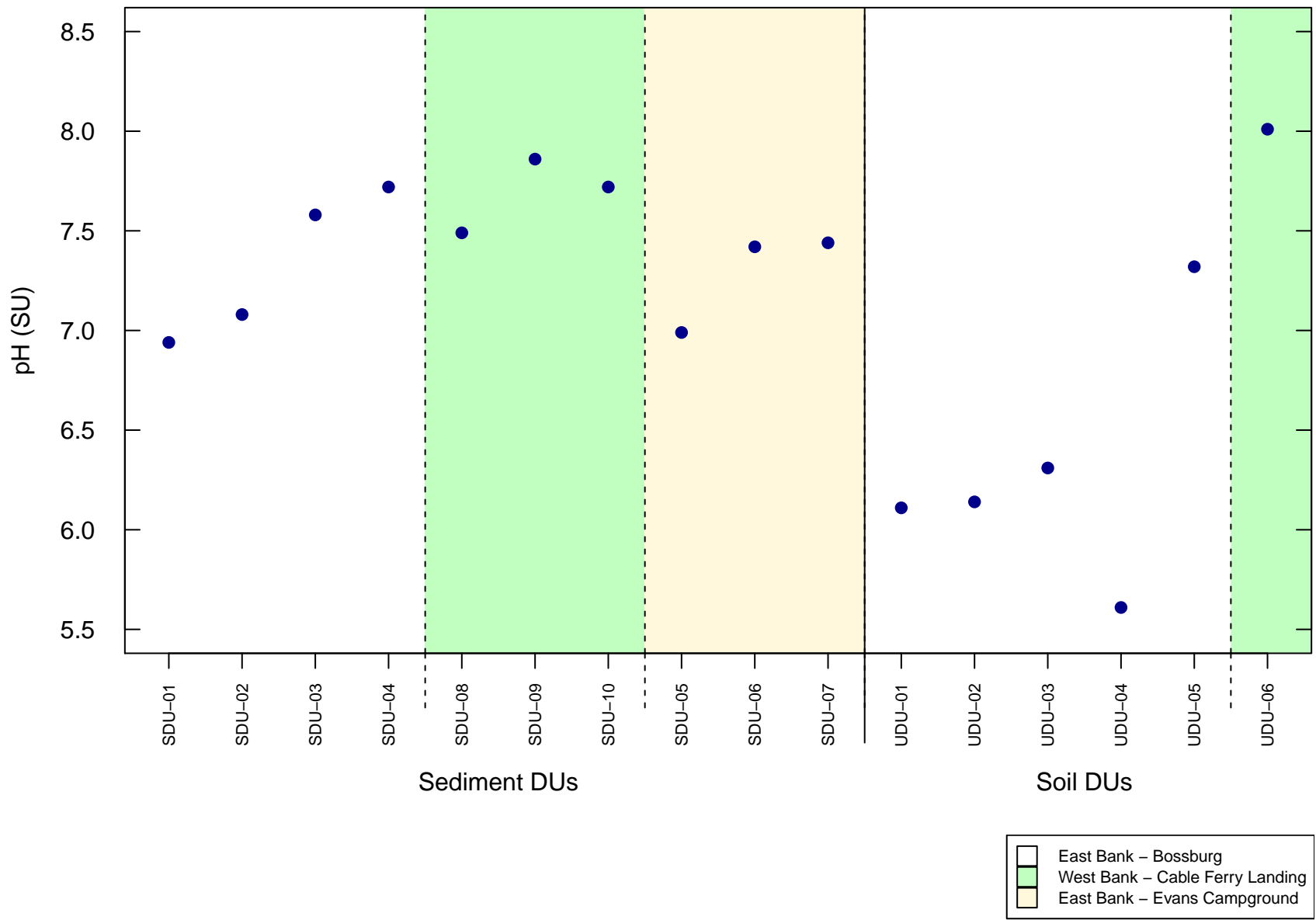
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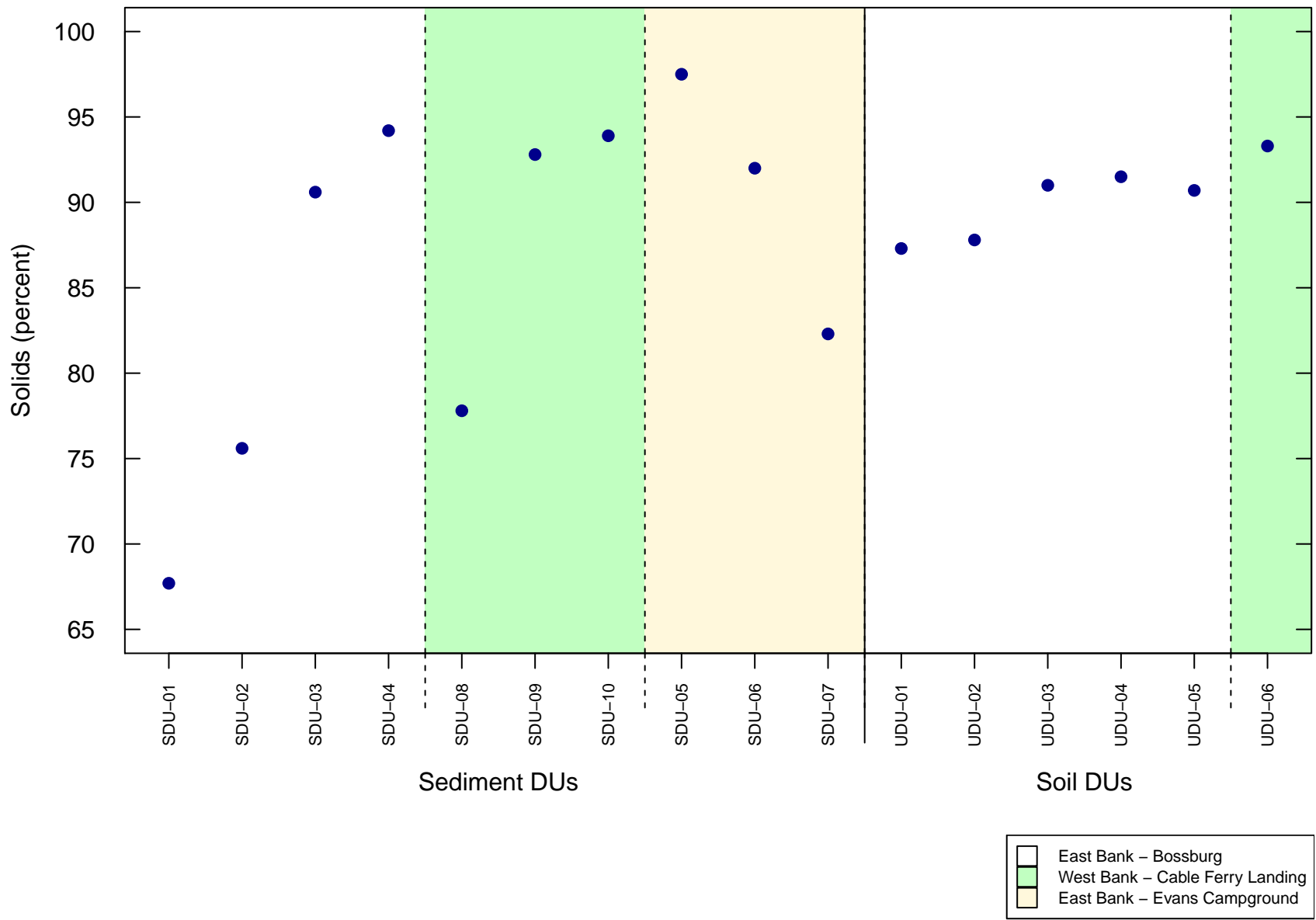
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FIGURES



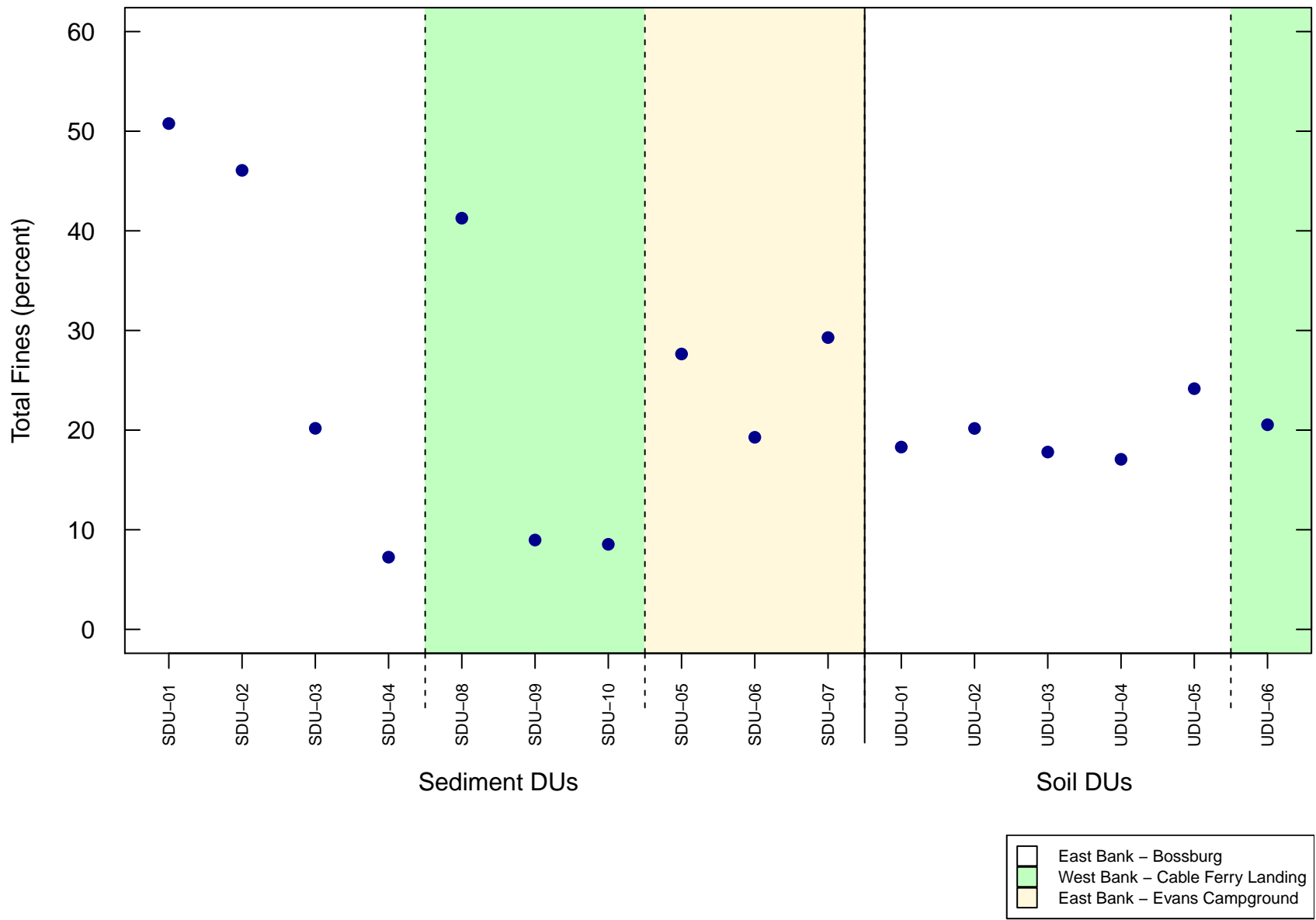
Decision Units are presented upstream to downstream within an area of the Site.

Figure 5-1a. pH in Bulk Sediment and Soil ICS Samples



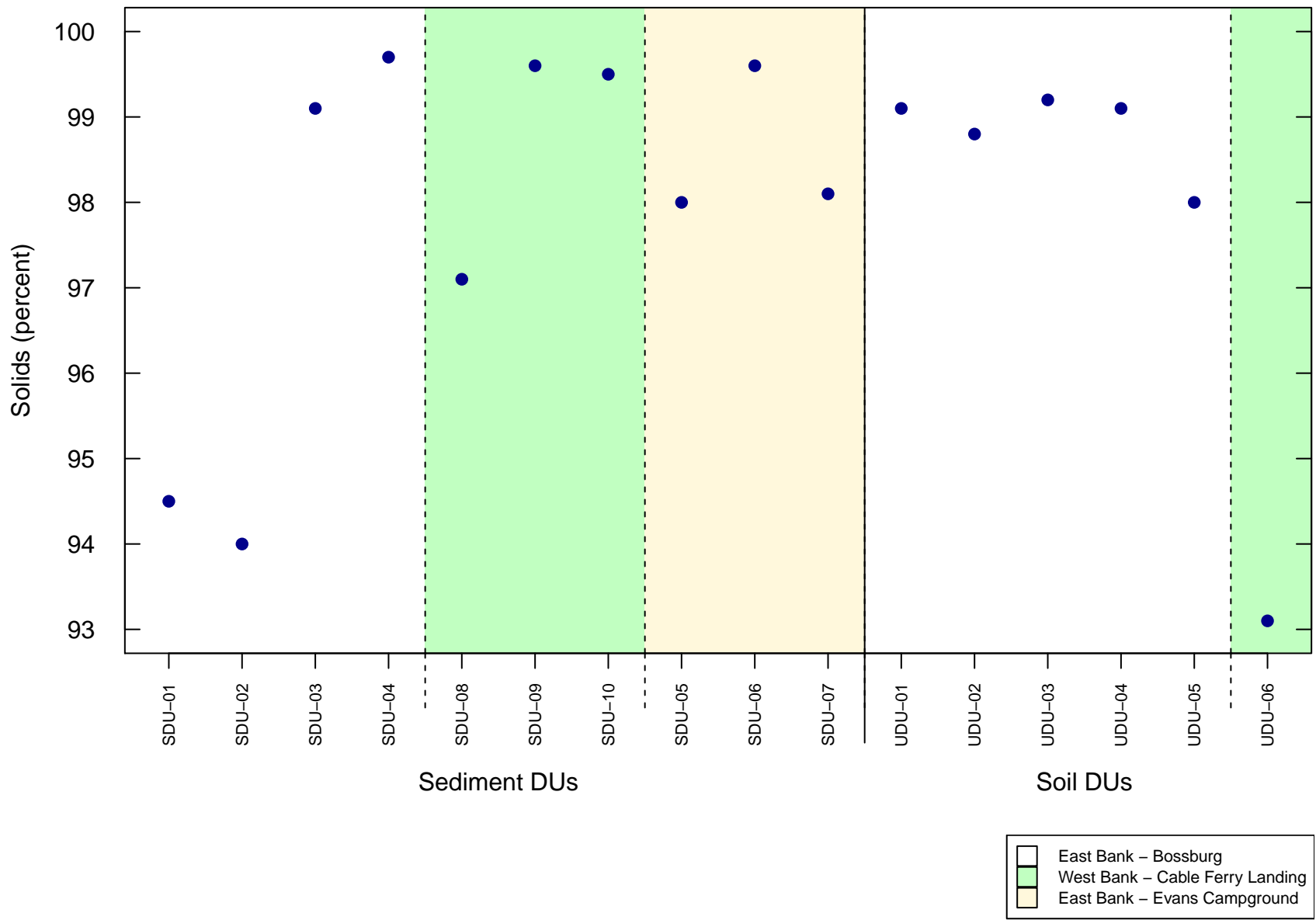
Decision Units are presented upstream to downstream within an area of the Site.

Figure 5-1b. Percent Solids in Bulk Sediment and Soil ICS Samples



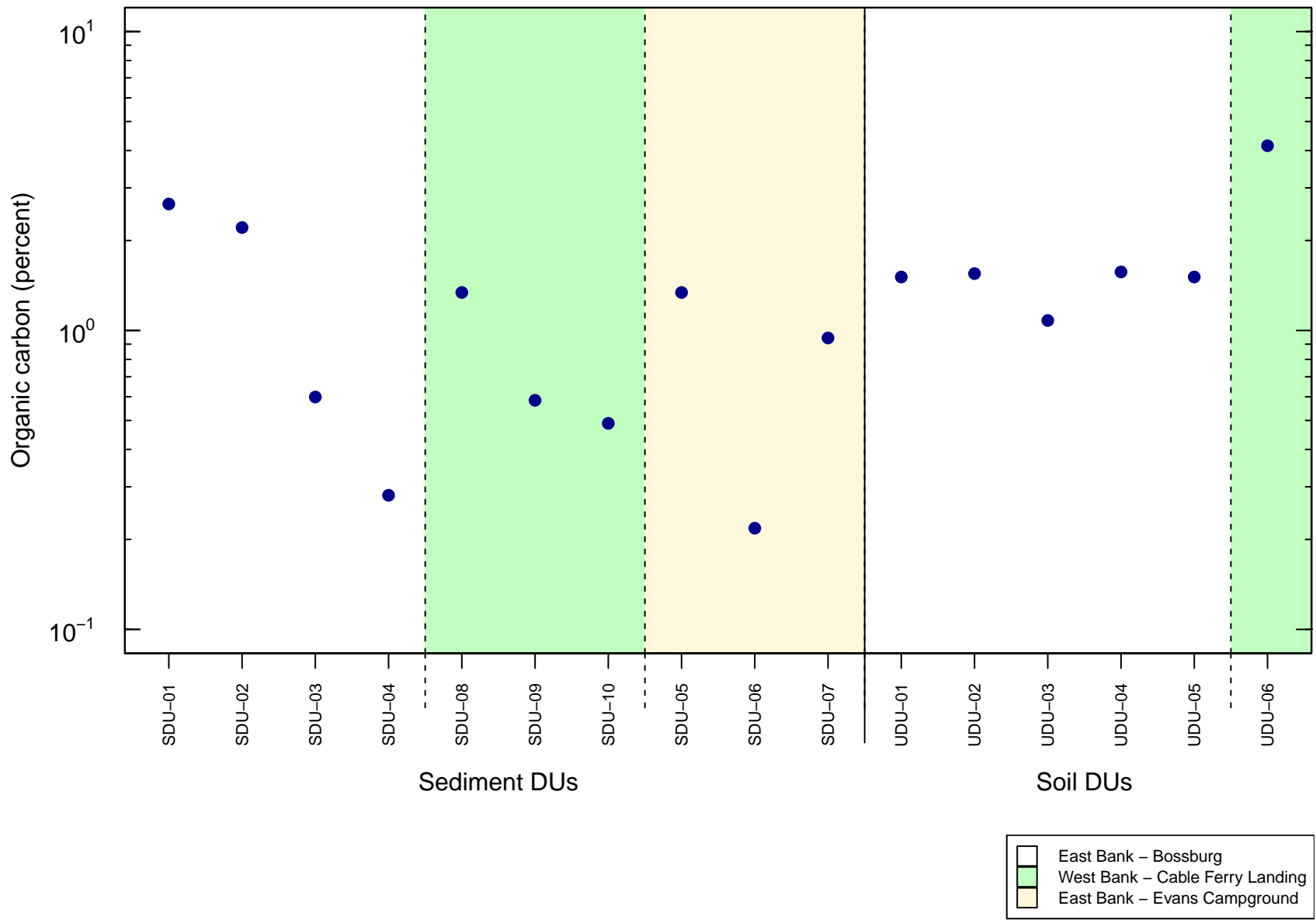
Decision Units are presented upstream to downstream within an area of the Site.

Figure 5-1c. Percent Fines in Bulk Sediment and Soil ICS Samples



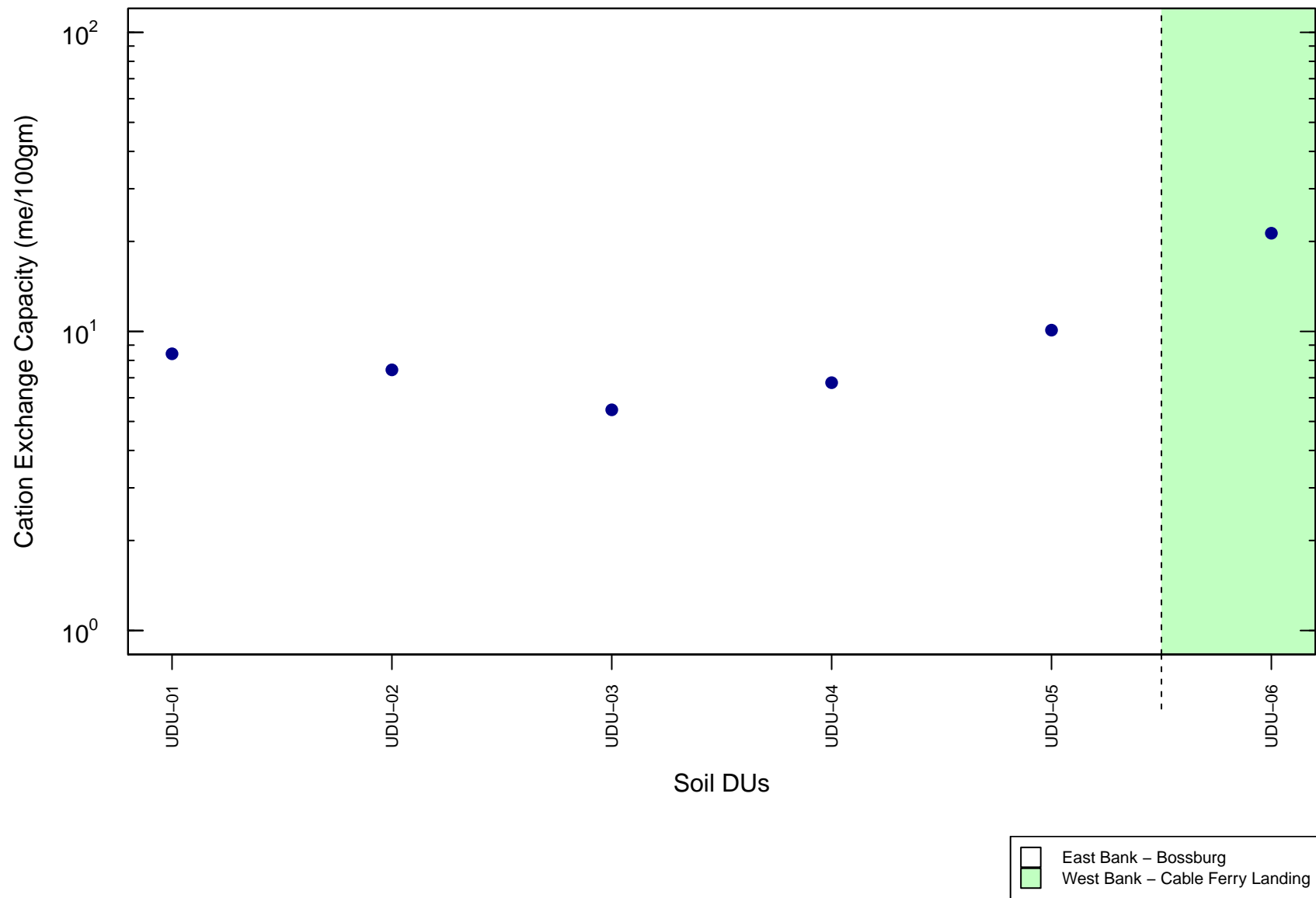
Decision Units are presented upstream to downstream within an area of the Site.

Figure 5-2a. Percent Solids in < 2-mm Sediment and Soil Fractions of ICS Samples



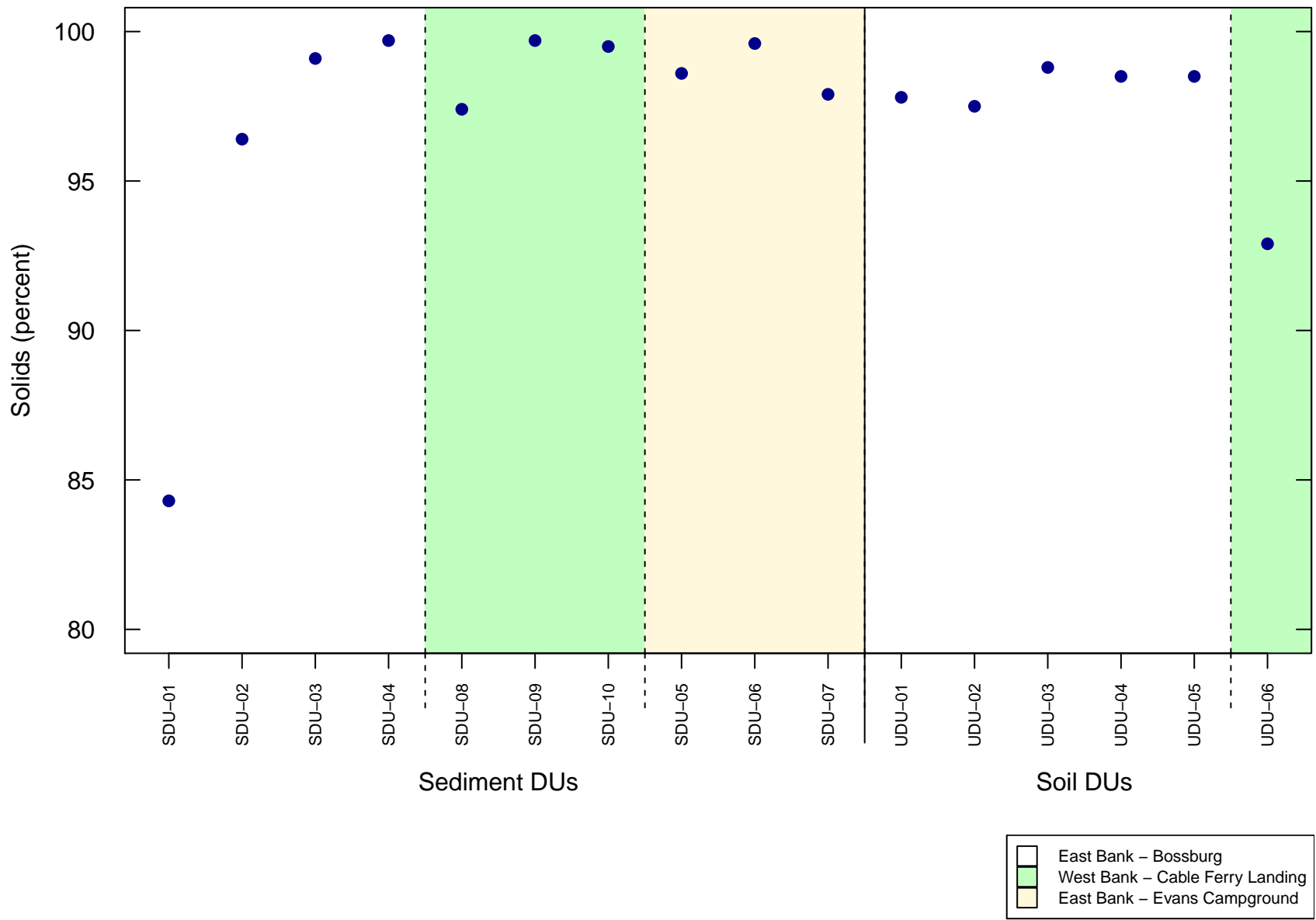
Decision Units are presented upstream to downstream within an area of the Site.

Figure 5-2b. Organic Carbon in < 2-mm Sediment and Soil Fractions of ICS Samples



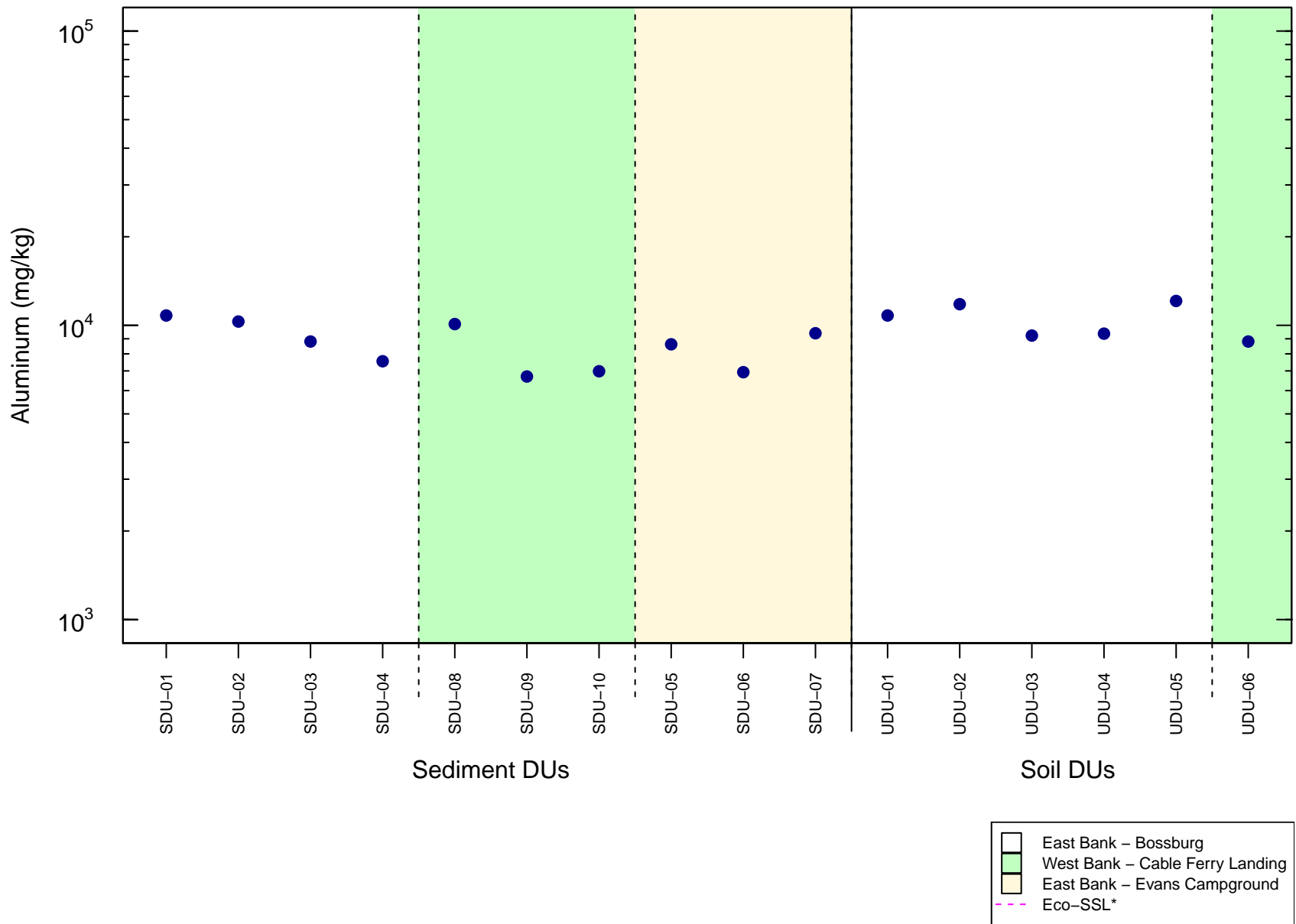
Decision Units are presented upstream to downstream within an area of the Site.

Figure 5-2c. Cation Exchange Capacity in < 2-mm Soil Fractions of ICS Samples



Decision Units are presented upstream to downstream within an area of the Site.

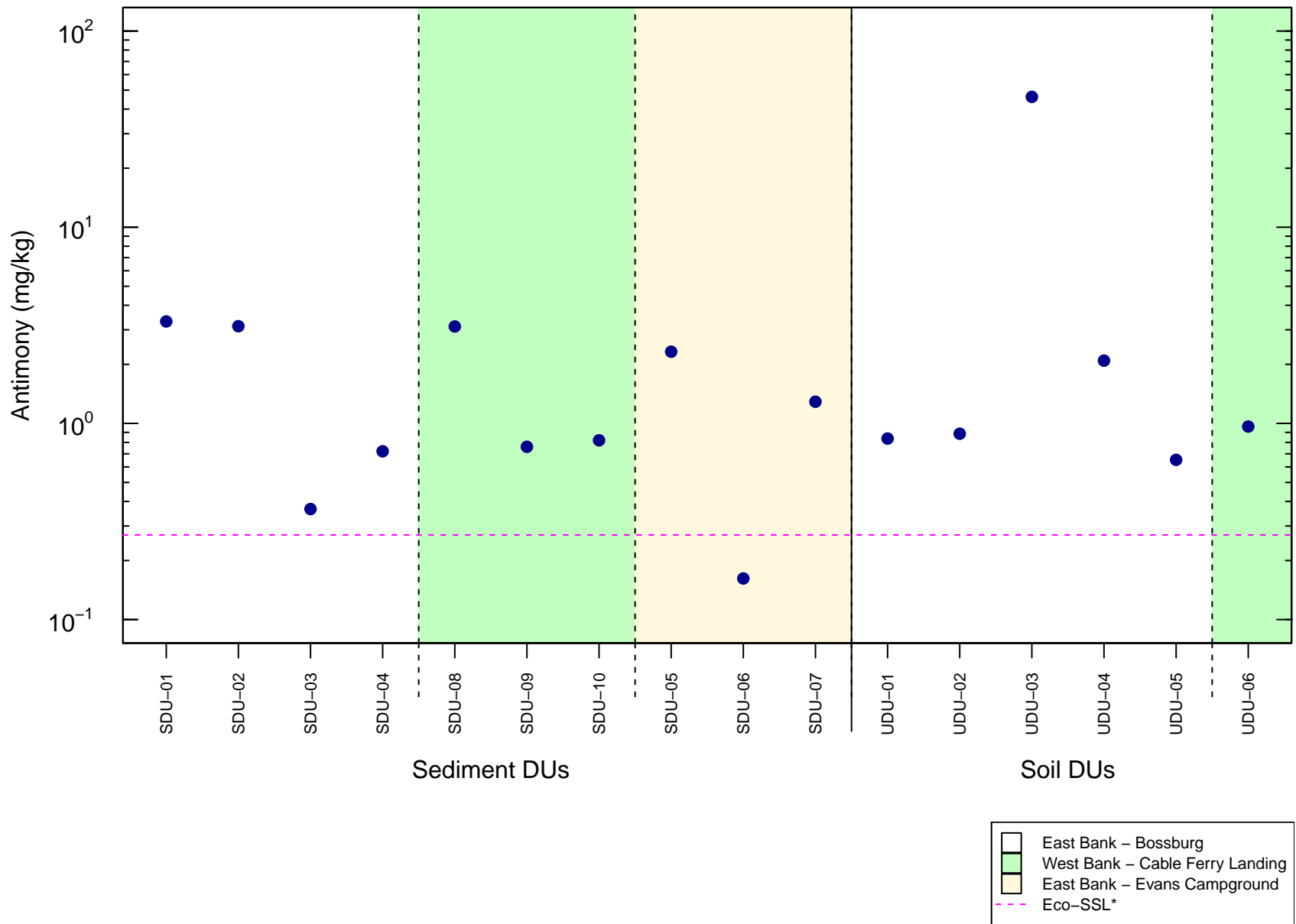
Figure 5-3. Percent solids in < 250- μ m Sediment and < 150- μ m Soil Fractions of ICS Samples



*No Eco-SSL is available for aluminum

Decision Units are presented upstream to downstream within an area of the Site.

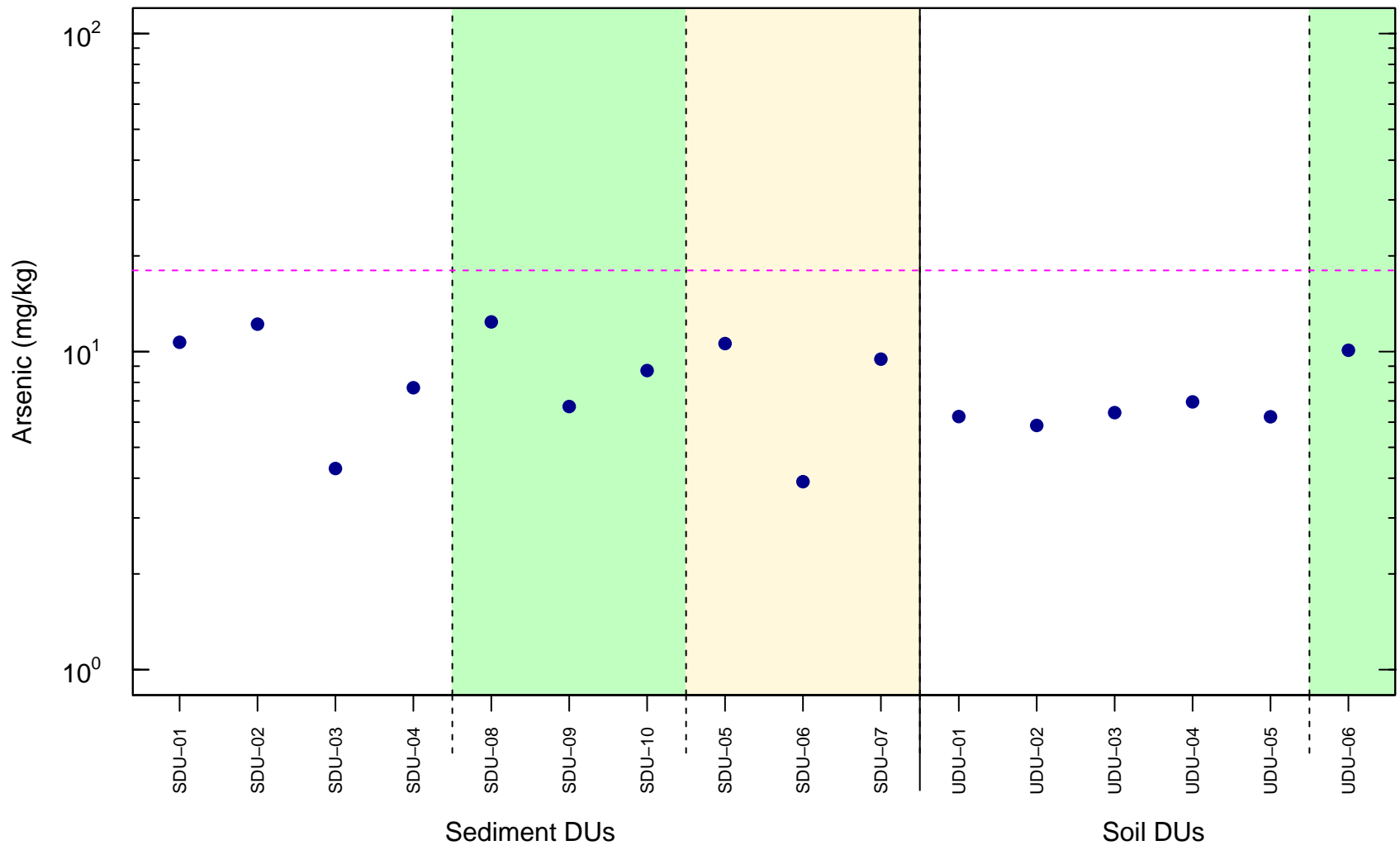
Figure 5-4a. Aluminum Concentrations in < 2-mm Sediment and Soil Fractions of ICS Samples



*Eco-SSL for antimony is 0.27 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

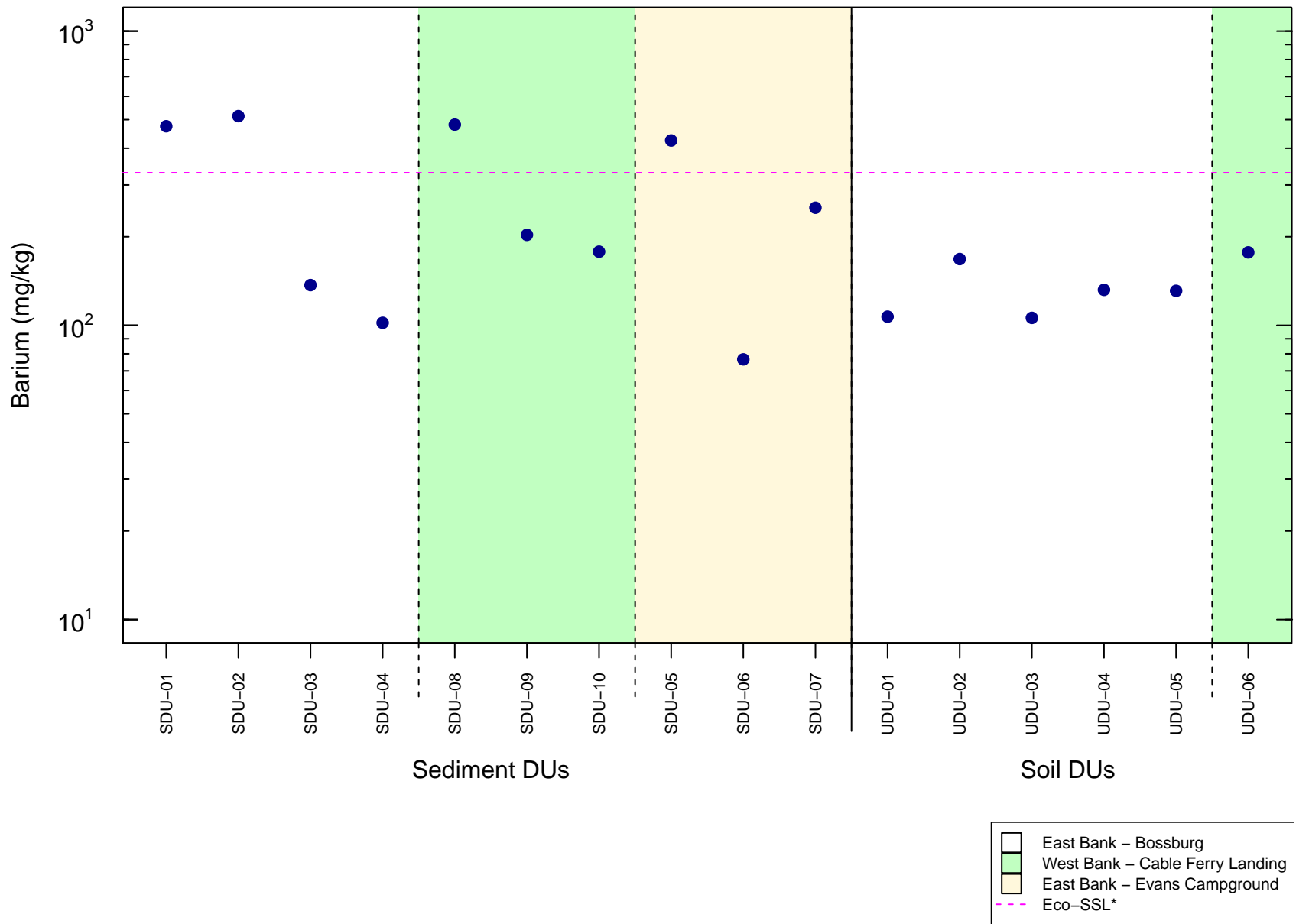
Figure 5-4b. Antimony Concentrations in < 2-mm Sediment and Soil Fractions of ICS Samples



*Eco-SSL for arsenic is 18 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

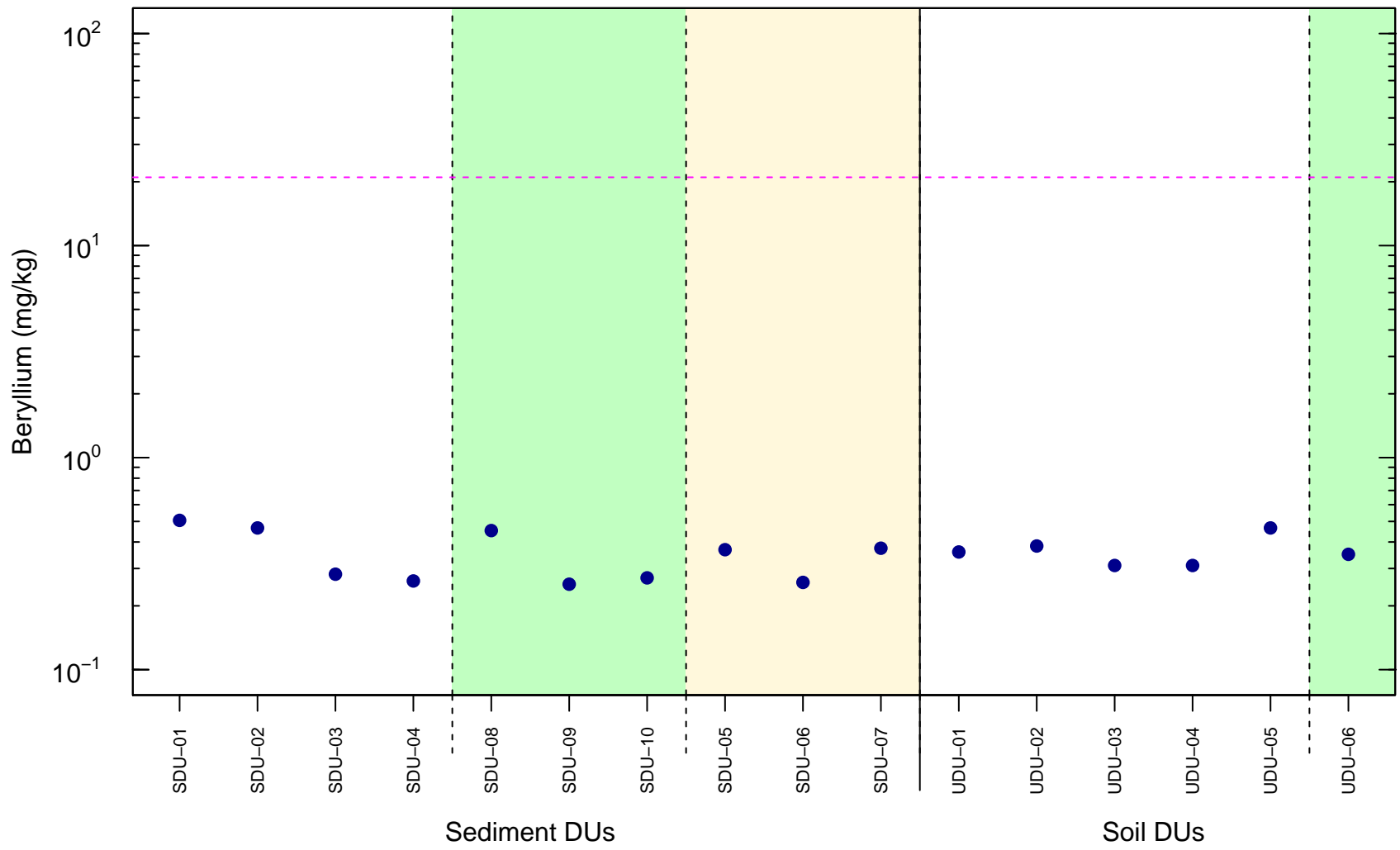
Figure 5-4c. Arsenic Concentrations in < 2-mm Sediment and Soil Fractions of ICS Samples



*Eco-SSL for barium is 330 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

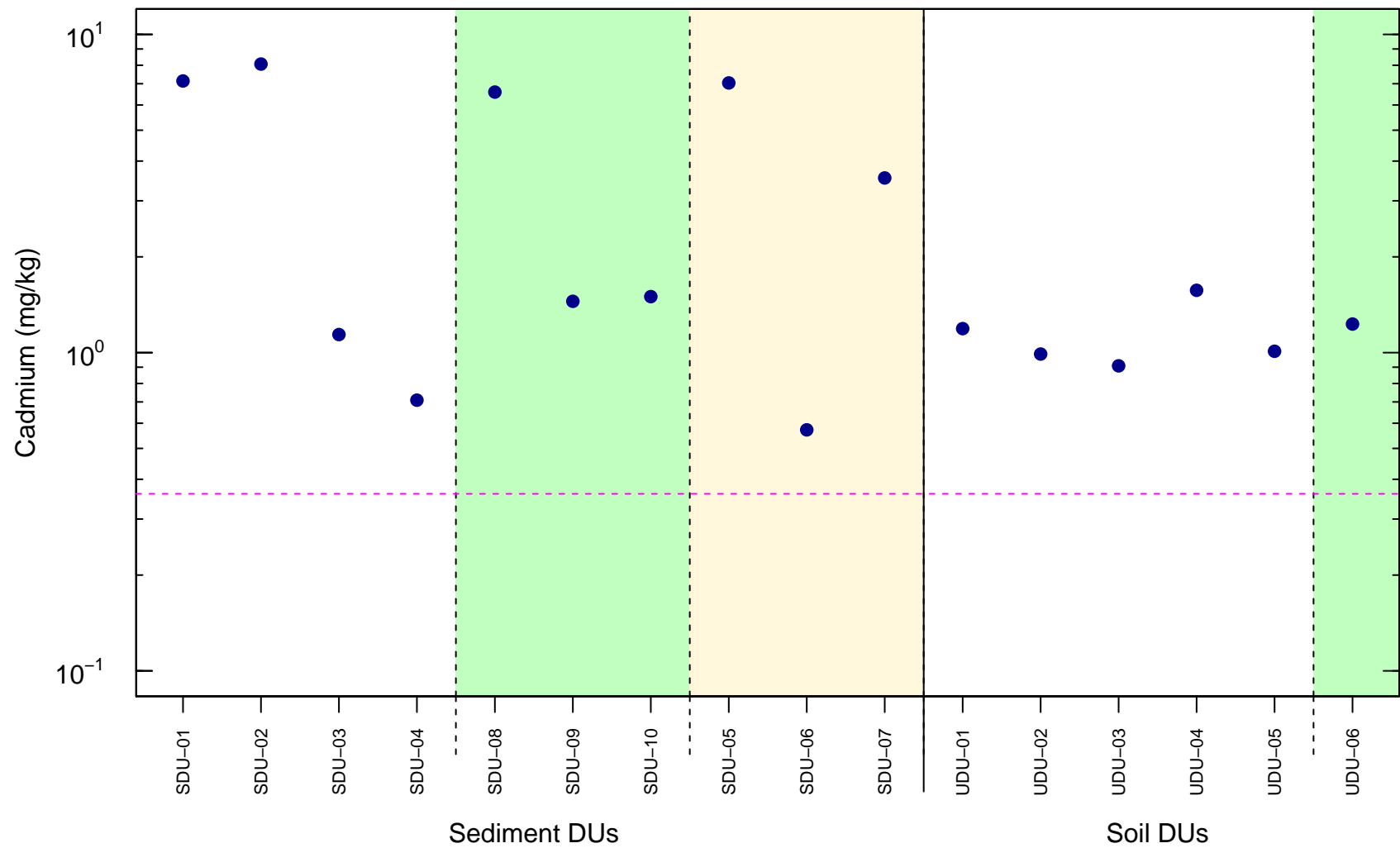
Figure 5-4d. Barium Concentrations in < 2-mm Sediment and Soil Fractions of ICS Samples



*Eco-SSL for beryllium is 21 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

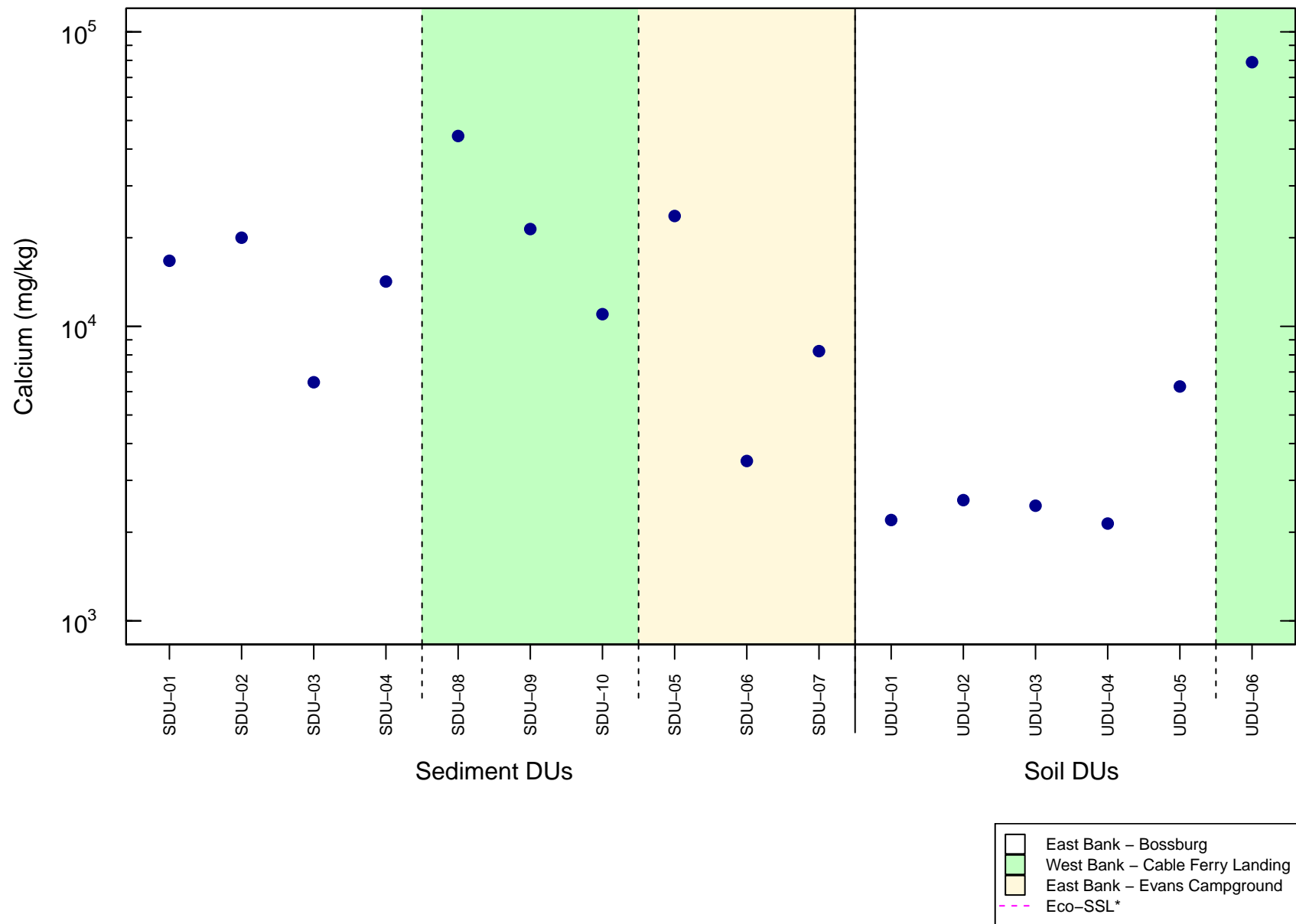
Figure 5-4e. Beryllium Concentrations in < 2-mm Sediment and Soil Fractions of ICS Samples



*Eco-SSL for cadmium is 0.36 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

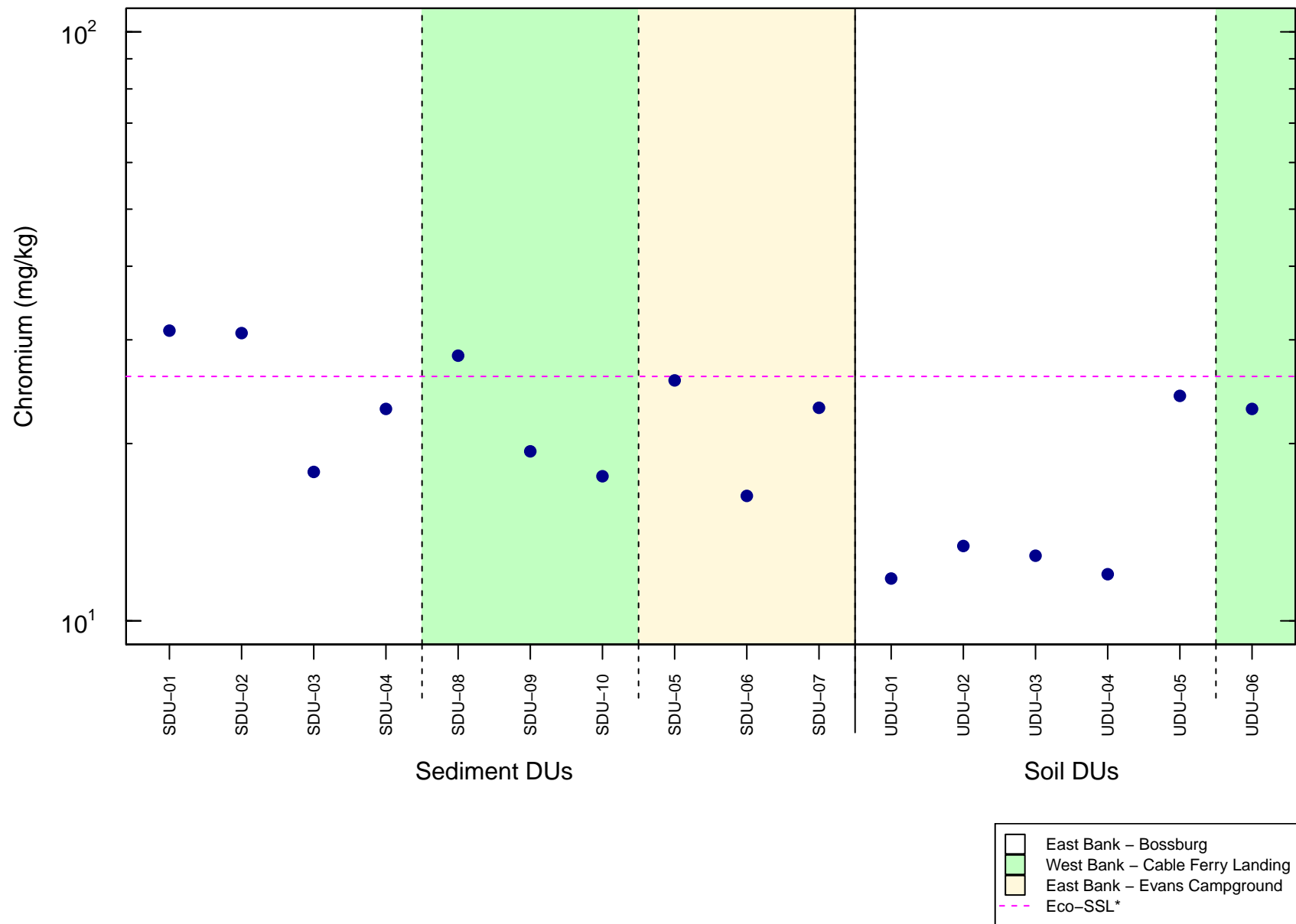
Figure 5-4f. Cadmium Concentrations in < 2-mm Sediment and Soil Fractions of ICS Samples



*No Eco-SSL is available for calcium

Decision Units are presented upstream to downstream within an area of the Site.

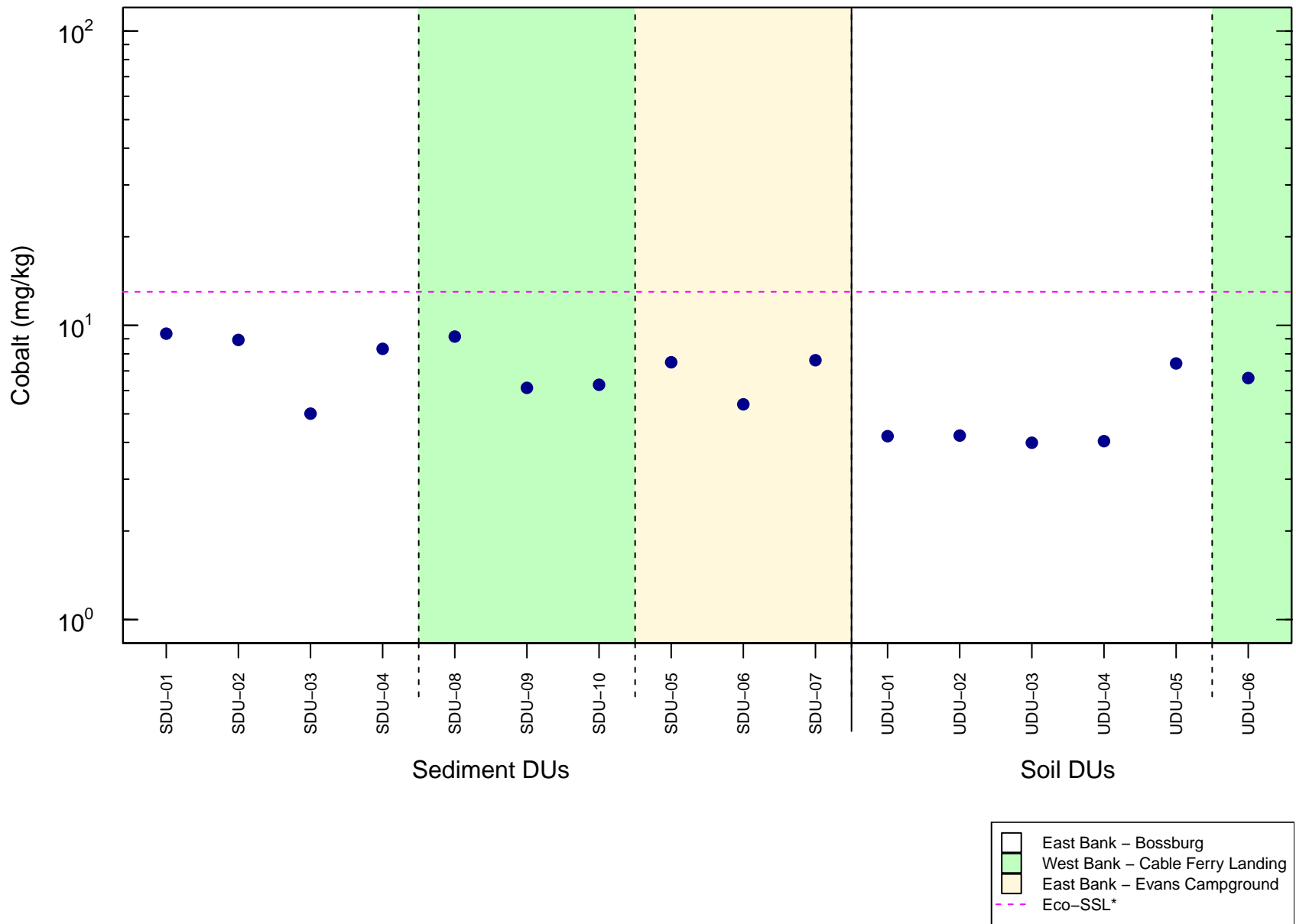
Figure 5-4g. Calcium Concentrations in < 2-mm Sediment and Soil Fractions of ICS Samples



*Eco-SSL for chromium is 26 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

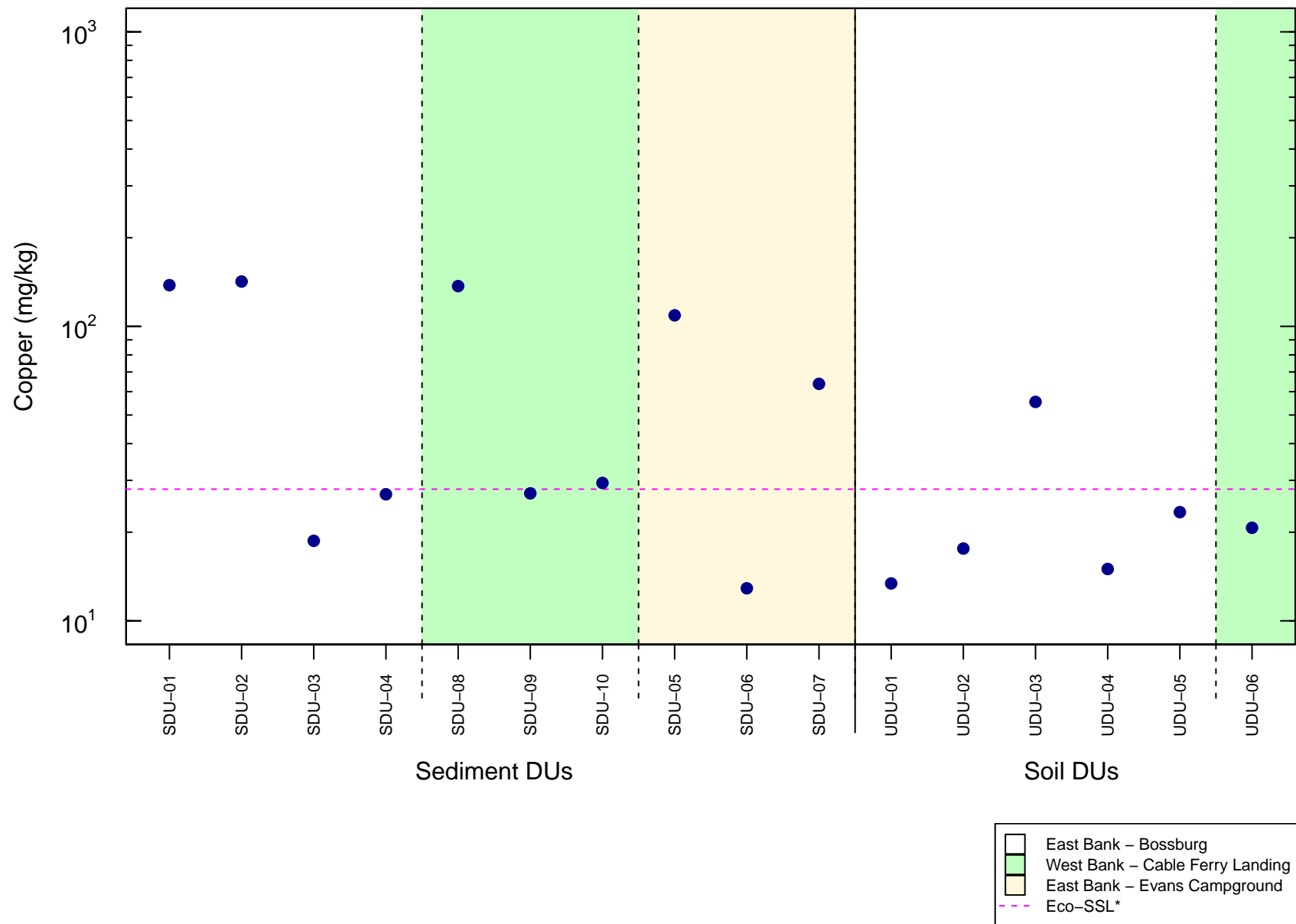
Figure 5-4h. Chromium Concentrations in < 2-mm Sediment and Soil Fractions of ICS Samples



*Eco-SSL for cobalt is 13 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

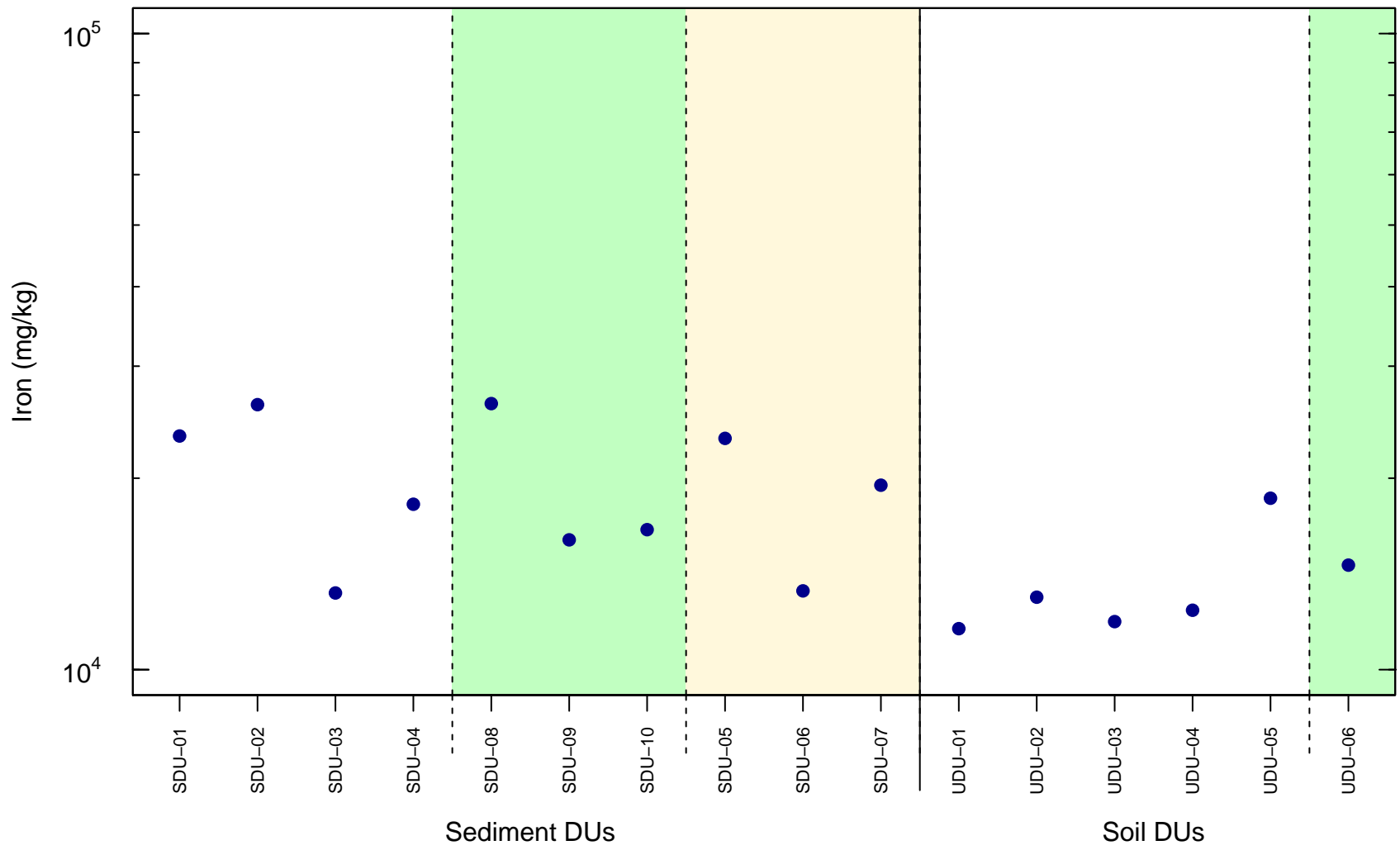
Figure 5-4i. Cobalt Concentrations in < 2-mm Sediment and Soil Fractions of ICS Samples



*Eco-SSL for copper is 28 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

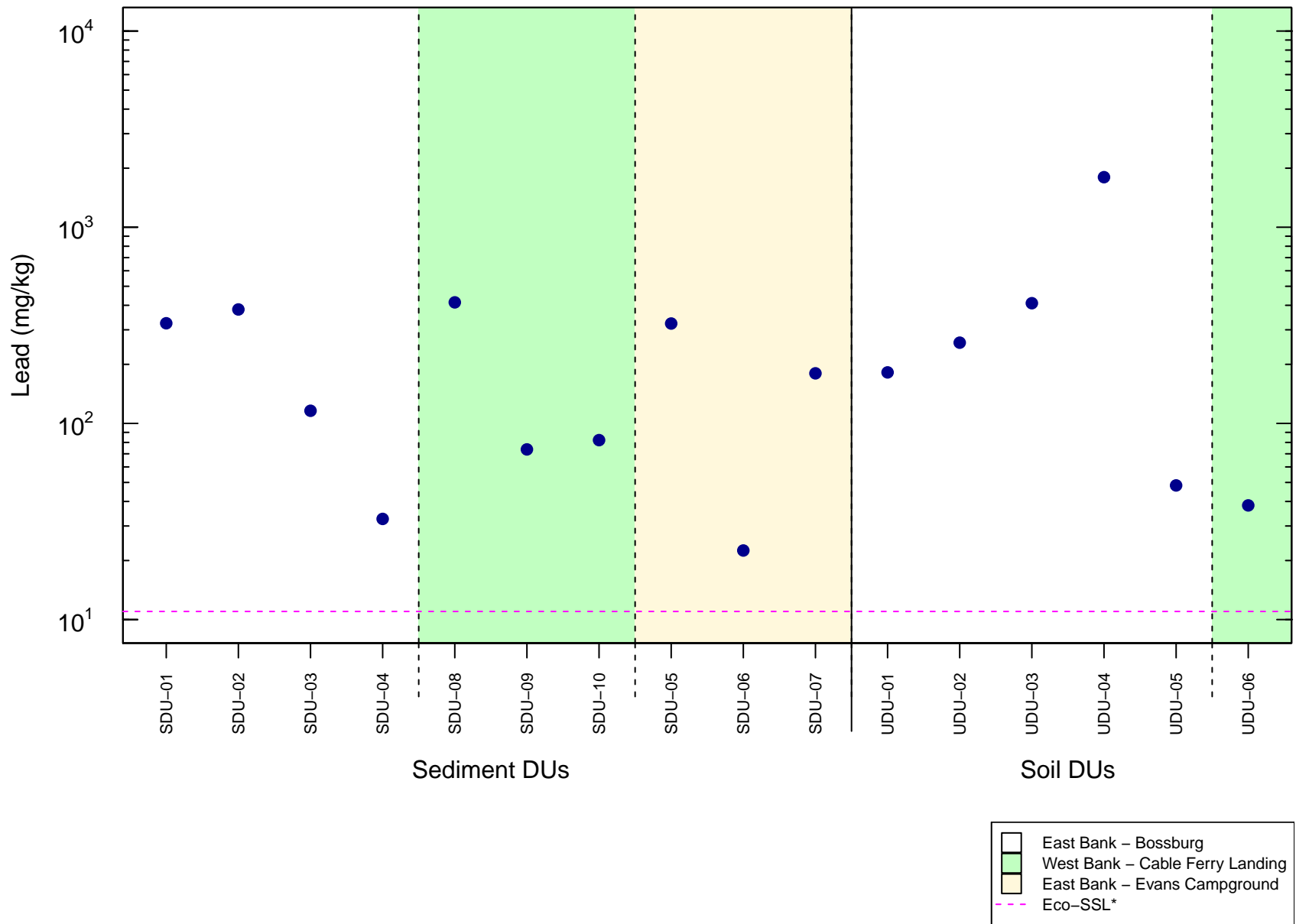
Figure 5-4j. Copper Concentrations in < 2-mm Sediment and Soil Fractions of ICS Samples



*No Eco-SSL is available for iron

Decision Units are presented upstream to downstream within an area of the Site.

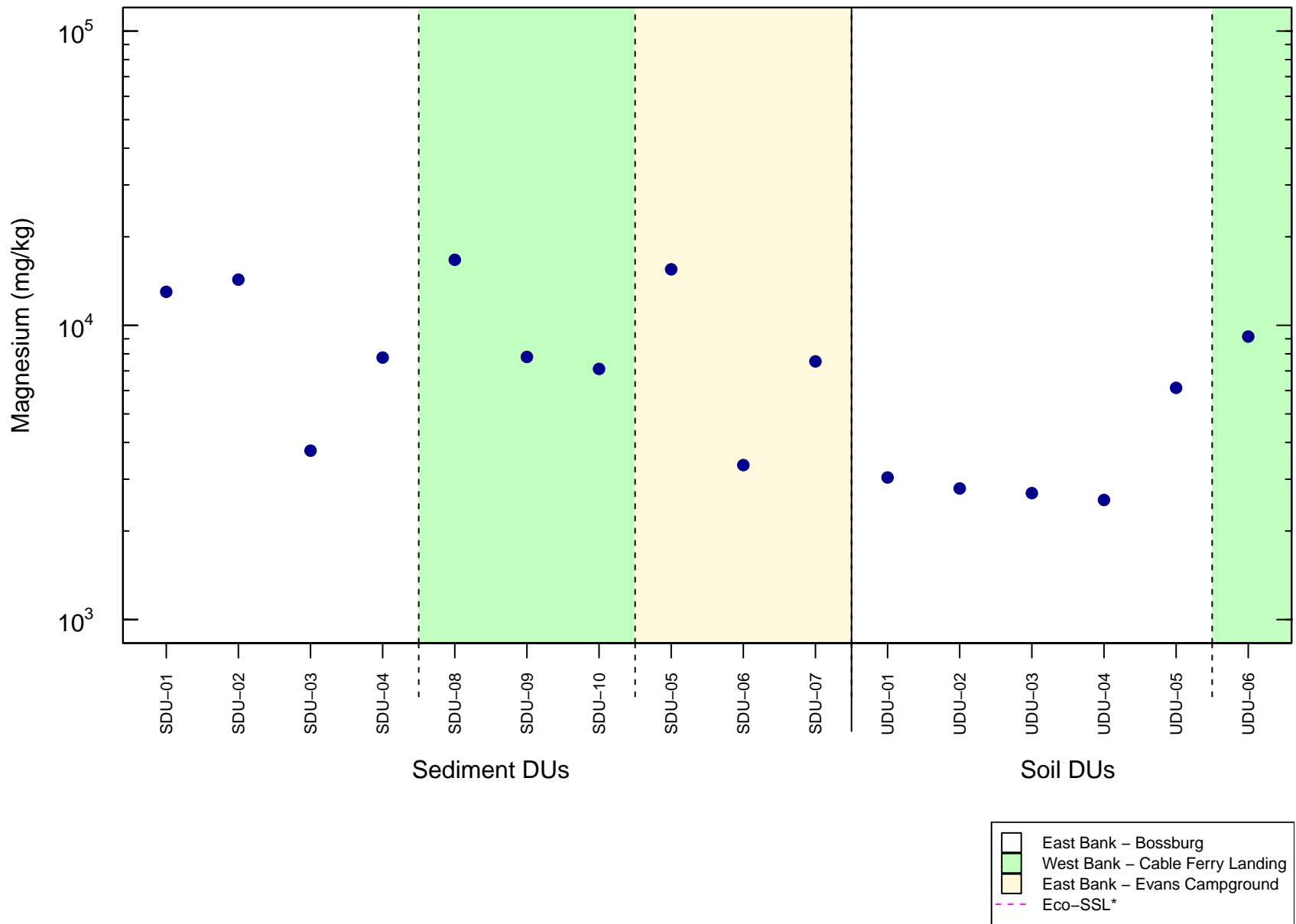
Figure 5-4k. Iron Concentrations in < 2-mm Sediment and Soil Fractions of ICS Samples



*Eco-SSL for lead is 11 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

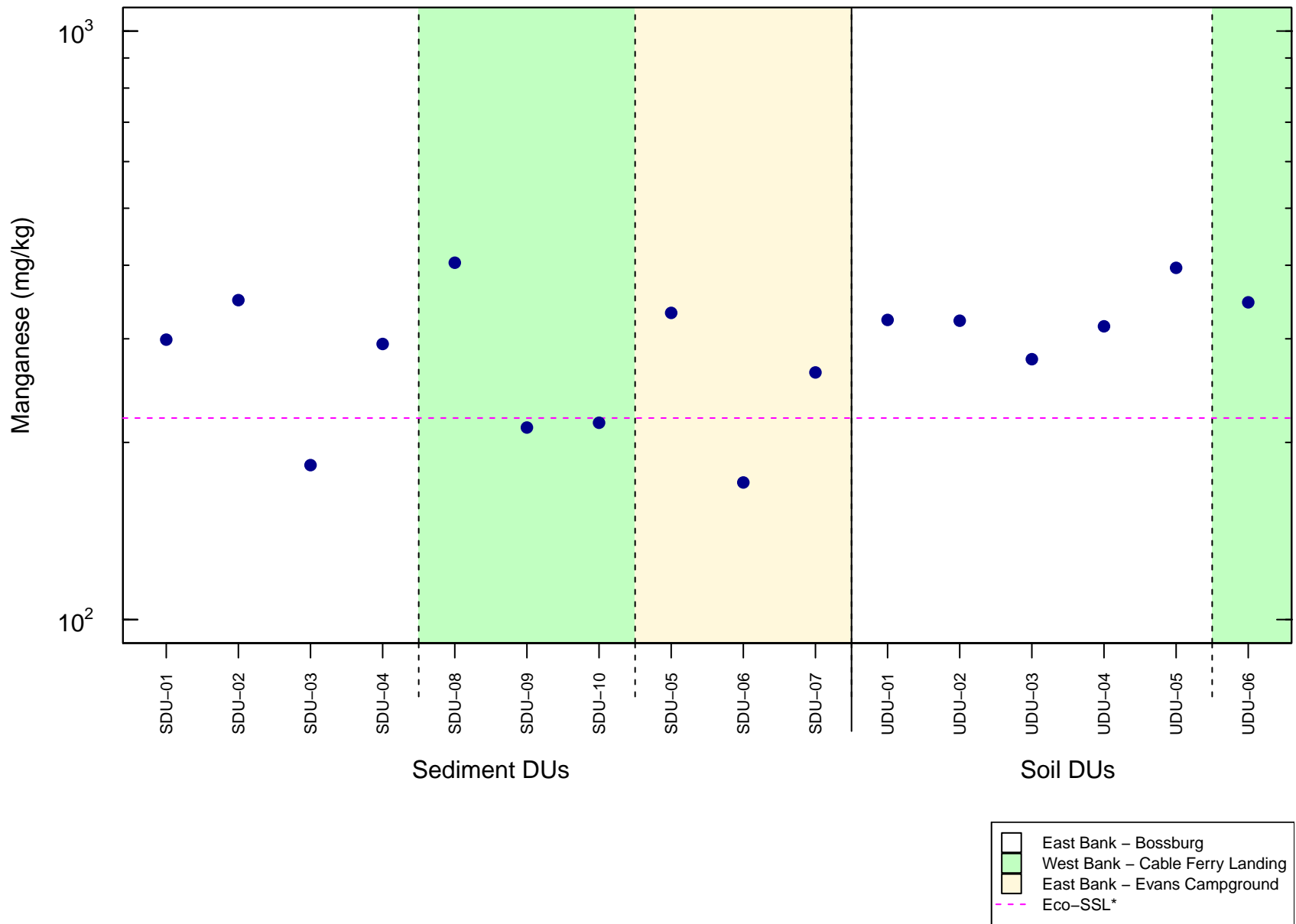
Figure 5-4l. Lead Concentrations in < 2-mm Sediment and Soil Fractions of ICS Samples



*No Eco-SSL is available for magnesium

Decision Units are presented upstream to downstream within an area of the Site.

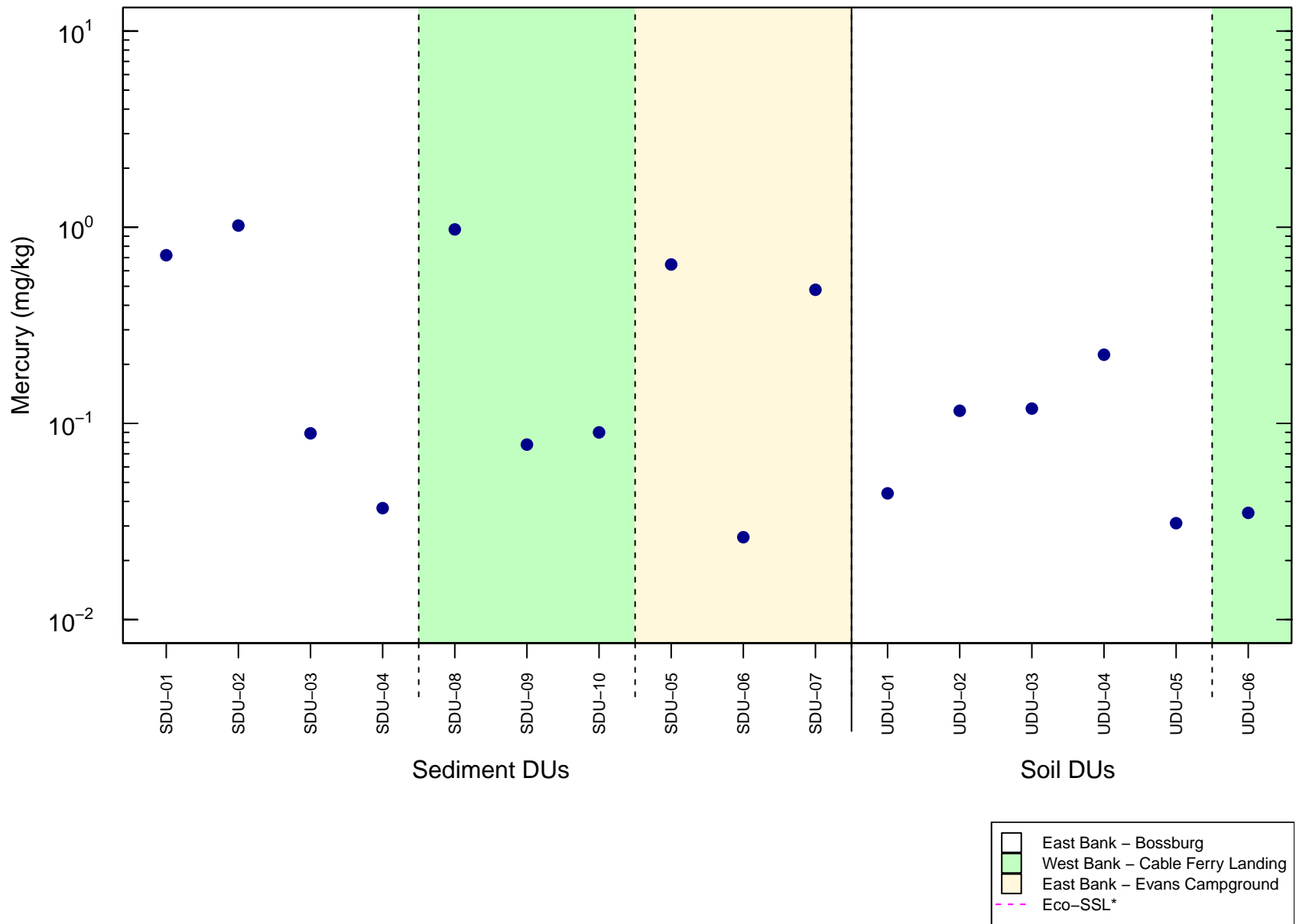
Figure 5-4m. Magnesium Concentrations in < 2-mm Sediment and Soil Fractions of ICS Samples



*Eco-SSL for manganese is 220 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

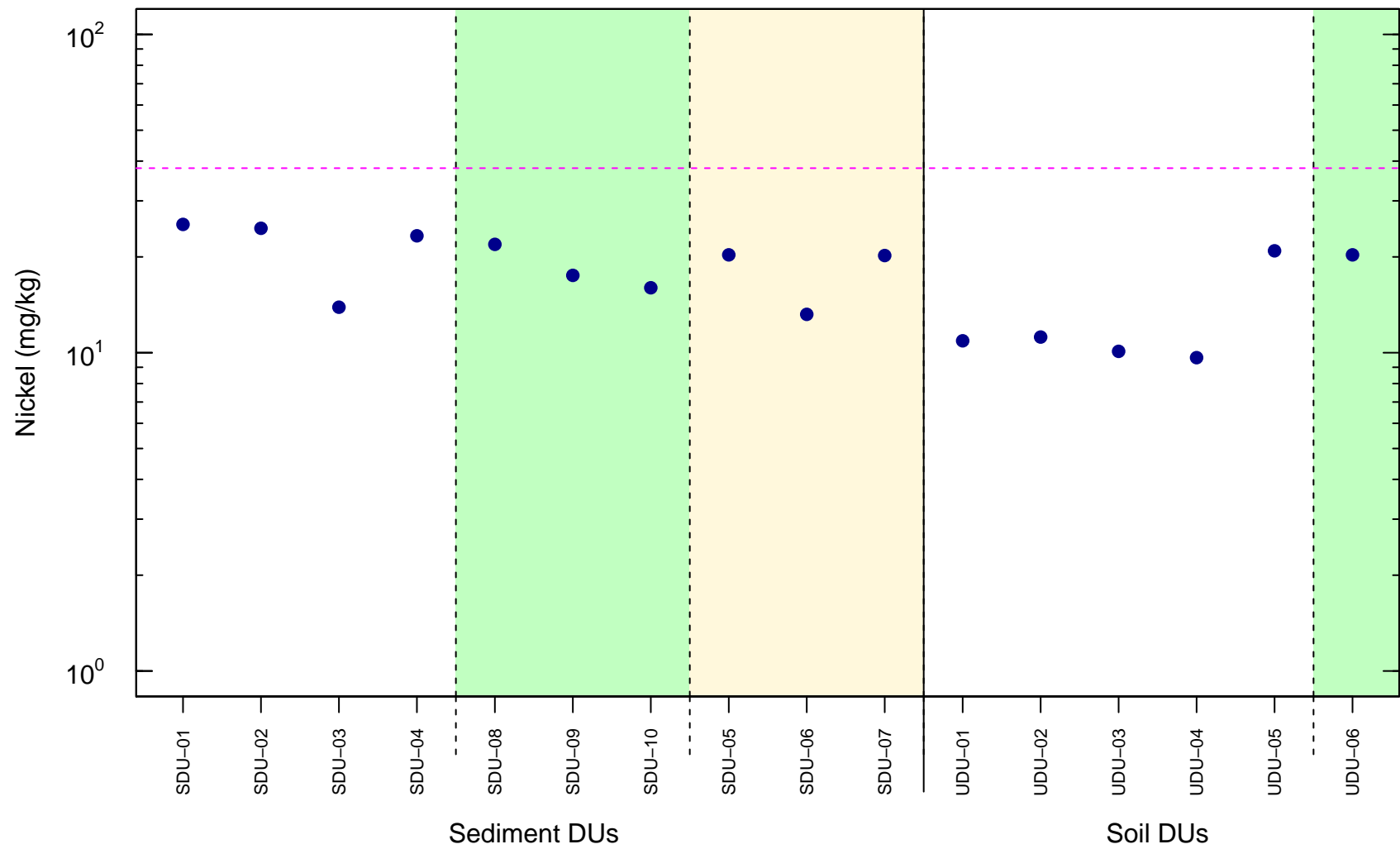
Figure 5-4n. Manganese Concentrations in < 2-mm Sediment and Soil Fractions of ICS Samples



*No Eco-SSL is available for mercury

Decision Units are presented upstream to downstream within an area of the Site.

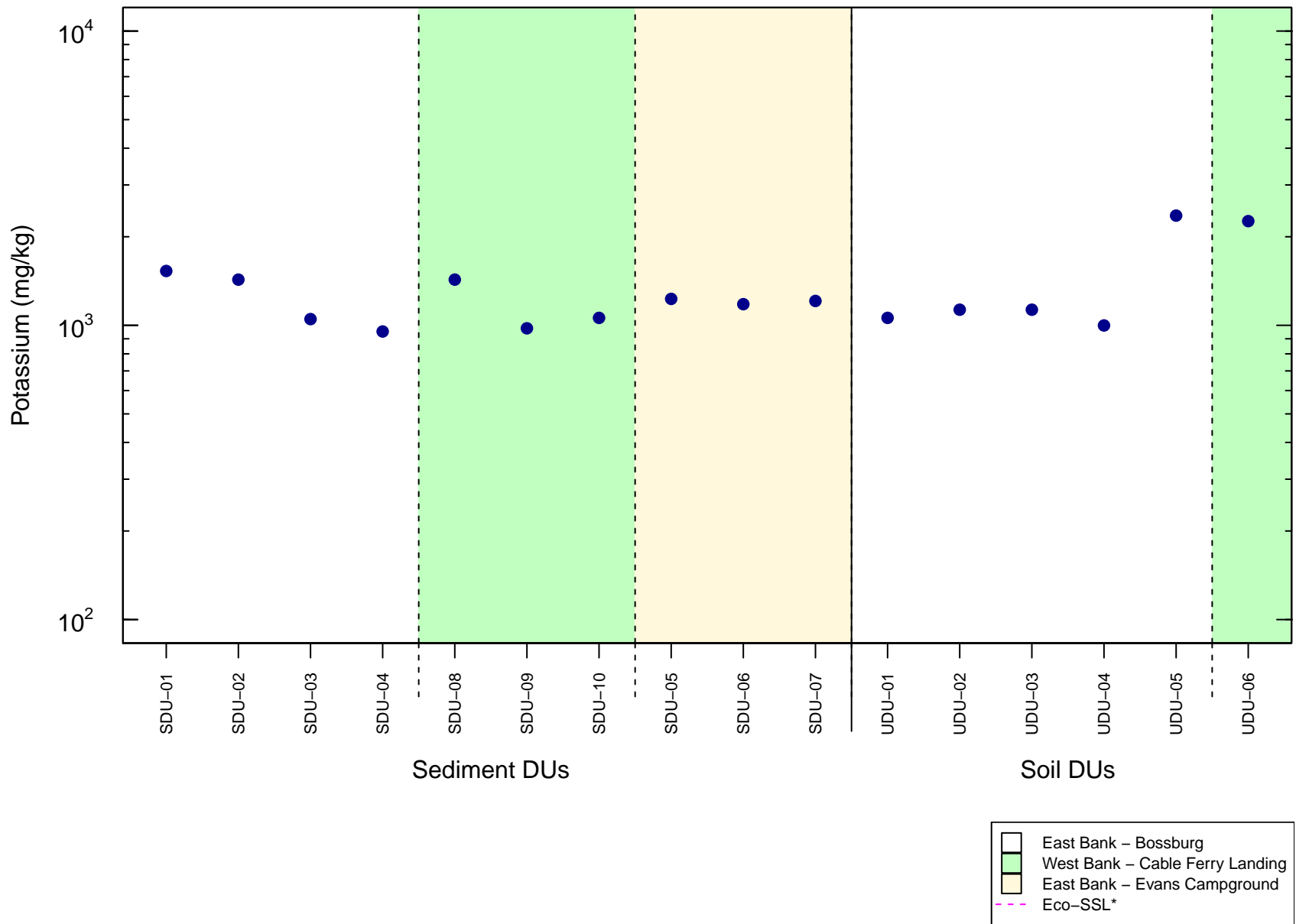
Figure 5-4o. Mercury Concentrations in < 2-mm Sediment and Soil Fractions of ICS Samples



*Eco-SSL for nickel is 38 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

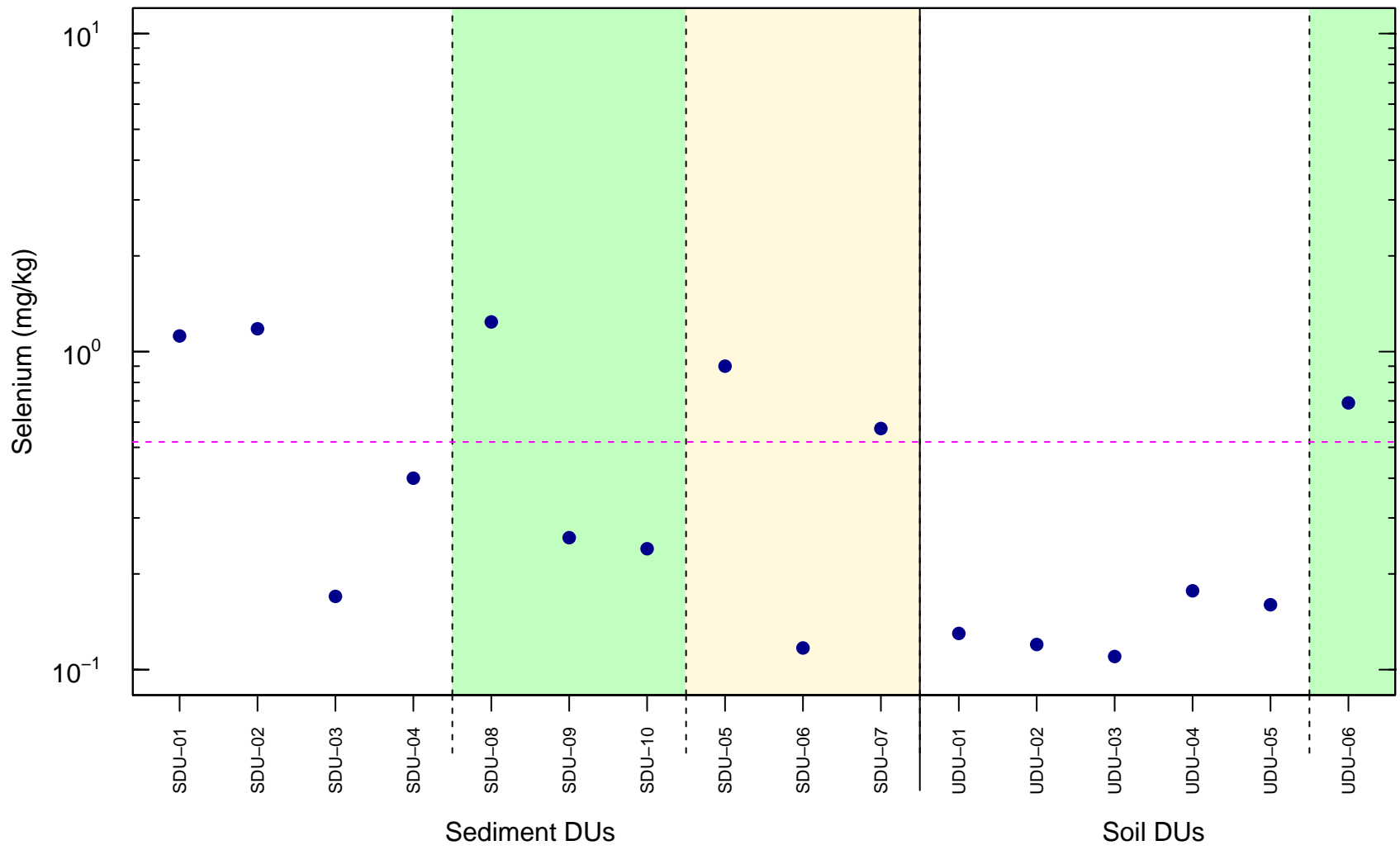
Figure 5-4p. Nickel Concentrations in < 2-mm Sediment and Soil Fractions of ICS Samples



*No Eco-SSL is available for potassium

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5-4q. Potassium Concentrations in < 2-mm Sediment and Soil Fractions of ICS Samples



*Eco-SSL for selenium is 0.52 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

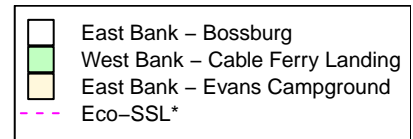
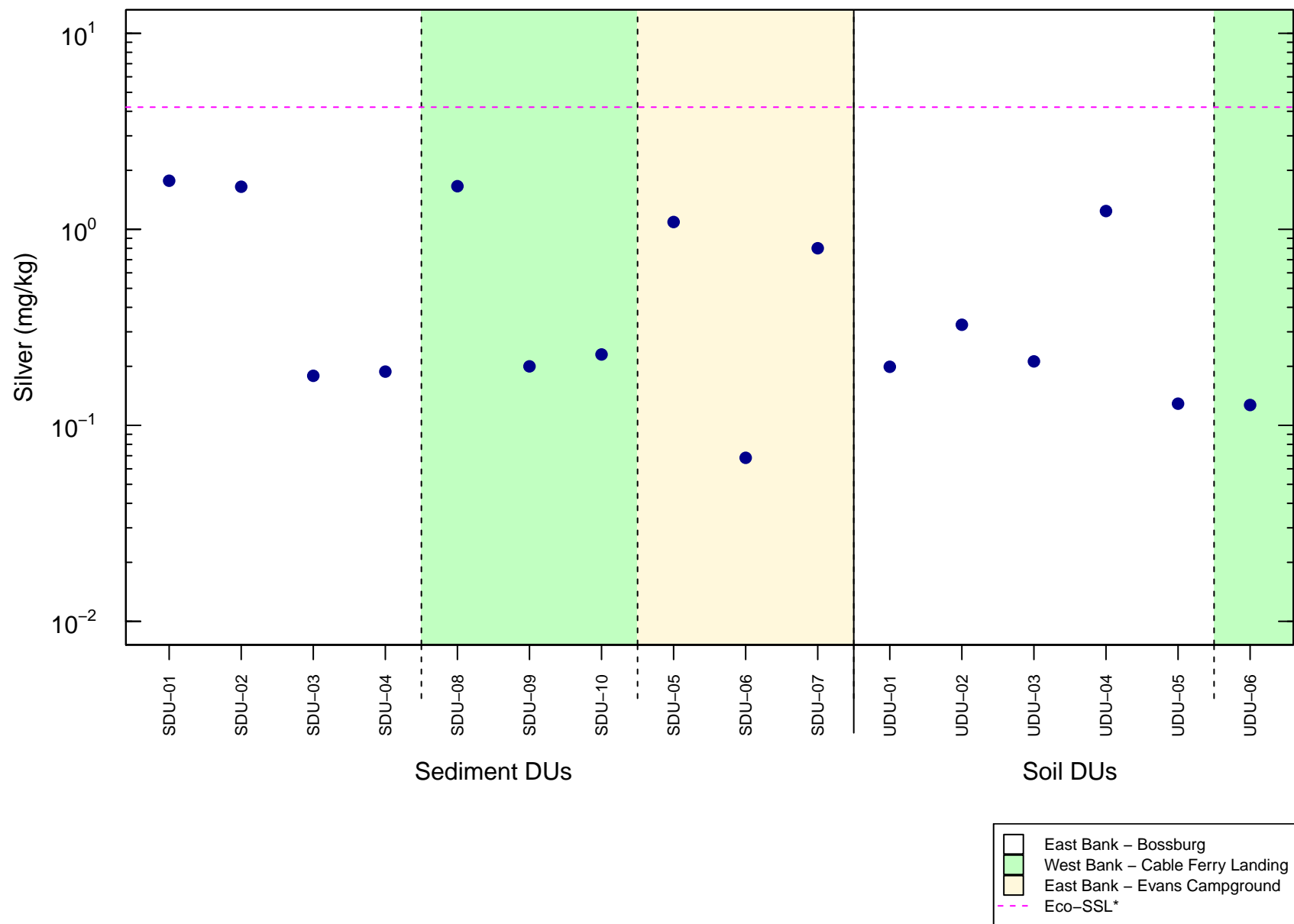


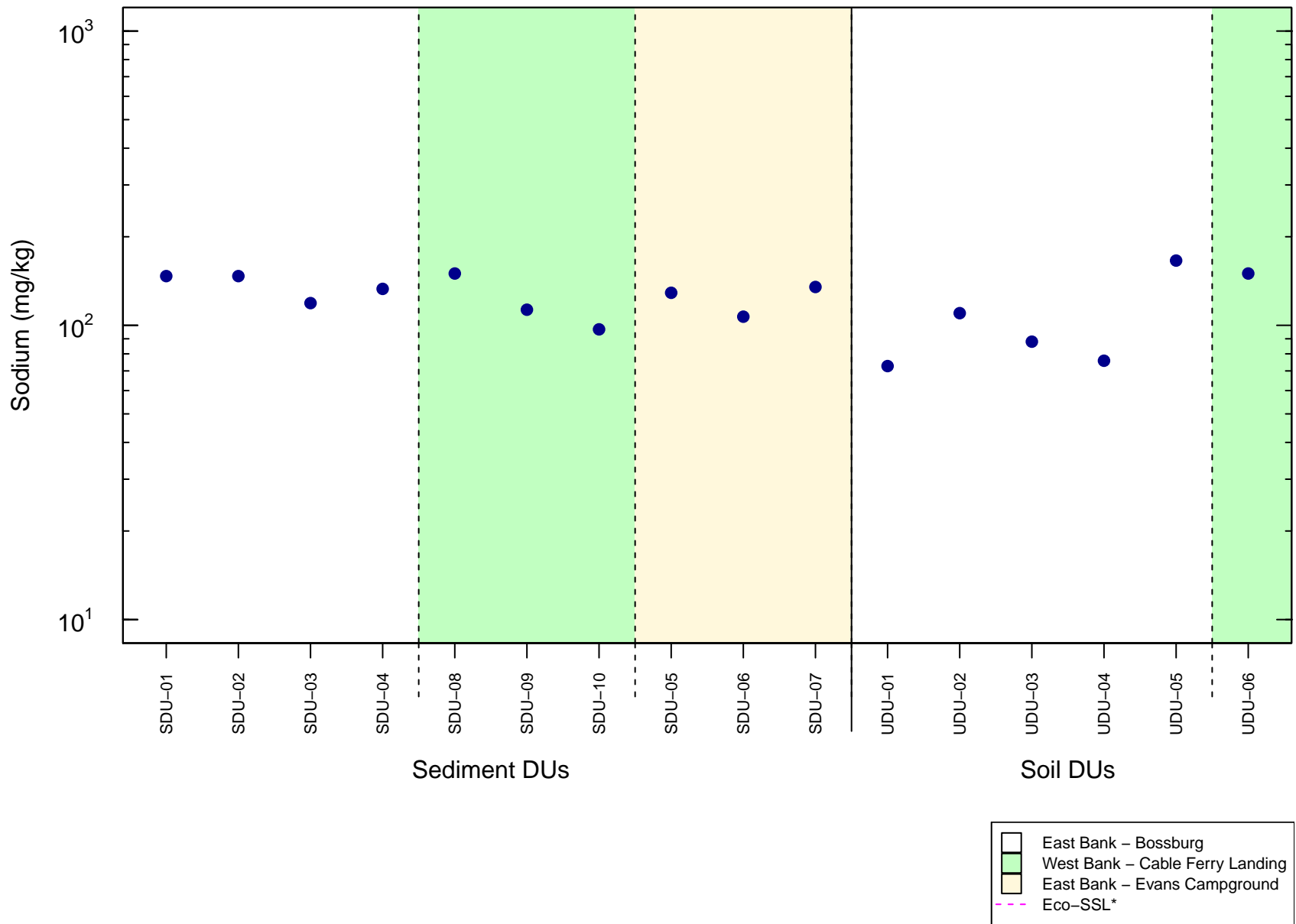
Figure 5-4r. Selenium Concentrations in < 2-mm Sediment and Soil Fractions of ICS Samples



*Eco-SSL for silver is 4.2 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

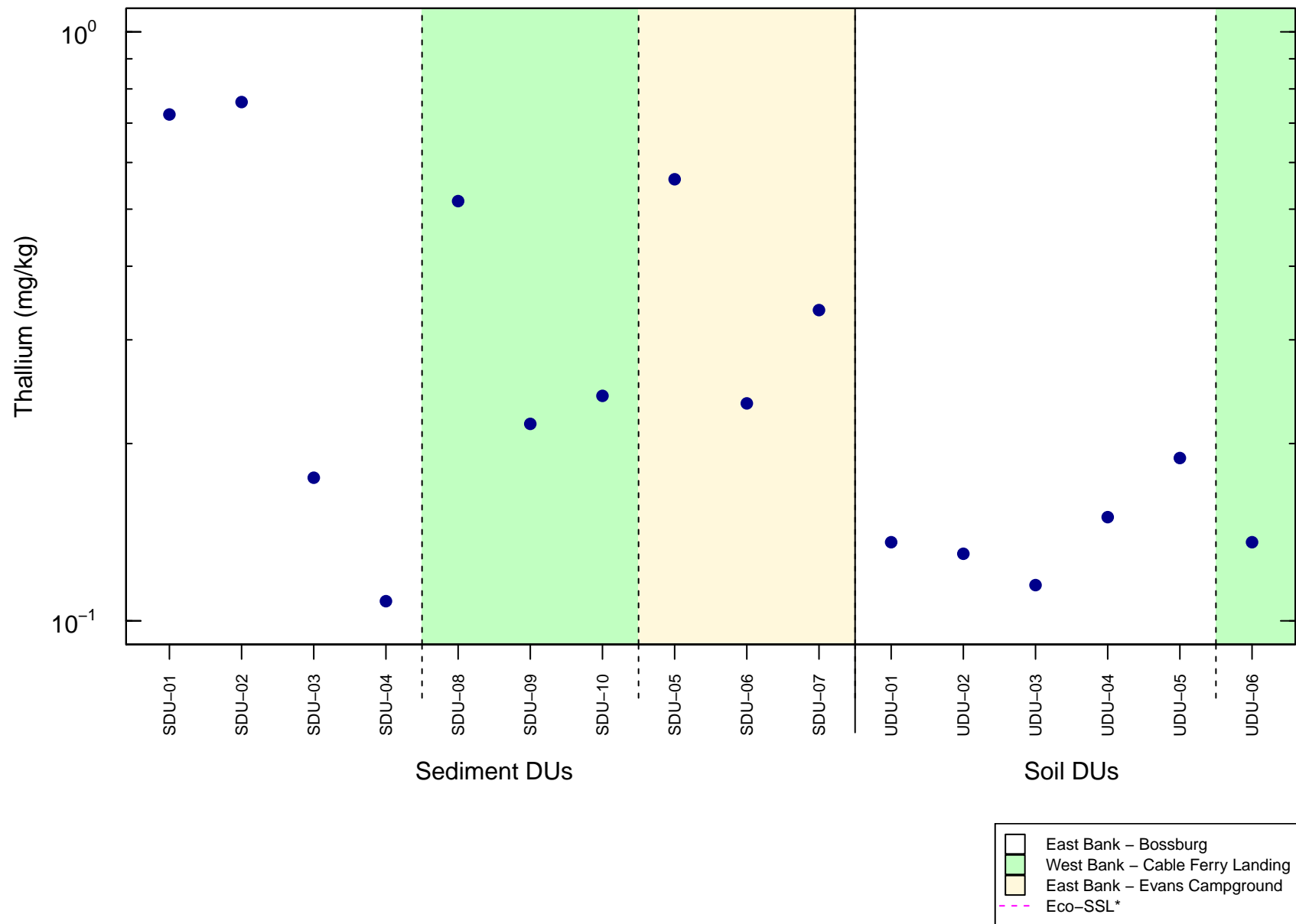
Figure 5-4s. Silver Concentrations in < 2-mm Sediment and Soil Fractions of ICS Samples



*No Eco-SSL is available for sodium

Decision Units are presented upstream to downstream within an area of the Site.

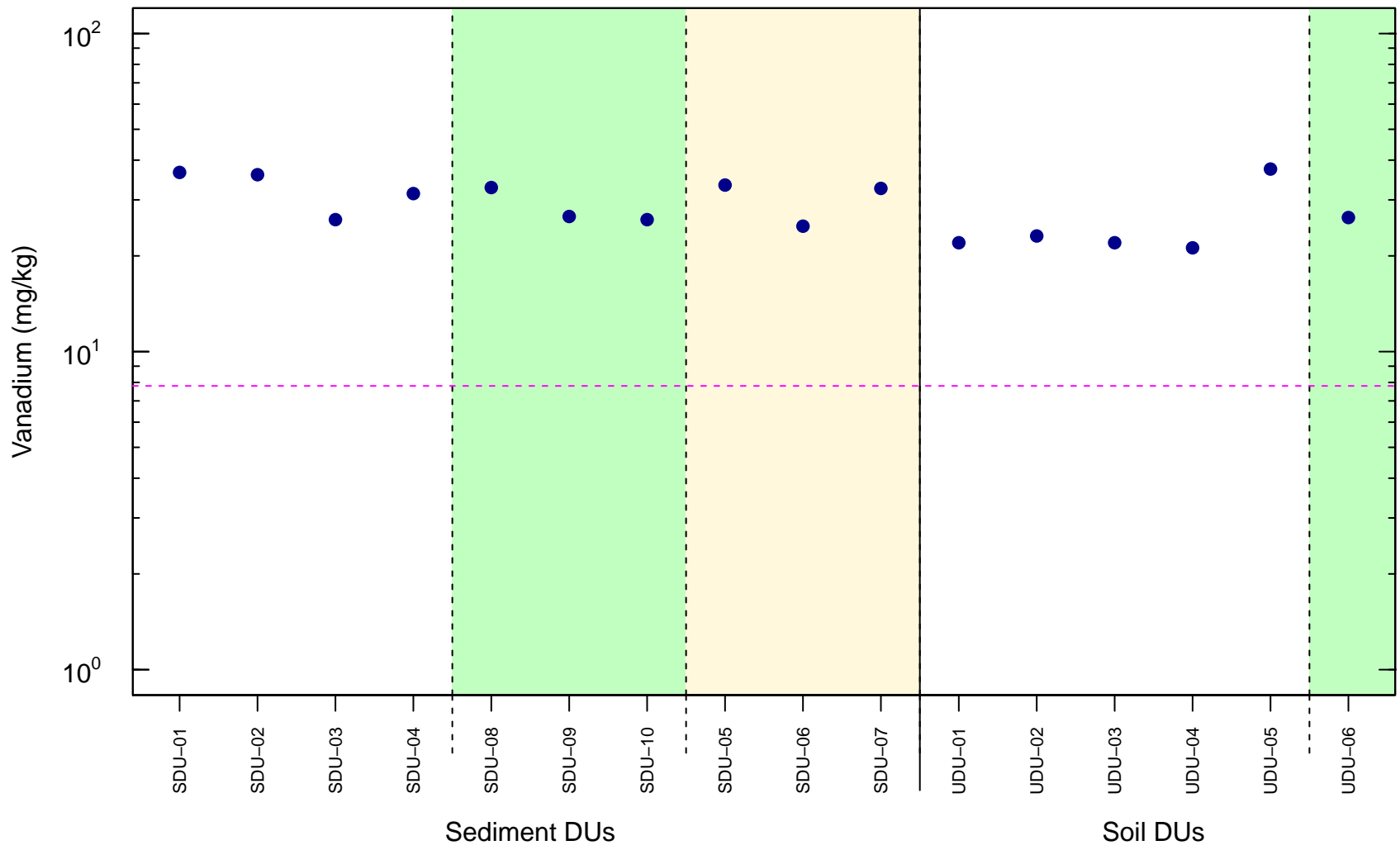
Figure 5-4t. Sodium Concentrations in < 2-mm Sediment and Soil Fractions of ICS Samples



*No Eco-SSL is available for thallium

Decision Units are presented upstream to downstream within an area of the Site.

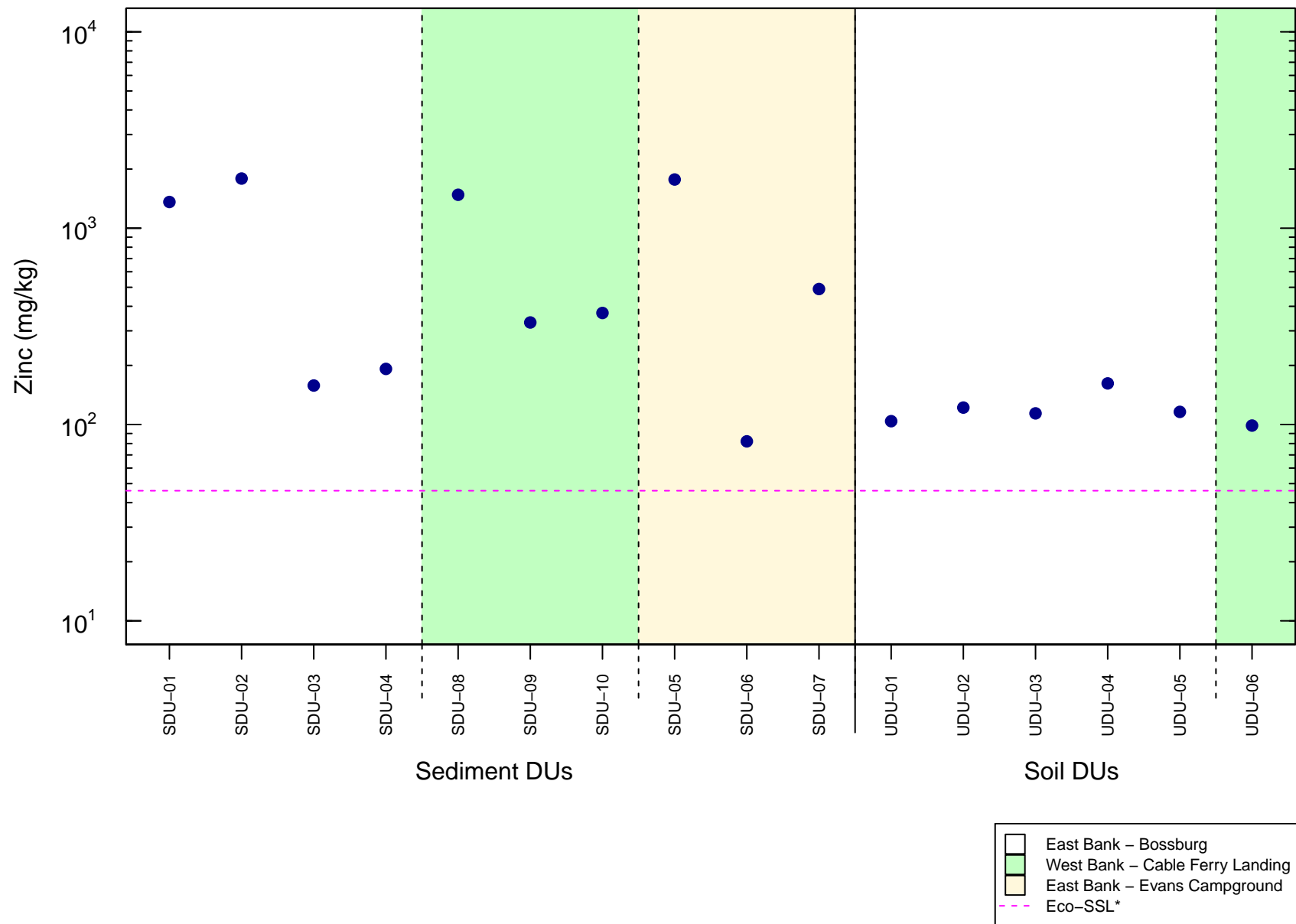
Figure 5-4u. Thallium Concentrations in < 2-mm Sediment and Soil Fractions of ICS Samples



*Eco-SSL for vanadium is 7.8 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

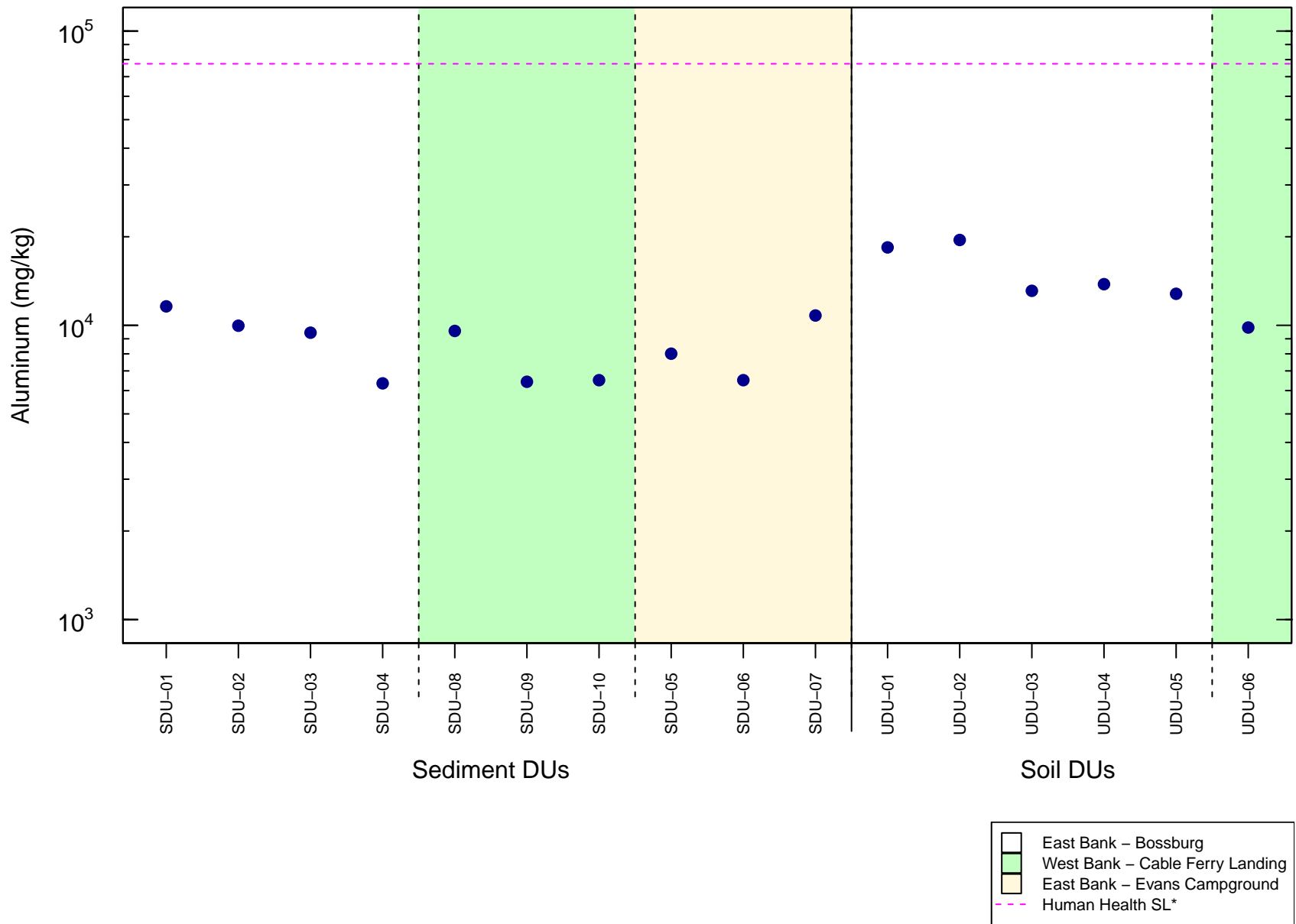
Figure 5-4v. Vanadium Concentrations in < 2-mm Sediment and Soil Fractions of ICS Samples



*Eco-SSL for zinc is 46 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

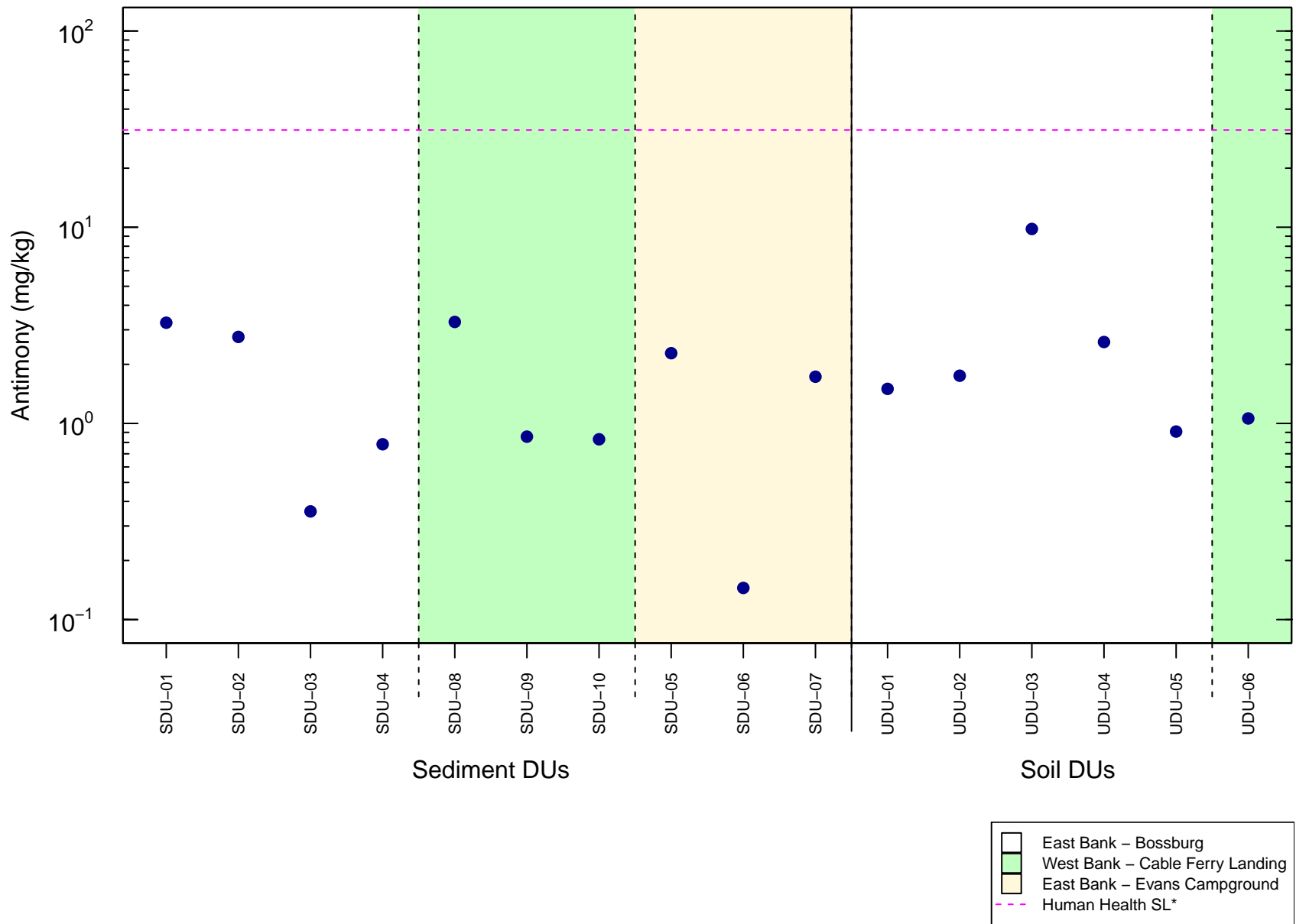
Figure 5-4w. Zinc Concentrations in < 2-mm Sediment and Soil Fractions of ICS Samples



*Human health SL for aluminum is 77,400 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

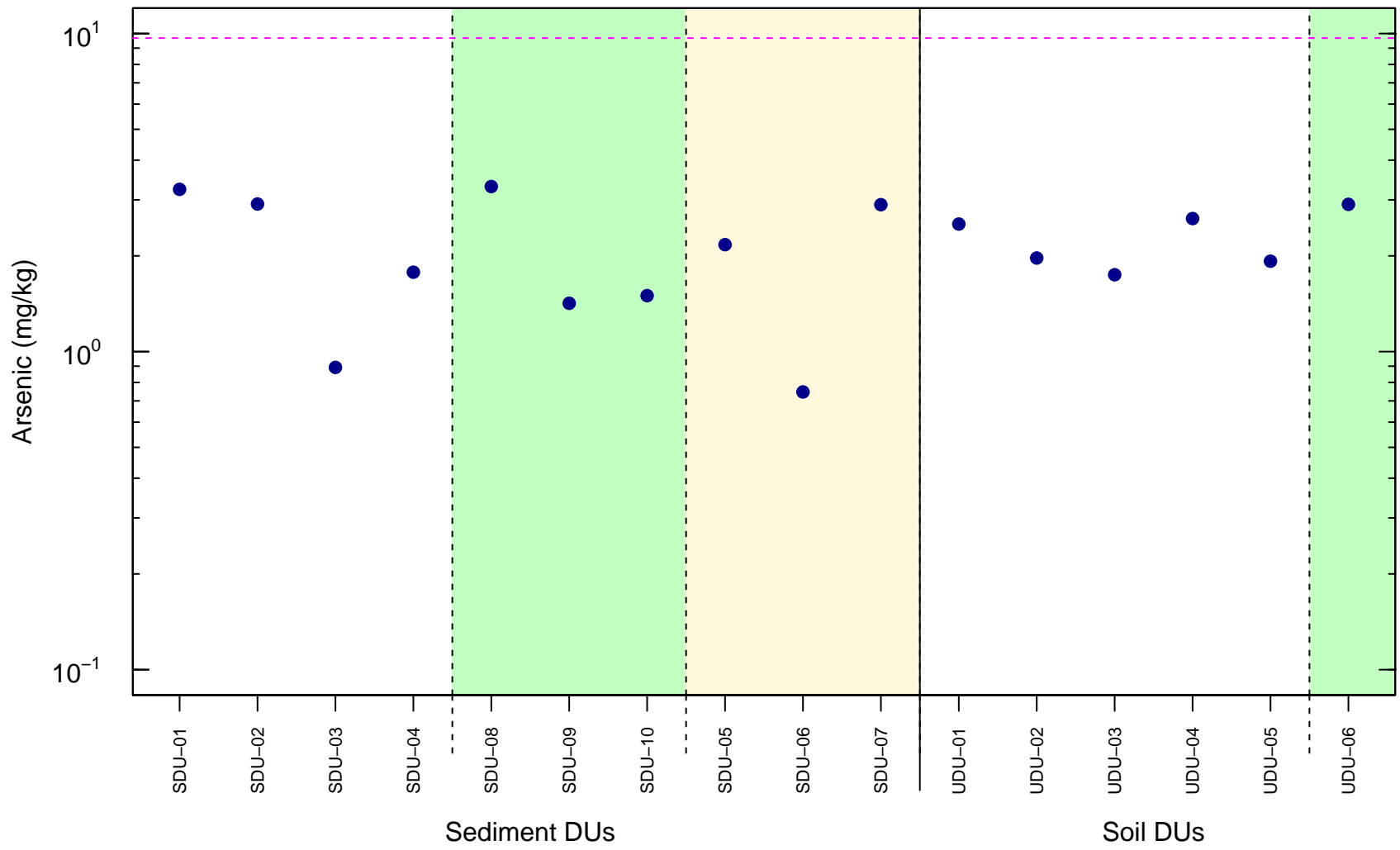
Figure 5-5a. Aluminum Concentrations in < 250- μ m Sediment and < 150- μ m Soil Fractions of ICS Samples



*Human health SL for antimony is 31.3 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5-5b. Antimony Concentrations in < 250- μ m Sediment and < 150- μ m Soil Fractions of ICS Samples



Concentrations have been adjusted for site-specific relative bioavailability (RBA).

*Human health SL for arsenic is 9.68 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

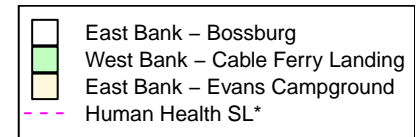
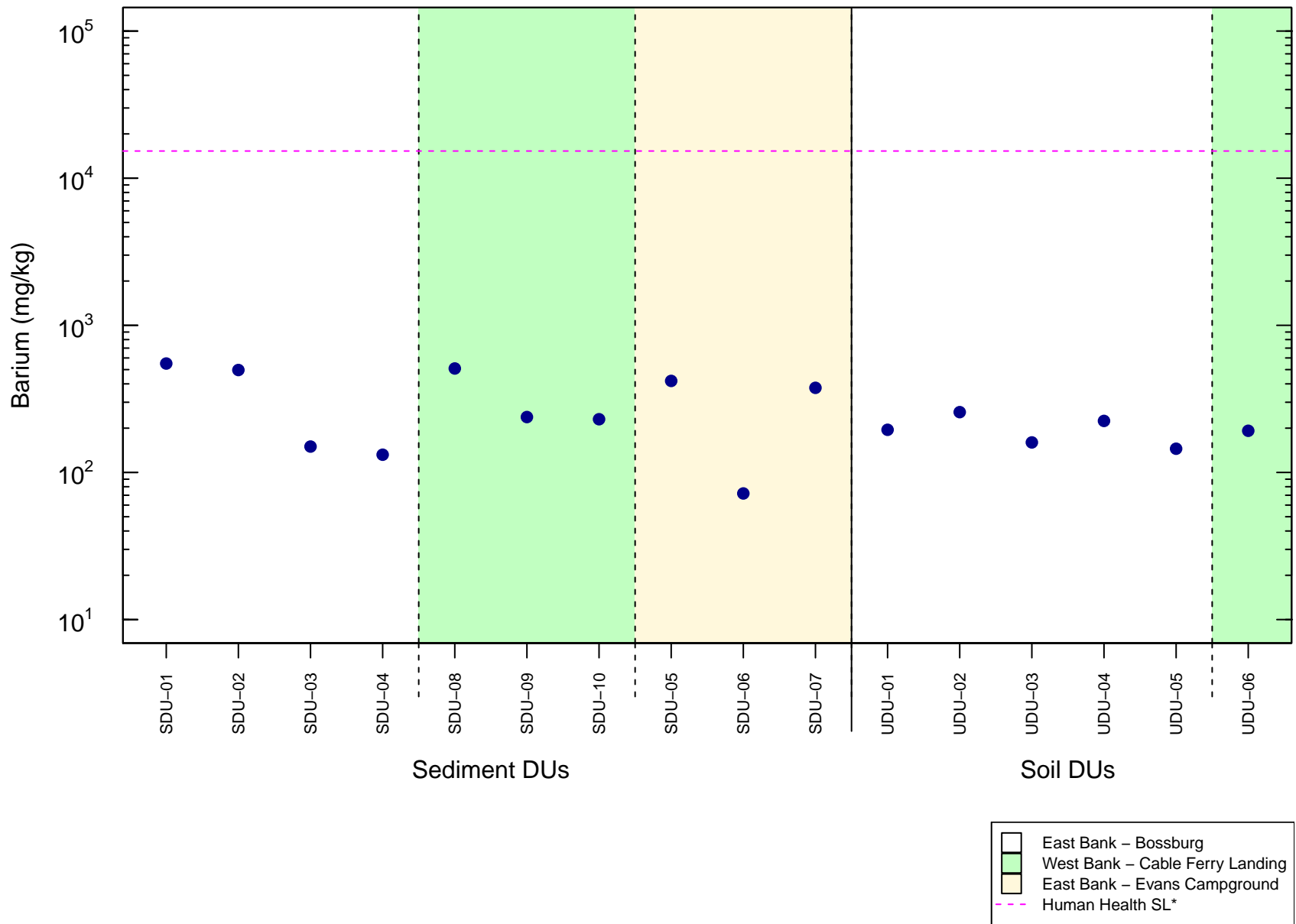


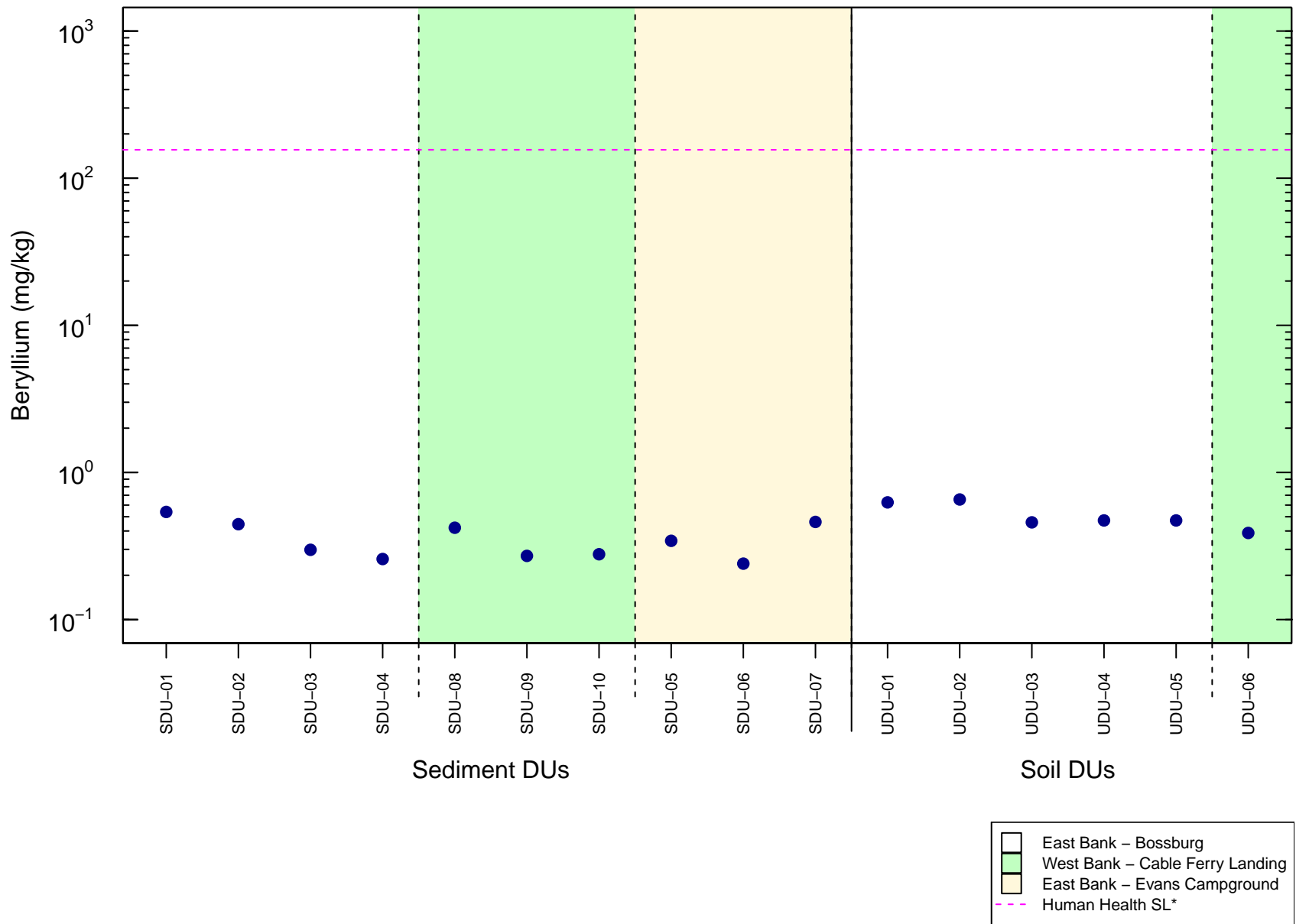
Figure 5-5c. Arsenic Concentrations in < 250- μ m Sediment and < 150- μ m Soil Fractions of ICS Samples



*Human health SL for barium is 15,300 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

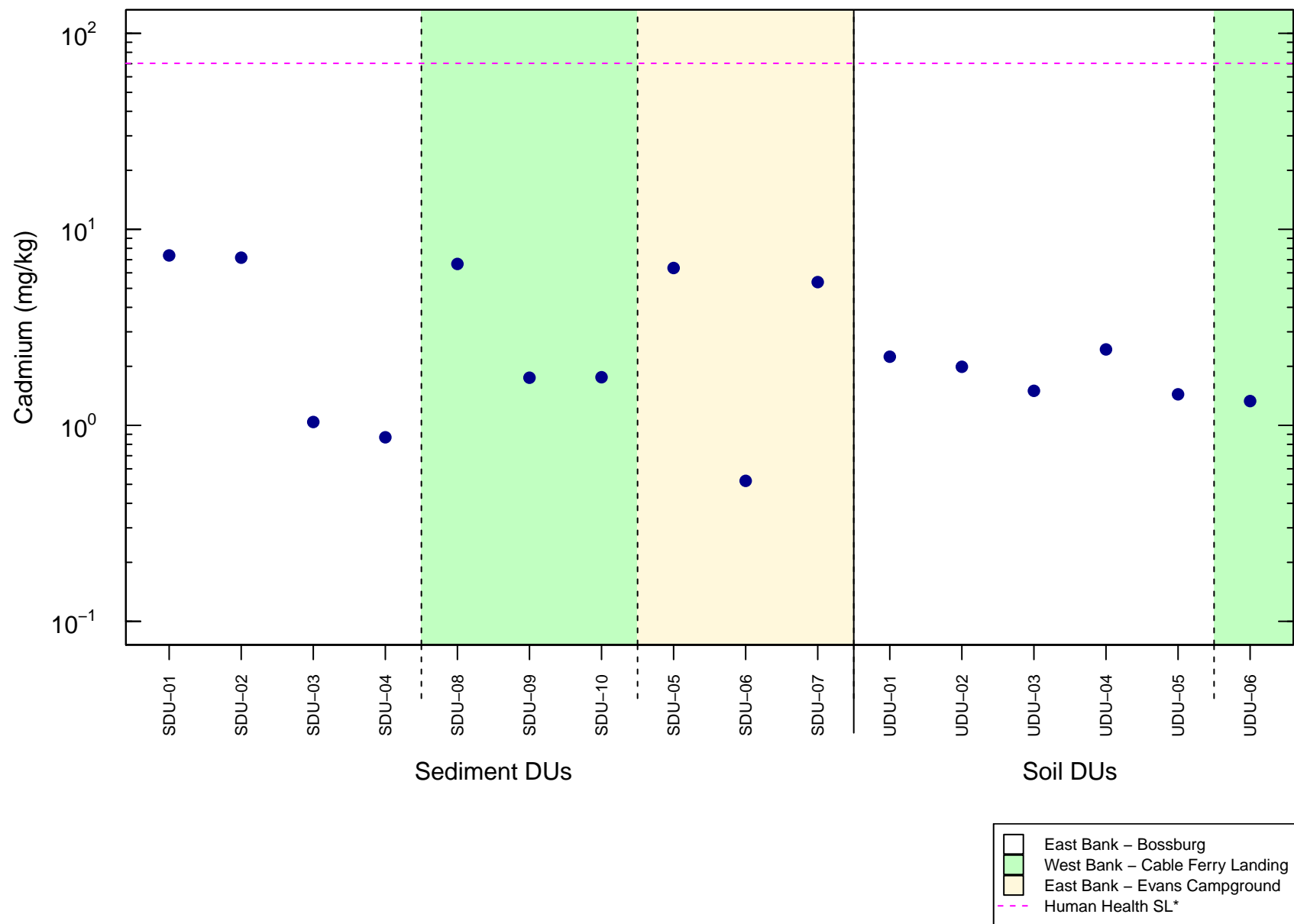
Figure 5-5d. Barium Concentrations in < 250- μ m Sediment and < 150- μ m Soil Fractions of ICS Samples



*Human health SL for beryllium is 156 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

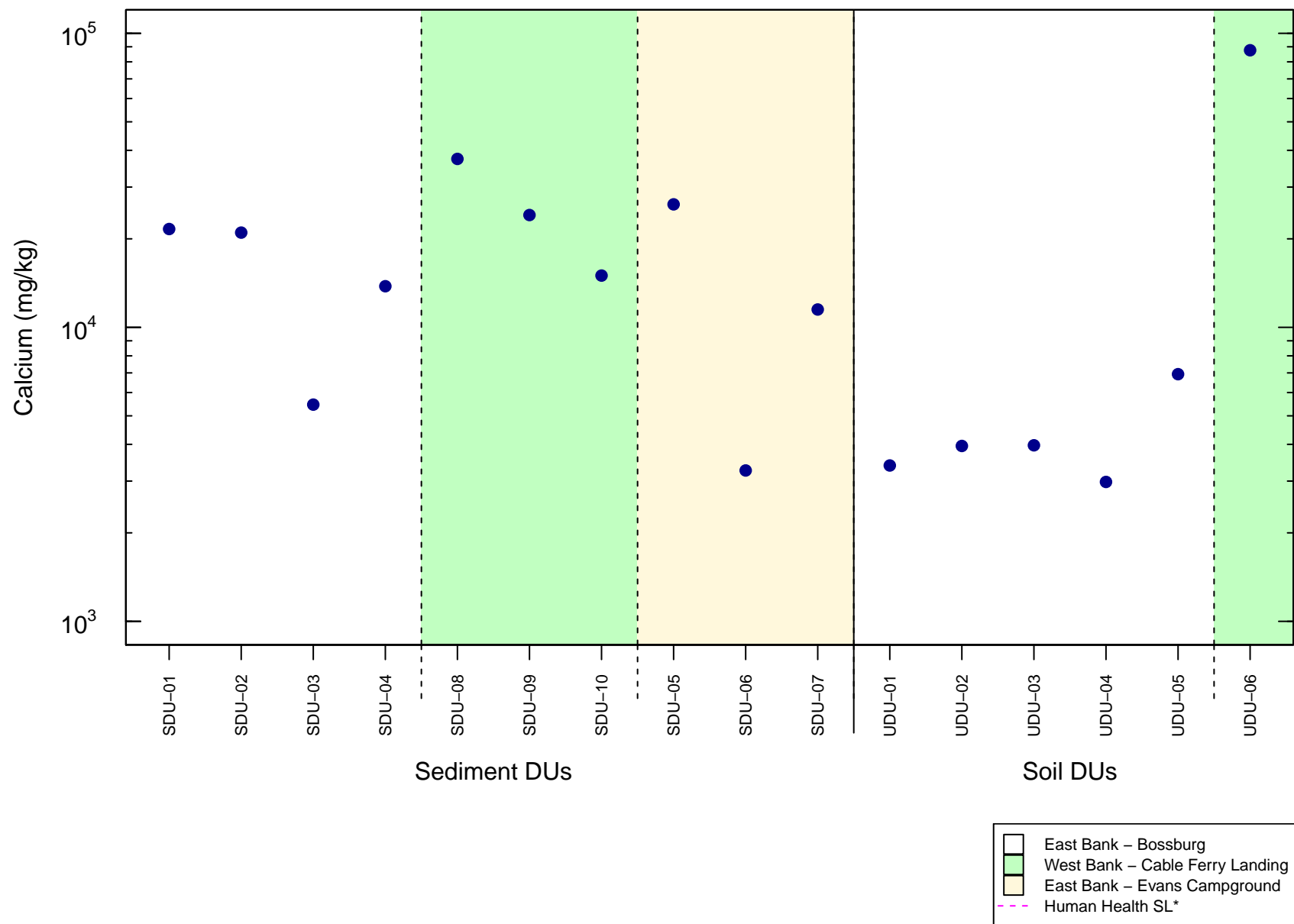
Figure 5-5e. Beryllium Concentrations in < 250- μ m Sediment and < 150- μ m Soil Fractions of ICS Samples



*Human health SL for cadmium is 70.3 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

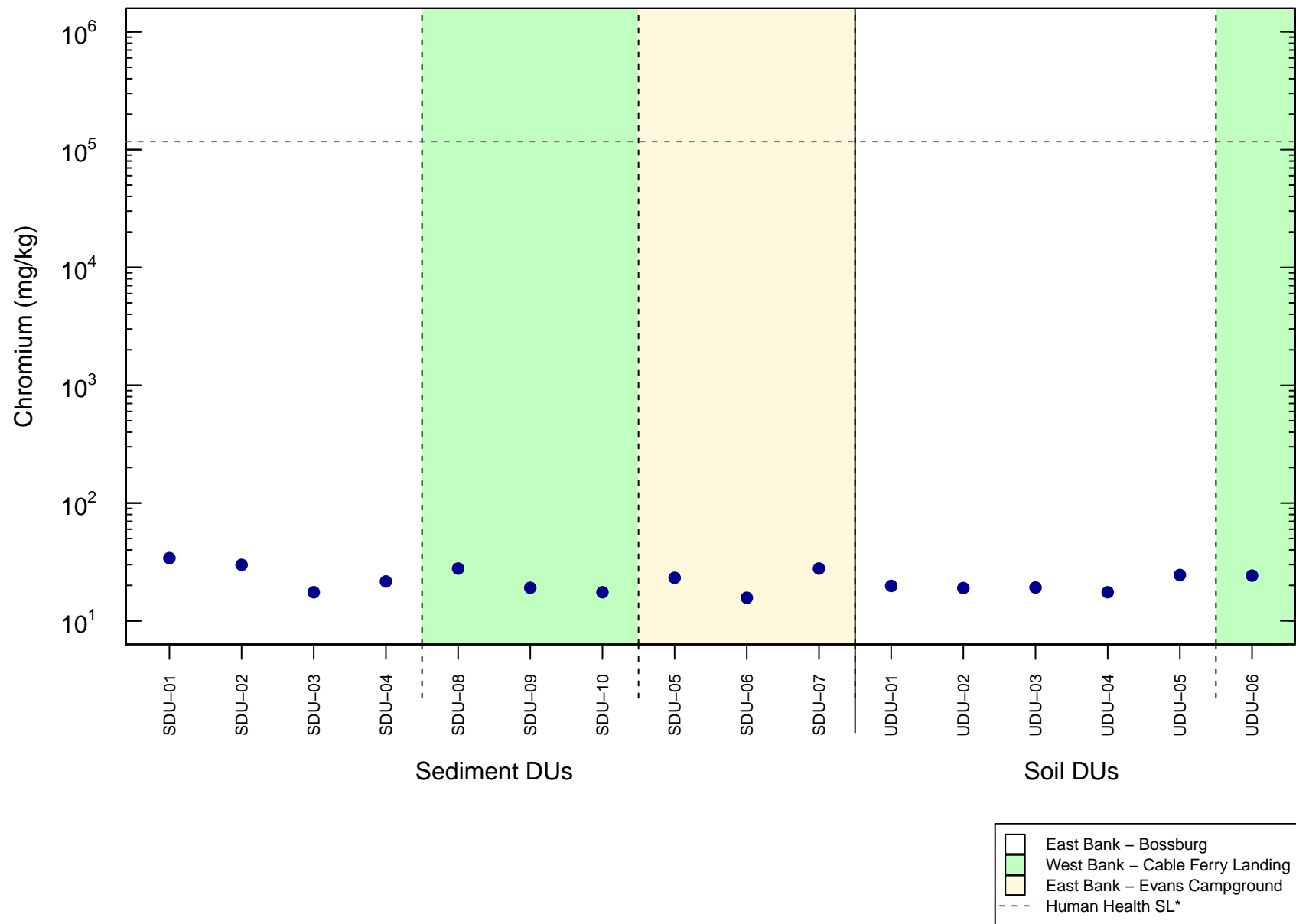
Figure 5-5f. Cadmium Concentrations in < 250- μ m Sediment and < 150- μ m Soil Fractions of ICS Samples



*No human health SL is available for calcium

Decision Units are presented upstream to downstream within an area of the Site.

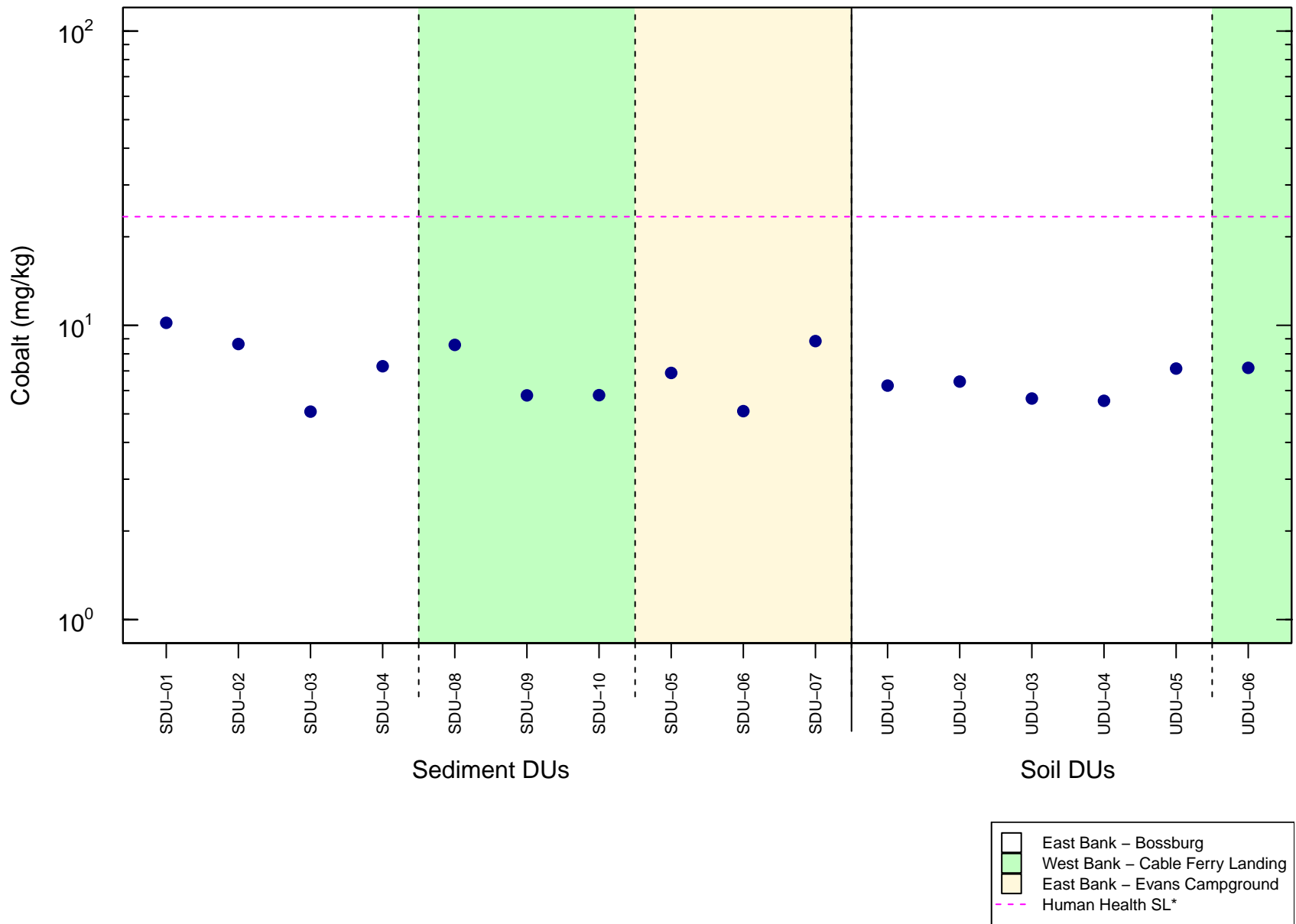
Figure 5-5g. Calcium Concentrations in < 250- μ m Sediment and < 150- μ m Soil Fractions of ICS Samples



*Human health SL for chromium is 117,000 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

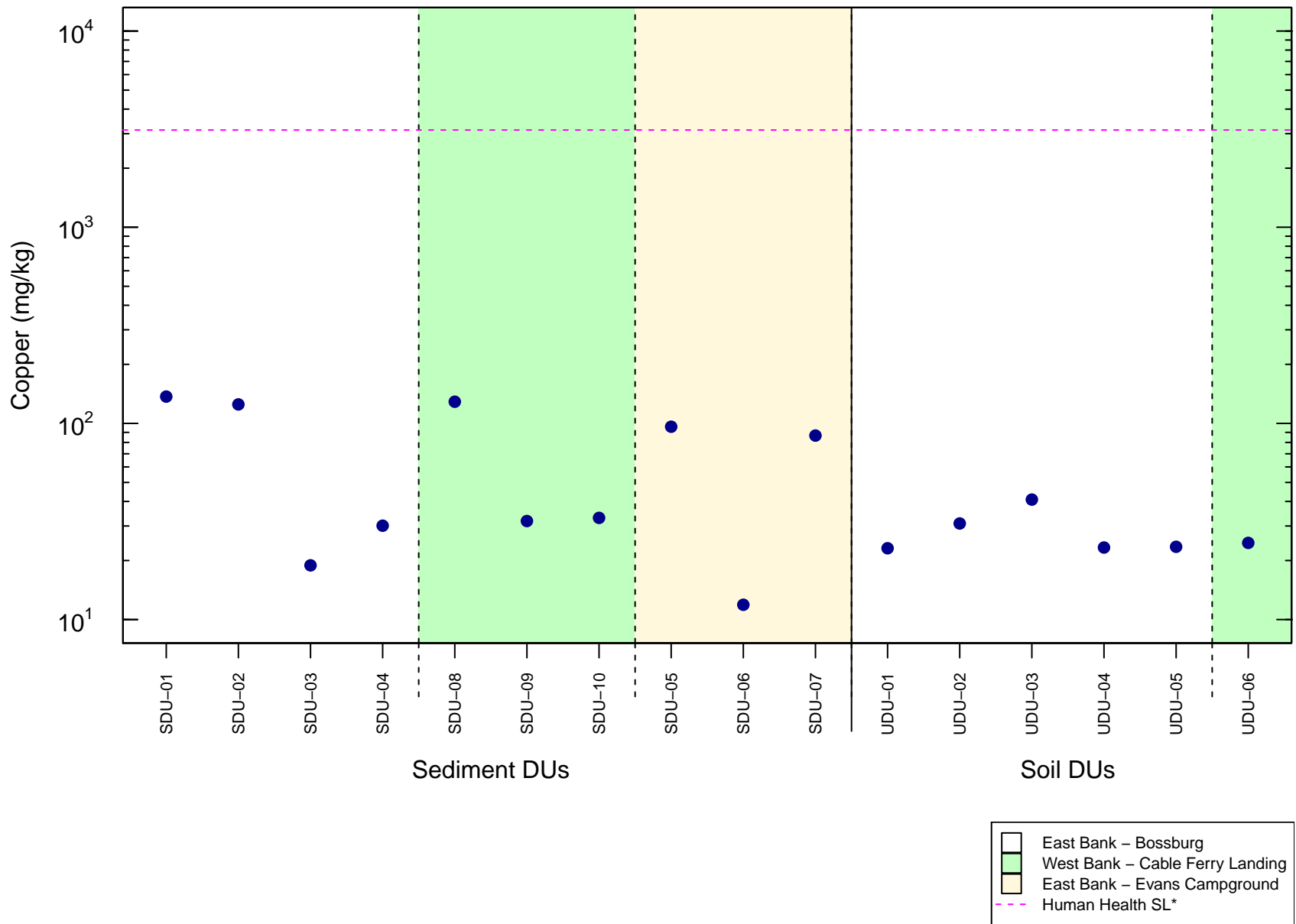
Figure 5-5h. Chromium Concentrations in < 250- μ m Sediment and < 150- μ m Soil Fractions of ICS Samples



*Human health SL for cobalt is 23.4 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

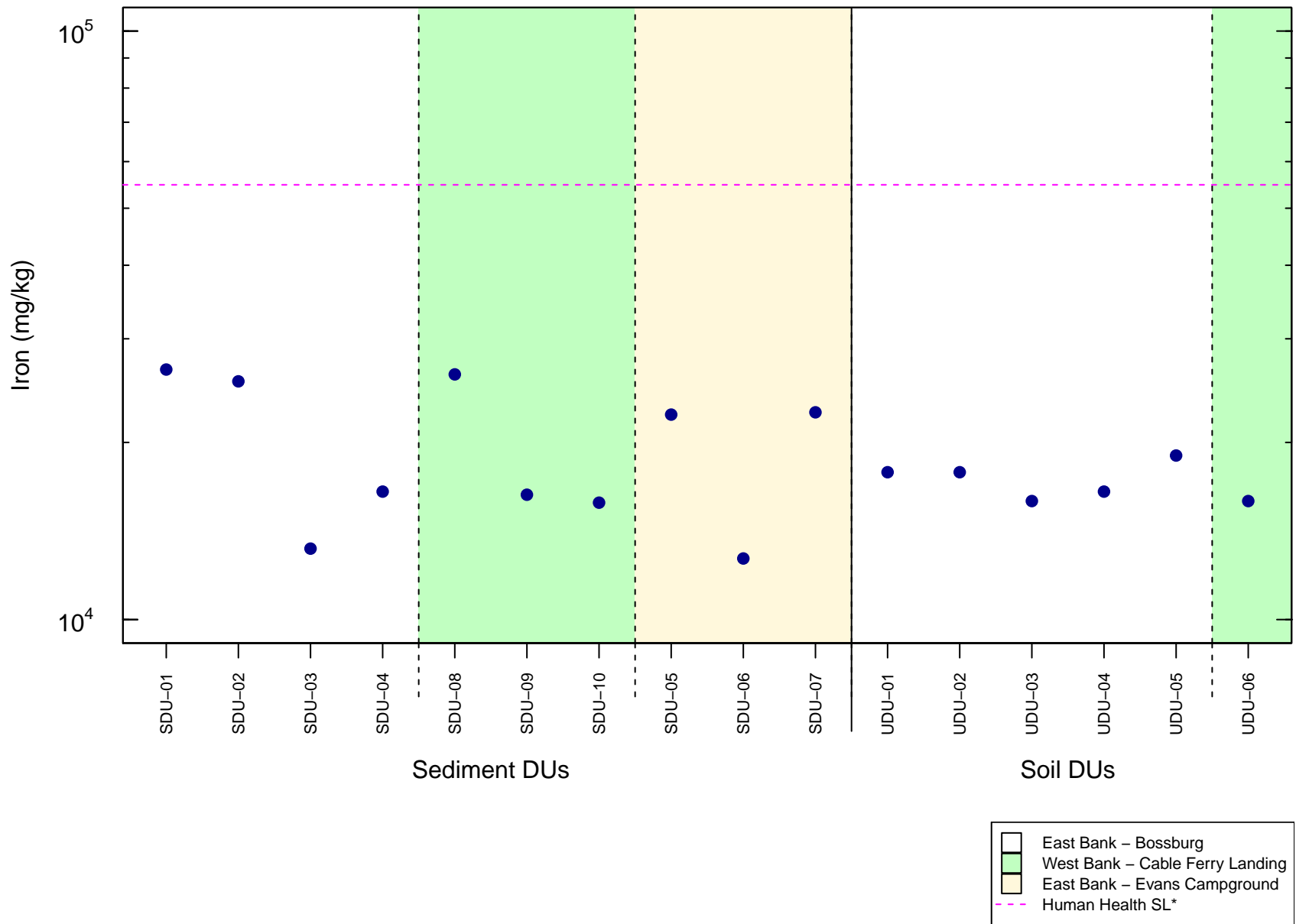
Figure 5-5i. Cobalt Concentrations in < 250- μ m Sediment and < 150- μ m Soil Fractions of ICS Samples



*Human health SL for copper is 3,130 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

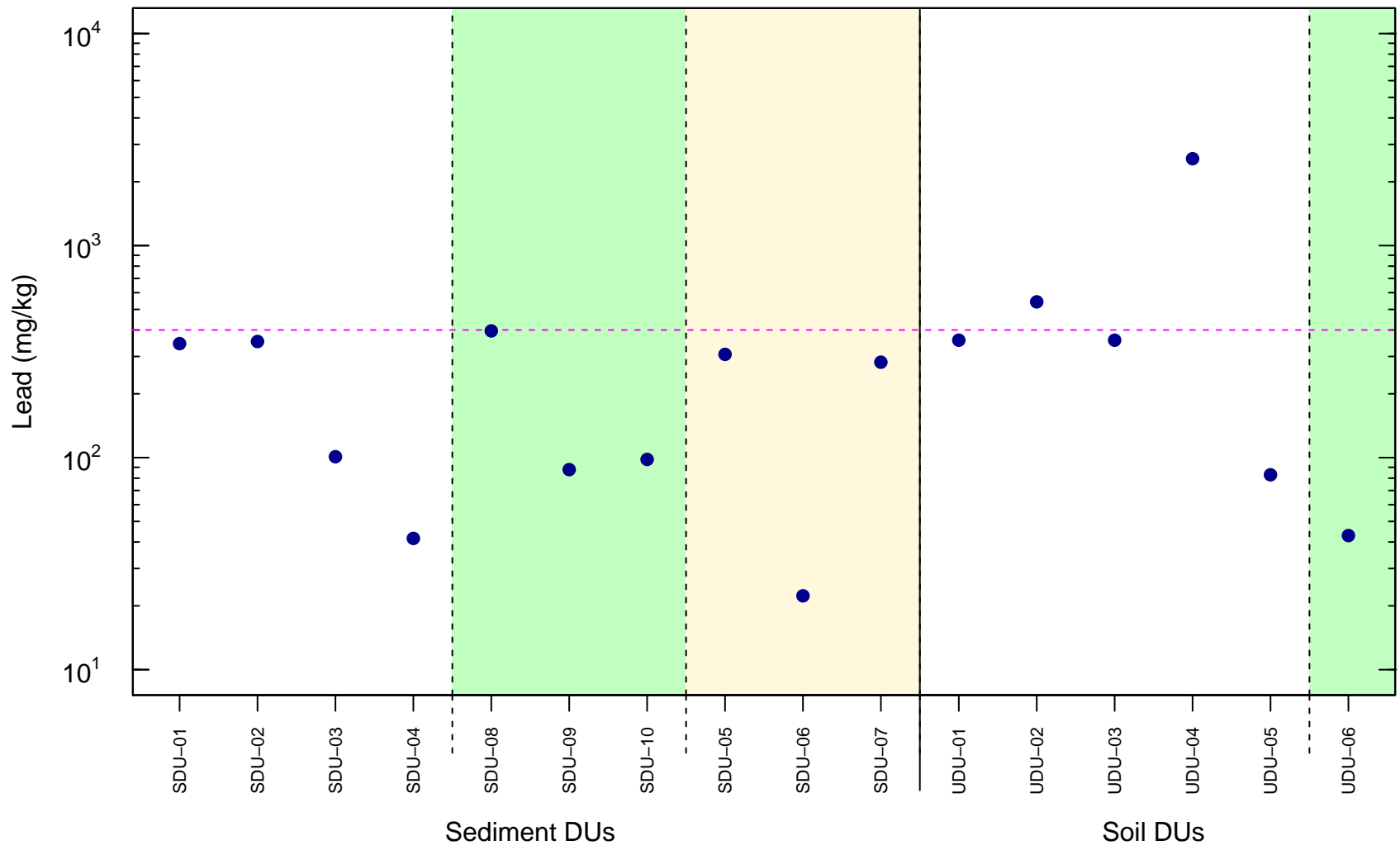
Figure 5-5j. Copper Concentrations in < 250- μ m Sediment and < 150- μ m Soil Fractions of ICS Samples



*Human health SL for iron is 54,800 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5–5k. Iron Concentrations in < 250–µm Sediment and < 150–µm Soil Fractions of ICS Samples



Concentrations have been adjusted for the ratio of site-specific relative bioavailability (RBA) to EPA's default RBA.

*Human health SL for lead is 400 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

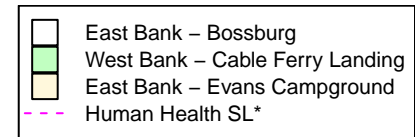
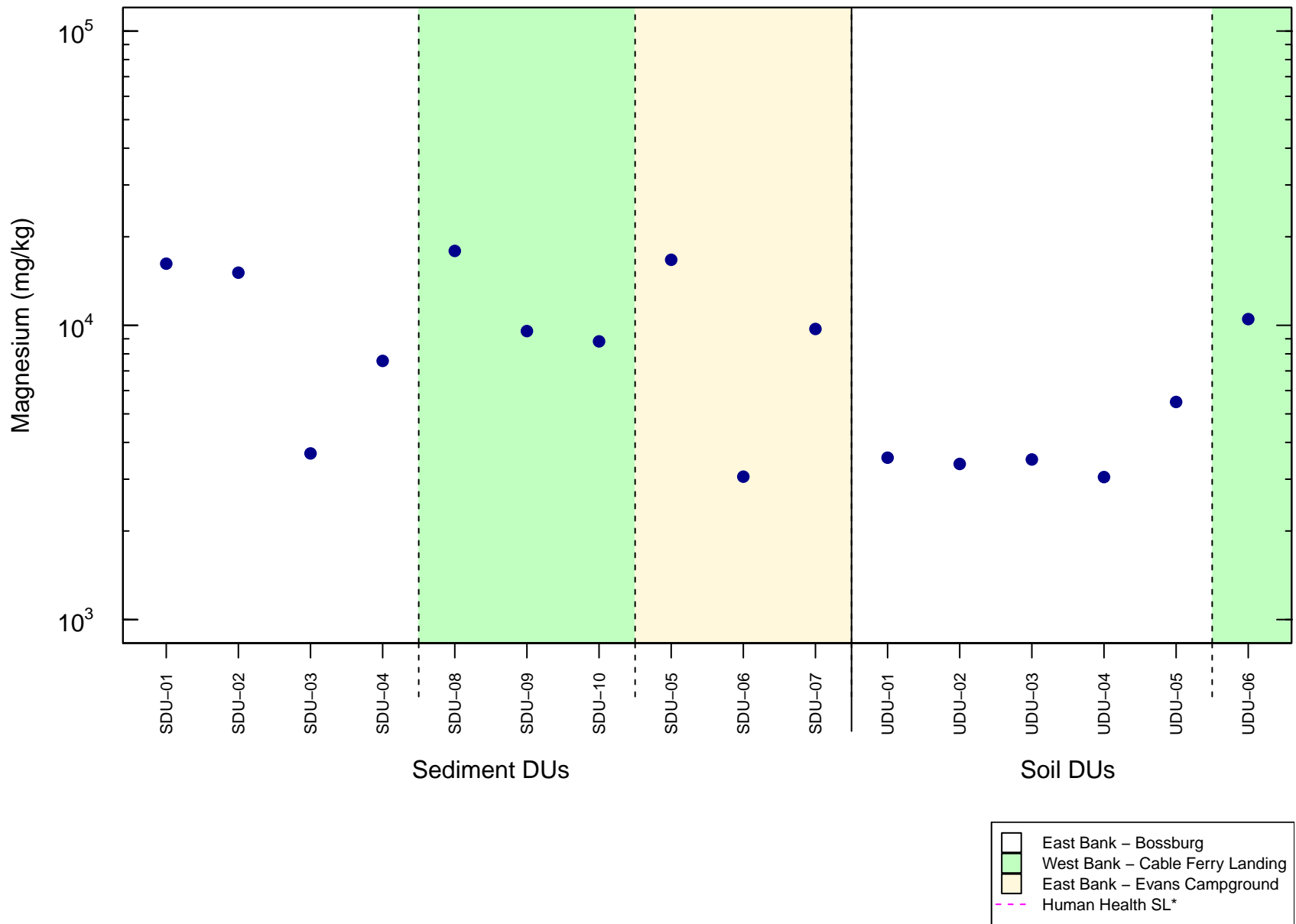


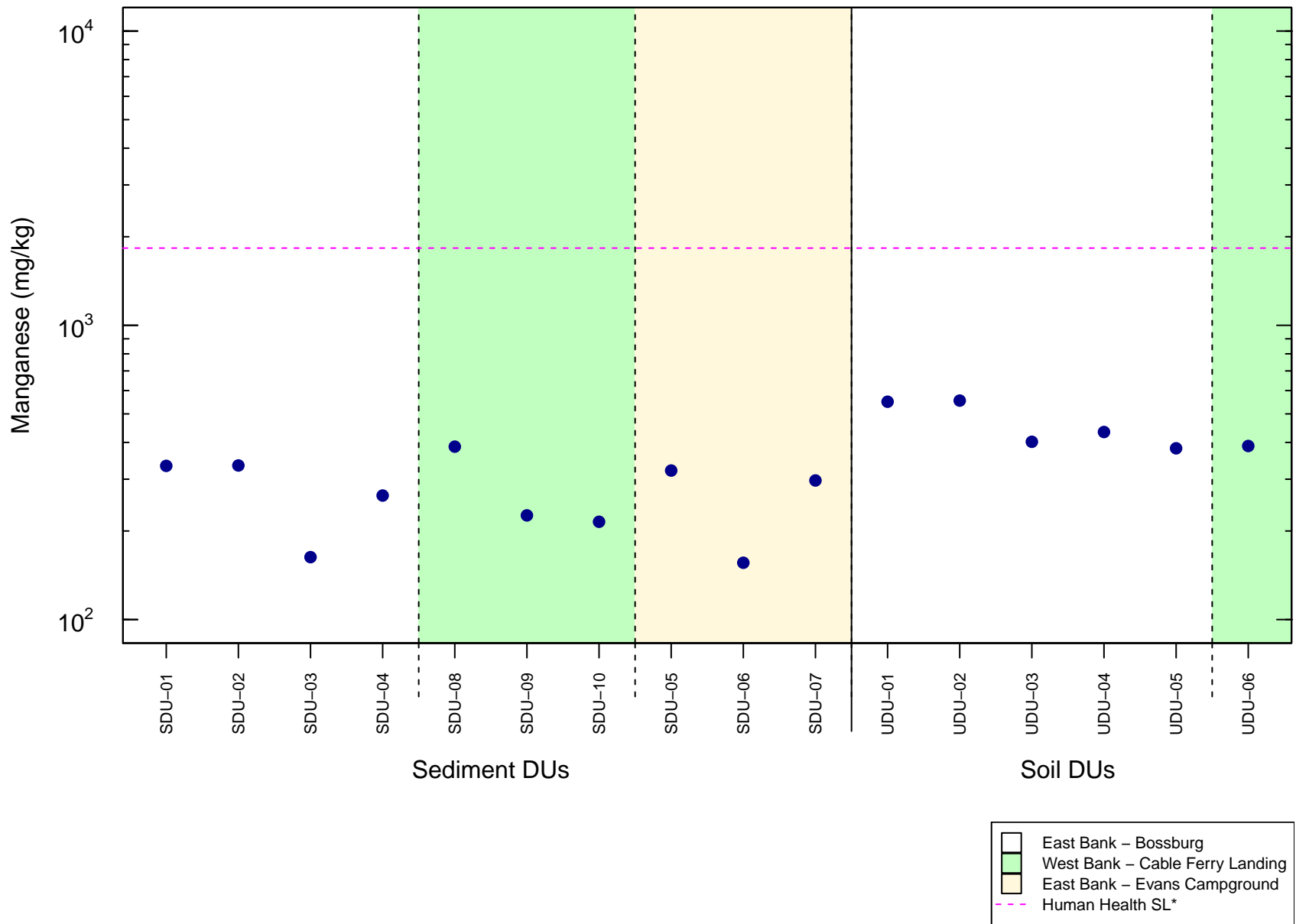
Figure 5-5I. Lead Concentrations in < 250- μ m Sediment and < 150- μ m Soil Fractions of ICS Samples



*No human health SL is available for magnesium

Decision Units are presented upstream to downstream within an area of the Site.

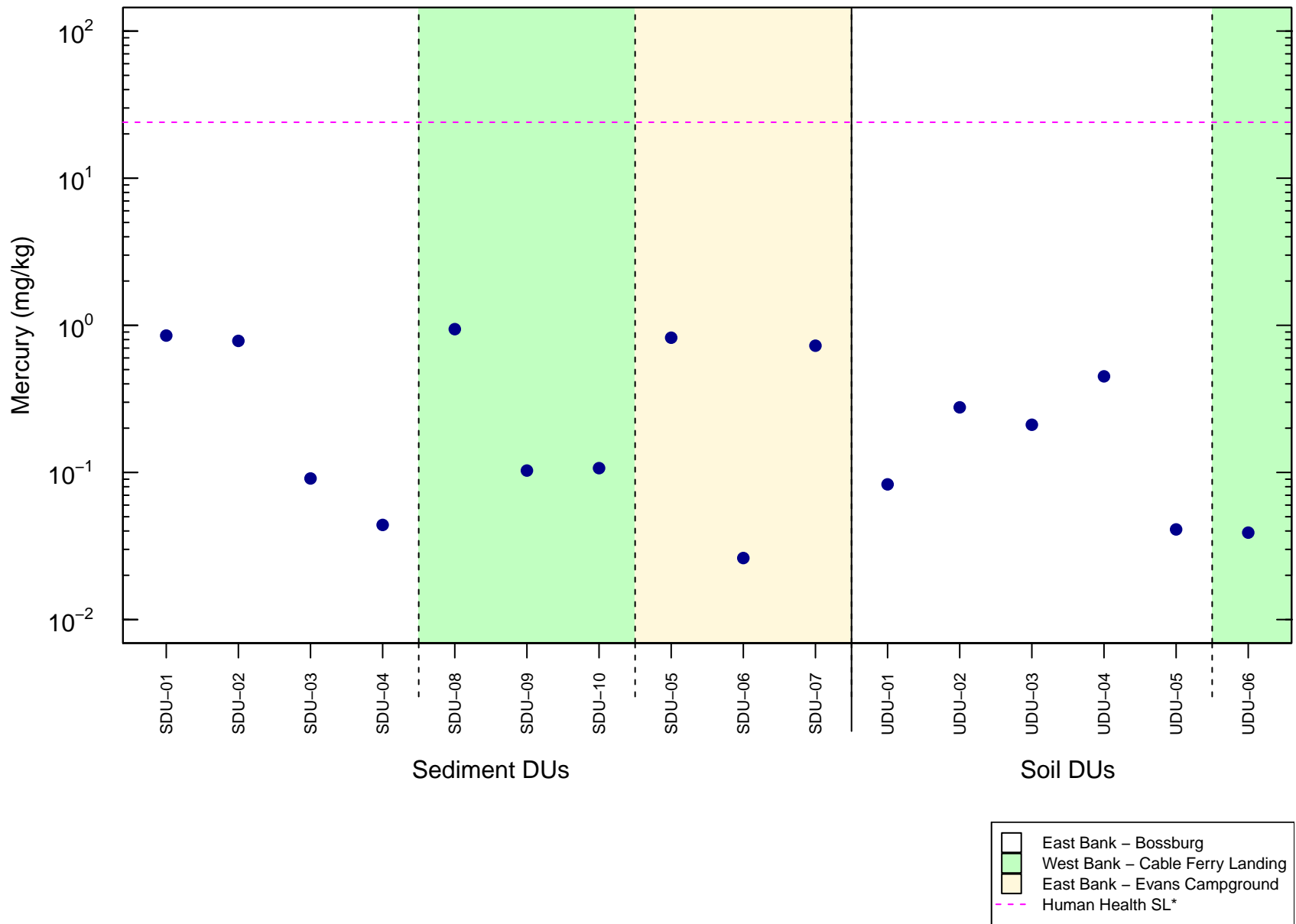
Figure 5-5m. Magnesium Concentrations in < 250- μ m Sediment and < 150- μ m Soil Fractions of ICS Samples



*Human health SL for manganese is 1,830 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

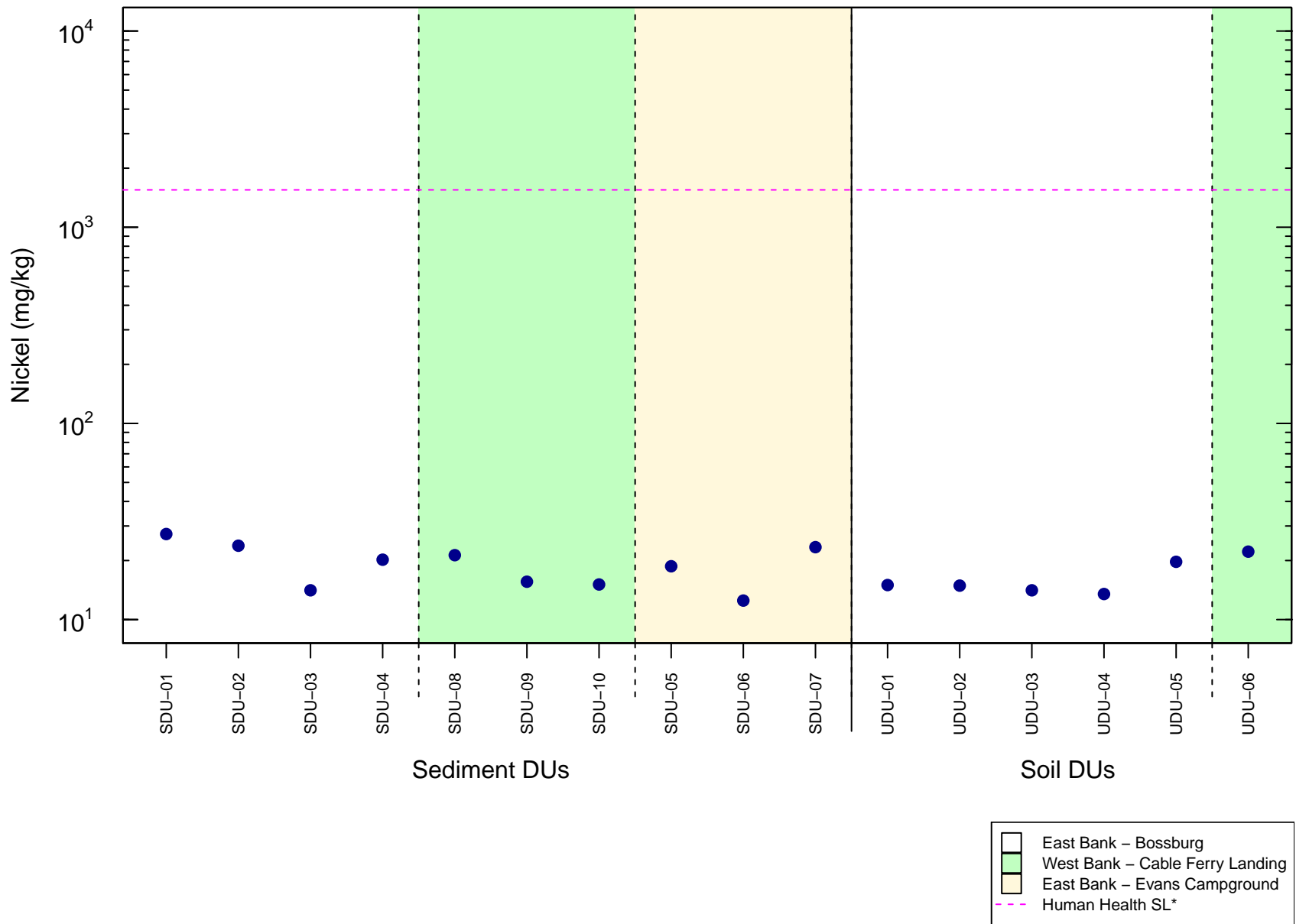
Figure 5-5n. Manganese Concentrations in < 250- μ m Sediment and < 150- μ m Soil Fractions of ICS Samples



*Human health SL for mercury is 24 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

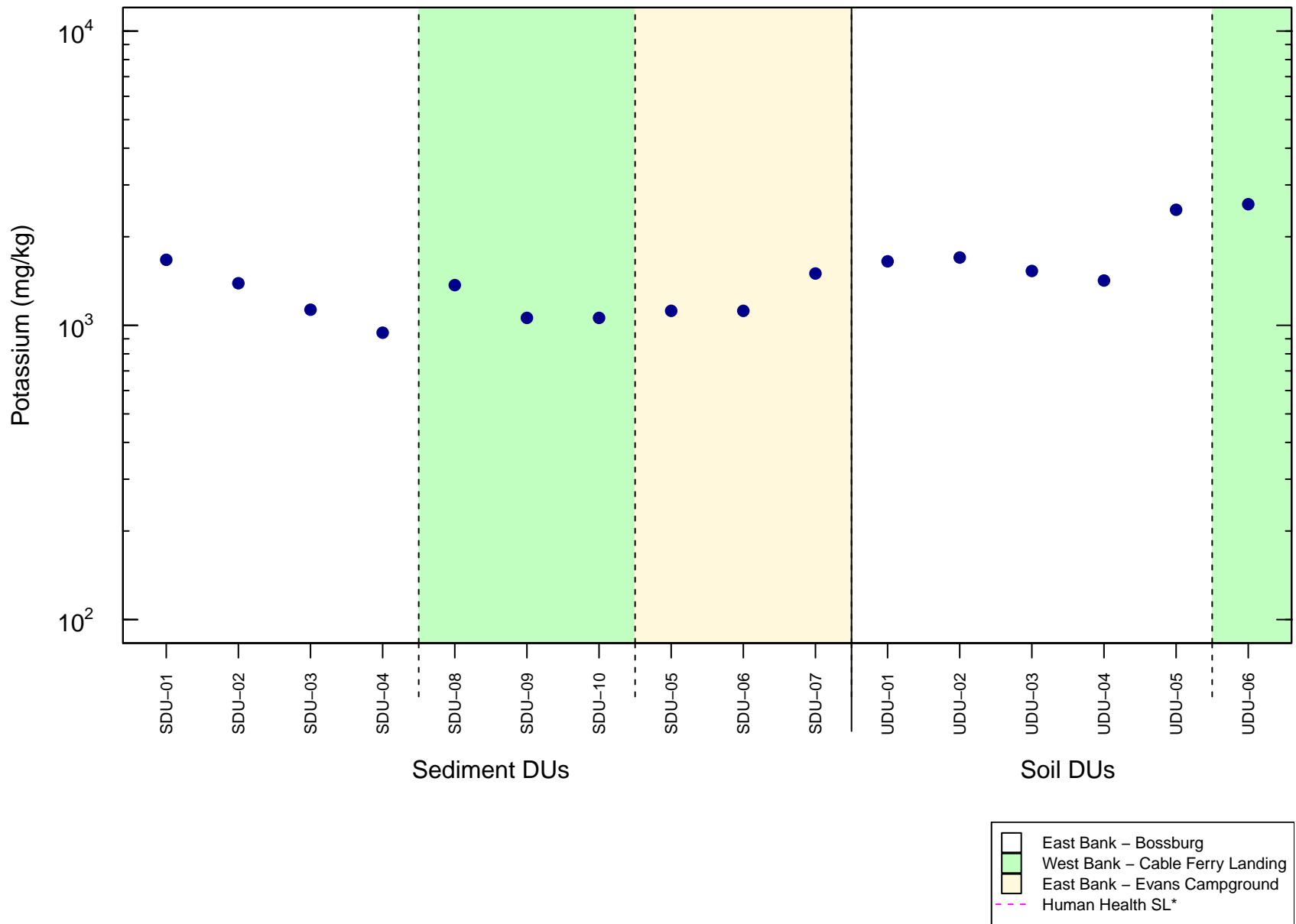
Figure 5-5o. Mercury Concentrations in < 250- μ m Sediment and < 150- μ m Soil Fractions of ICS Samples



*Human health SL for nickel is 1,550 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

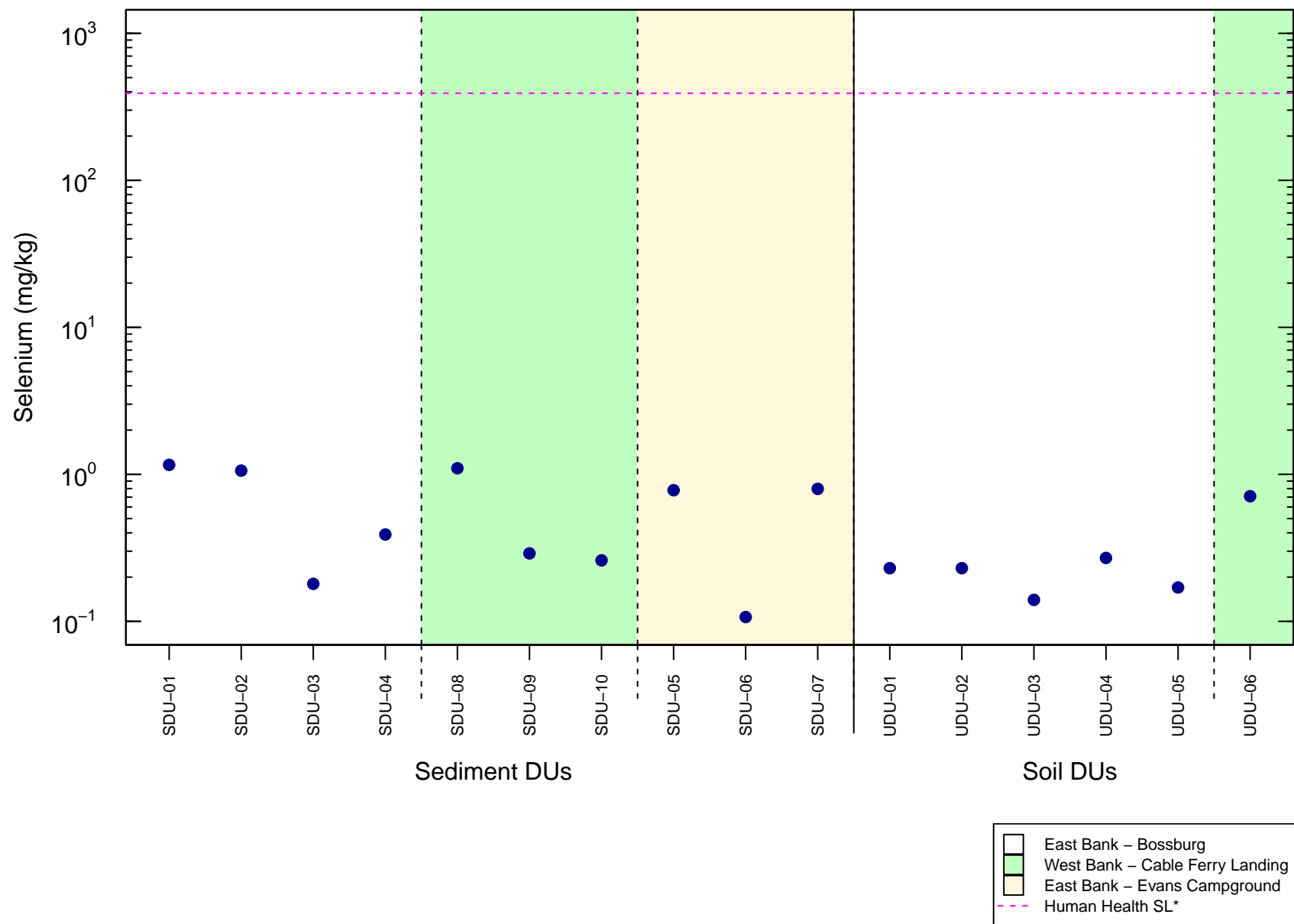
Figure 5-5p. Nickel Concentrations in < 250- μ m Sediment and < 150- μ m Soil Fractions of ICS Samples



*No human health SL is available for potassium

Decision Units are presented upstream to downstream within an area of the Site.

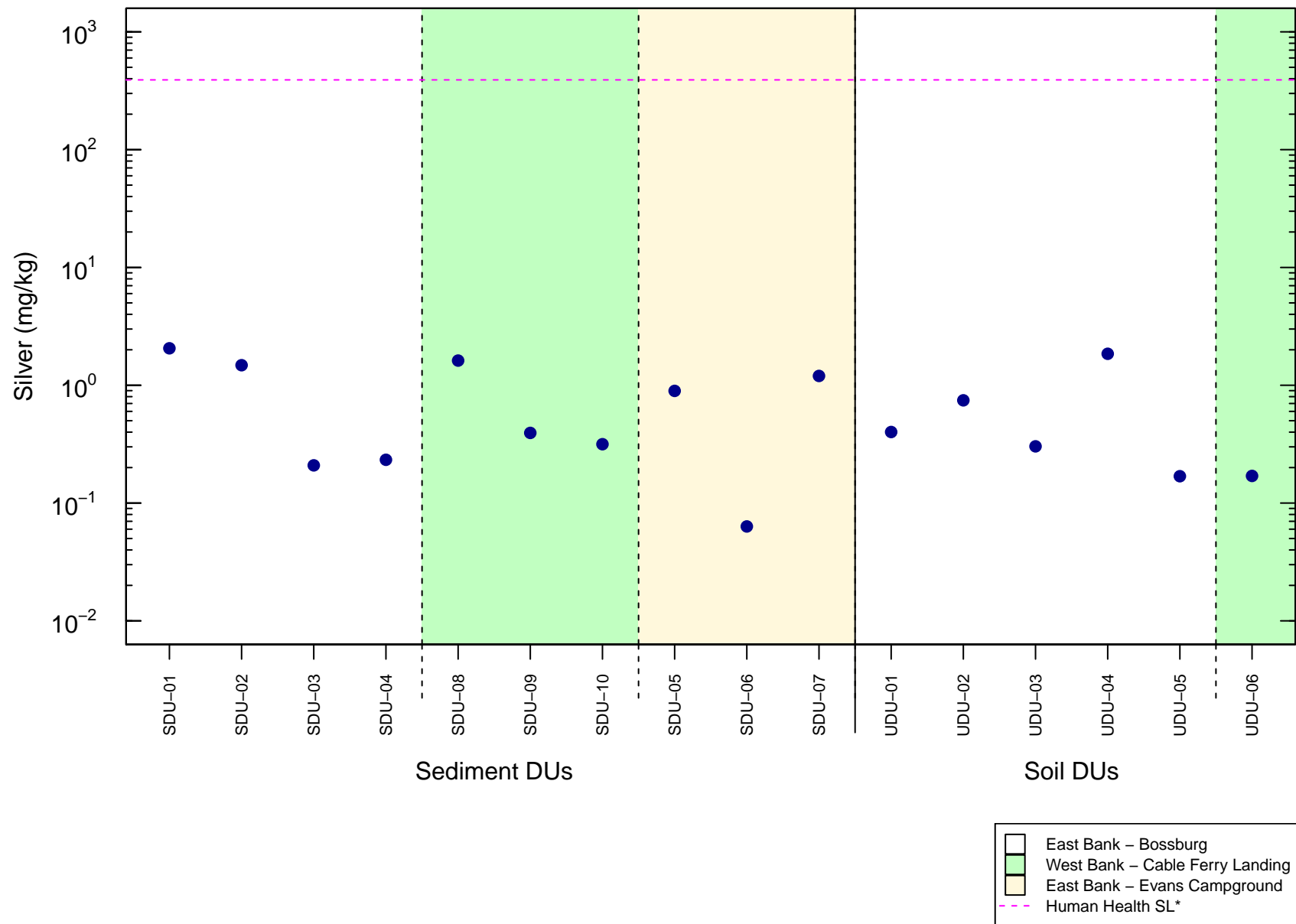
Figure 5-5q. Potassium Concentrations in < 250- μ m Sediment and < 150- μ m Soil Fractions of ICS Samples



*Human health SL for selenium is 391 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

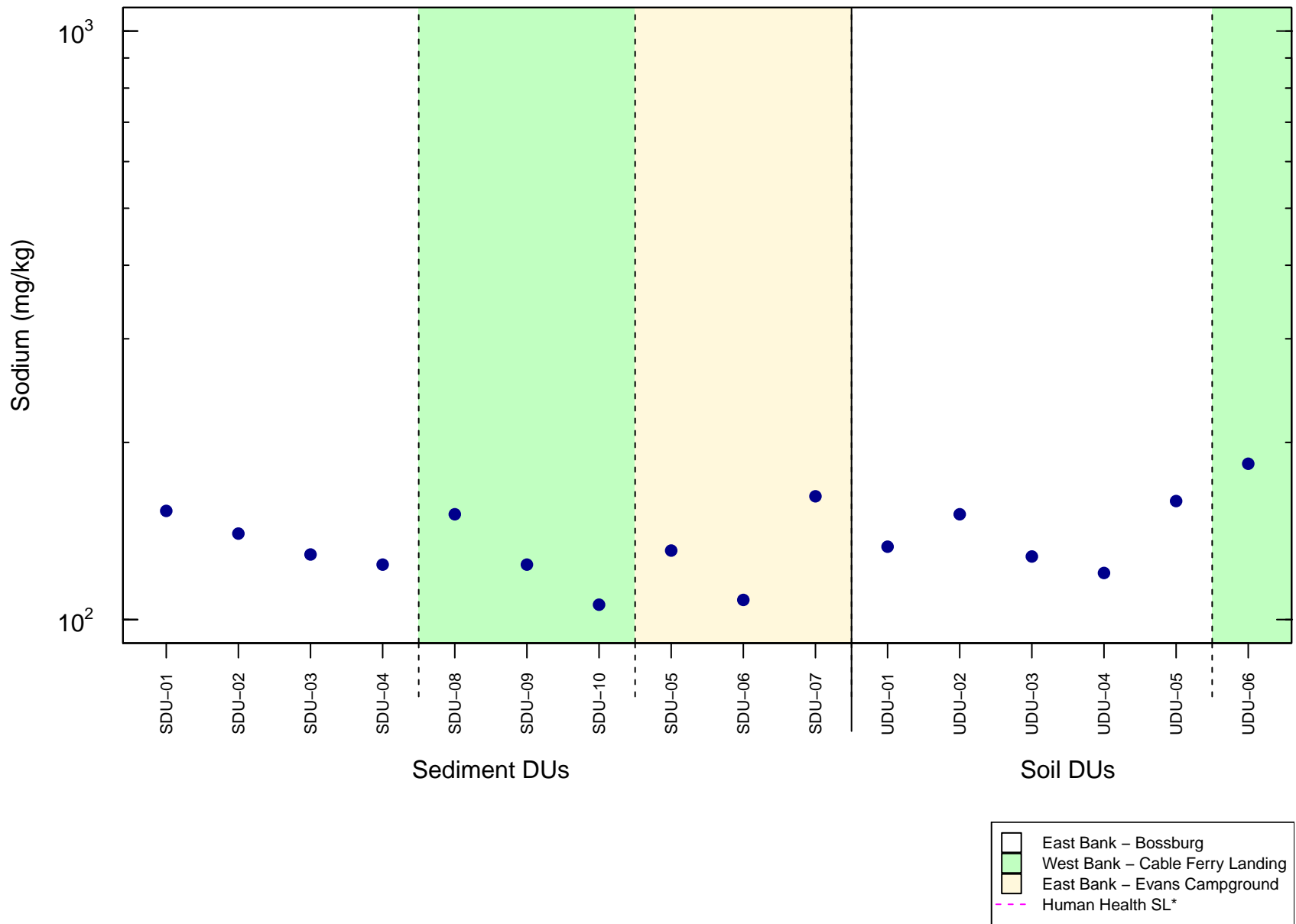
Figure 5-5r. Selenium Concentrations in < 250- μ m Sediment and < 150- μ m Soil Fractions of ICS Samples



*Human health SL for silver is 391 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

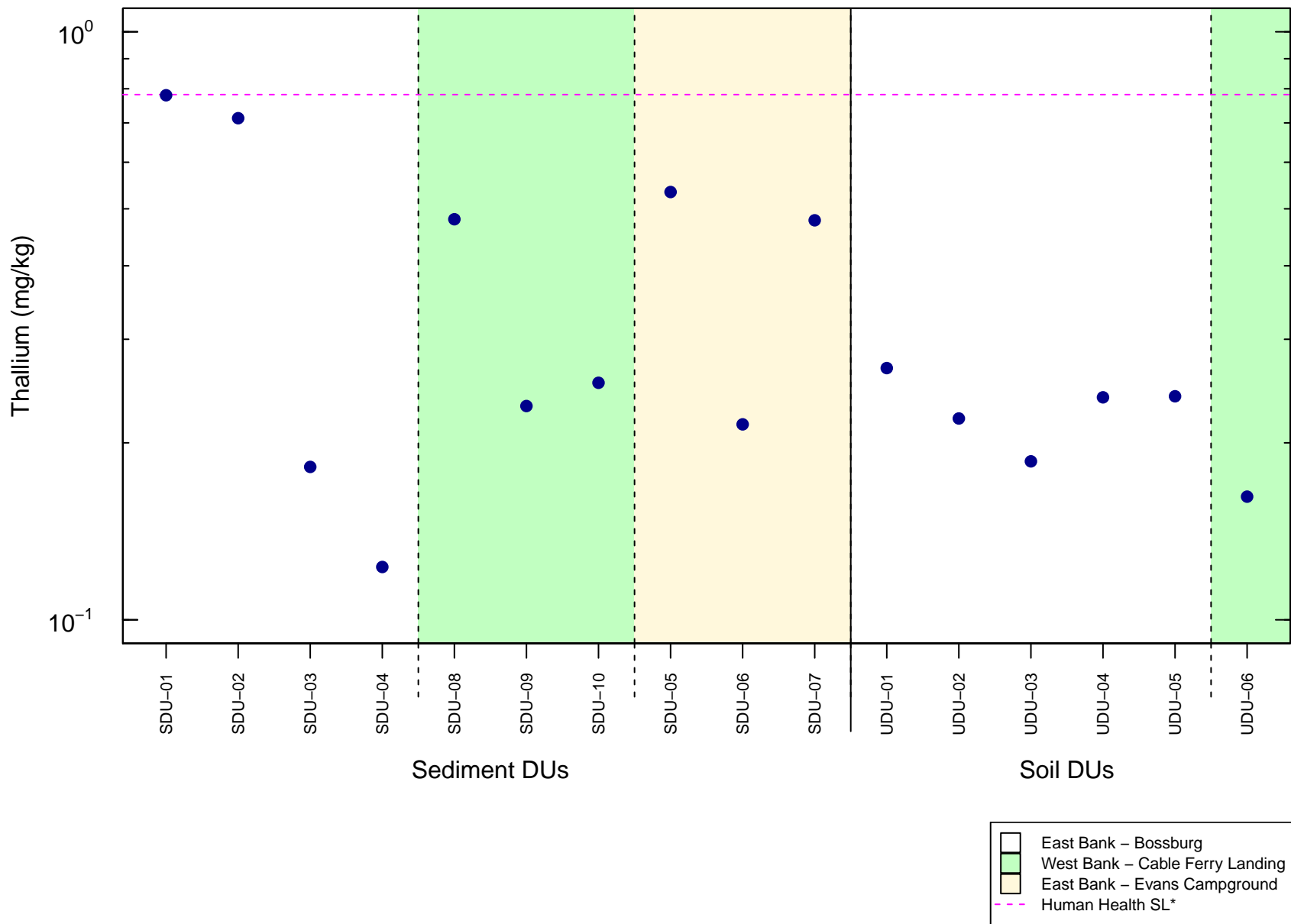
Figure 5-5s. Silver Concentrations in < 250- μ m Sediment and < 150- μ m Soil Fractions of ICS Samples



*No human health SL is available for sodium

Decision Units are presented upstream to downstream within an area of the Site.

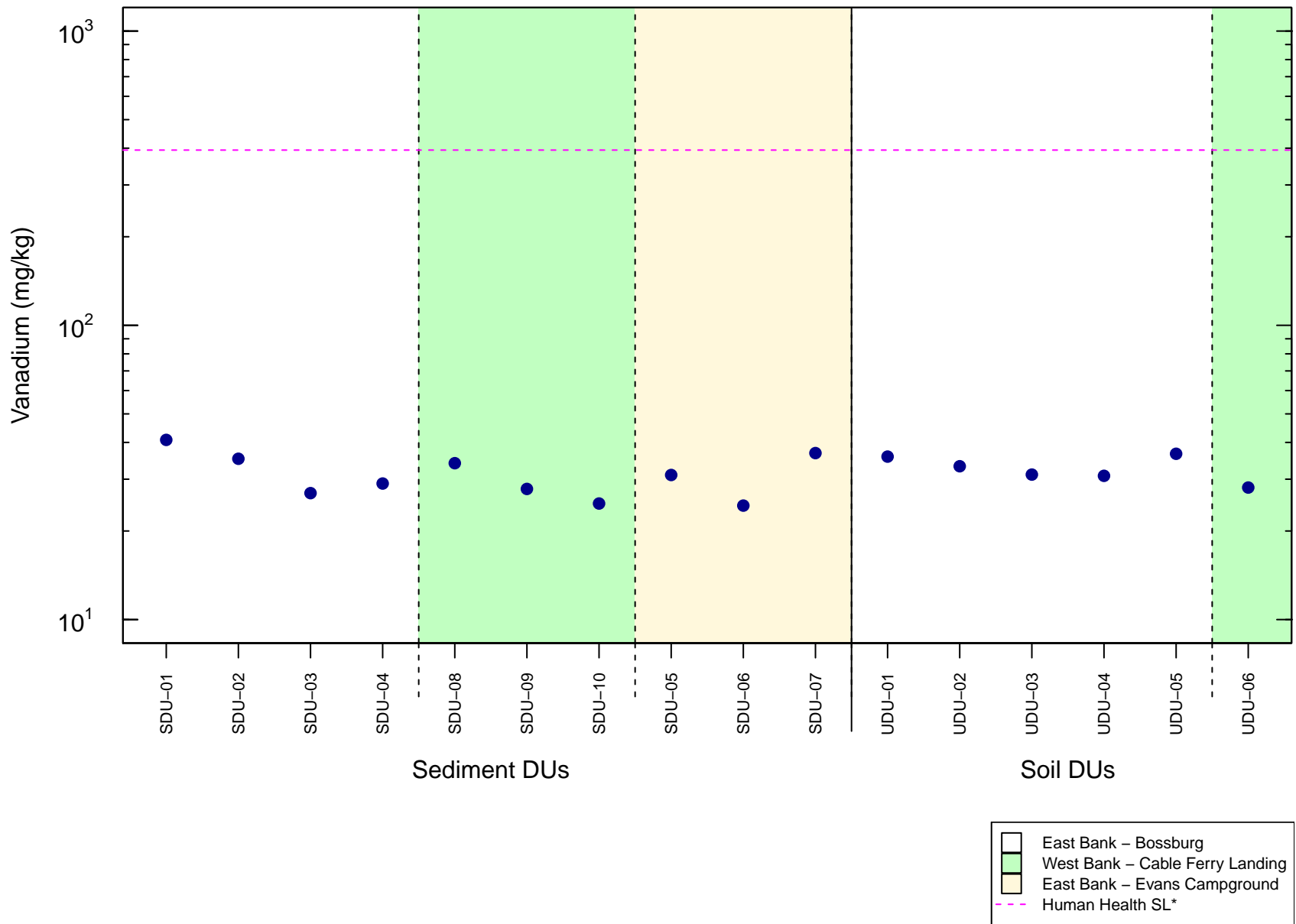
Figure 5–5t. Sodium Concentrations in < 250–µm Sediment and < 150–µm Soil Fractions of ICS Samples



*Human health SL for thallium is 0.782 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

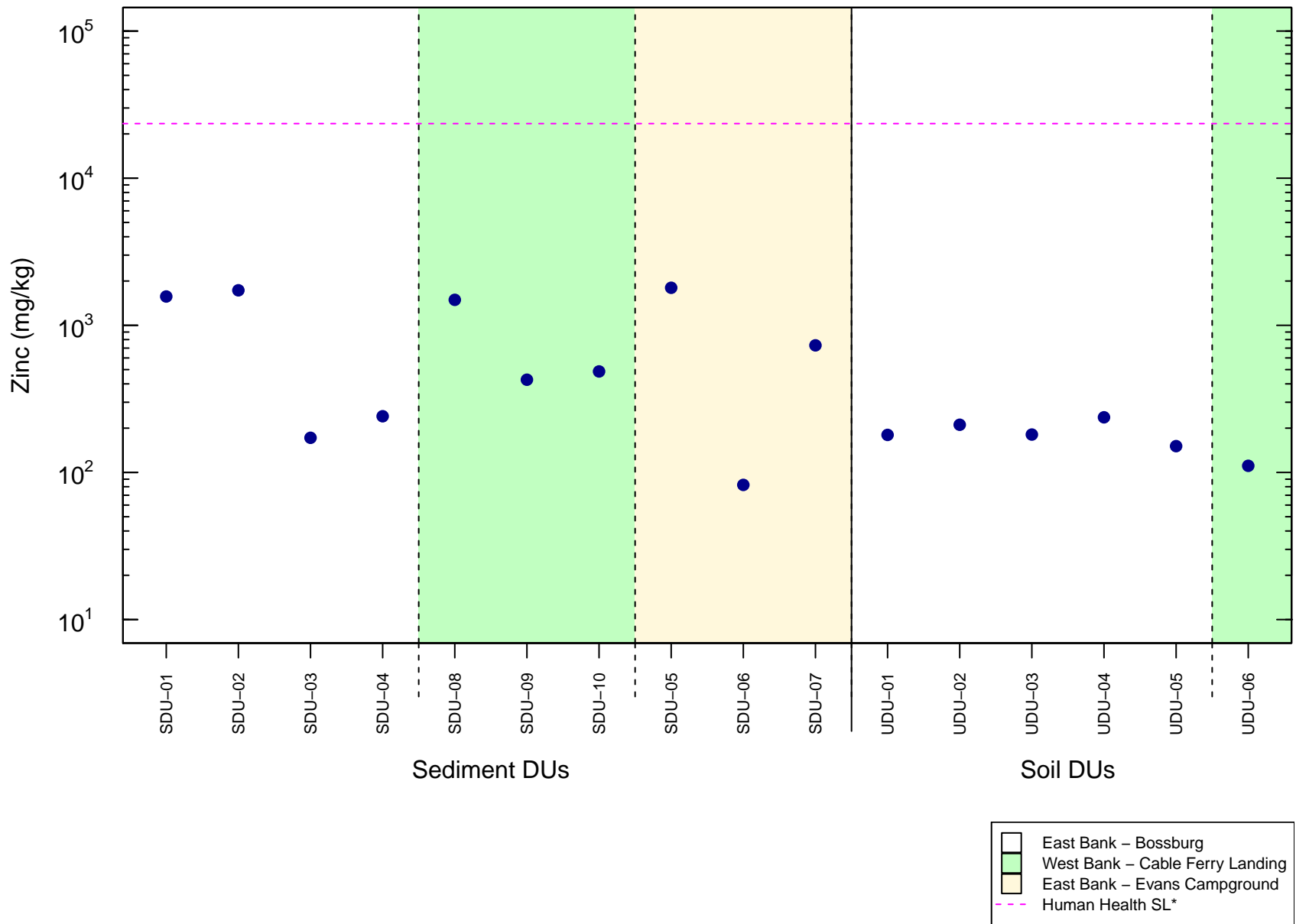
Figure 5-5u. Thallium Concentrations in < 250- μ m Sediment and < 150- μ m Soil Fractions of ICS Samples



*Human health SL for vanadium is 394 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

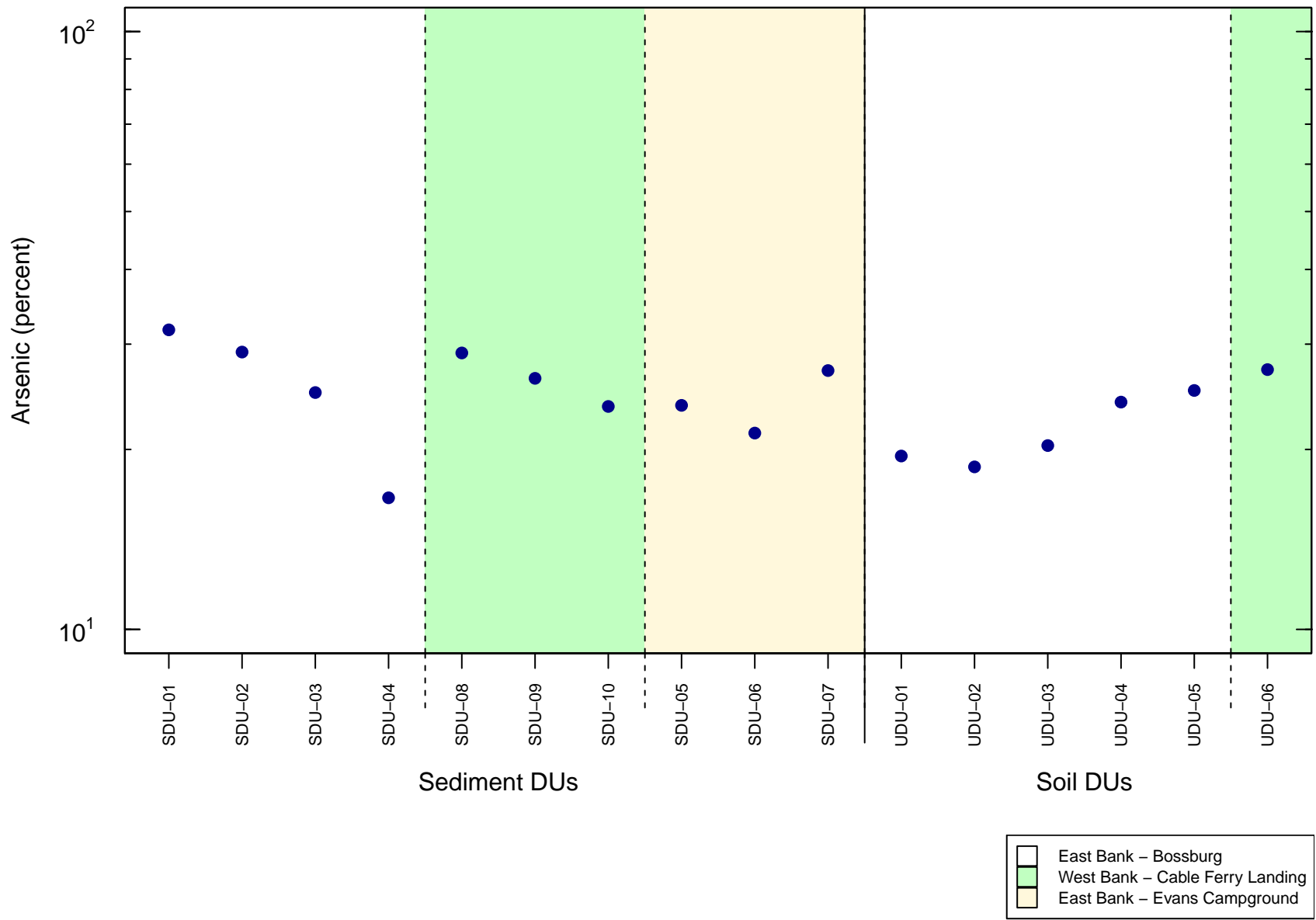
Figure 5-5v. Vanadium Concentrations in < 250- μ m Sediment and < 150- μ m Soil Fractions of ICS Samples



*Human health SL for zinc is 23,500 mg/kg

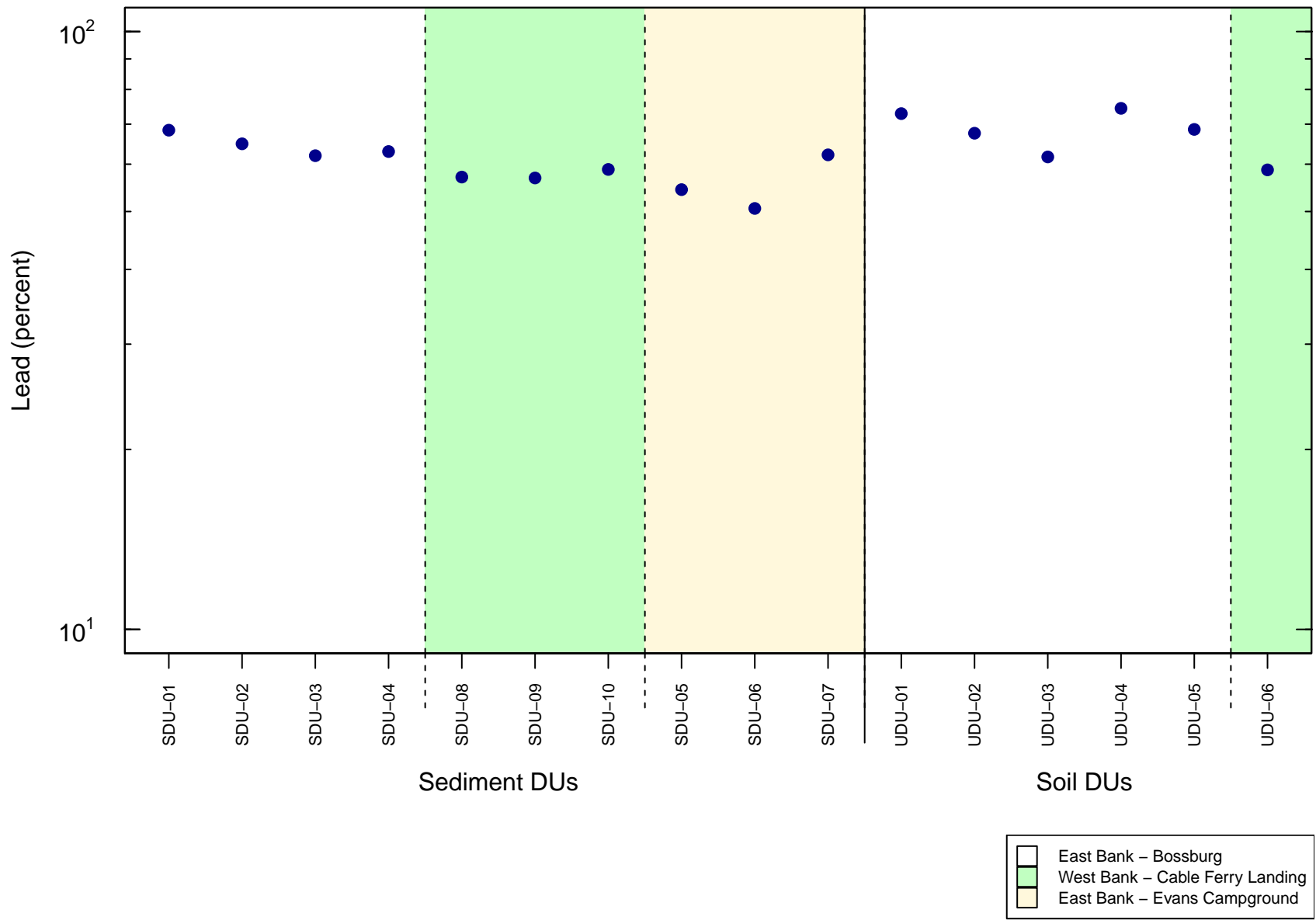
Decision Units are presented upstream to downstream within an area of the Site.

Figure 5–5w. Zinc Concentrations in < 250–µm Sediment and < 150–µm Soil Fractions of ICS Samples



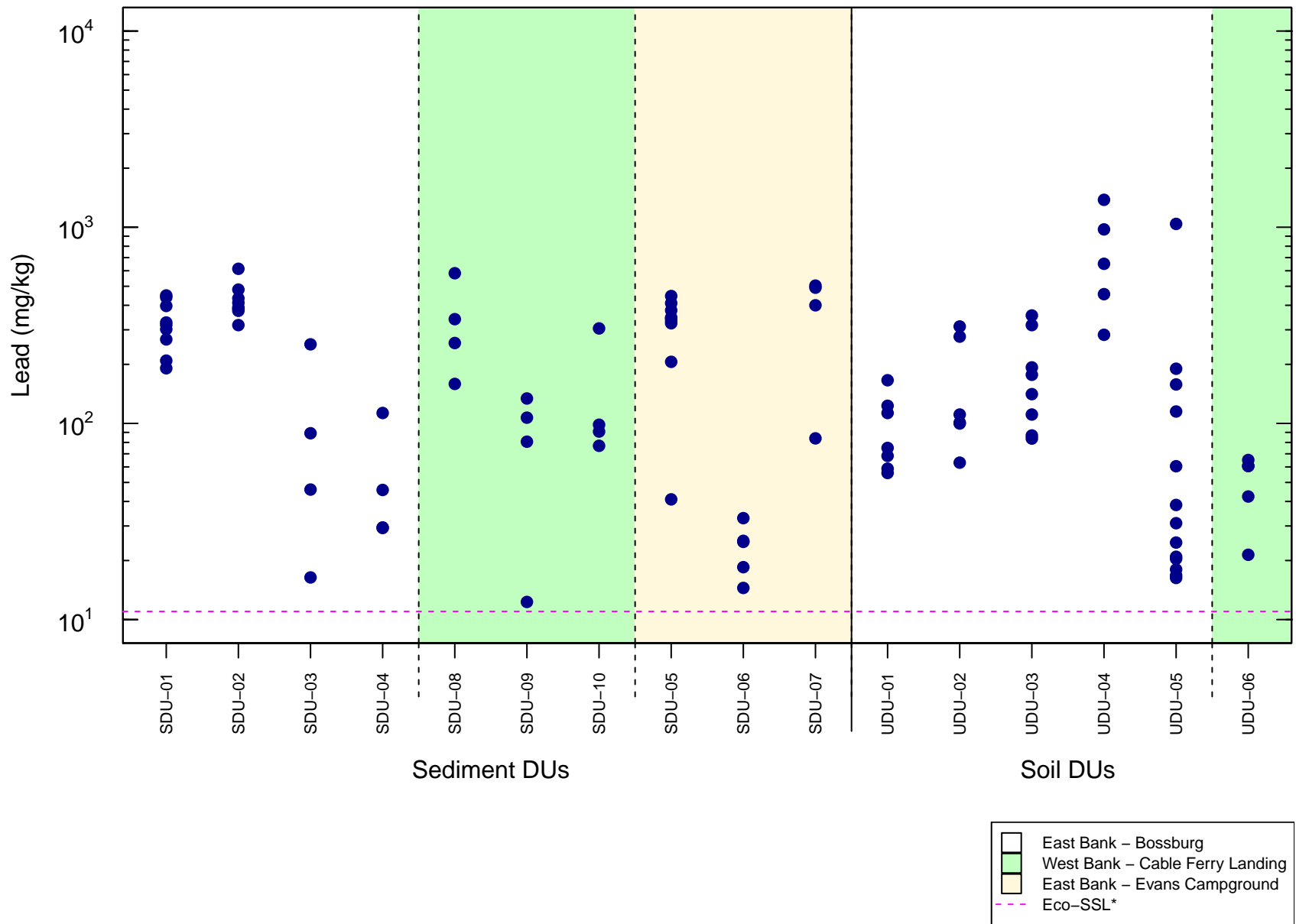
Decision Units are presented upstream to downstream within an area of the Site.

Figure 5-6a. Percent Bioaccessible Arsenic in < 250- μ m Sediment and < 150- μ m Soil Fractions of ICS Samples



Decision Units are presented upstream to downstream within an area of the Site.

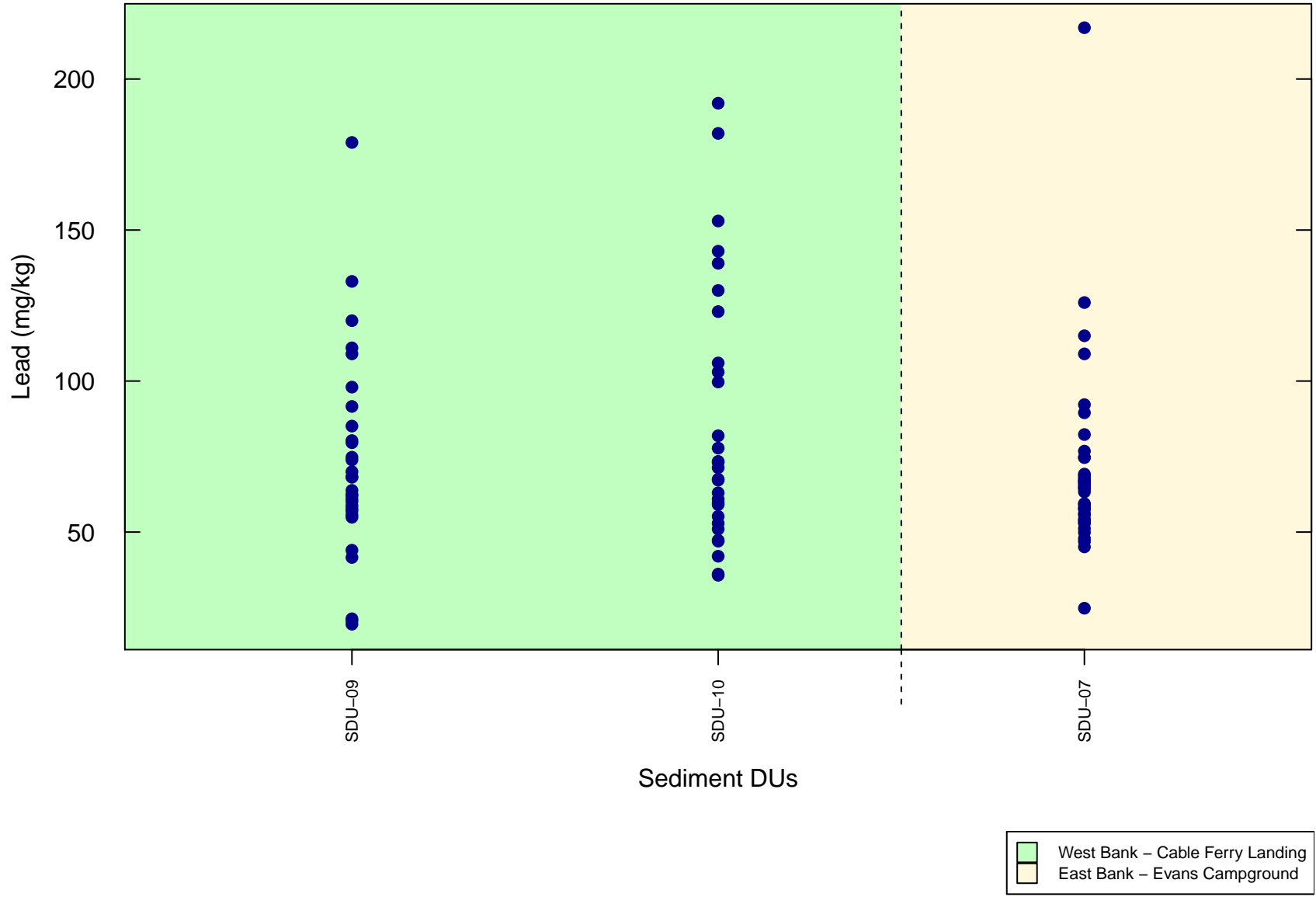
Figure 5-6b. Percent Bioaccessible Lead in < 250-µm Sediment and < 150-µm Soil Fractions of ICS Samples



*Eco-SSL for lead is 11 mg/kg

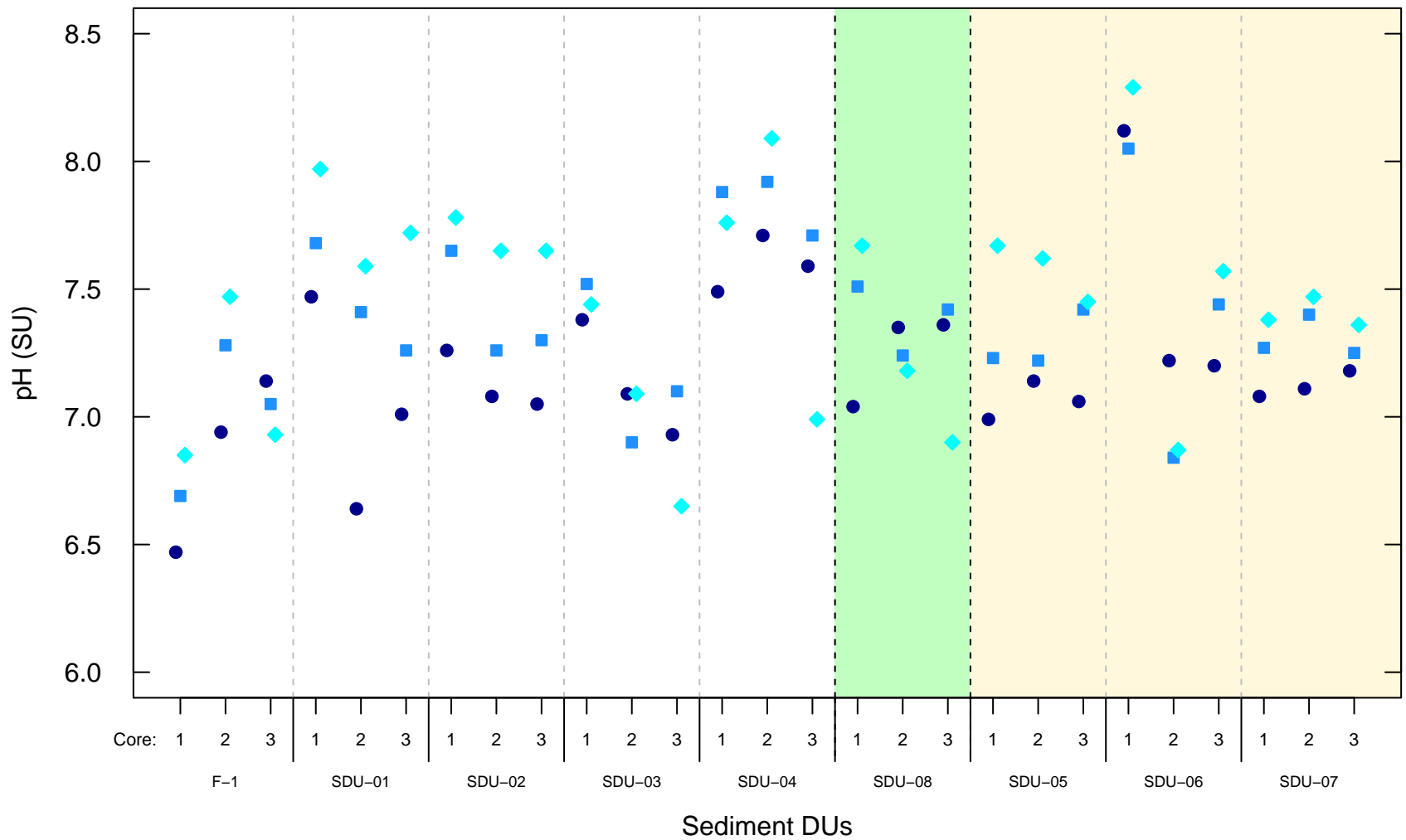
Decision Units are presented upstream to downstream within an area of the Site.

Figure 5-7. Lead Concentrations in < 2-mm Sediment and Soil Fractions Measured in Field Laboratory Using XRF Analyzer



Decision Units are presented upstream to downstream within an area of the Site.

Figure 5-8. Lead Concentrations Measured In Situ Using XRF Analyzer

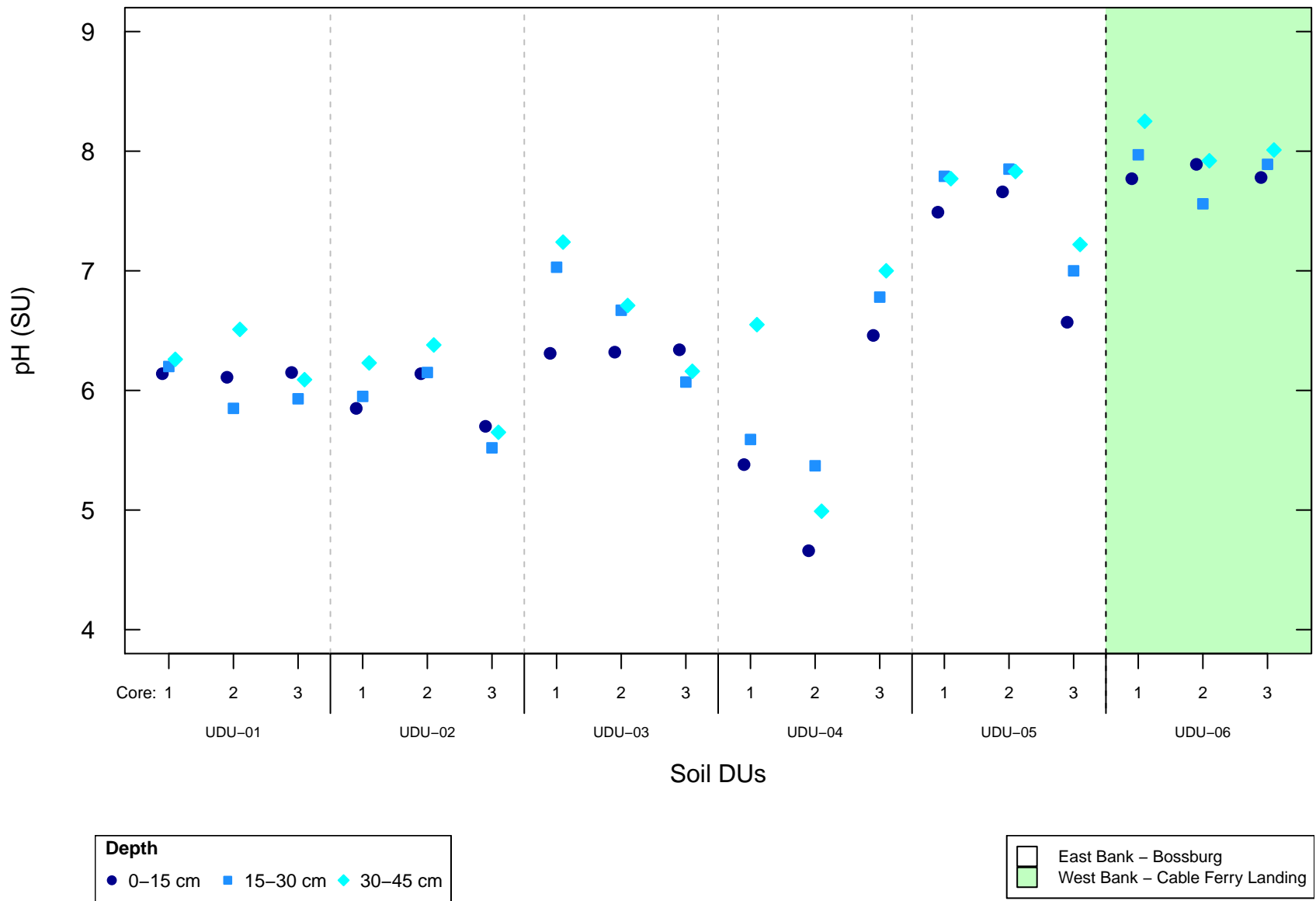


Depth
 ● 0-15 cm ■ 15-30 cm ◆ 30-45 cm

□ East Bank - Bossburg
 ■ West Bank - Cable Ferry Landing
 ■ East Bank - Evans Campground

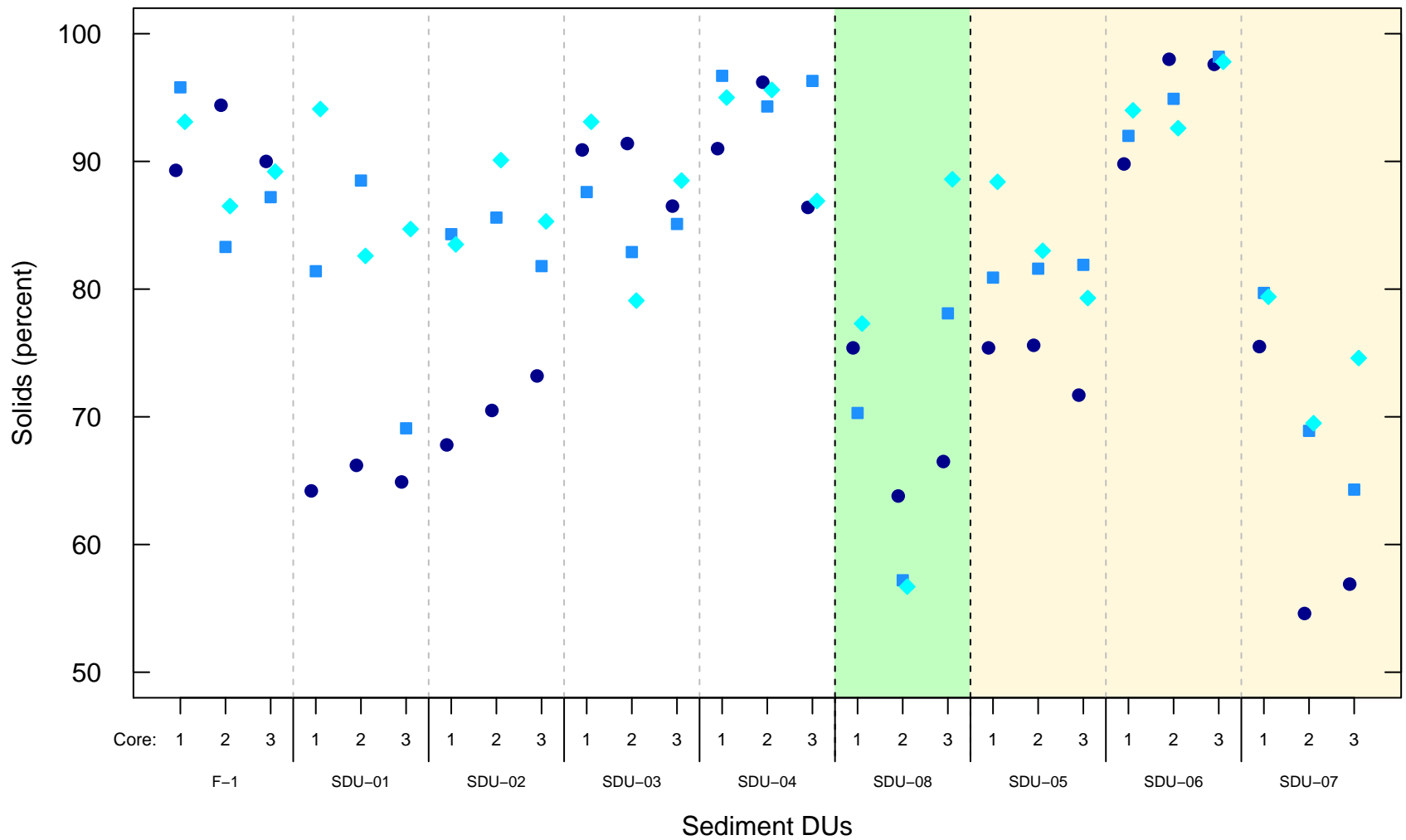
Decision Units are presented upstream to downstream within an area of the Site.

Figure 5-9a. pH in Bulk Sediment Core Samples



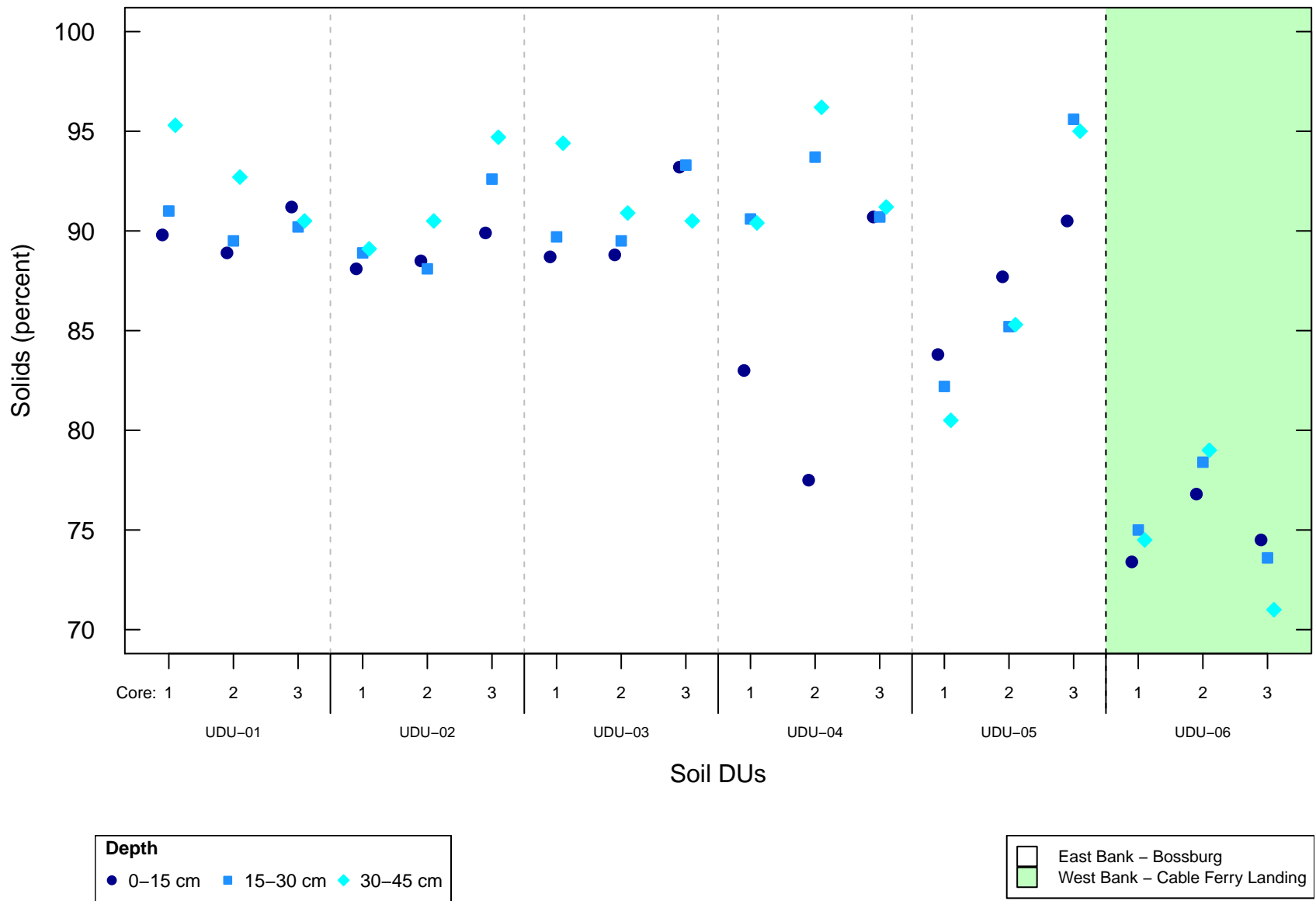
Decision Units are presented upstream to downstream within an area of the Site.

Figure 5-9b. pH in Bulk Soil Core Samples



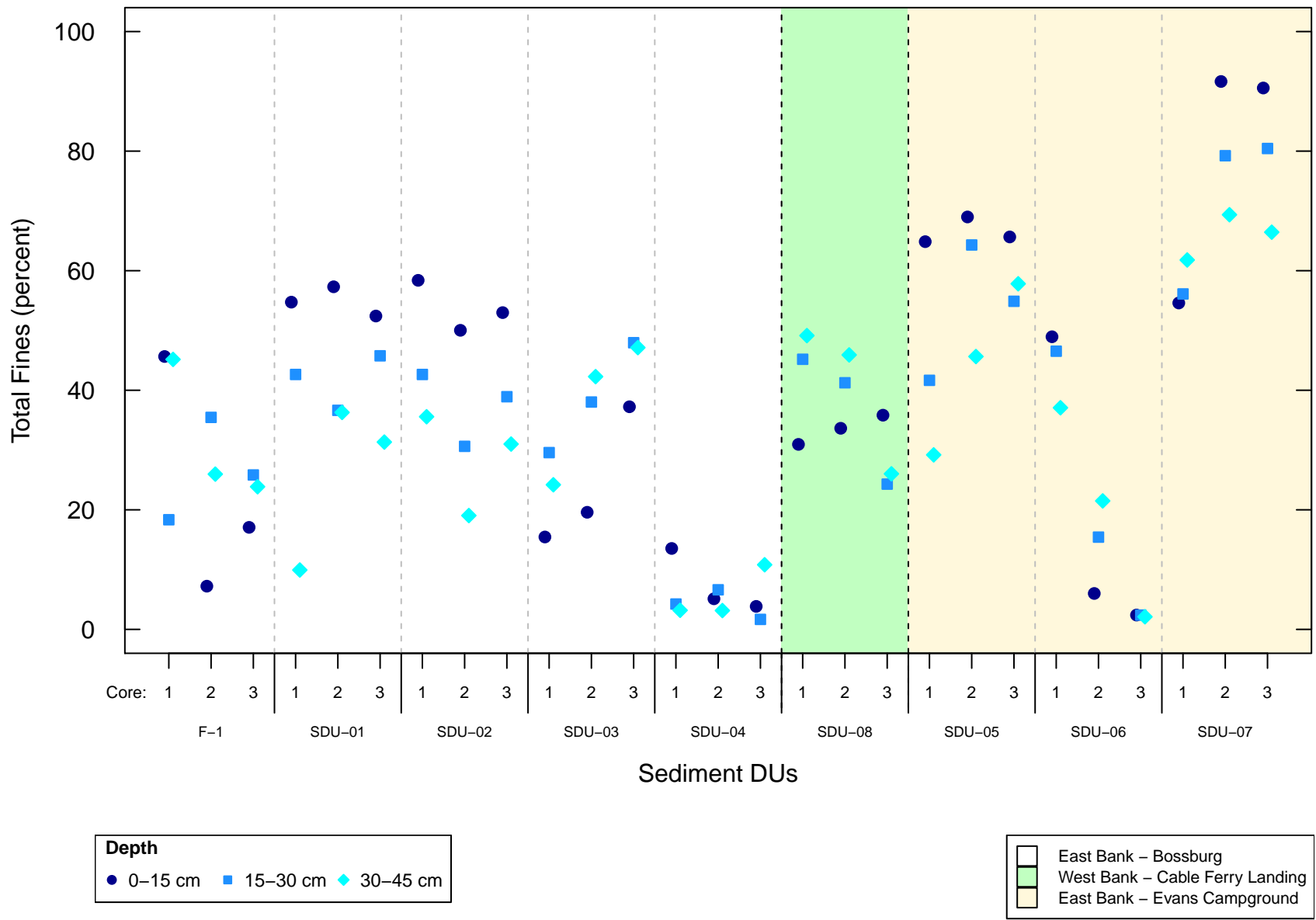
Decision Units are presented upstream to downstream within an area of the Site.

Figure 5–9c. Percent Solids in Bulk Sediment Core Samples



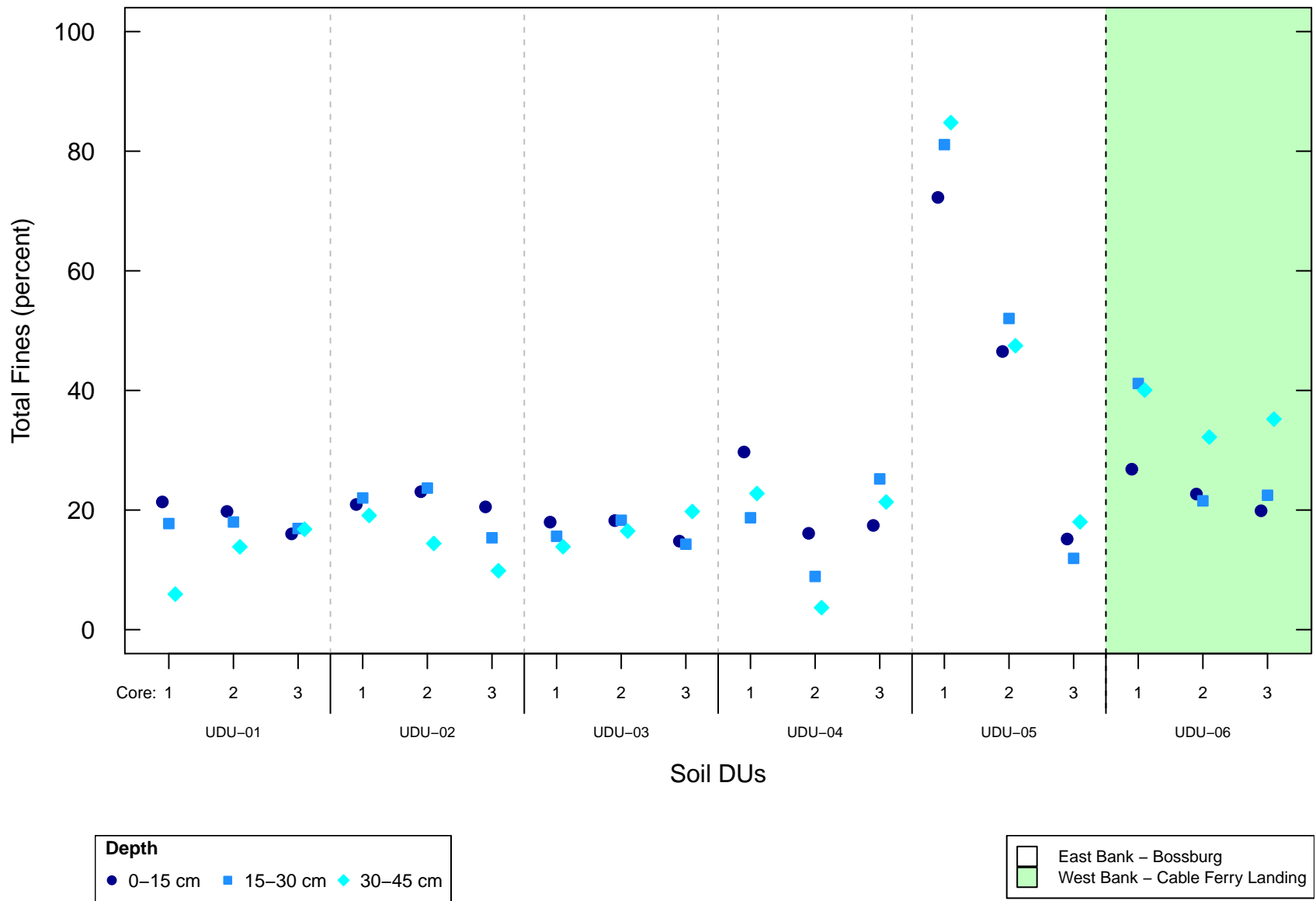
Decision Units are presented upstream to downstream within an area of the Site.

Figure 5–9d. Percent Solids in Bulk Soil Core Samples



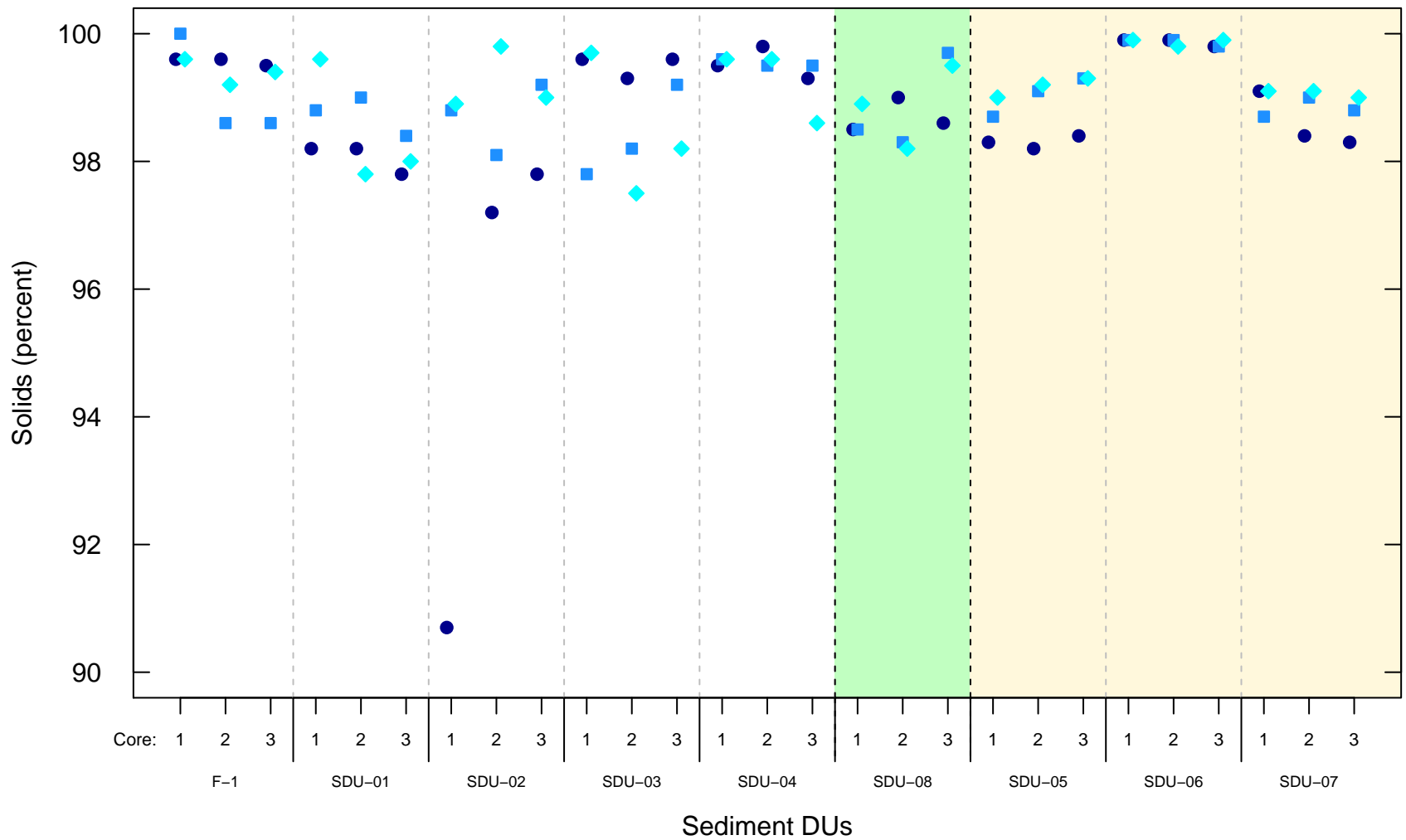
Decision Units are presented upstream to downstream within an area of the Site.

Figure 5–9e. Percent Fines in Bulk Sediment Core Samples



Decision Units are presented upstream to downstream within an area of the Site.

Figure 5–9f. Percent Fines in Bulk Soil Core Samples



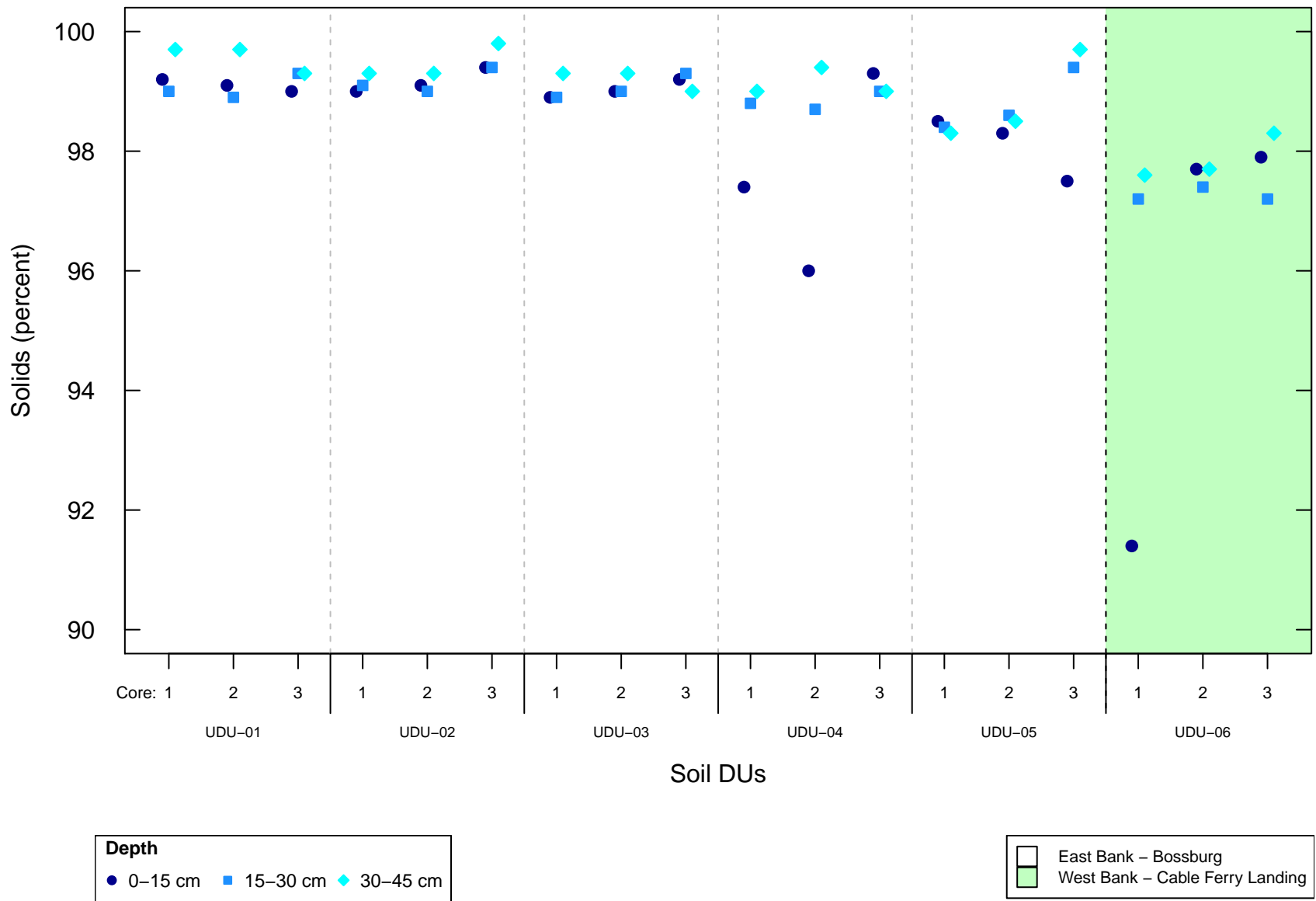
Depth

- 0–15 cm
- 15–30 cm
- ◆ 30–45 cm

- East Bank – Bossburg
- West Bank – Cable Ferry Landing
- East Bank – Evans Campground

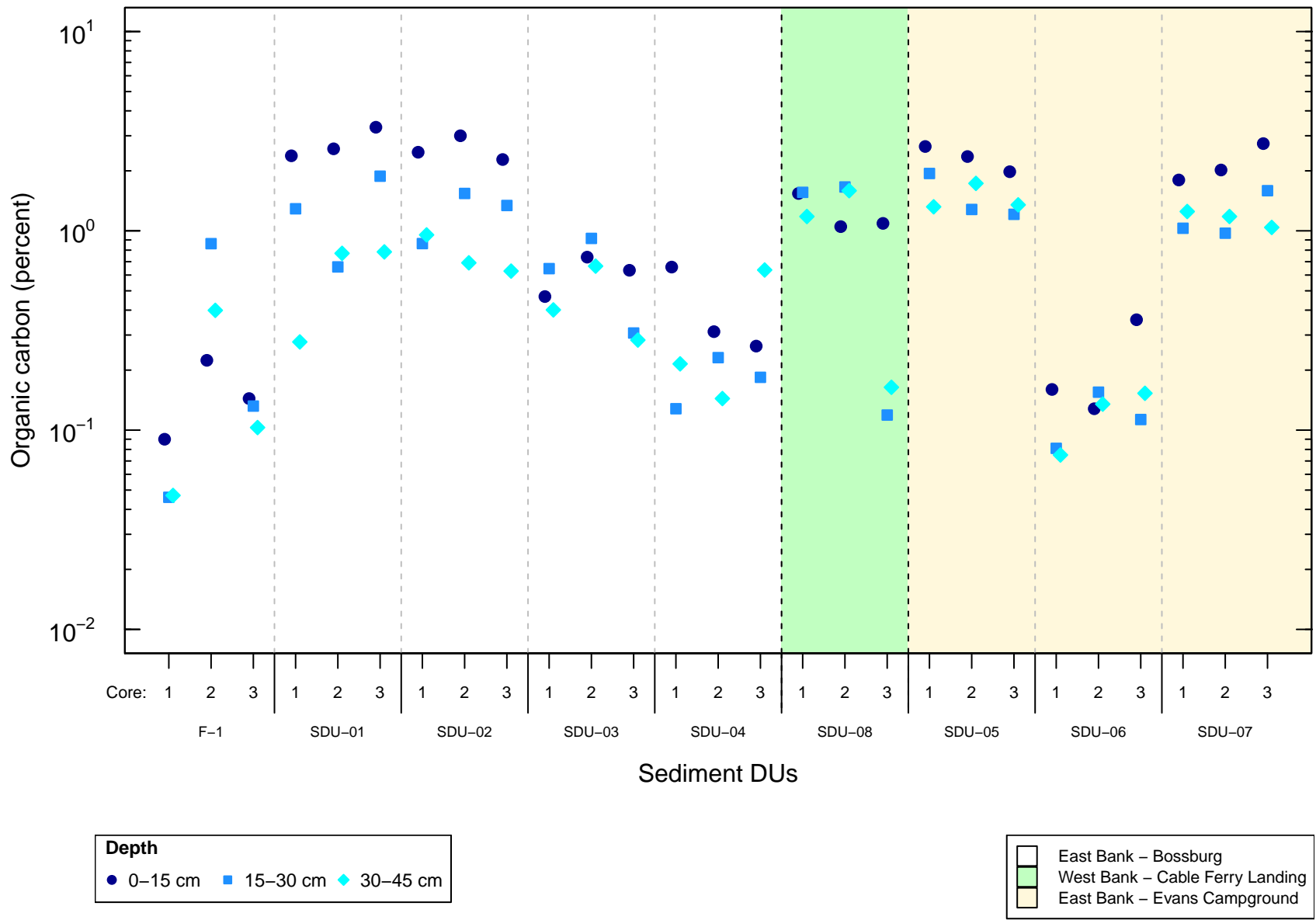
Decision Units are presented upstream to downstream within an area of the Site.

Figure 5–10a. Percent Solids in <2–mm Sediment Fractions of Core Samples



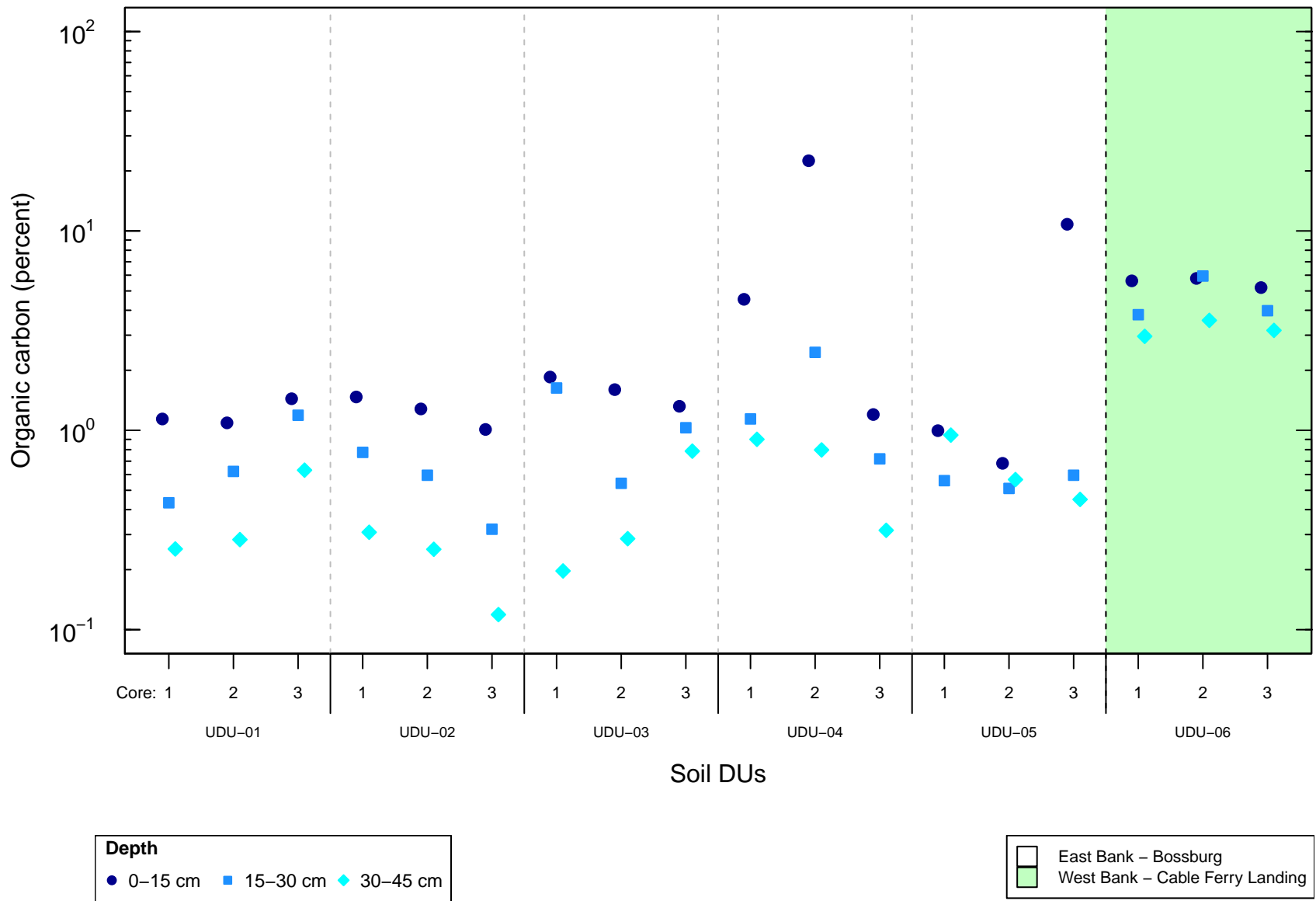
Decision Units are presented upstream to downstream within an area of the Site.

Figure 5-10b. Percent Solids in <2-mm Soil Fractions of Core Samples



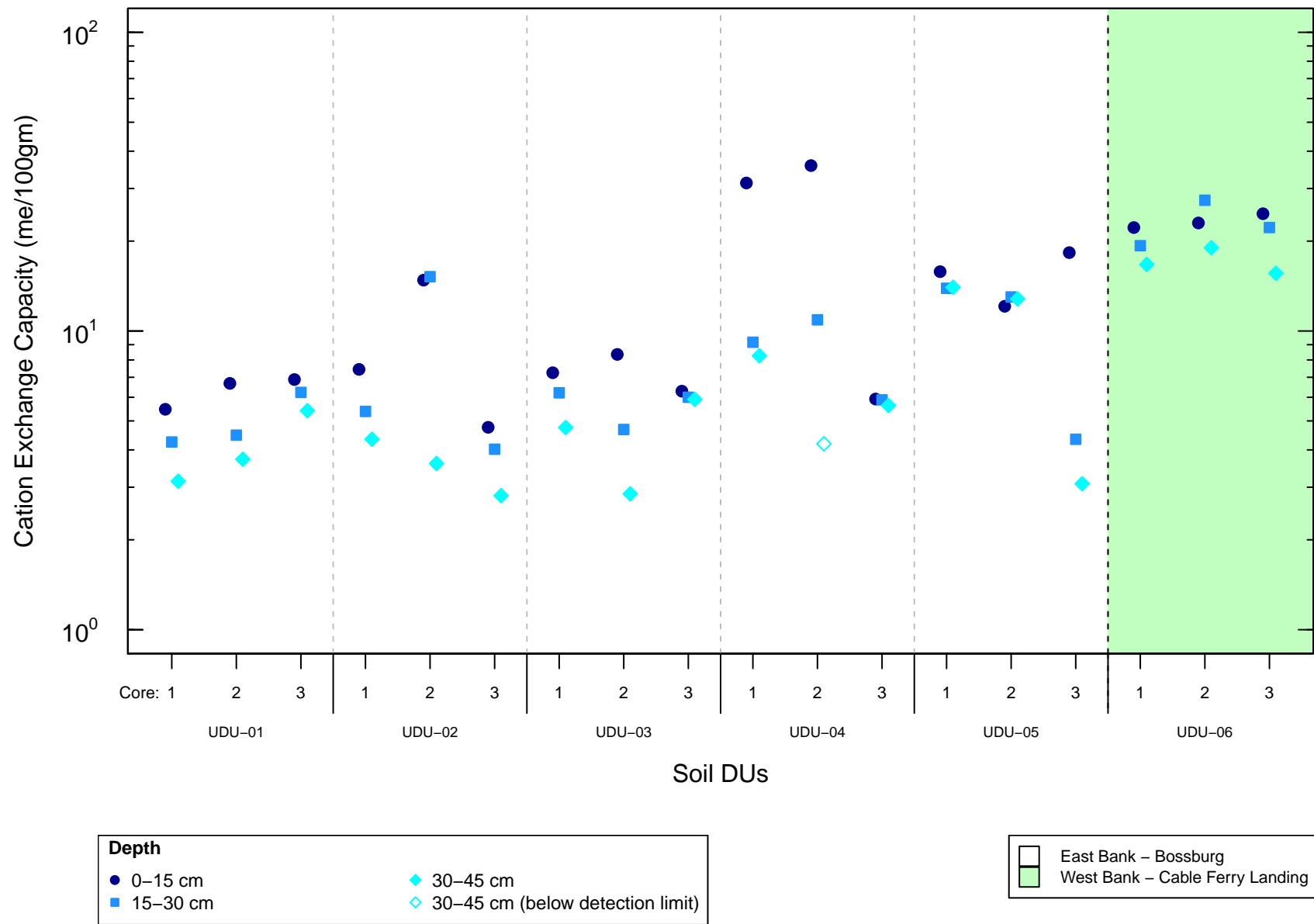
Decision Units are presented upstream to downstream within an area of the Site.

Figure 5-10c. Organic Carbon in <2-mm Sediment Fractions of Core Samples



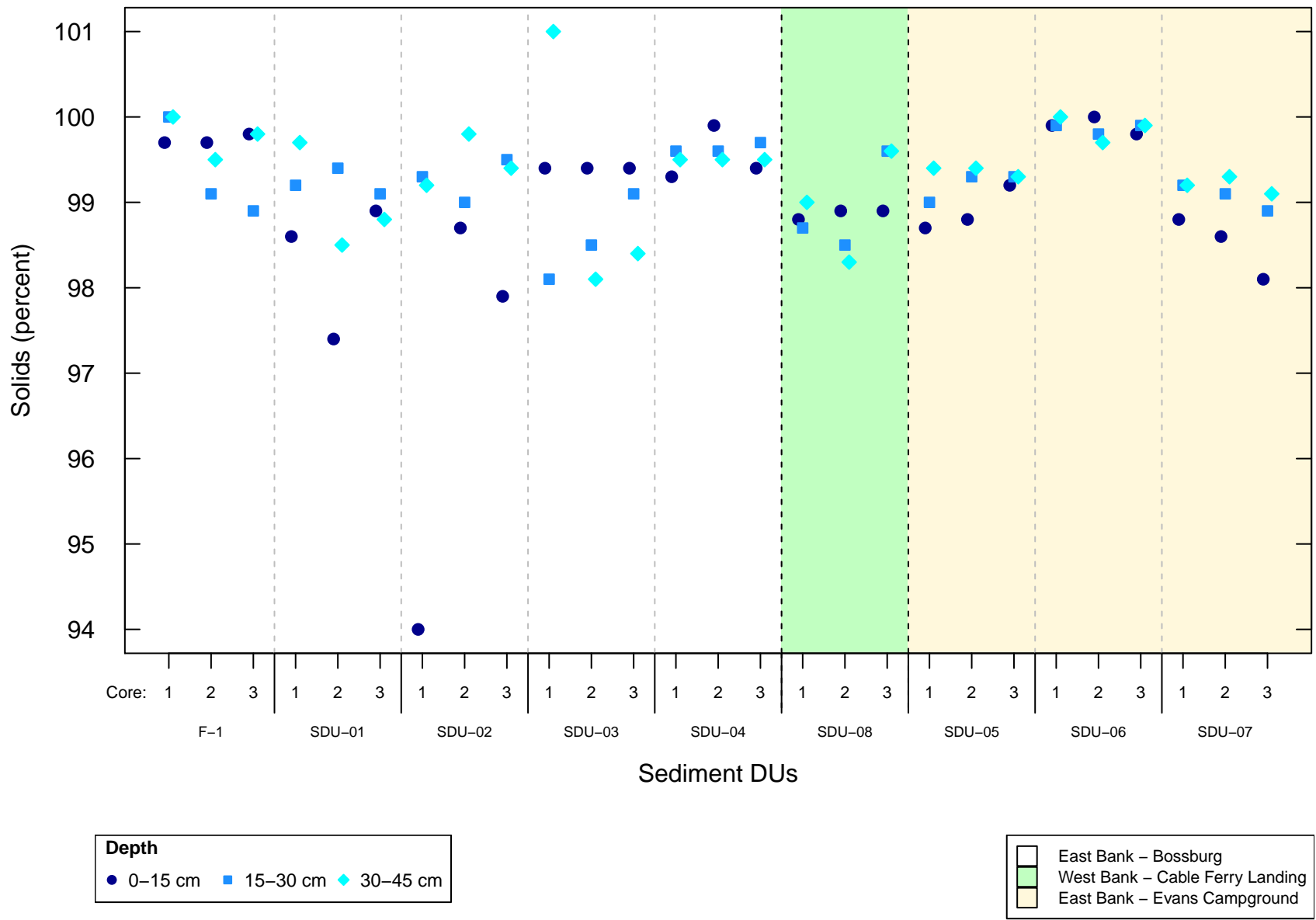
Decision Units are presented upstream to downstream within an area of the Site.

Figure 5-10d. Organic Carbon in < 2-mm Soil Fractions of Core Samples



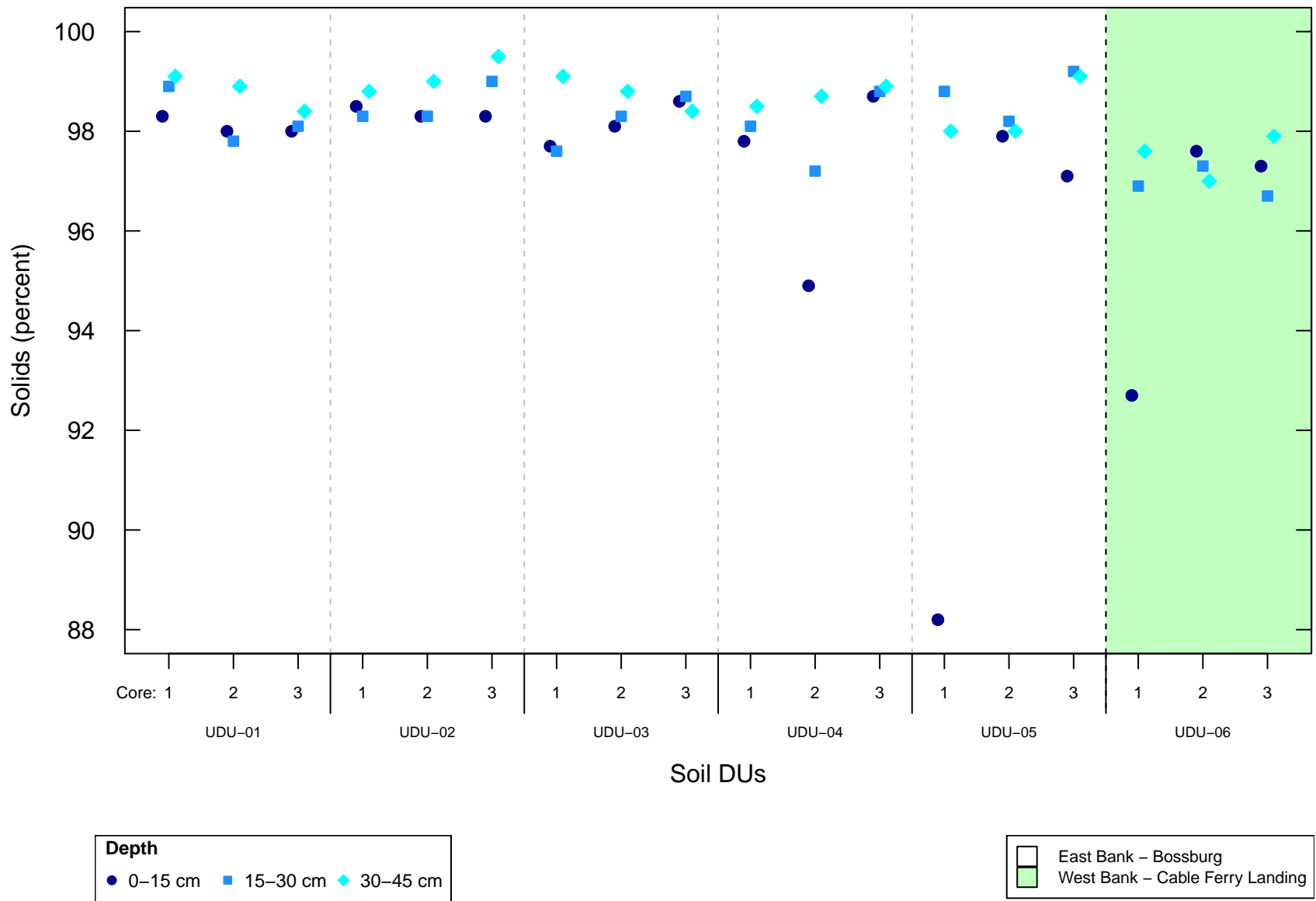
Decision Units are presented upstream to downstream within an area of the Site.

Figure 5–10e. Cation Exchange Capacity in < 2–mm Soil Fractions of Core Samples



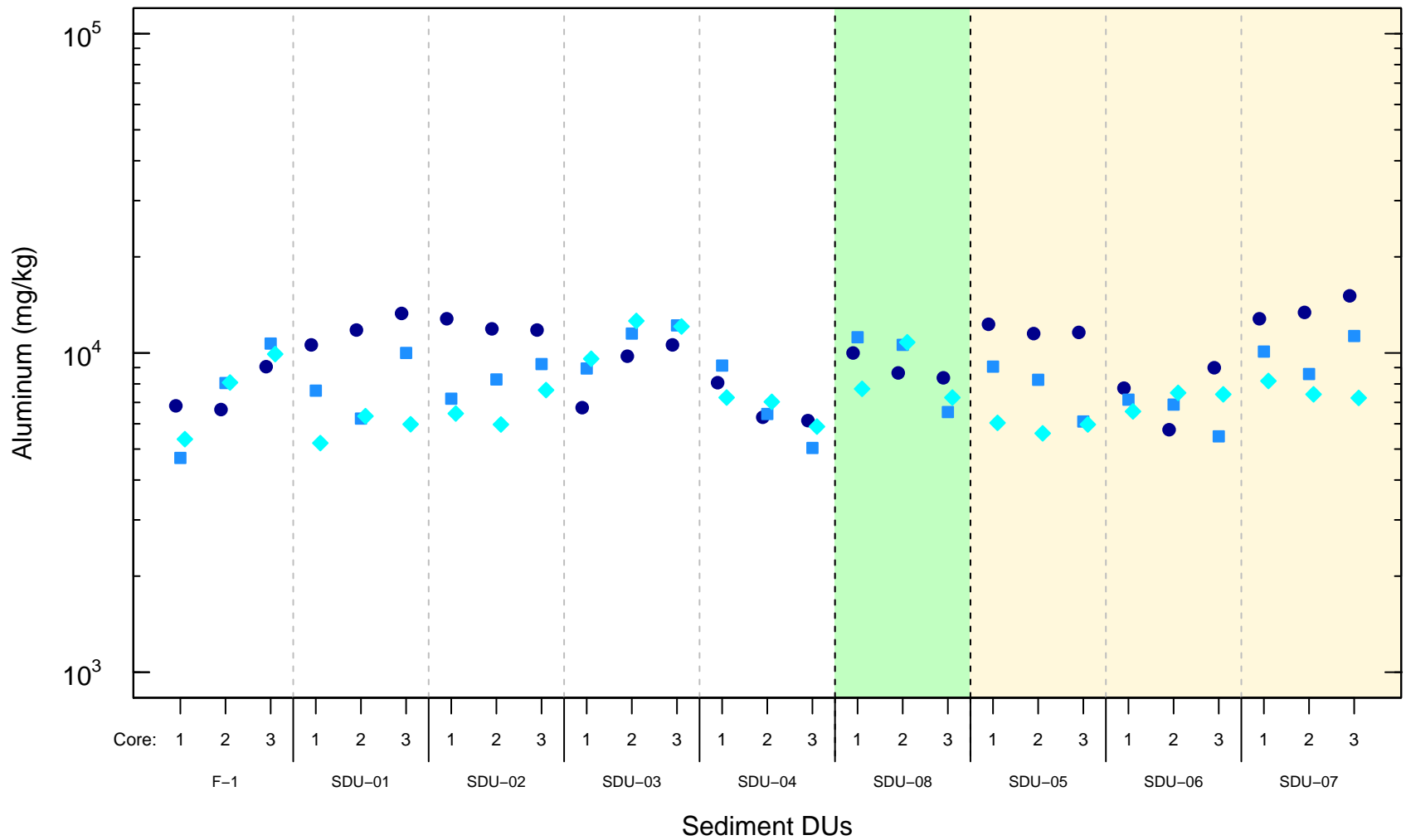
Decision Units are presented upstream to downstream within an area of the Site.

Figure 5–11a. Percent solids in < 250–µm Sediment Fractions of Core Samples



Decision Units are presented upstream to downstream within an area of the Site.

Figure 5–11b. Percent solids in < 150- μ m Soil Fractions of Core Samples



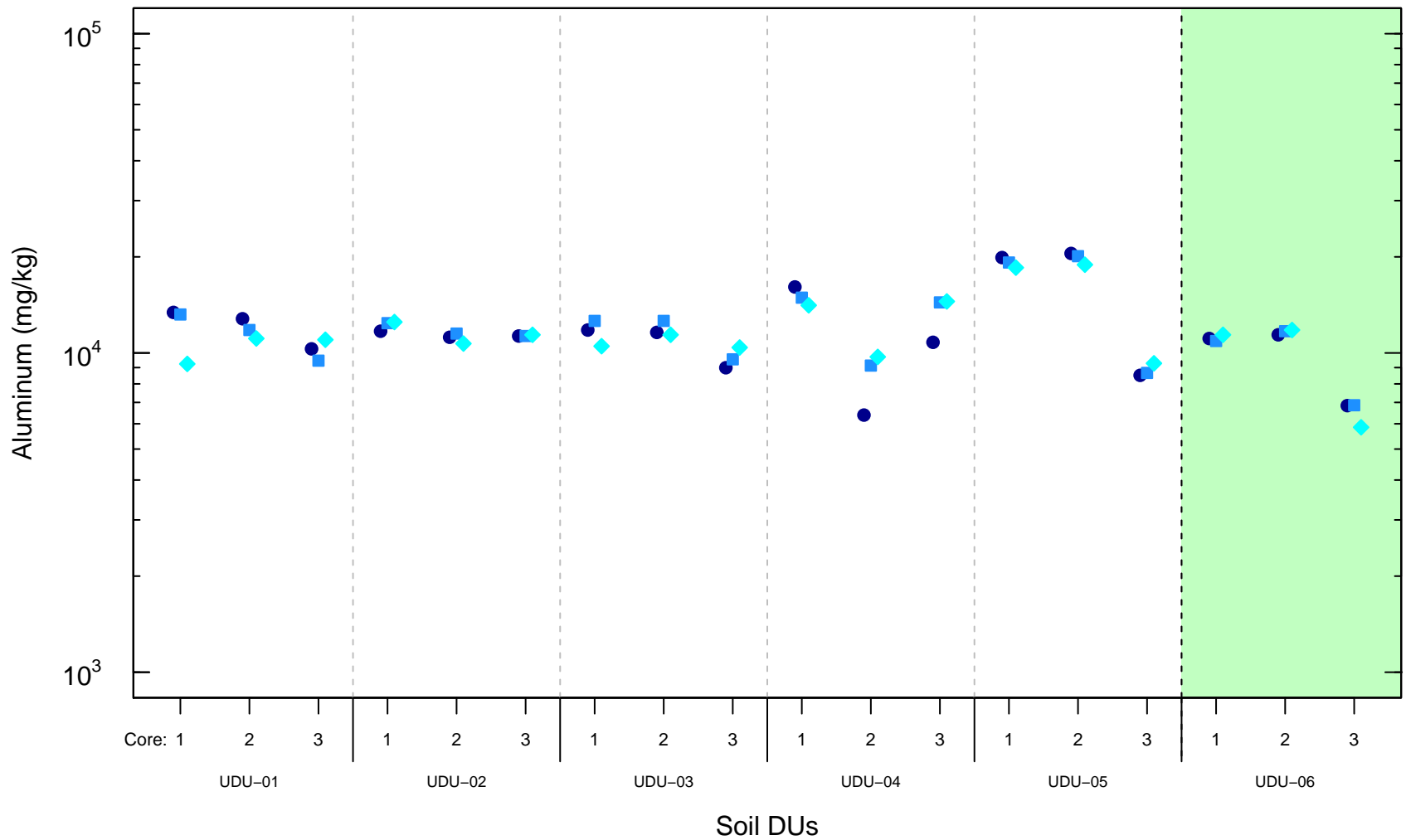
Depth
 ● 0–15 cm ■ 15–30 cm ◆ 30–45 cm

□ East Bank – Bossburg
 ■ West Bank – Cable Ferry Landing
 ■ East Bank – Evans Campground
 - - - Eco-SSL*

*No Eco-SSL is available for aluminum

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5–12a. Aluminum Concentrations in <2–mm Sediment Fractions of Core Samples



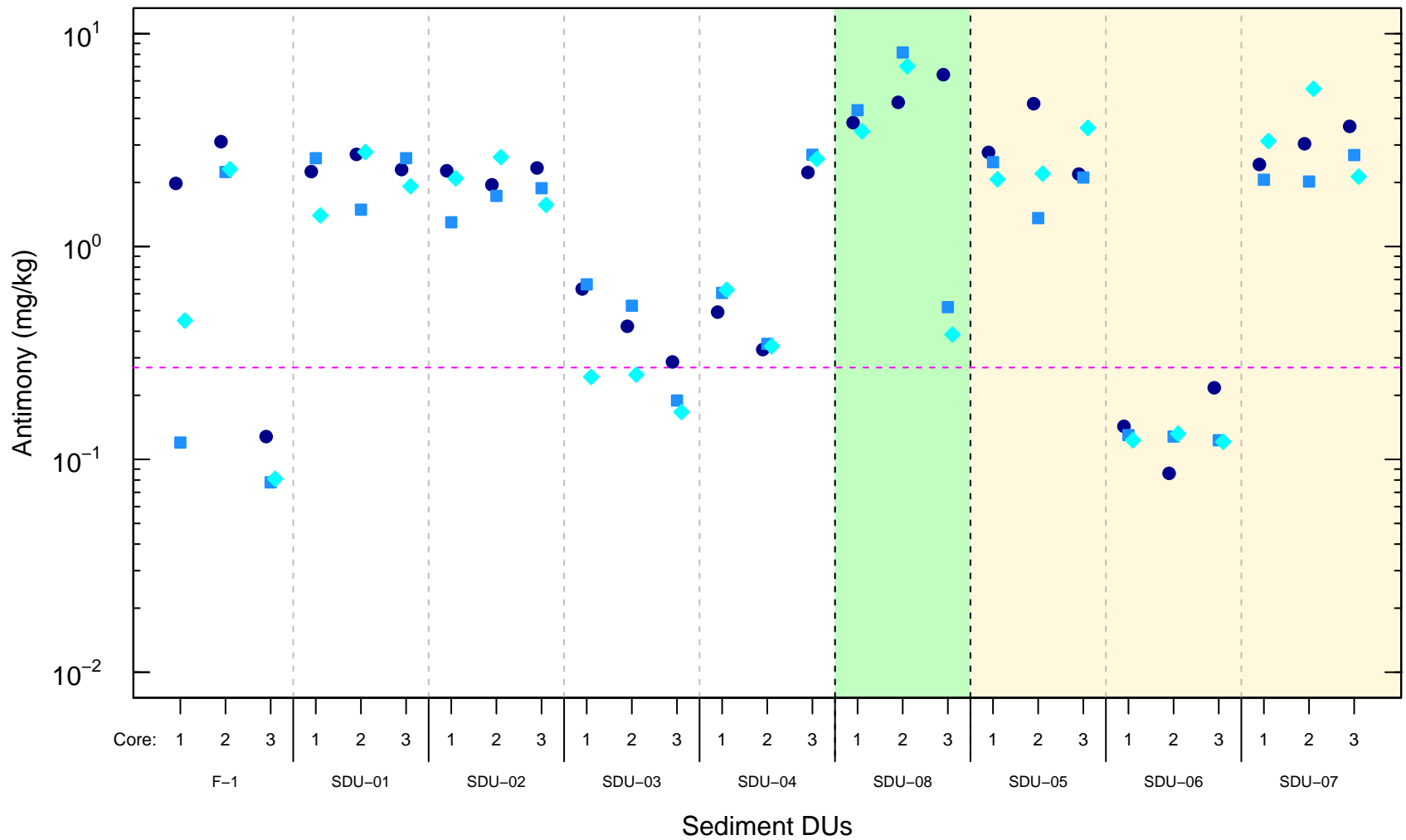
Depth
 ● 0–15 cm ■ 15–30 cm ◆ 30–45 cm

□ East Bank – Bossburg
 ■ West Bank – Cable Ferry Landing
 - - - Eco-SSL*

*No Eco-SSL is available for aluminum

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5–12b. Aluminum Concentrations in < 2–mm Soil Fractions of Core Samples



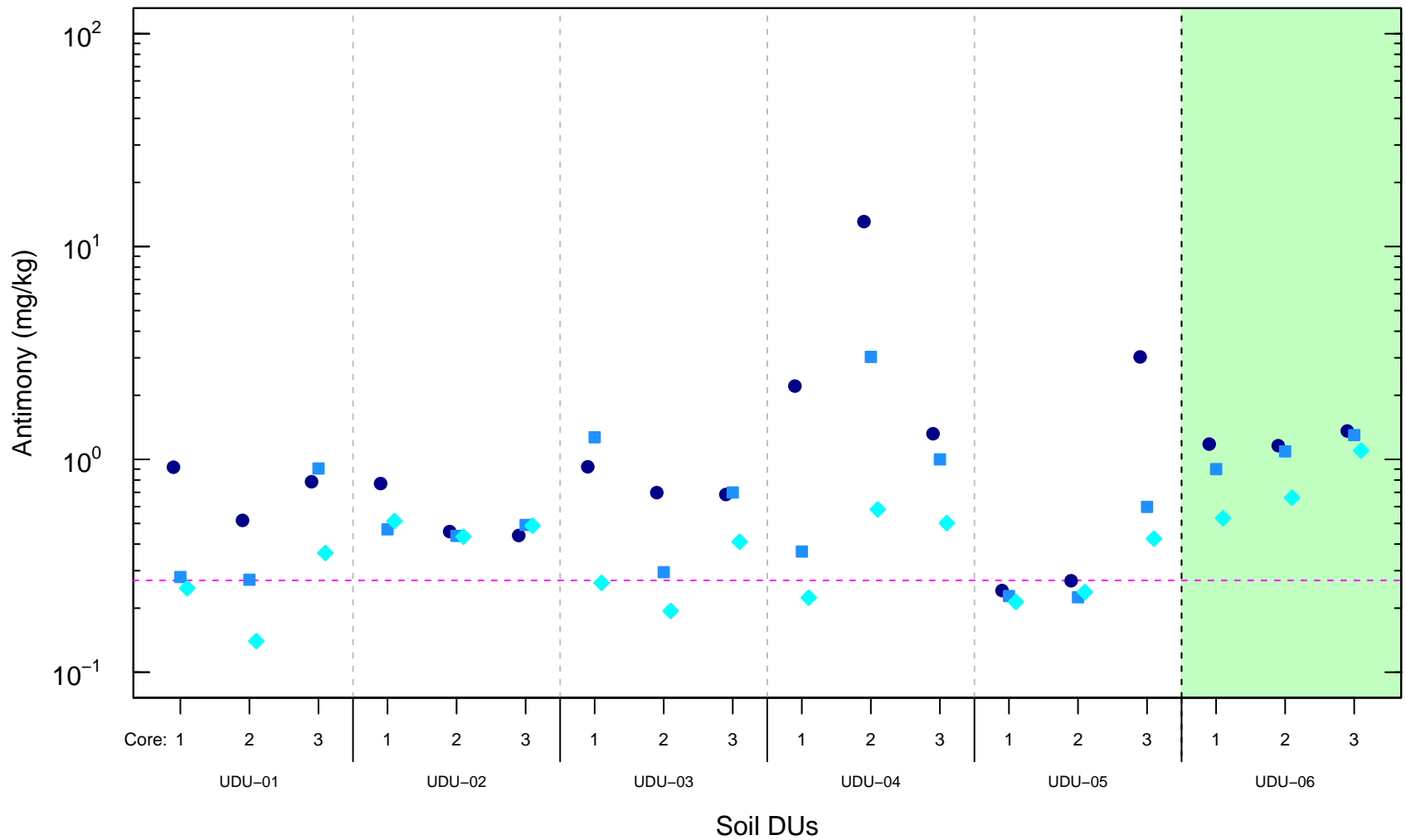
Depth
 ● 0–15 cm ■ 15–30 cm ◆ 30–45 cm

□ East Bank – Bossburg
 ■ West Bank – Cable Ferry Landing
 ■ East Bank – Evans Campground
 - - - Eco-SSL*

*Eco-SSL for antimony is 0.27 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5–12c. Antimony Concentrations in < 2–mm Sediment Fractions of Core Samples



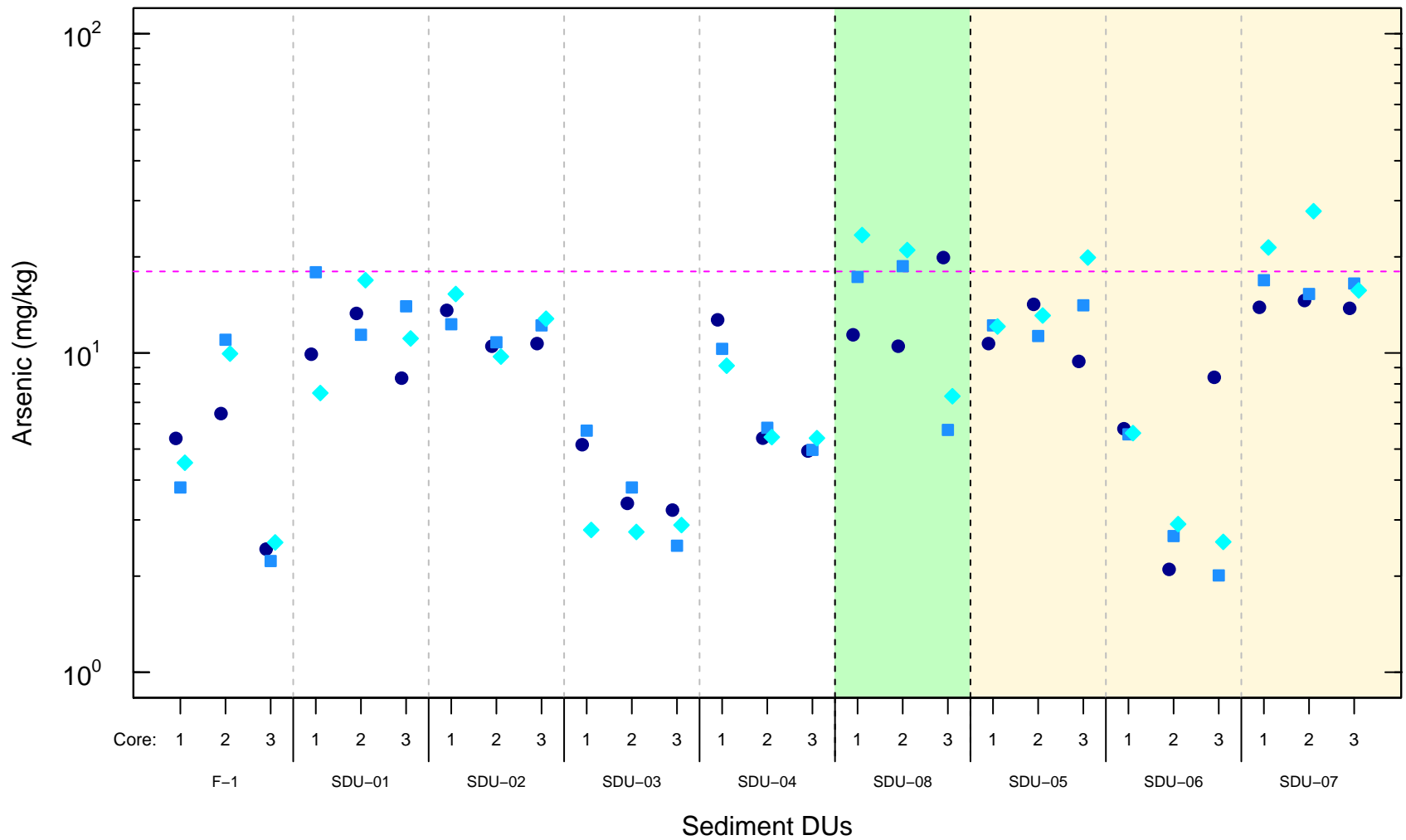
Depth
 ● 0-15 cm ■ 15-30 cm ◆ 30-45 cm

□ East Bank – Bossburg
 ■ West Bank – Cable Ferry Landing
 - - - Eco-SSL*

*Eco-SSL for antimony is 0.27 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5-12d. Antimony Concentrations in < 2-mm Soil Fractions of Core Samples



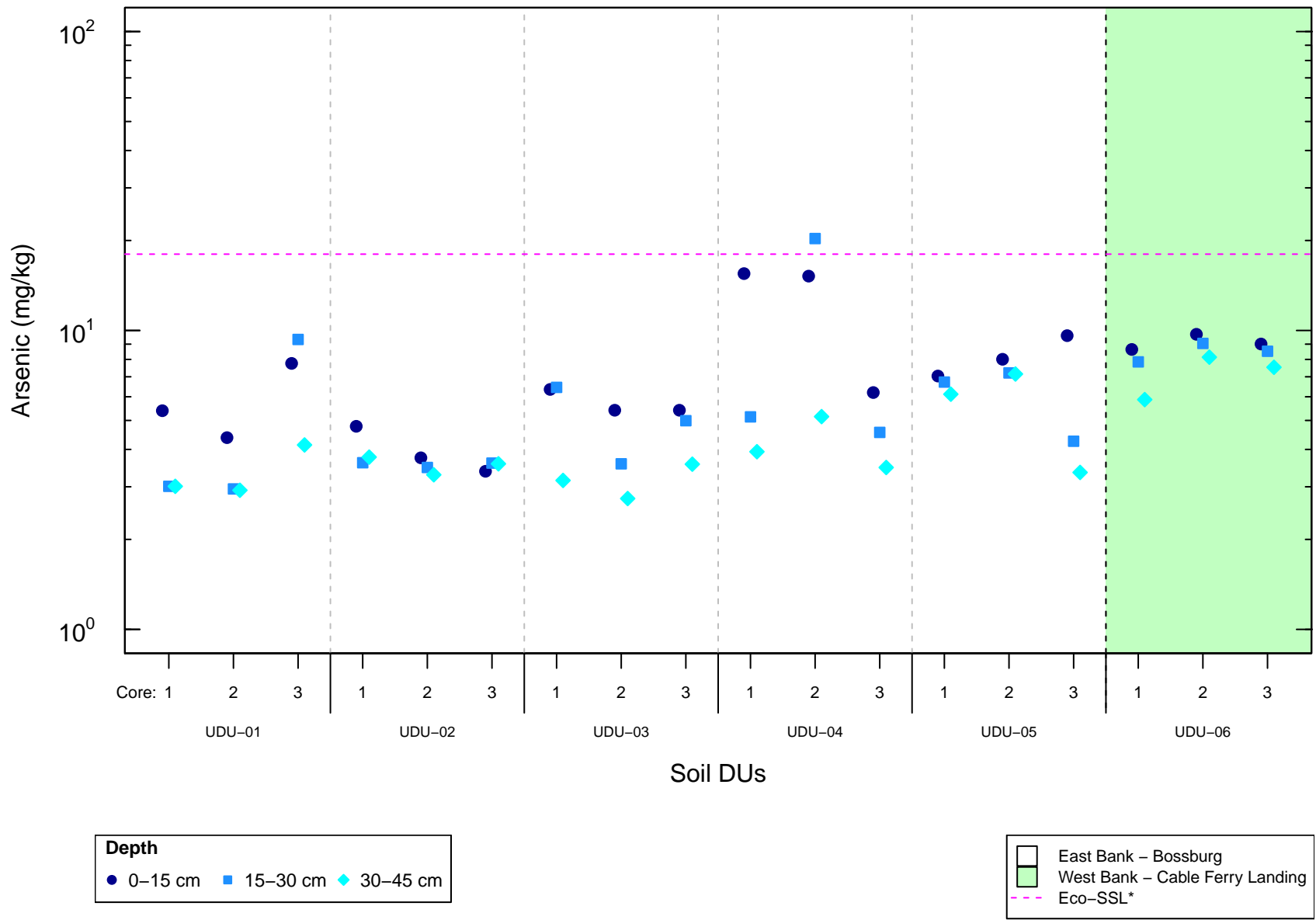
Depth
 ● 0–15 cm ■ 15–30 cm ◆ 30–45 cm

□ East Bank – Bossburg
 ■ West Bank – Cable Ferry Landing
 ■ East Bank – Evans Campground
 - - - Eco-SSL*

*Eco-SSL for arsenic is 18 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

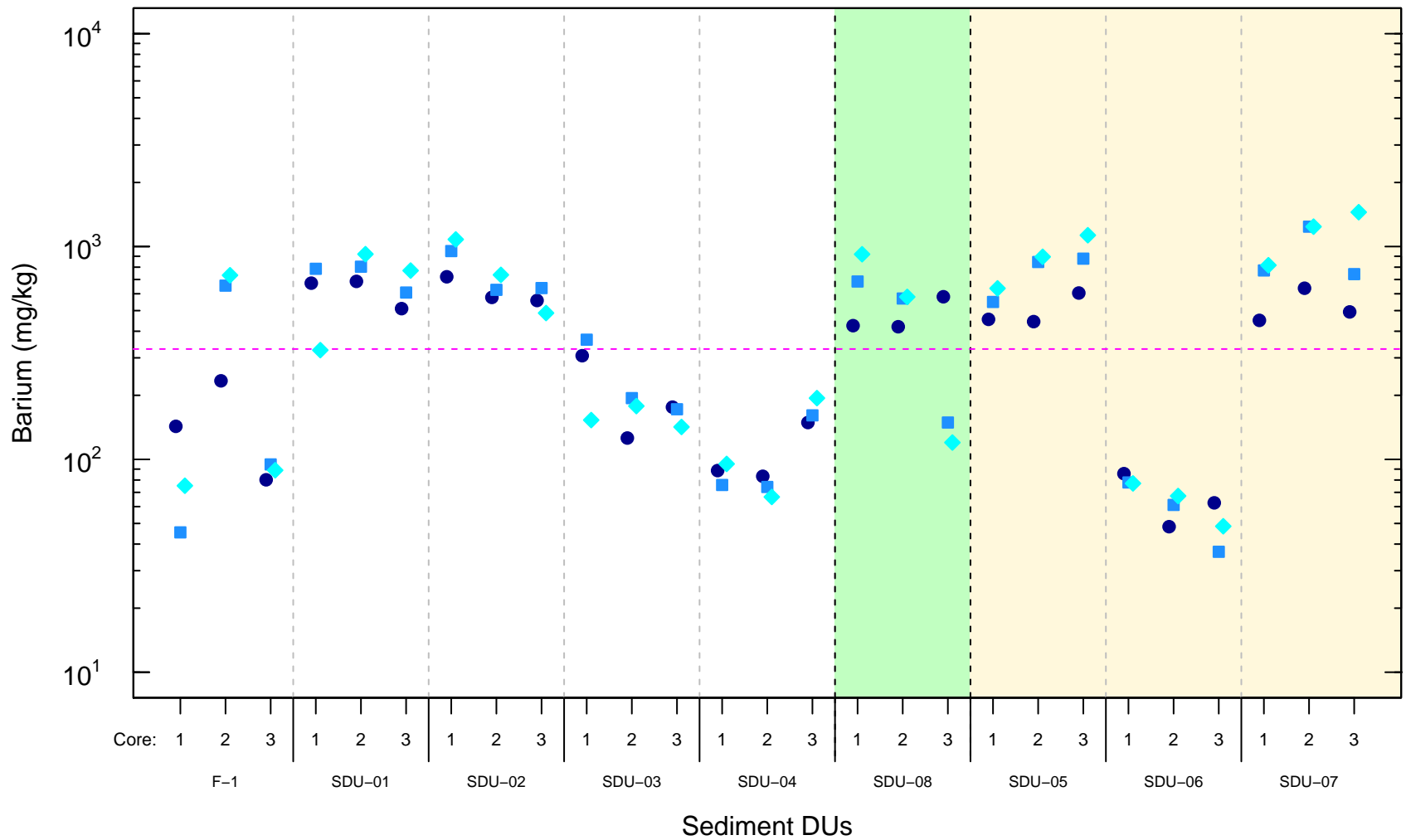
Figure 5–12e. Arsenic Concentrations in < 2–mm Sediment Fractions of Core Samples



*Eco-SSL for arsenic is 18 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5-12f. Arsenic Concentrations in < 2-mm Soil Fractions of Core Samples



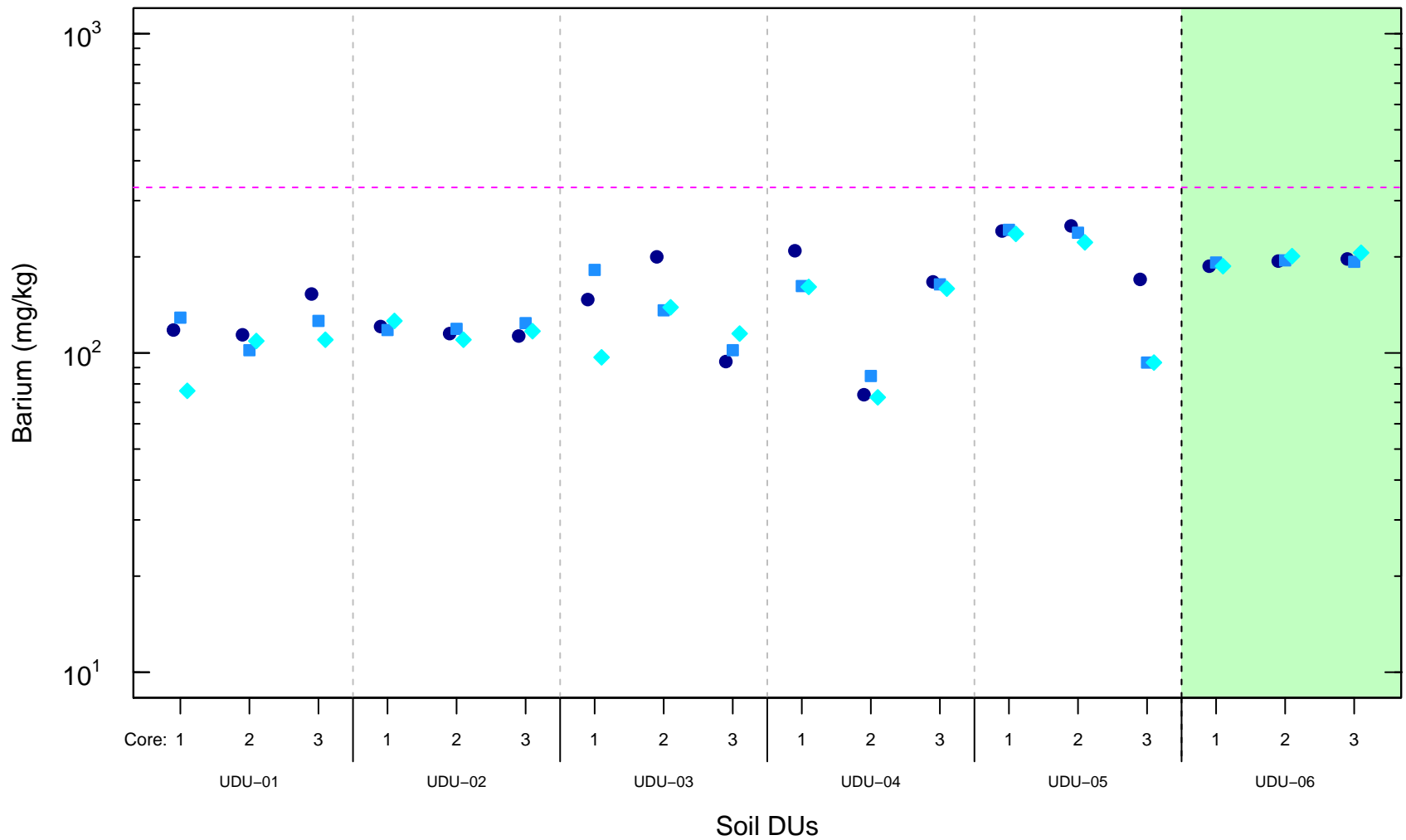
Depth
 ● 0–15 cm ■ 15–30 cm ◆ 30–45 cm

□ East Bank – Bossburg
 ■ West Bank – Cable Ferry Landing
 ■ East Bank – Evans Campground
 - - - Eco-SSL*

*Eco-SSL for barium is 330 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5–12g. Barium Concentrations in <2–mm Sediment Fractions of Core Samples



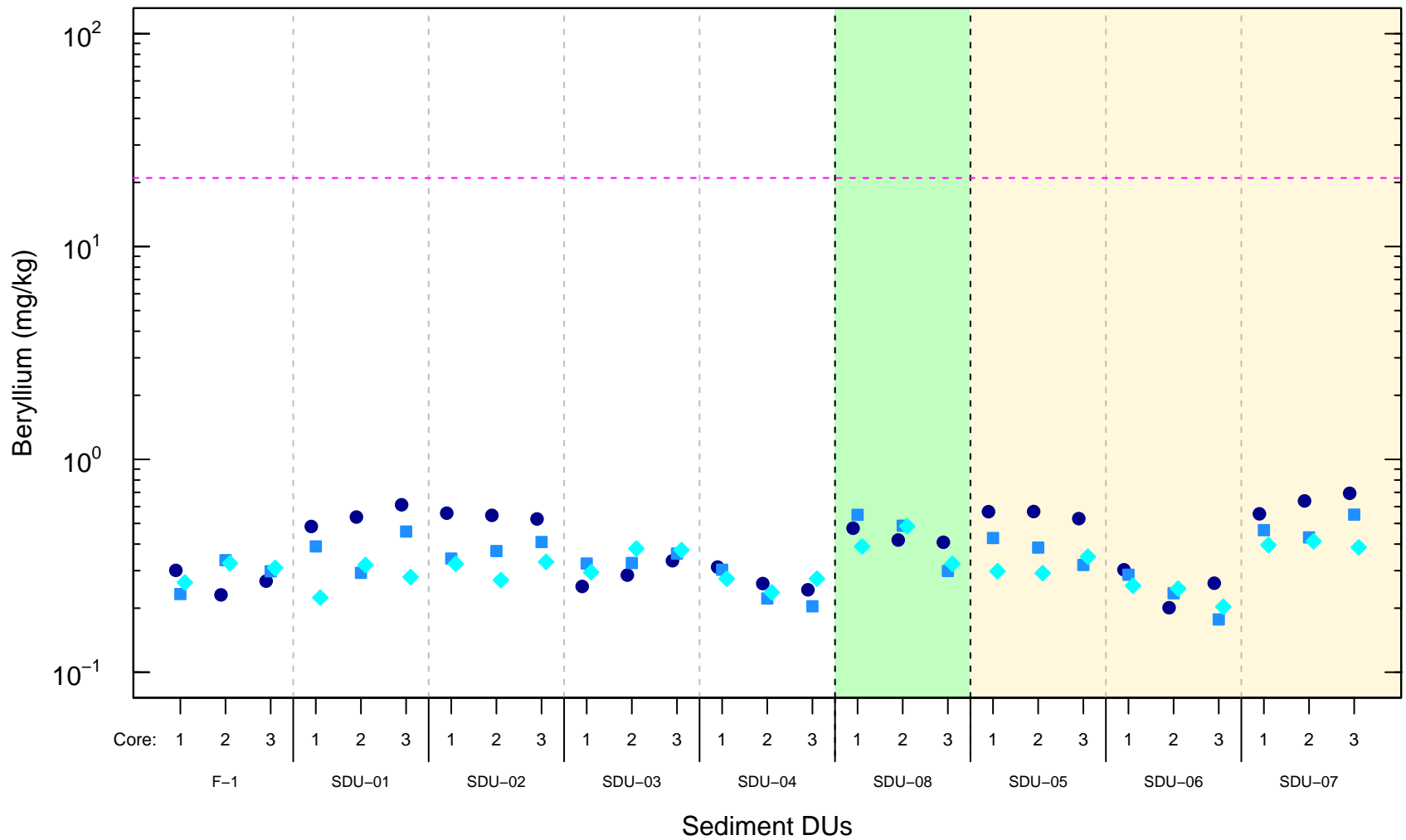
Depth
 ● 0–15 cm ■ 15–30 cm ◆ 30–45 cm

□ East Bank – Bossburg
 ■ West Bank – Cable Ferry Landing
 - - - Eco-SSL*

*Eco-SSL for barium is 330 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5–12h. Barium Concentrations in < 2–mm Soil Fractions of Core Samples



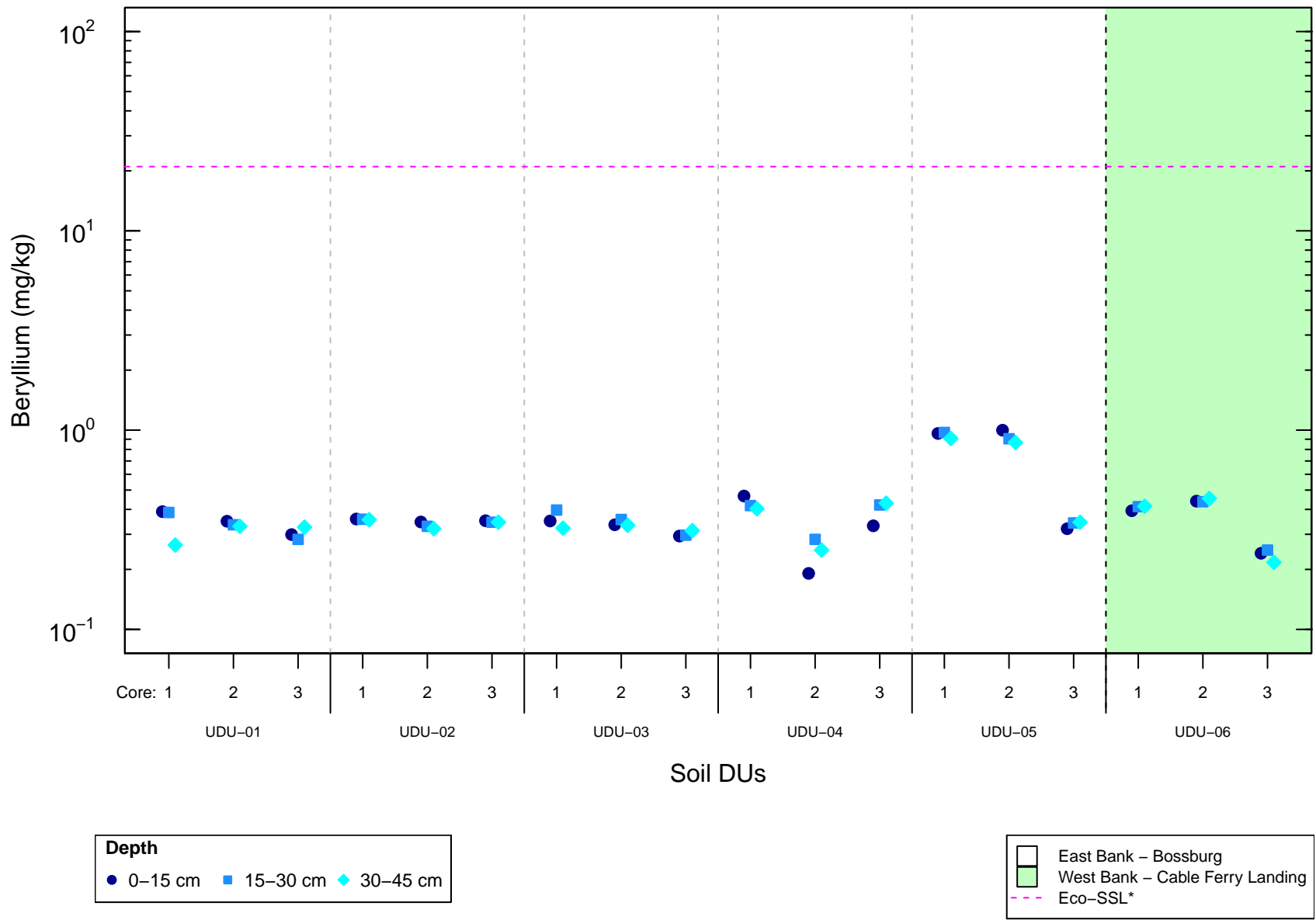
Depth
 ● 0–15 cm ■ 15–30 cm ◆ 30–45 cm

□ East Bank – Bossburg
 ■ West Bank – Cable Ferry Landing
 ■ East Bank – Evans Campground
 - - - Eco-SSL*

*Eco-SSL for beryllium is 21 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

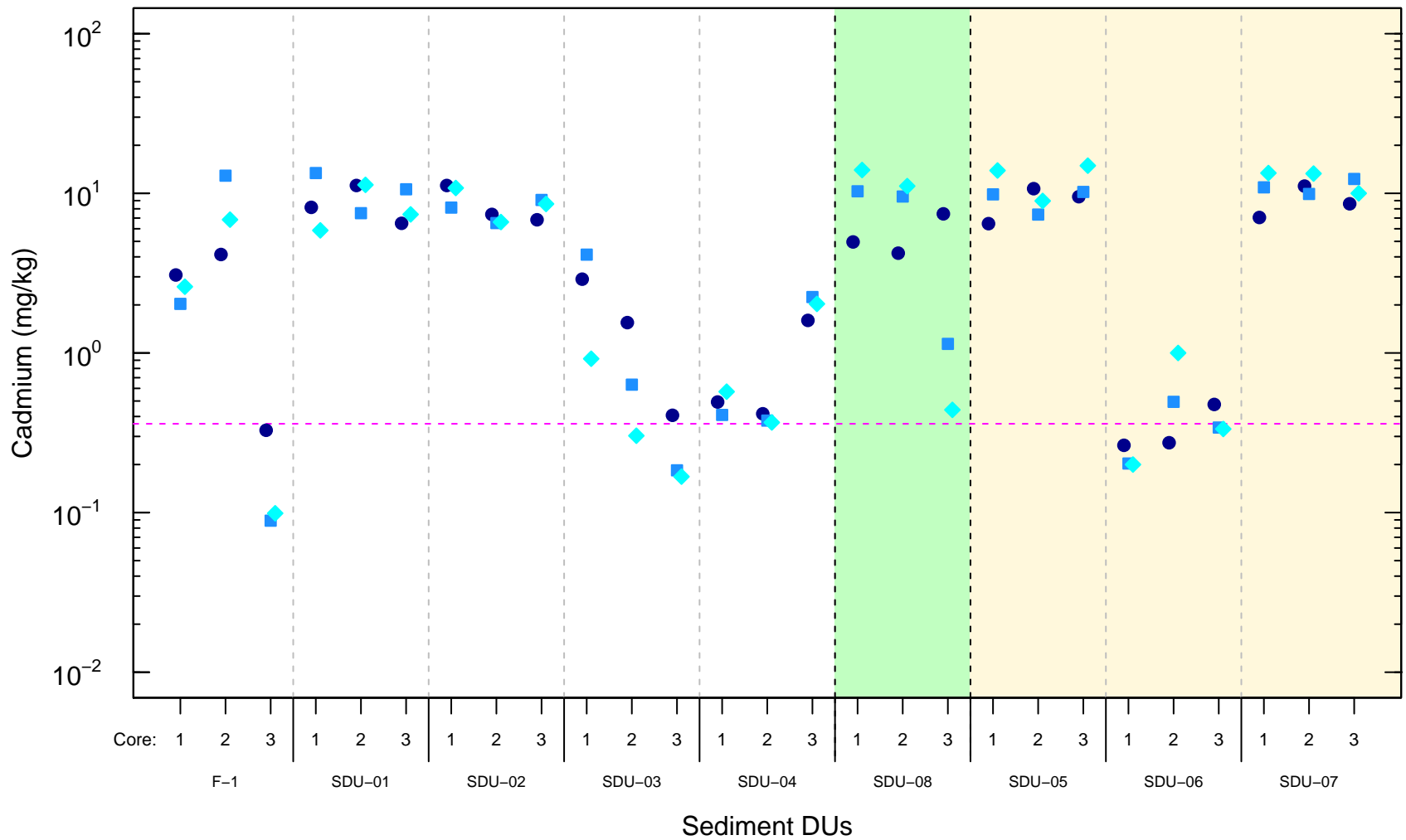
Figure 5–12i. Beryllium Concentrations in < 2–mm Sediment Fractions of Core Samples



*Eco-SSL for beryllium is 21 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5-12j. Beryllium Concentrations in < 2-mm Soil Fractions of Core Samples



Depth

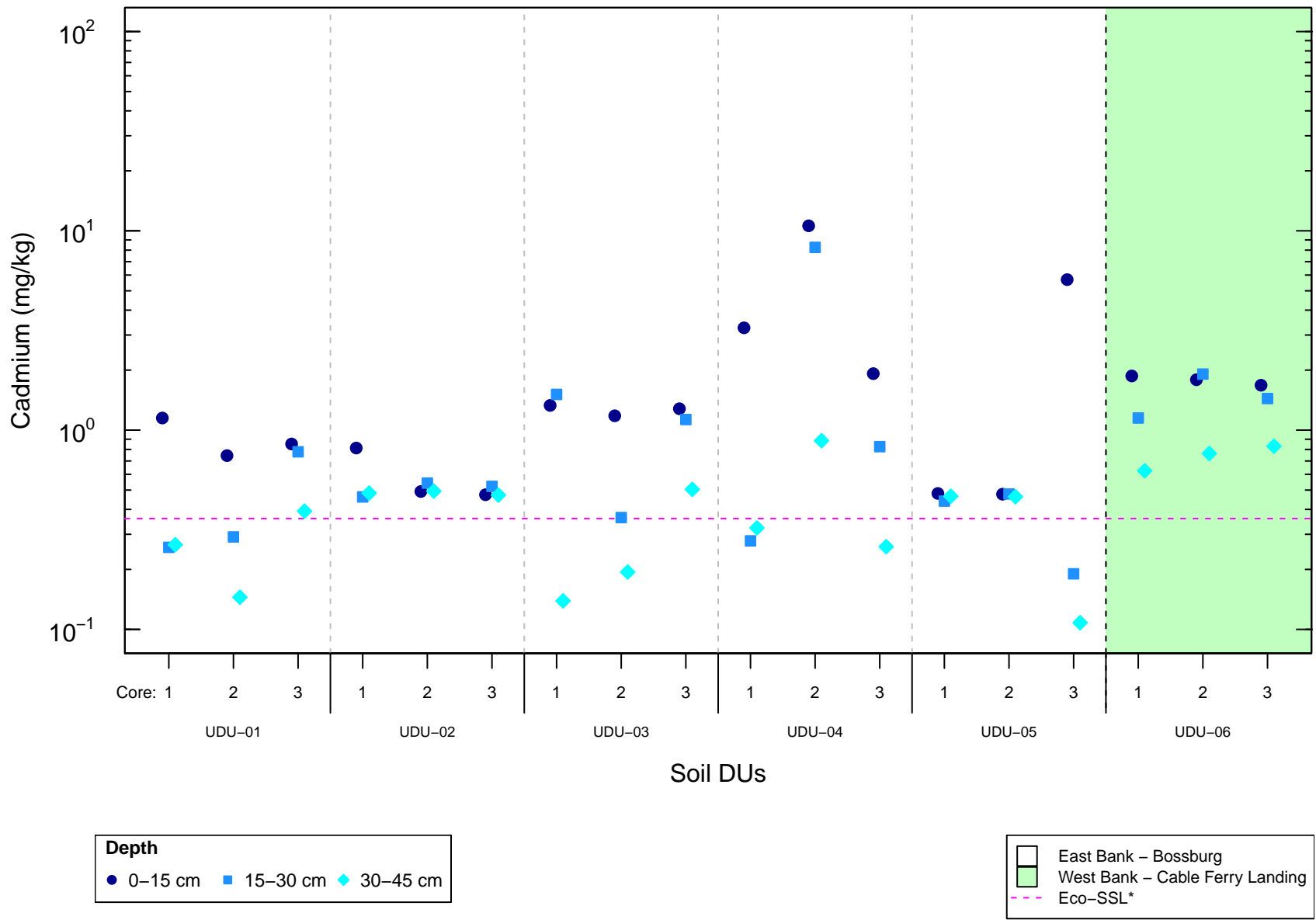
- 0–15 cm
- 15–30 cm
- ◆ 30–45 cm

- East Bank – Bossburg
- West Bank – Cable Ferry Landing
- East Bank – Evans Campground
- - - Eco-SSL*

*Eco-SSL for cadmium is 0.36 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

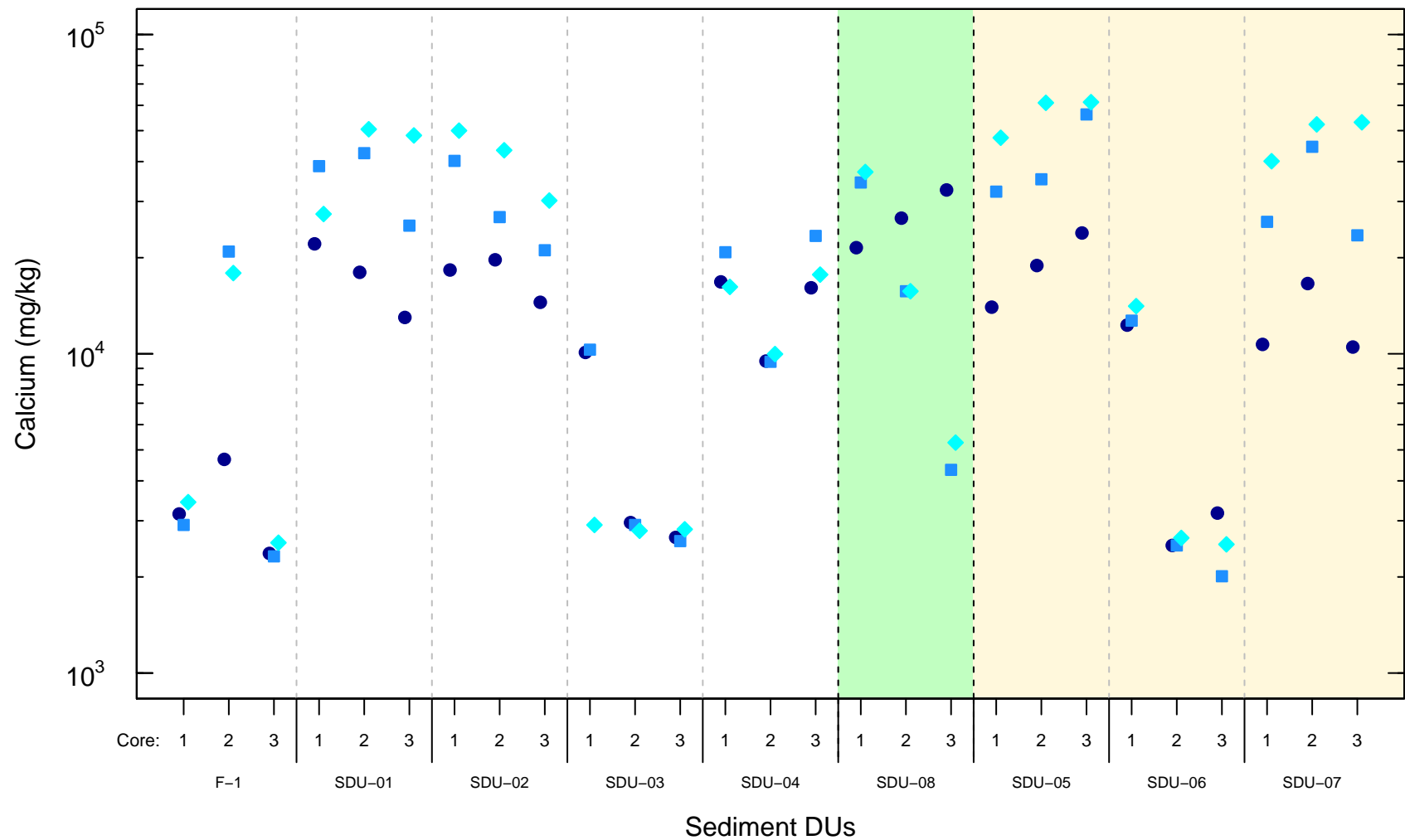
Figure 5-12k. Cadmium Concentrations in <2-mm Sediment Fractions of Core Samples



*Eco–SSL for cadmium is 0.36 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5–12I. Cadmium Concentrations in < 2–mm Soil Fractions of Core Samples



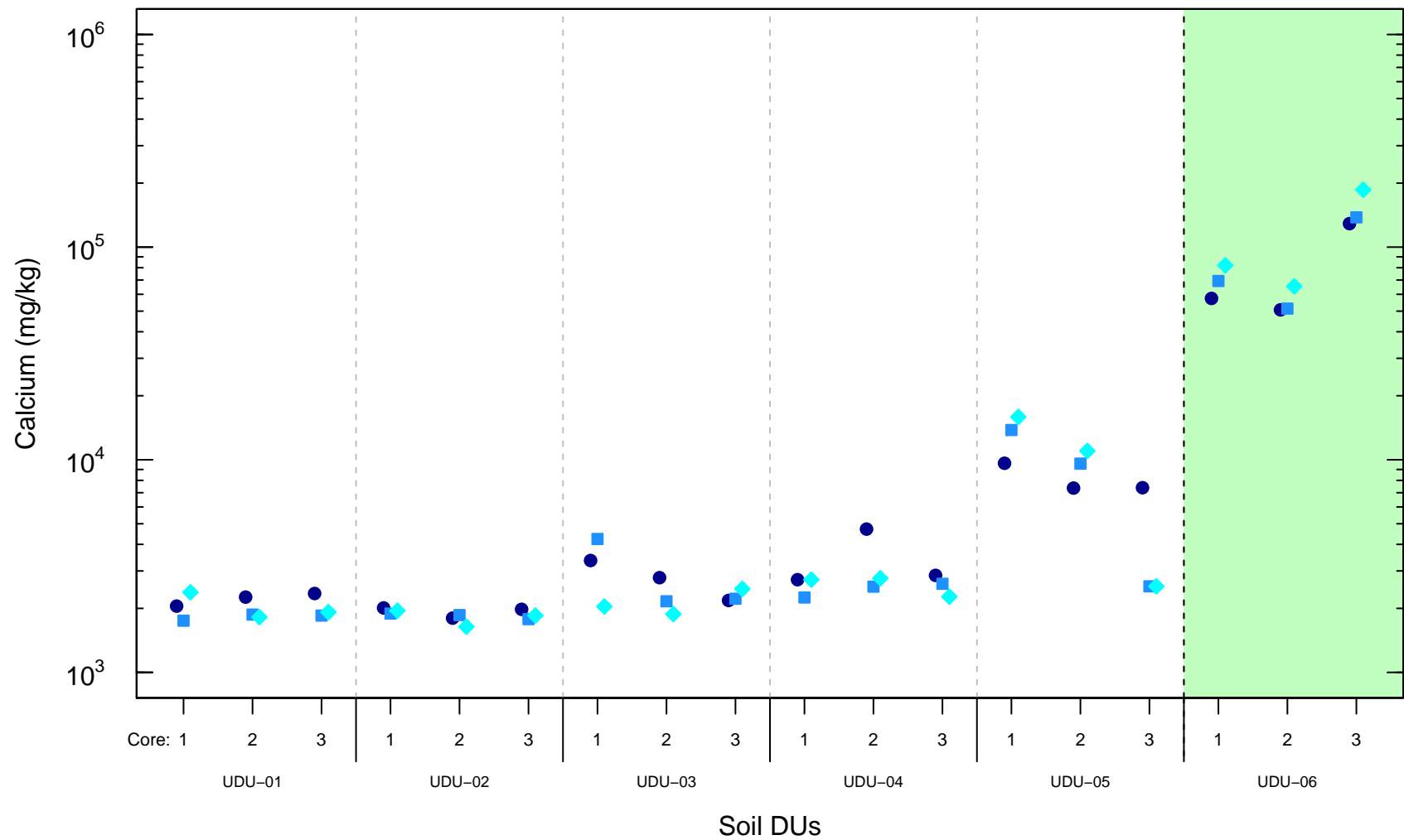
Depth
 ● 0–15 cm ■ 15–30 cm ◆ 30–45 cm

□ East Bank – Bossburg
 ■ West Bank – Cable Ferry Landing
 ■ East Bank – Evans Campground
 - - - Eco-SSL*

*No Eco-SSL is available for calcium

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5–12m. Calcium Concentrations in < 2–mm Sediment Fractions of Core Samples



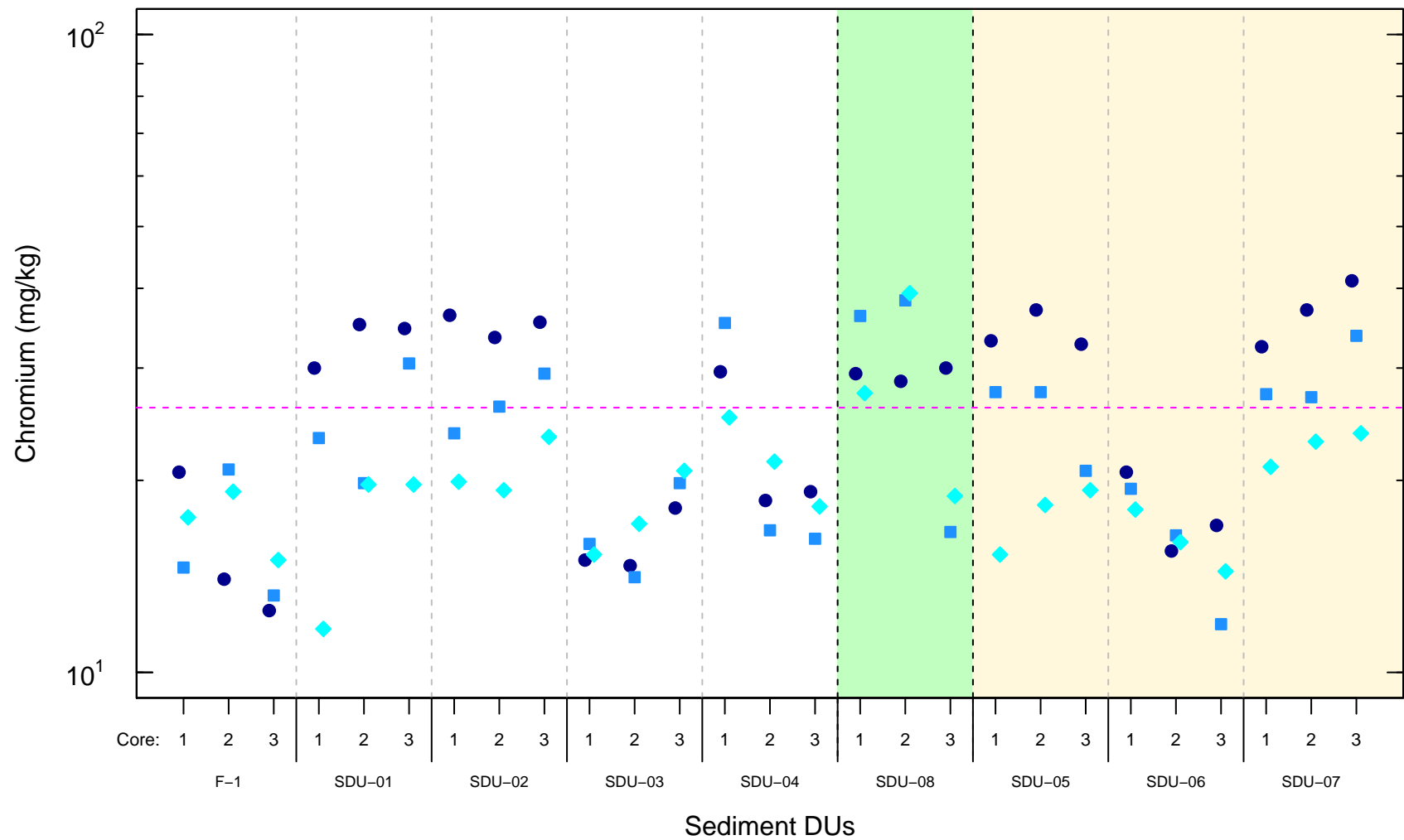
Depth
 ● 0–15 cm ■ 15–30 cm ◆ 30–45 cm

□ East Bank – Bossburg
 ■ West Bank – Cable Ferry Landing
 - - - Eco-SSL*

*No Eco-SSL is available for calcium

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5–12n. Calcium Concentrations in < 2-mm Soil Fractions of Core Samples



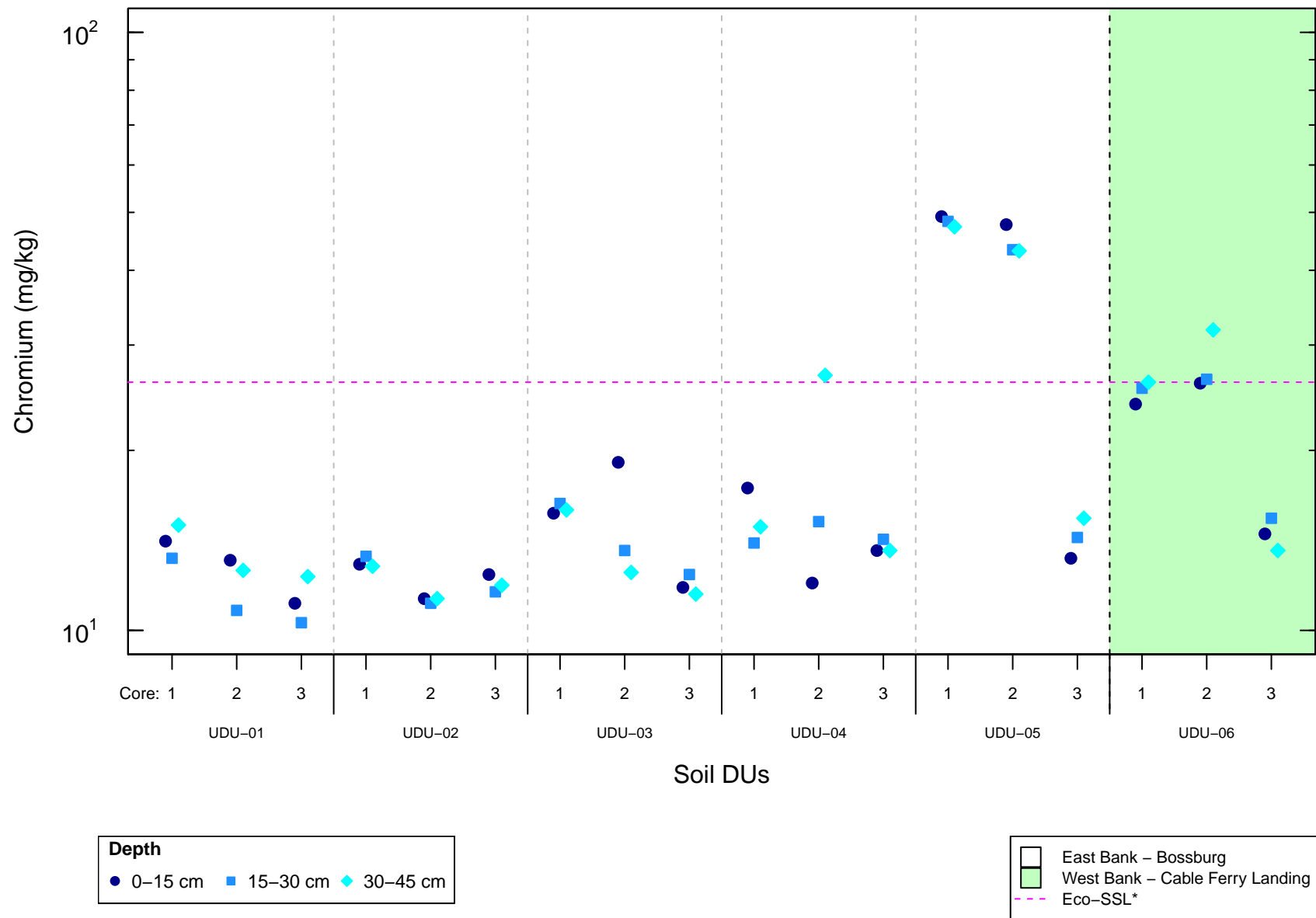
Depth
 ● 0–15 cm ■ 15–30 cm ◆ 30–45 cm

□ East Bank – Bossburg
 ■ West Bank – Cable Ferry Landing
 ■ East Bank – Evans Campground
 - - - Eco-SSL*

*Eco-SSL for chromium is 26 mg/kg

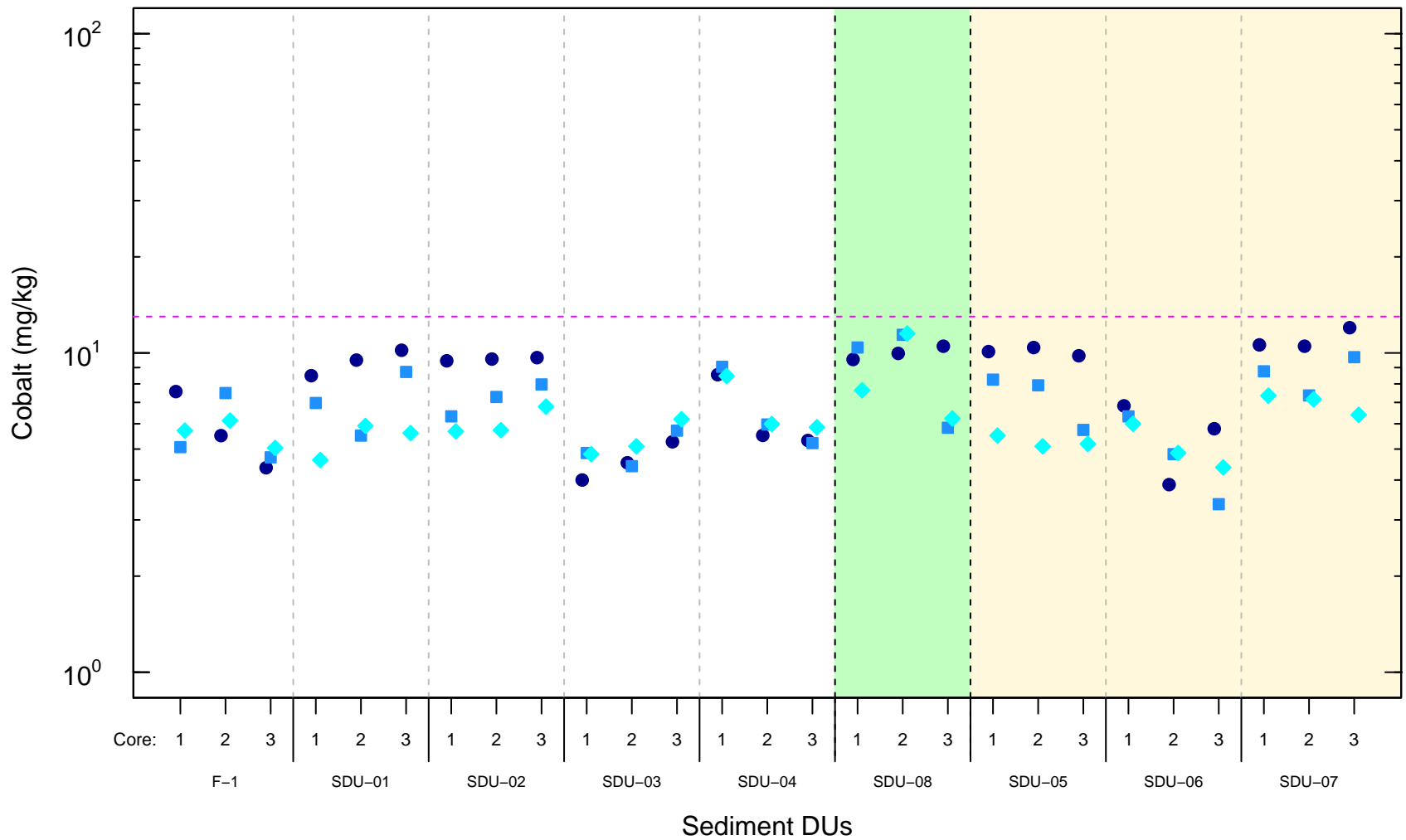
Decision Units are presented upstream to downstream within an area of the Site.

Figure 5–12o. Chromium Concentrations in <2–mm Sediment Fractions of Core Samples



Decision Units are presented upstream to downstream within an area of the Site.

Figure 5-12p. Chromium Concentrations in < 2-mm Soil Fractions of Core Samples



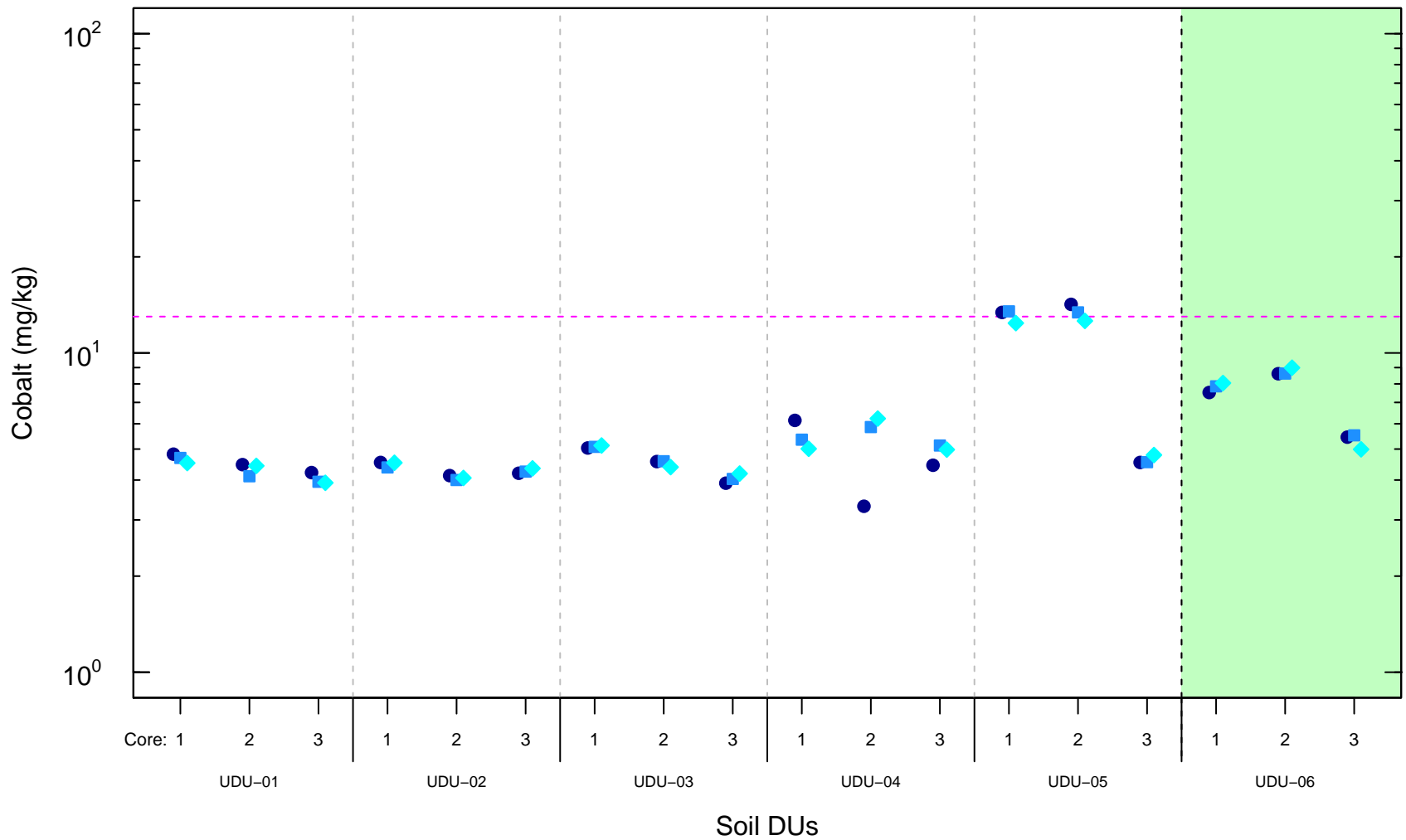
Depth
 ● 0–15 cm ■ 15–30 cm ◆ 30–45 cm

□ East Bank – Bossburg
 ■ West Bank – Cable Ferry Landing
 ■ East Bank – Evans Campground
 - - - Eco-SSL*

*Eco-SSL for cobalt is 13 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5–12q. Cobalt Concentrations in < 2–mm Sediment Fractions of Core Samples



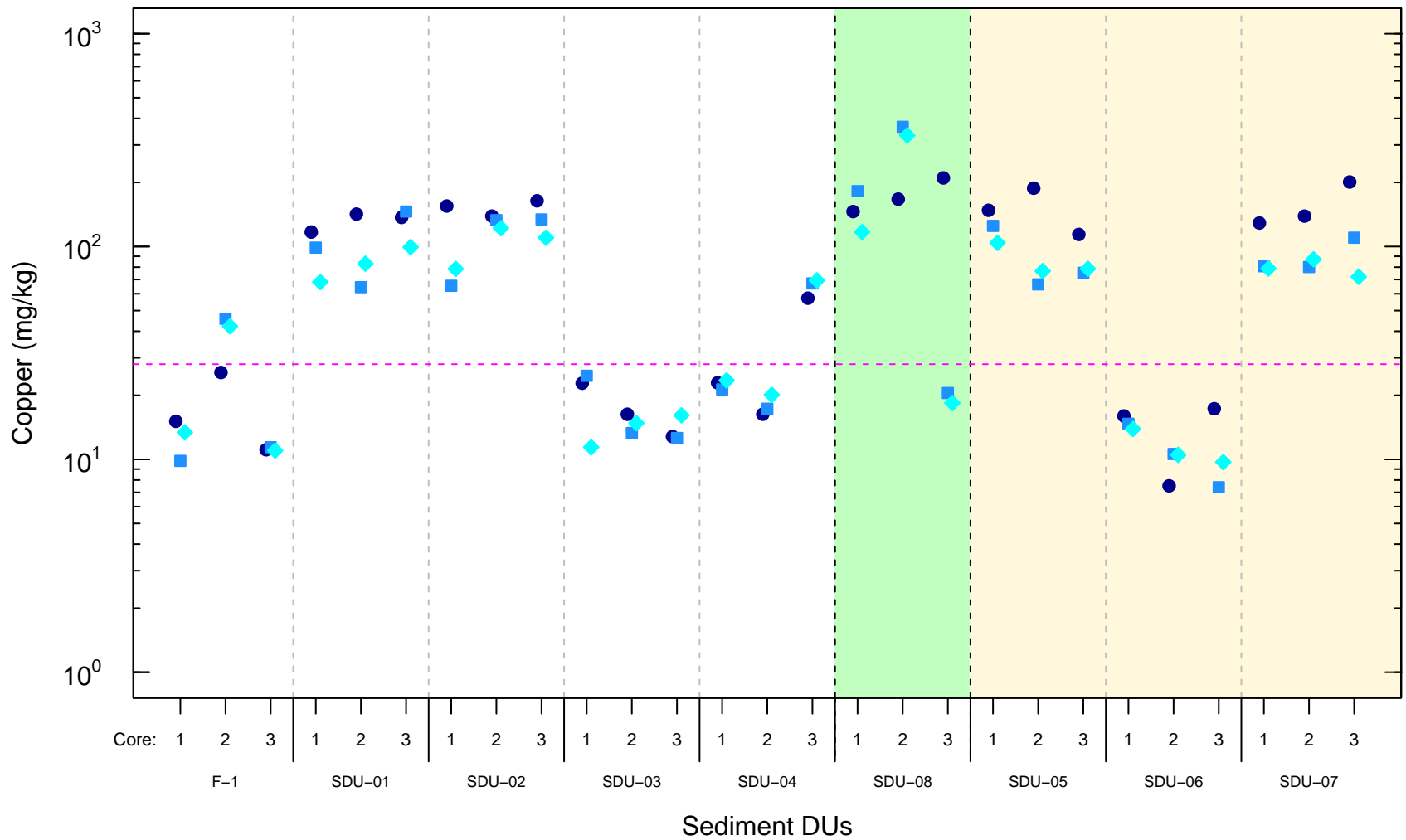
Depth
 ● 0-15 cm ■ 15-30 cm ◆ 30-45 cm

□ East Bank – Bossburg
 ■ West Bank – Cable Ferry Landing
 - - - Eco-SSL*

*Eco-SSL for cobalt is 13 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5-12r. Cobalt Concentrations in < 2-mm Soil Fractions of Core Samples



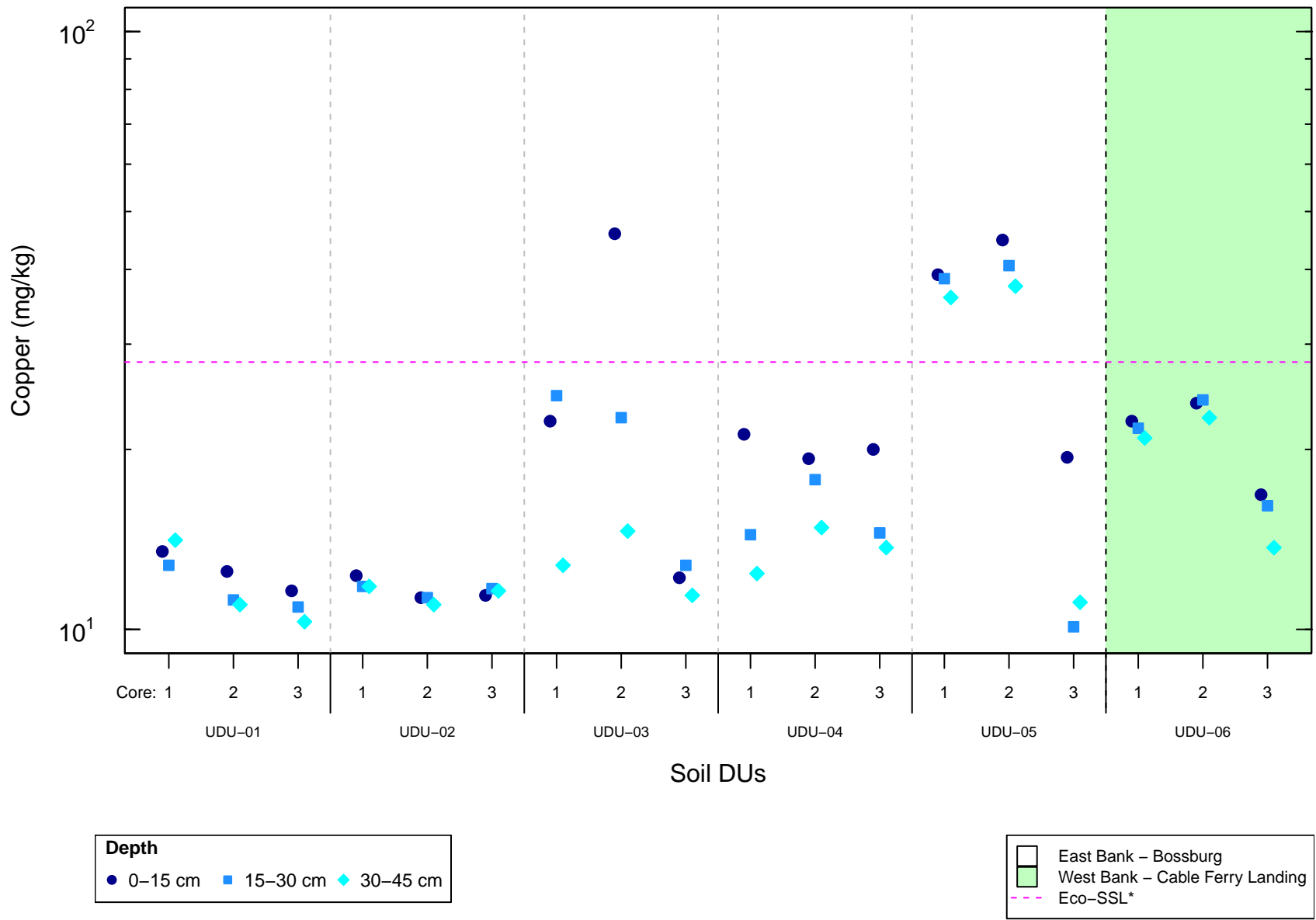
Depth
 ● 0–15 cm ■ 15–30 cm ◆ 30–45 cm

□ East Bank – Bossburg
 ■ West Bank – Cable Ferry Landing
 ■ East Bank – Evans Campground
 - - - Eco-SSL*

*Eco-SSL for copper is 28 mg/kg

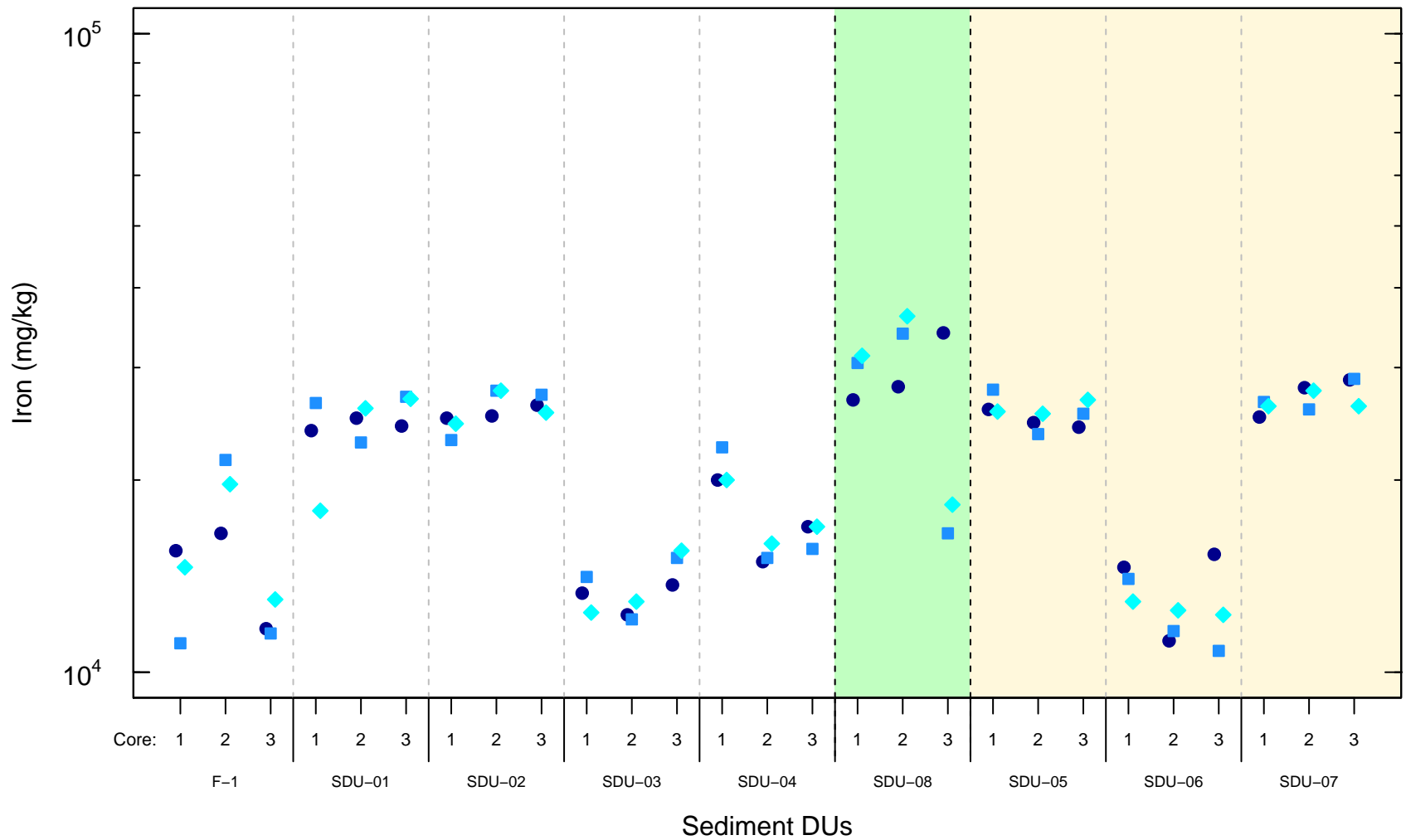
Decision Units are presented upstream to downstream within an area of the Site.

Figure 5–12s. Copper Concentrations in < 2–mm Sediment Fractions of Core Samples



Decision Units are presented upstream to downstream within an area of the Site.

Figure 5–12t. Copper Concentrations in < 2–mm Soil Fractions of Core Samples



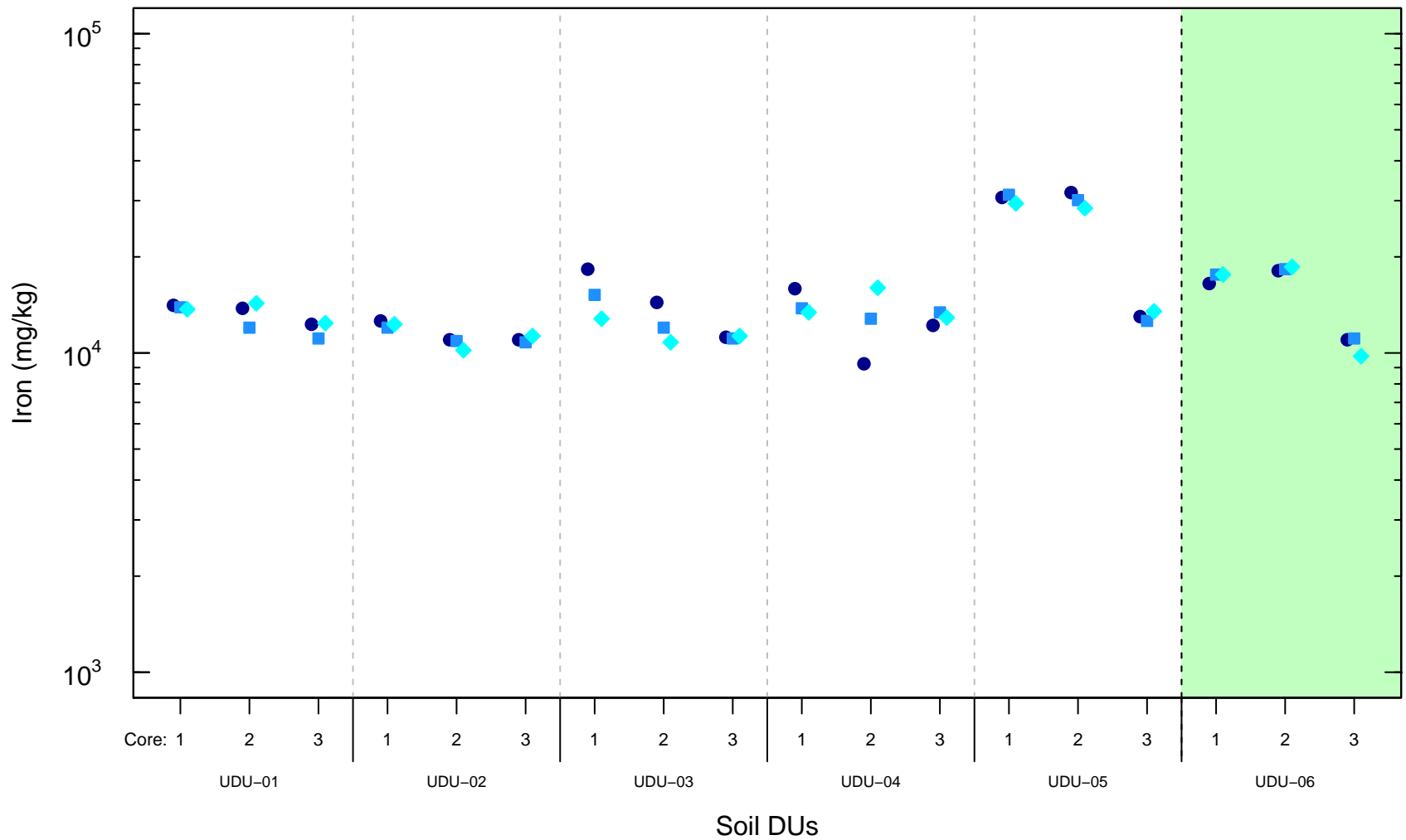
Depth
 ● 0–15 cm ■ 15–30 cm ◆ 30–45 cm

□ East Bank – Bossburg
 ■ West Bank – Cable Ferry Landing
 □ East Bank – Evans Campground
 - - - Eco-SSL*

*No Eco-SSL is available for iron

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5–12u. Iron Concentrations in < 2–mm Sediment Fractions of Core Samples



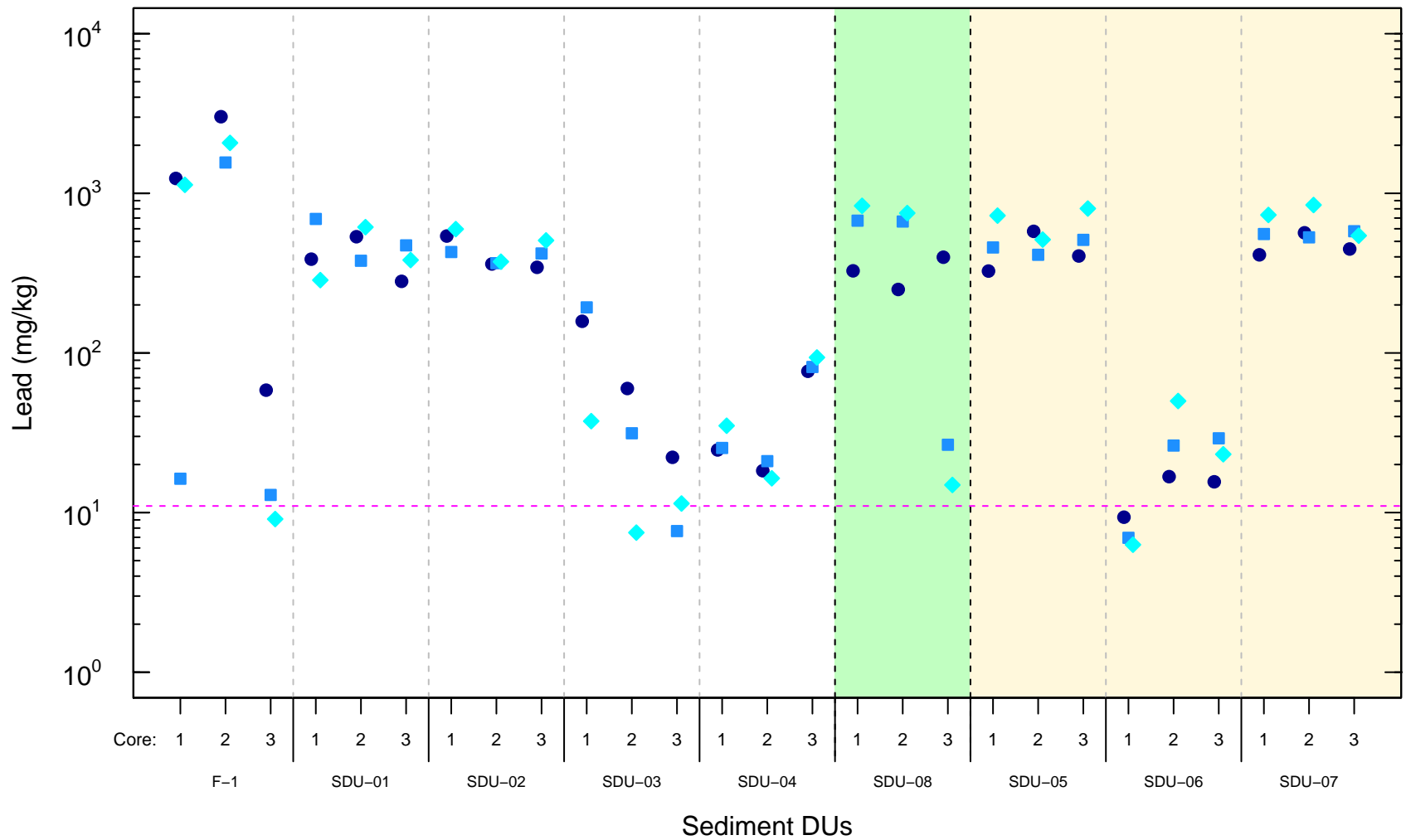
Depth
 ● 0-15 cm ■ 15-30 cm ◆ 30-45 cm

□ East Bank - Bossburg
 ■ West Bank - Cable Ferry Landing
 - - - Eco-SSL*

*No Eco-SSL is available for iron

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5-12v. Iron Concentrations in < 2-mm Soil Fractions of Core Samples



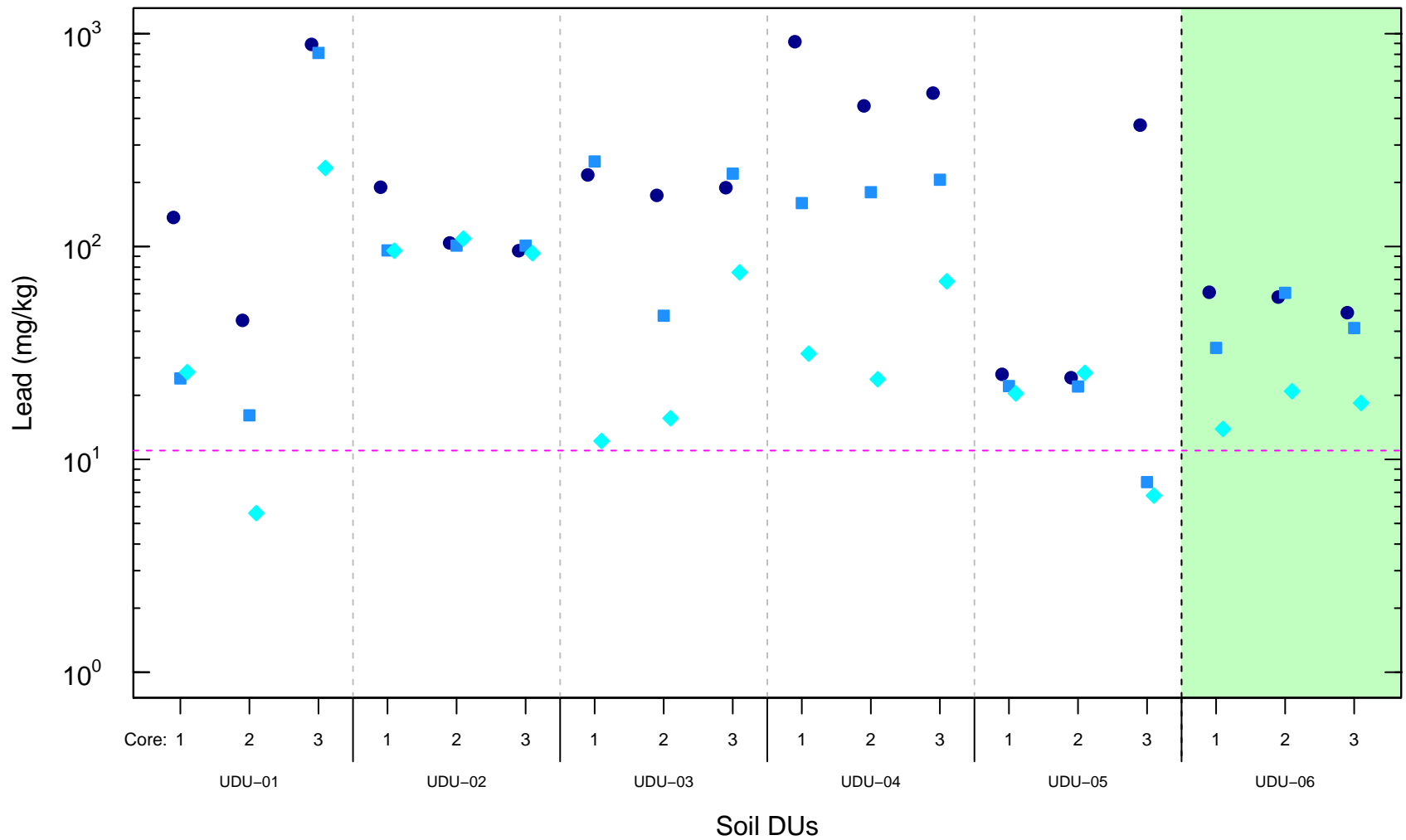
Depth
 ● 0-15 cm ■ 15-30 cm ◆ 30-45 cm

□ East Bank - Bossburg
 ■ West Bank - Cable Ferry Landing
 ■ East Bank - Evans Campground
 - - - Eco-SSL*

*Eco-SSL for lead is 11 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5-12w. Lead Concentrations in <2-mm Sediment Fractions of Core Samples



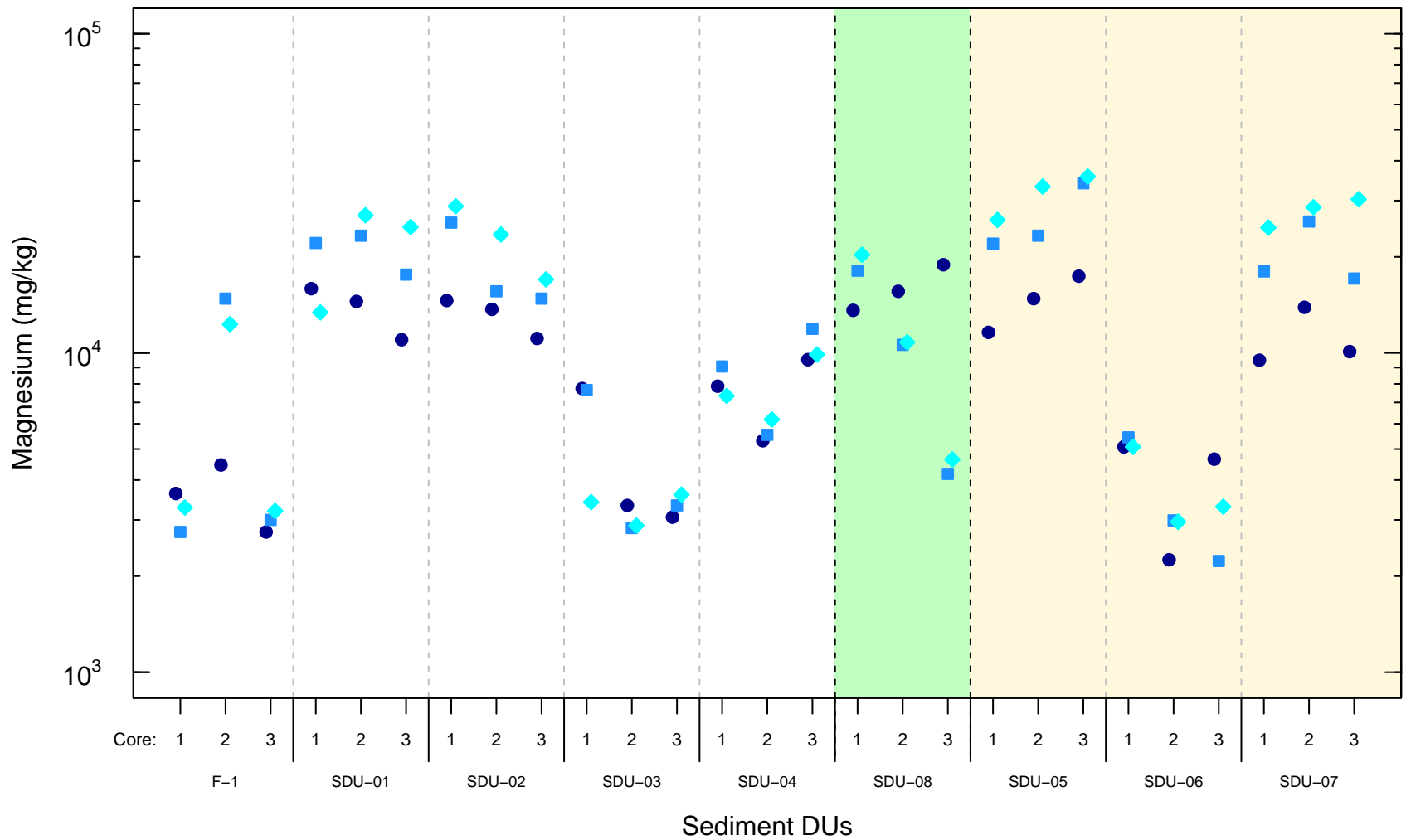
Depth
 ● 0–15 cm ■ 15–30 cm ◆ 30–45 cm

□ East Bank – Bossburg
 ■ West Bank – Cable Ferry Landing
 - - - Eco-SSL*

*Eco-SSL for lead is 11 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5–12x. Lead Concentrations in < 2–mm Soil Fractions of Core Samples



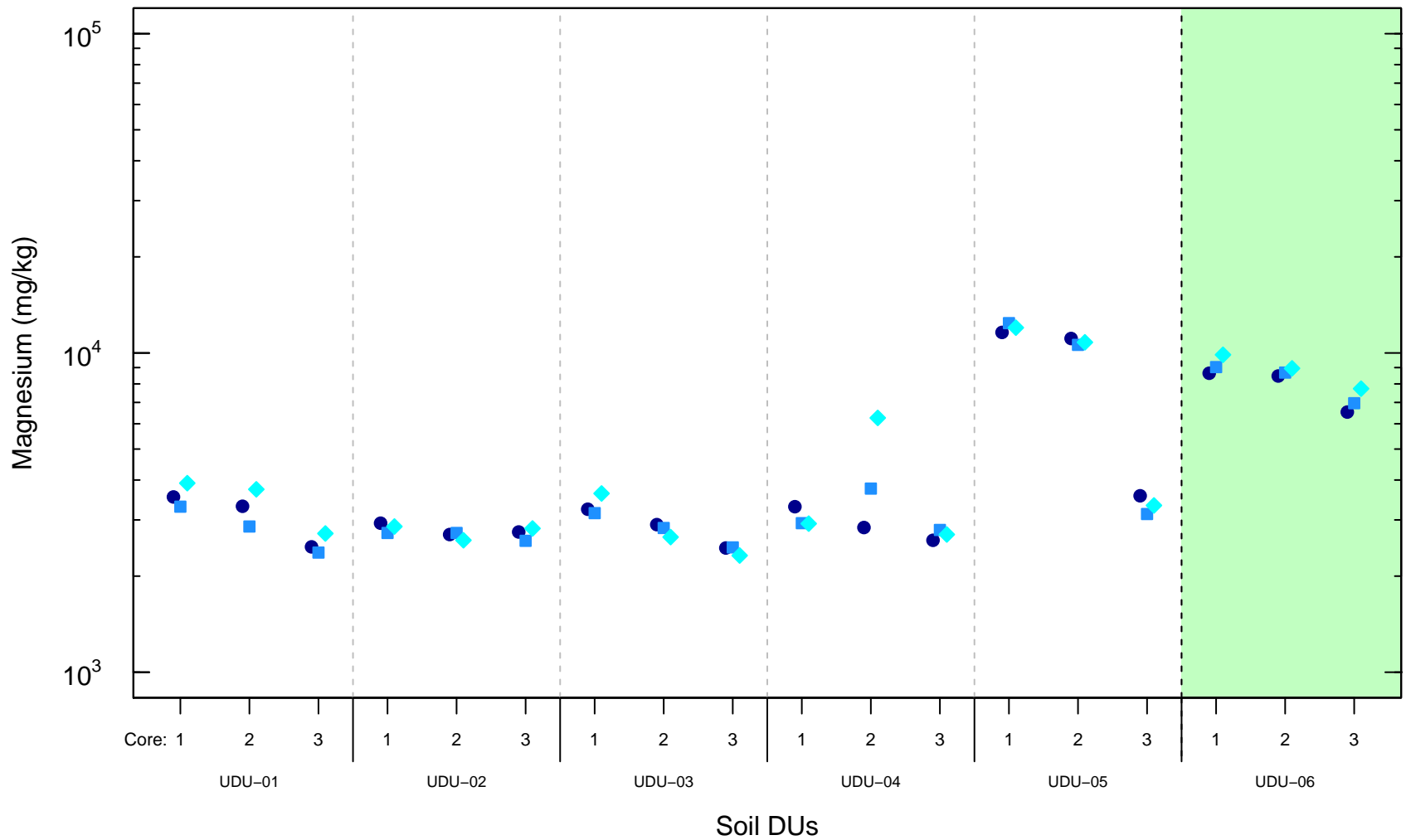
Depth
 ● 0–15 cm ■ 15–30 cm ◆ 30–45 cm

□ East Bank – Bossburg
 ■ West Bank – Cable Ferry Landing
 ■ East Bank – Evans Campground
 - - - Eco-SSL*

*No Eco-SSL is available for magnesium

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5–12y. Magnesium Concentrations in < 2–mm Sediment Fractions of Core Samples



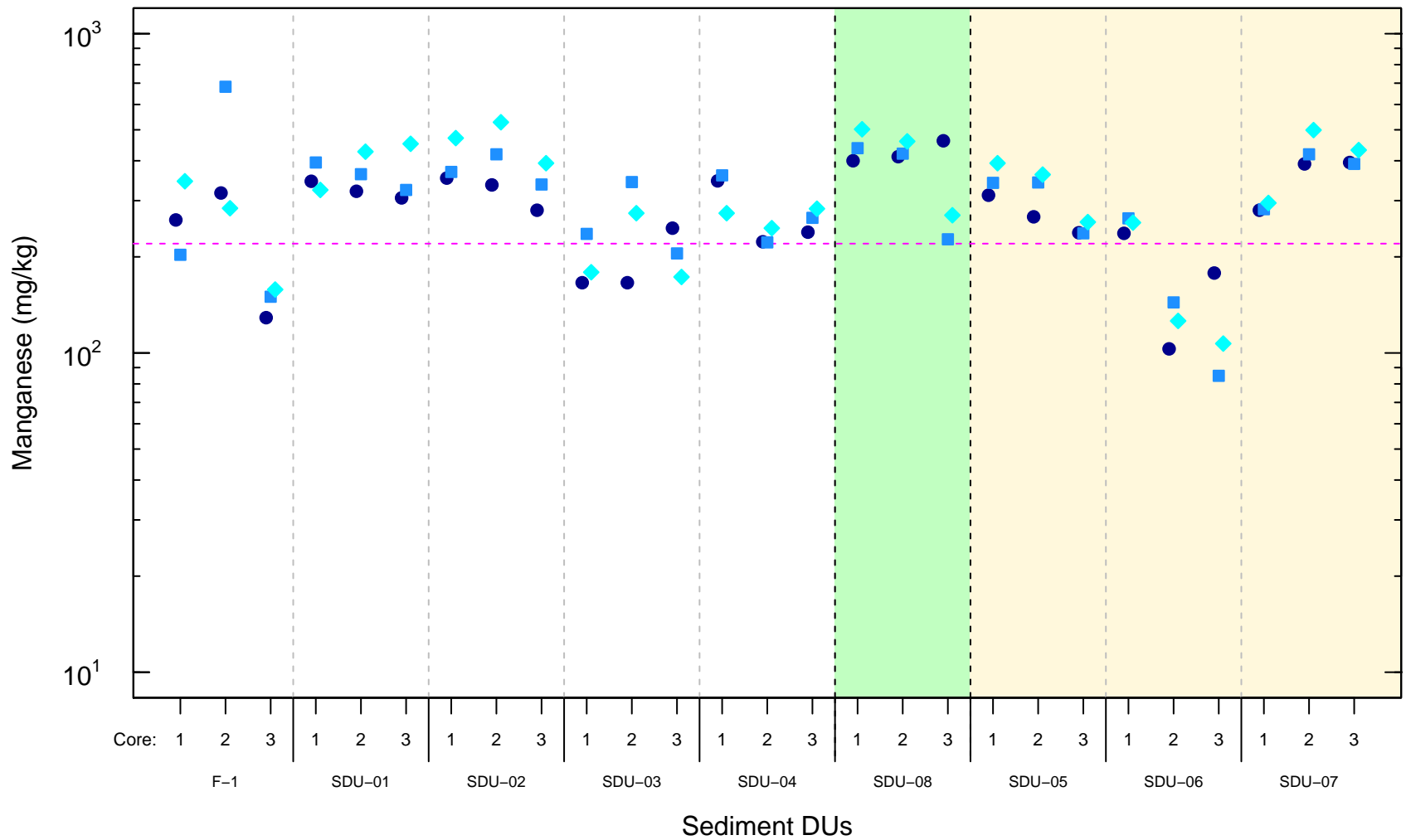
Depth
 ● 0-15 cm ■ 15-30 cm ◆ 30-45 cm

□ East Bank – Bossburg
 ■ West Bank – Cable Ferry Landing
 - - - Eco-SSL*

*No Eco-SSL is available for magnesium

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5-12z. Magnesium Concentrations in < 2-mm Soil Fractions of Core Samples



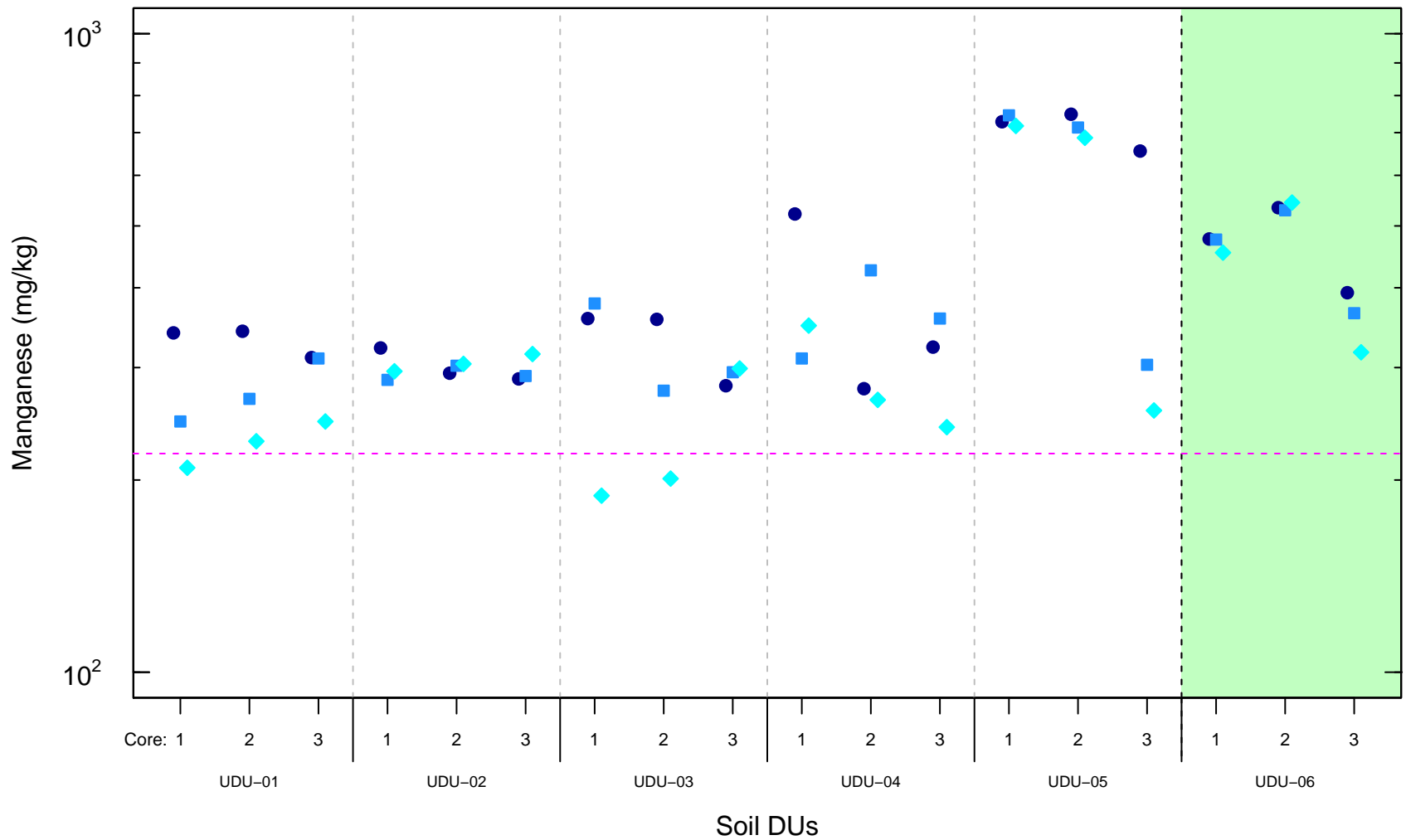
Depth
 ● 0–15 cm ■ 15–30 cm ◆ 30–45 cm

□ East Bank – Bossburg
 ■ West Bank – Cable Ferry Landing
 ■ East Bank – Evans Campground
 - - - Eco-SSL*

*Eco-SSL for manganese is 220 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5–12aa. Manganese Concentrations in <2–mm Sediment Fractions of Core Samples



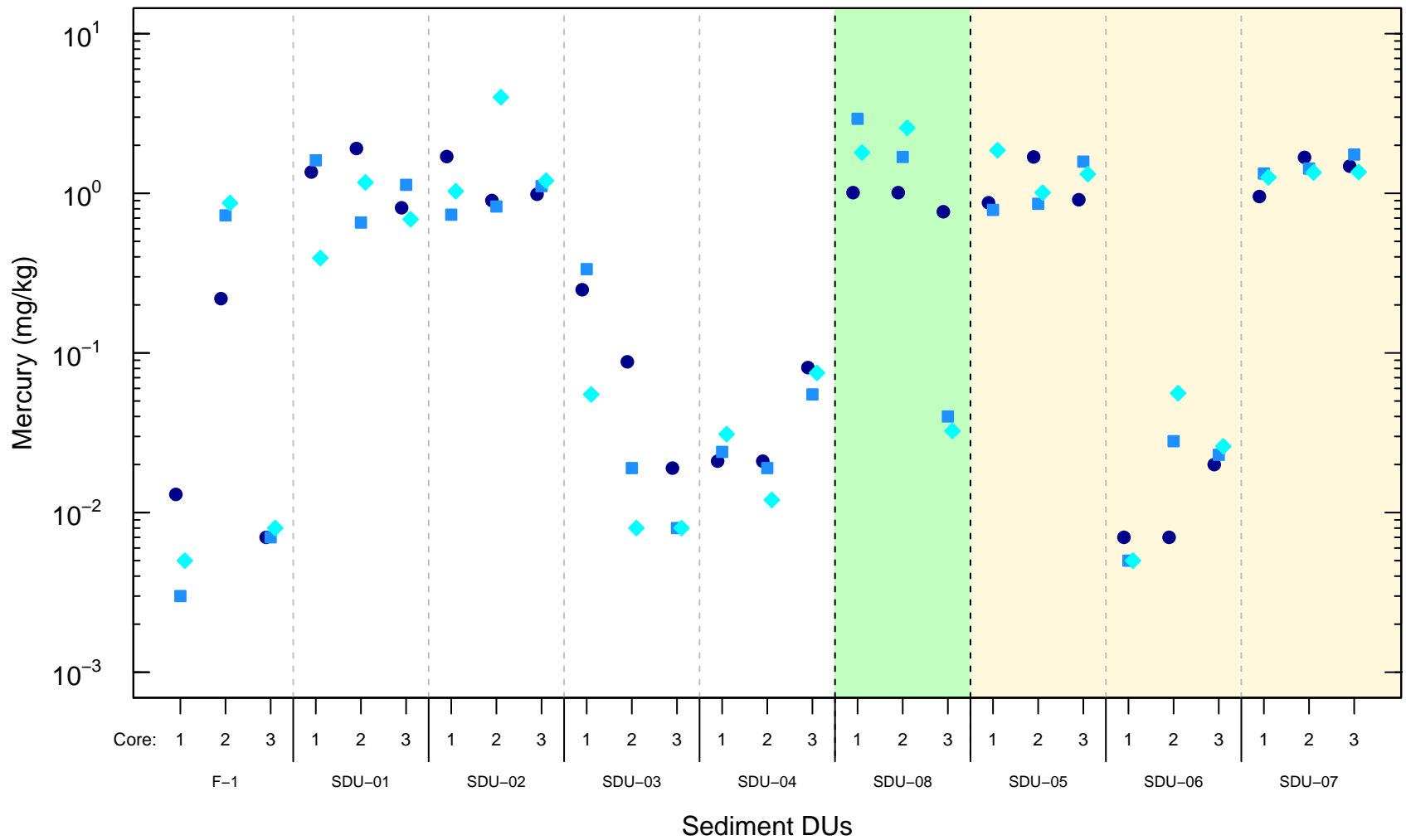
Depth
 ● 0–15 cm ■ 15–30 cm ◆ 30–45 cm

□ East Bank – Bossburg
 ■ West Bank – Cable Ferry Landing
 - - - Eco-SSL*

*Eco-SSL for manganese is 220 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5–12ab. Manganese Concentrations in < 2–mm Soil Fractions of Core Samples



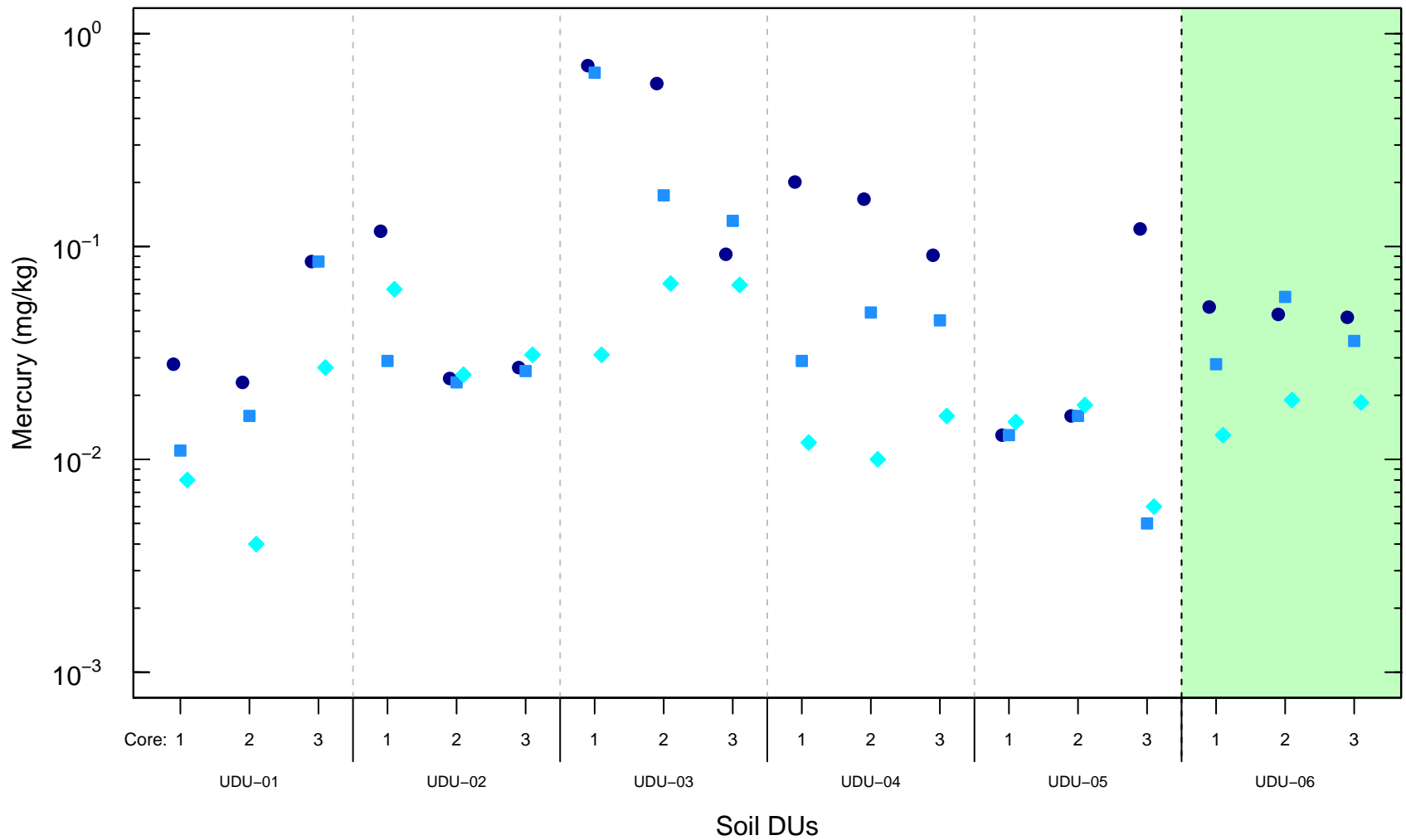
Depth
 ● 0–15 cm ■ 15–30 cm ◆ 30–45 cm

□ East Bank – Bossburg
 ■ West Bank – Cable Ferry Landing
 ■ East Bank – Evans Campground
 - - - Eco-SSL*

*No Eco-SSL is available for mercury

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5–12ac. Mercury Concentrations in < 2–mm Sediment Fractions of Core Samples



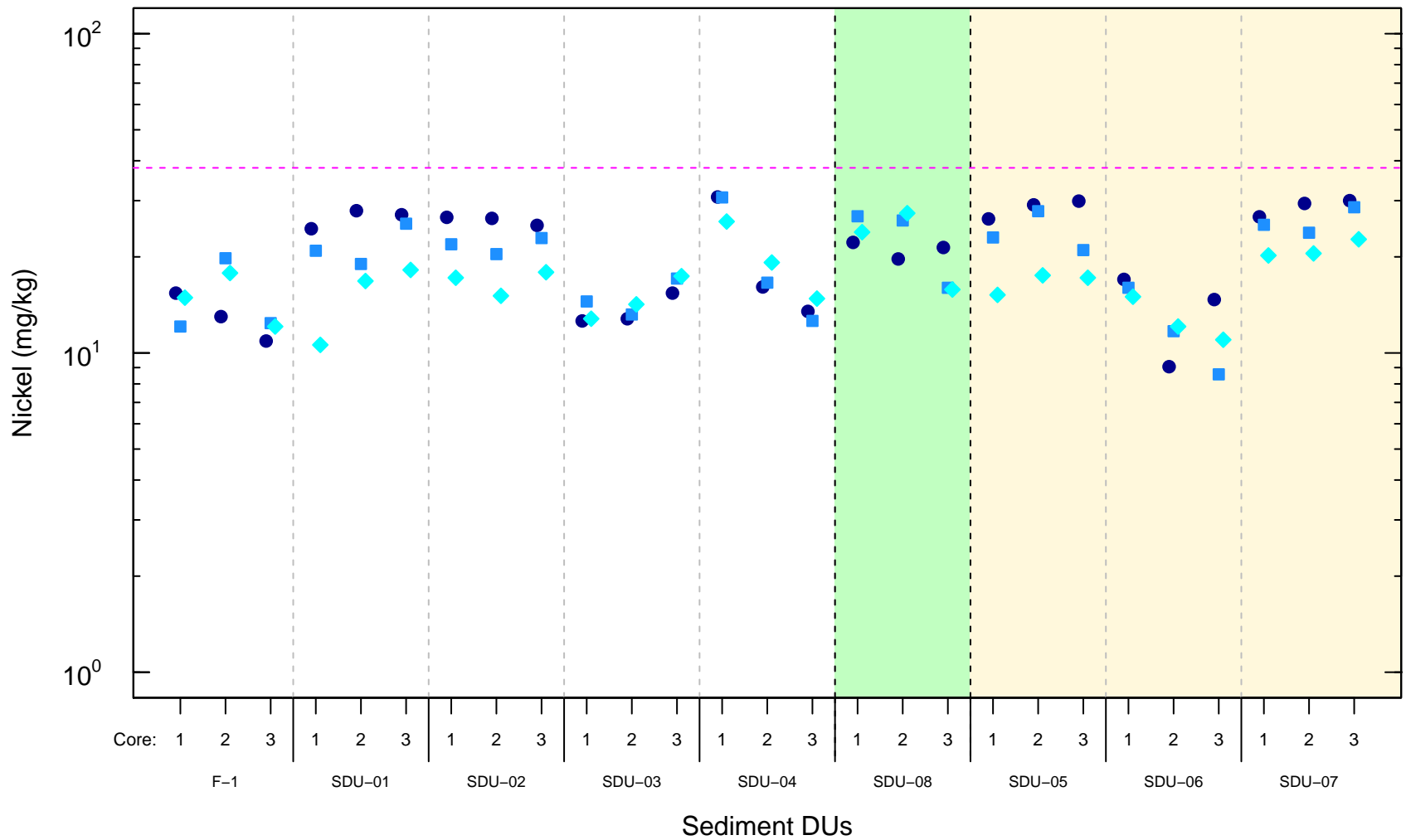
Depth
 ● 0–15 cm ■ 15–30 cm ◆ 30–45 cm

□ East Bank – Bossburg
 ■ West Bank – Cable Ferry Landing
 - - - Eco-SSL*

*No Eco-SSL is available for mercury

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5–12ad. Mercury Concentrations in < 2–mm Soil Fractions of Core Samples



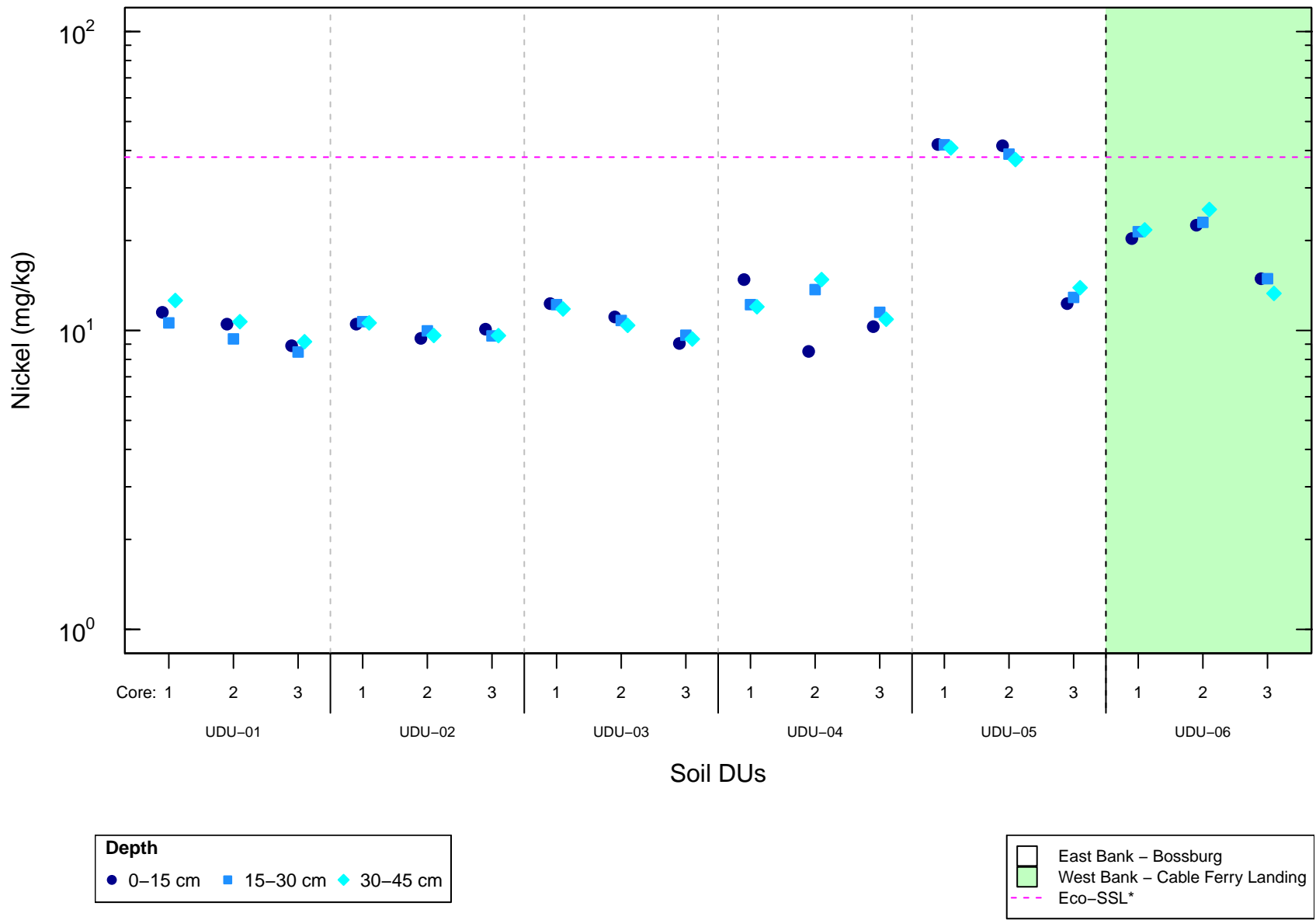
Depth
 ● 0–15 cm ■ 15–30 cm ◆ 30–45 cm

□ East Bank – Bossburg
 ■ West Bank – Cable Ferry Landing
 ■ East Bank – Evans Campground
 - - - Eco-SSL*

*Eco-SSL for nickel is 38 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

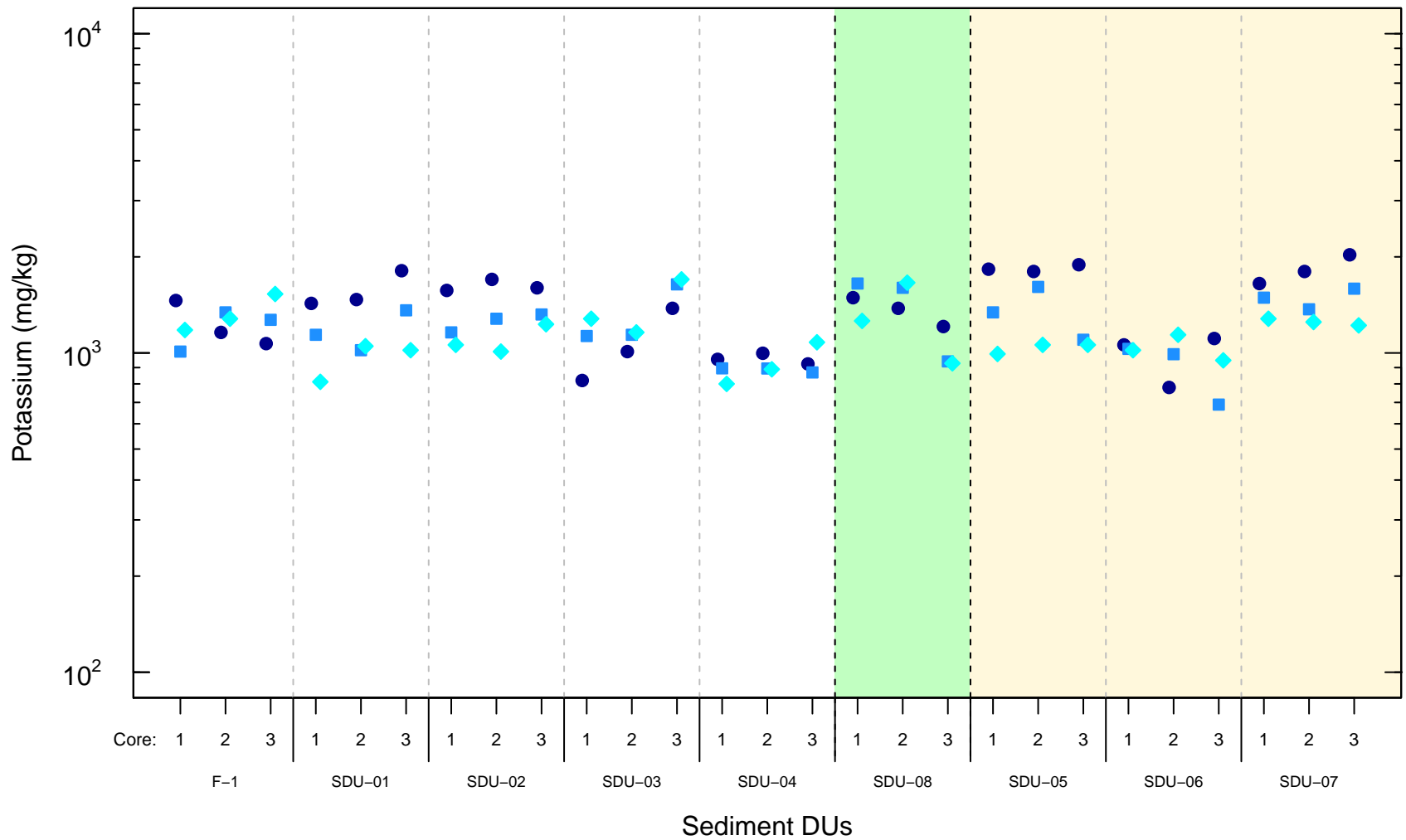
Figure 5–12ae. Nickel Concentrations in < 2–mm Sediment Fractions of Core Samples



*Eco-SSL for nickel is 38 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5-12af. Nickel Concentrations in < 2-mm Soil Fractions of Core Samples



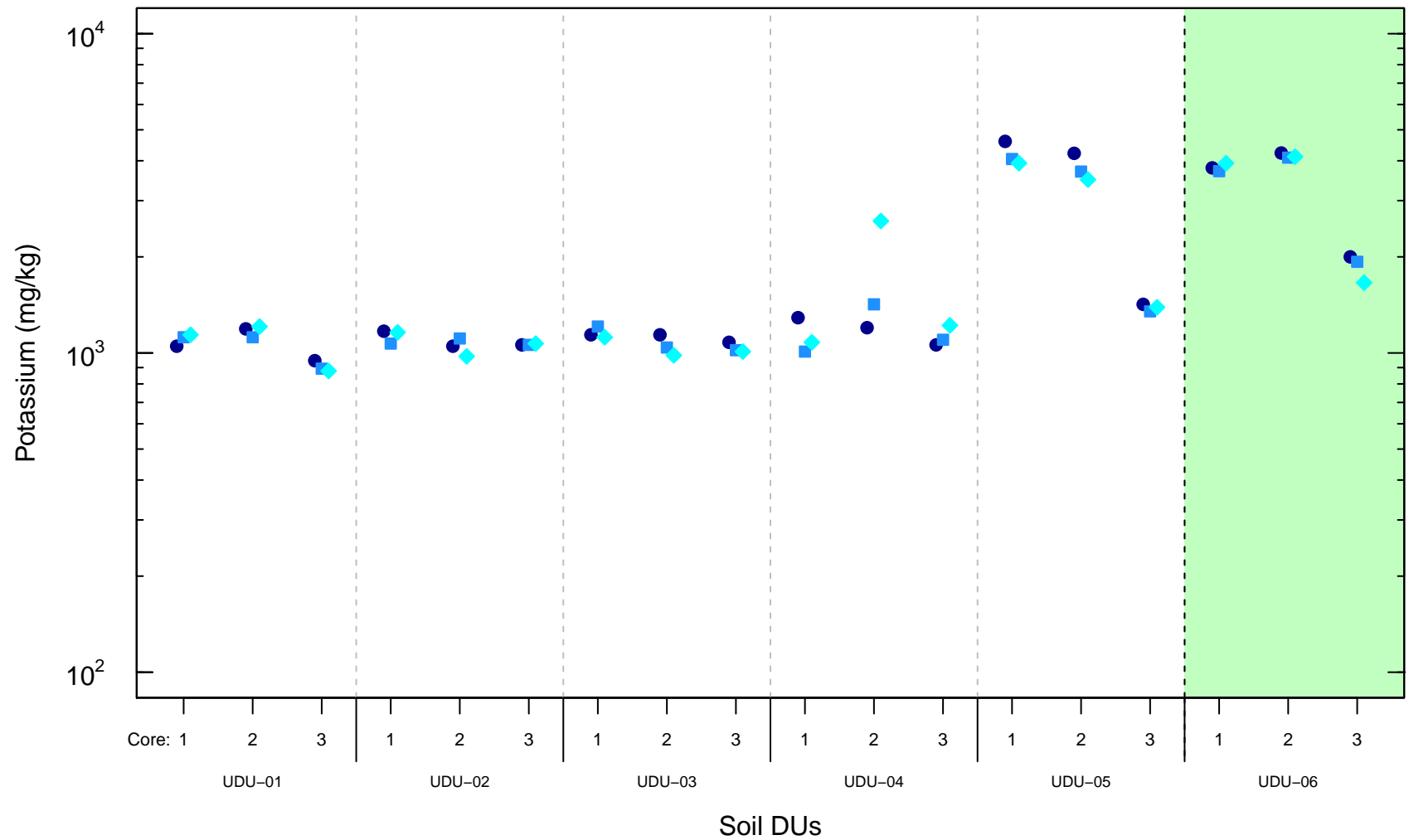
Depth
 ● 0–15 cm ■ 15–30 cm ◆ 30–45 cm

□ East Bank – Bossburg
 ■ West Bank – Cable Ferry Landing
 ■ East Bank – Evans Campground
 - - - Eco-SSL*

*No Eco-SSL is available for potassium

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5–12ag. Potassium Concentrations in < 2–mm Sediment Fractions of Core Samples



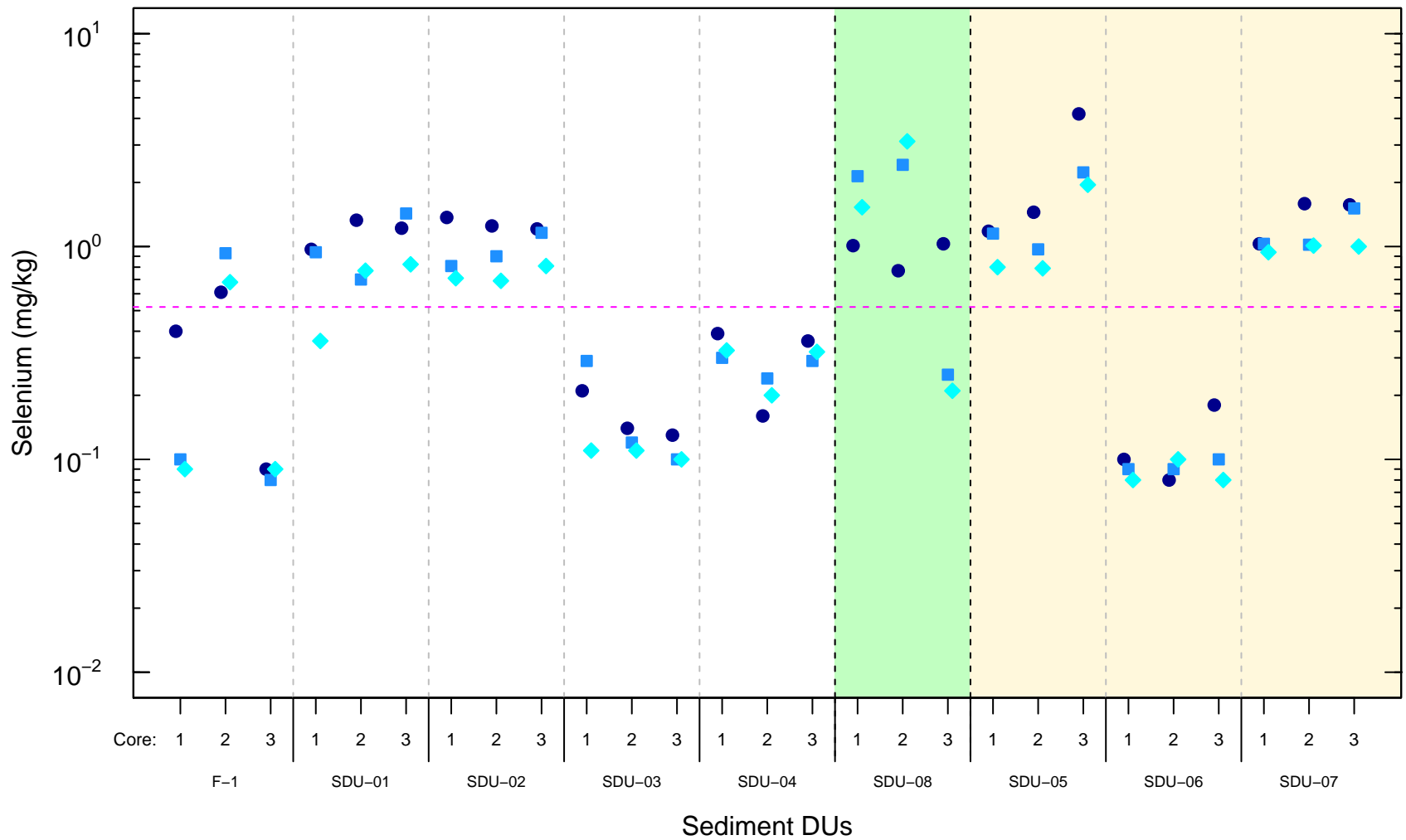
Depth
 ● 0–15 cm ■ 15–30 cm ◆ 30–45 cm

□ East Bank – Bossburg
 ■ West Bank – Cable Ferry Landing
 - - - Eco-SSL*

*No Eco-SSL is available for potassium

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5–12ah. Potassium Concentrations in < 2–mm Soil Fractions of Core Samples



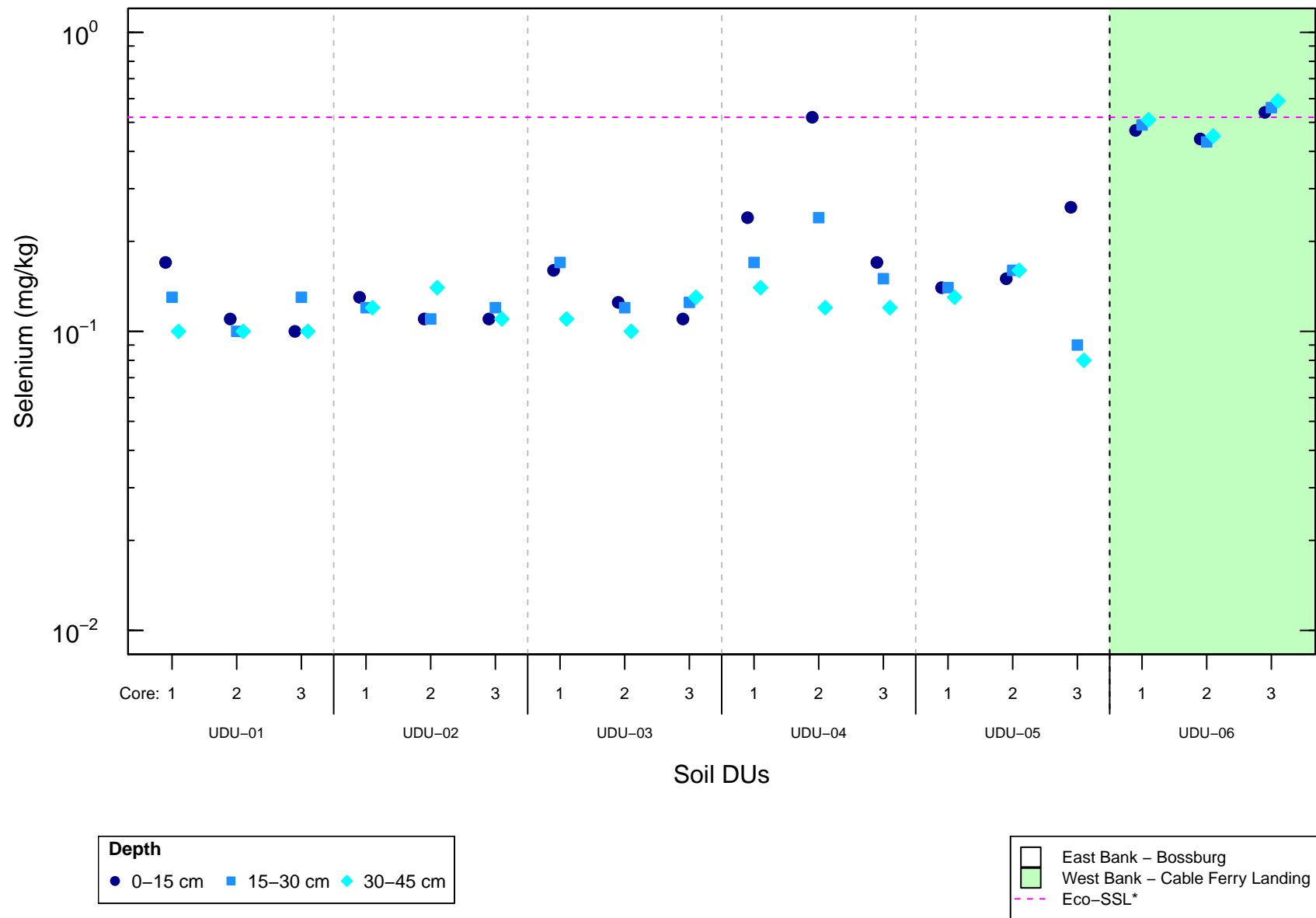
Depth
 ● 0-15 cm ■ 15-30 cm ◆ 30-45 cm

□ East Bank - Bossburg
 ■ West Bank - Cable Ferry Landing
 ■ East Bank - Evans Campground
 - - - Eco-SSL*

*Eco-SSL for selenium is 0.52 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

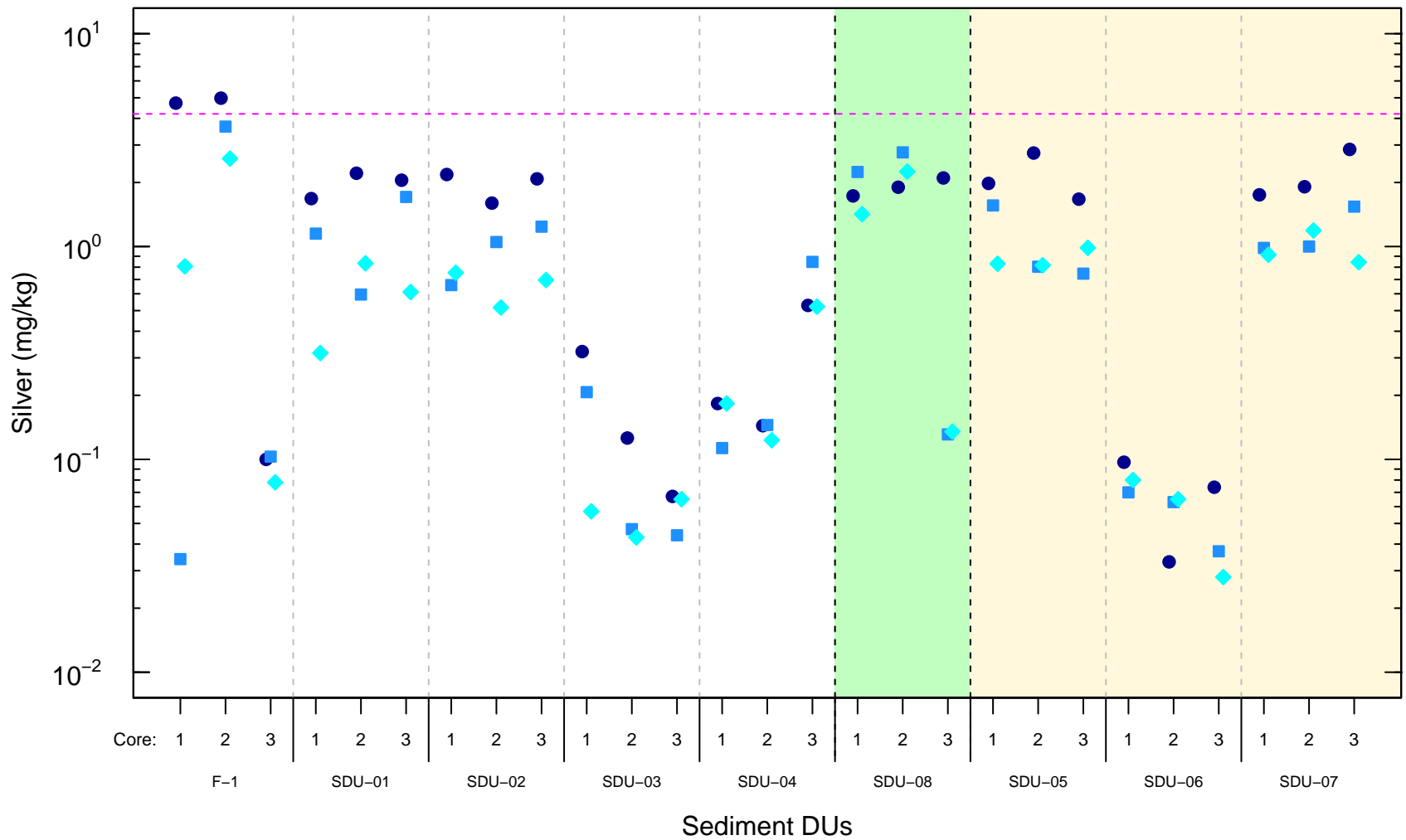
Figure 5-12ai. Selenium Concentrations in <2-mm Sediment Fractions of Core Samples



*Eco-SSL for selenium is 0.52 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5-12aj. Selenium Concentrations in < 2-mm Soil Fractions of Core Samples



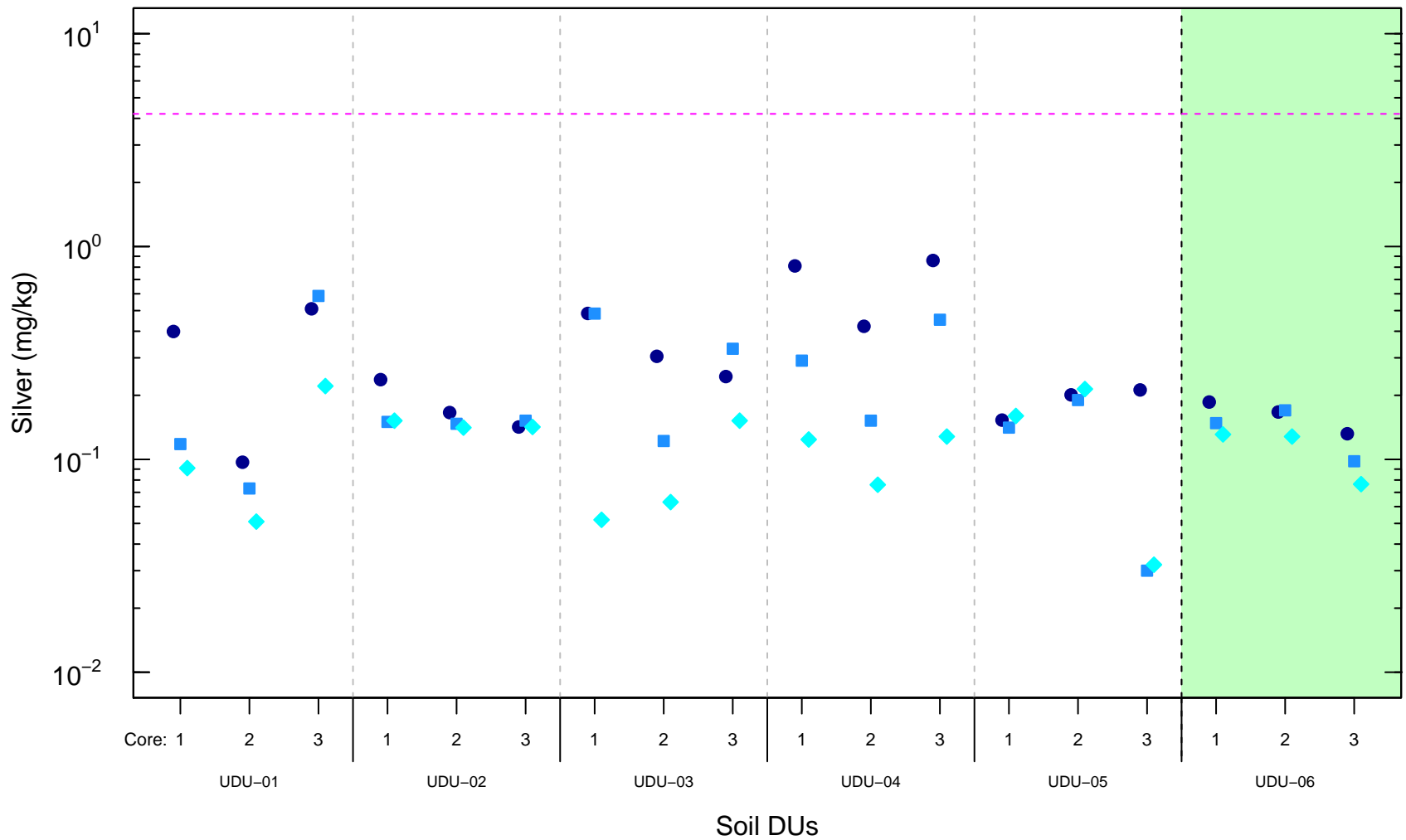
Depth
 ● 0-15 cm ■ 15-30 cm ◆ 30-45 cm

□ East Bank - Bossburg
 ■ West Bank - Cable Ferry Landing
 ■ East Bank - Evans Campground
 - - - Eco-SSL*

*Eco-SSL for silver is 4.2 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5-12ak. Silver Concentrations in <2-mm Sediment Fractions of Core Samples



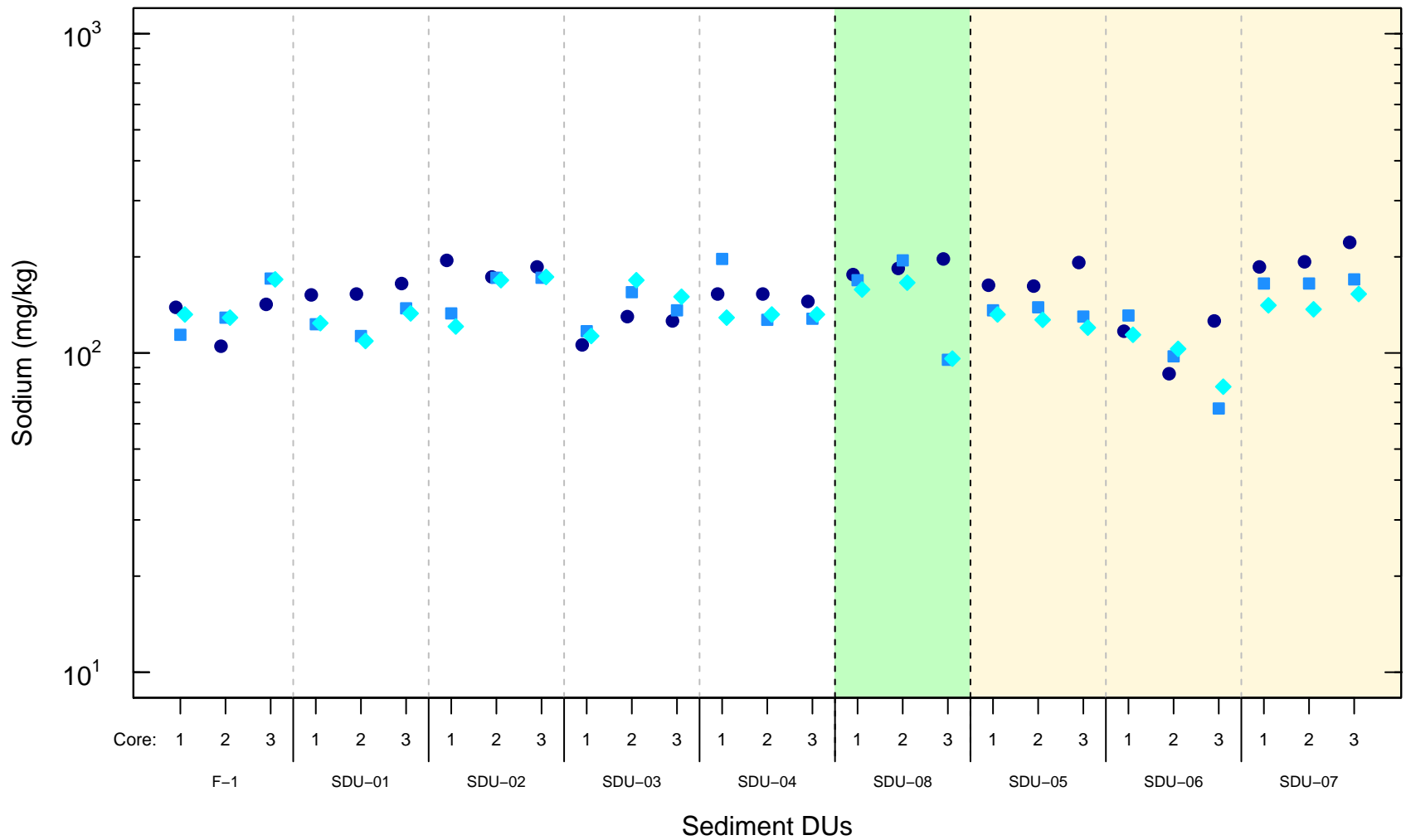
Depth
 ● 0-15 cm ■ 15-30 cm ◆ 30-45 cm

□ East Bank - Bossburg
 ■ West Bank - Cable Ferry Landing
 - - - Eco-SSL*

*Eco-SSL for silver is 4.2 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5-12al. Silver Concentrations in < 2-mm Soil Fractions of Core Samples



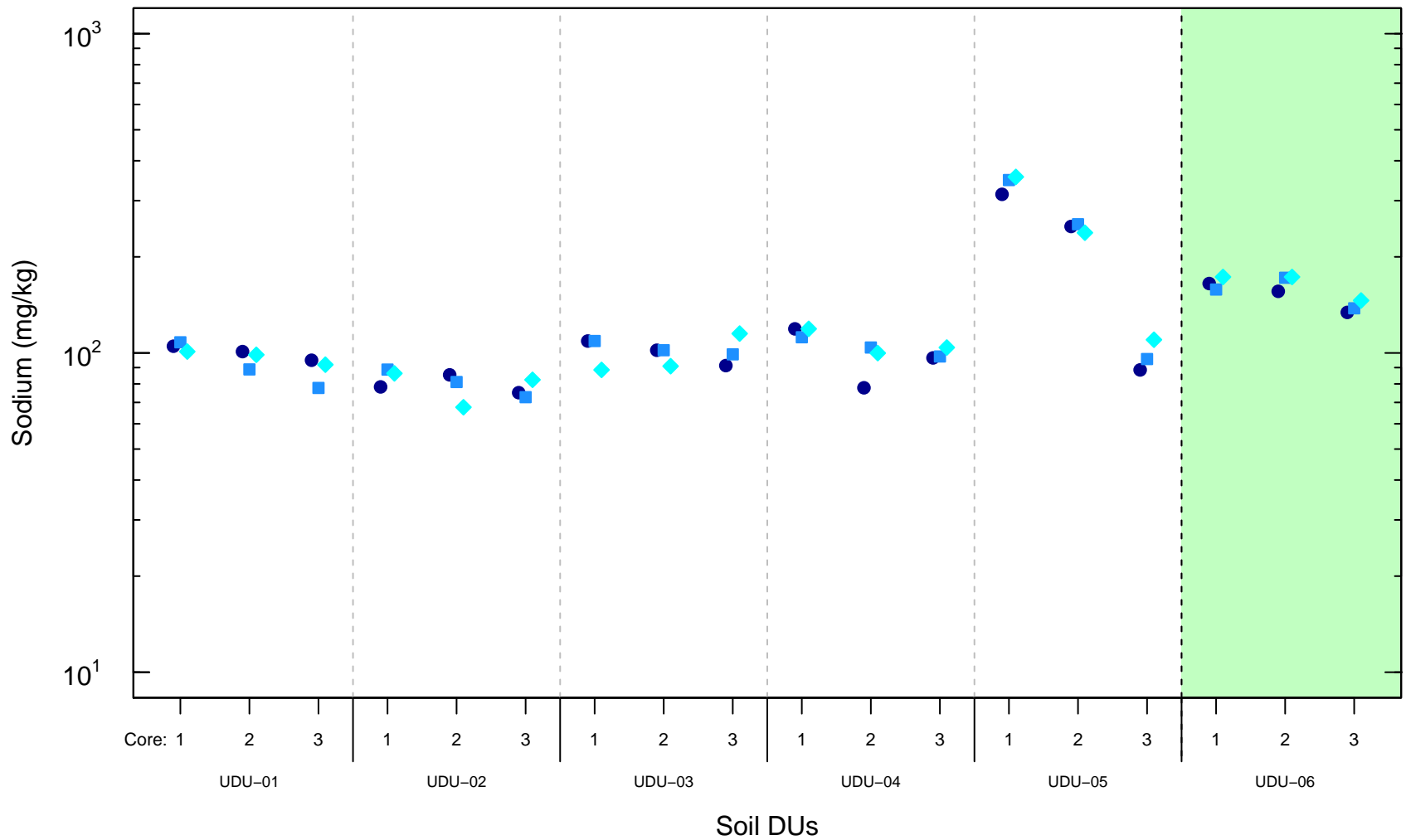
Depth
 ● 0–15 cm ■ 15–30 cm ◆ 30–45 cm

□ East Bank – Bossburg
 ■ West Bank – Cable Ferry Landing
 ■ East Bank – Evans Campground
 - - - Eco-SSL*

*No Eco-SSL is available for sodium

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5–12am. Sodium Concentrations in < 2–mm Sediment Fractions of Core Samples



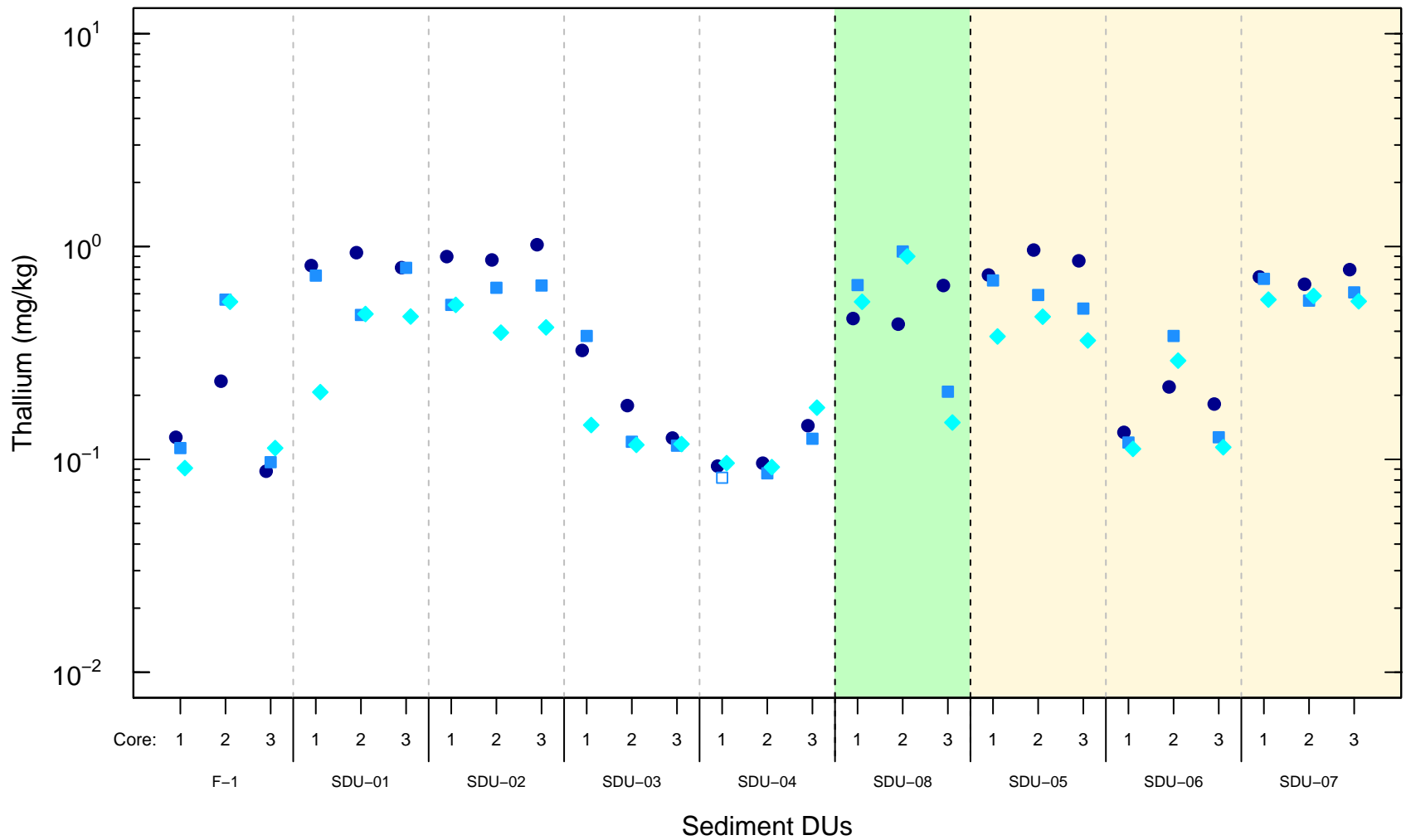
Depth
 ● 0–15 cm ■ 15–30 cm ◆ 30–45 cm

□ East Bank – Bossburg
 ■ West Bank – Cable Ferry Landing
 - - - Eco-SSL*

*No Eco-SSL is available for sodium

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5–12an. Sodium Concentrations in < 2–mm Soil Fractions of Core Samples



Depth

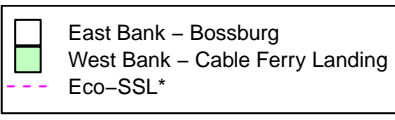
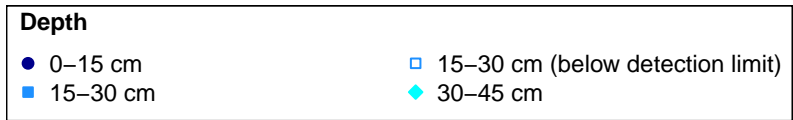
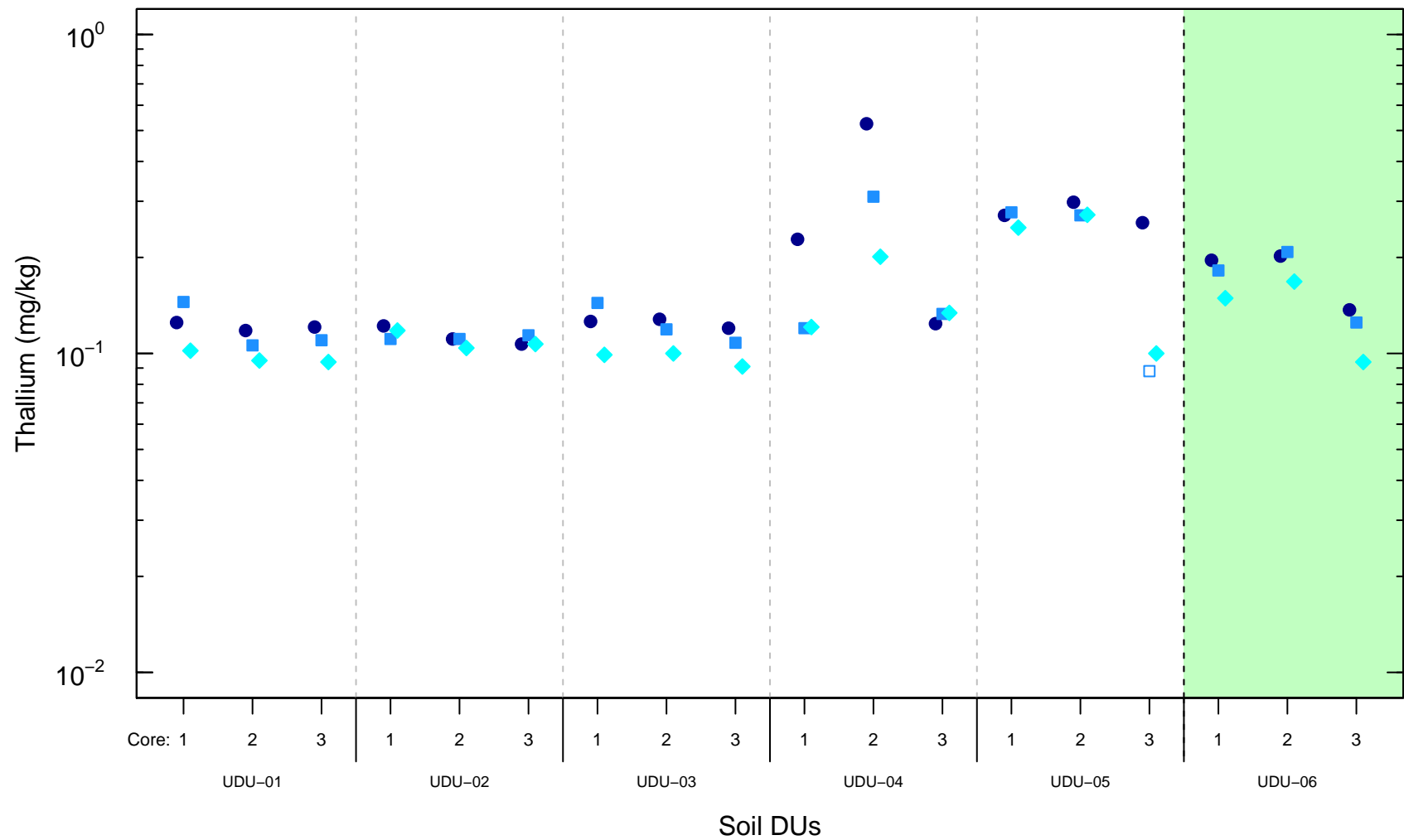
- 0–15 cm
- 15–30 cm
- 15–30 cm (below detection limit)
- ◆ 30–45 cm

- East Bank – Bossburg
- West Bank – Cable Ferry Landing
- East Bank – Evans Campground
- - - Eco-SSL*

*No Eco-SSL is available for thallium

Decision Units are presented upstream to downstream within an area of the Site.

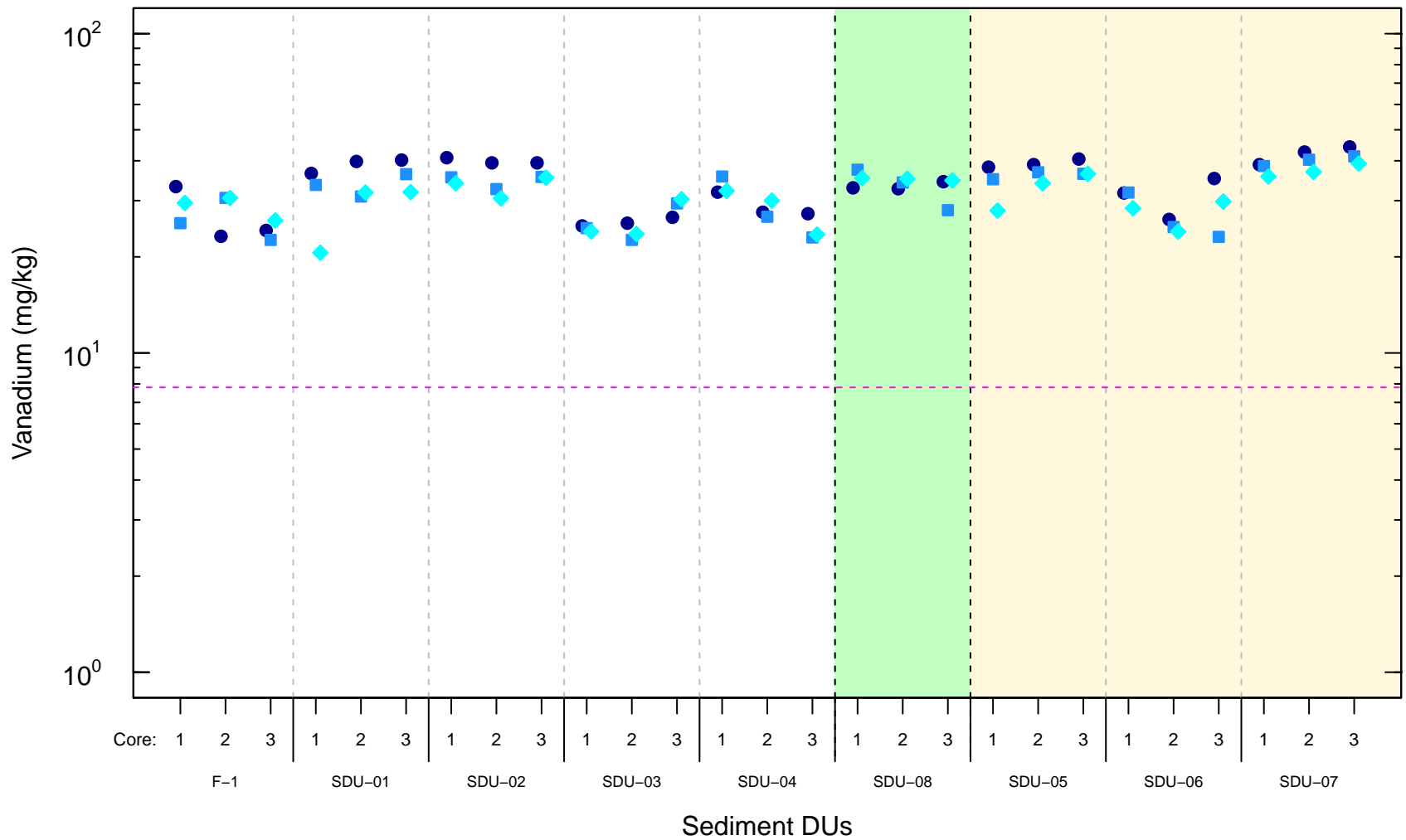
Figure 5–12ao. Thallium Concentrations in < 2–mm Sediment Fractions of Core Samples



*No Eco-SSL is available for thallium

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5-12ap. Thallium Concentrations in < 2-mm Soil Fractions of Core Samples



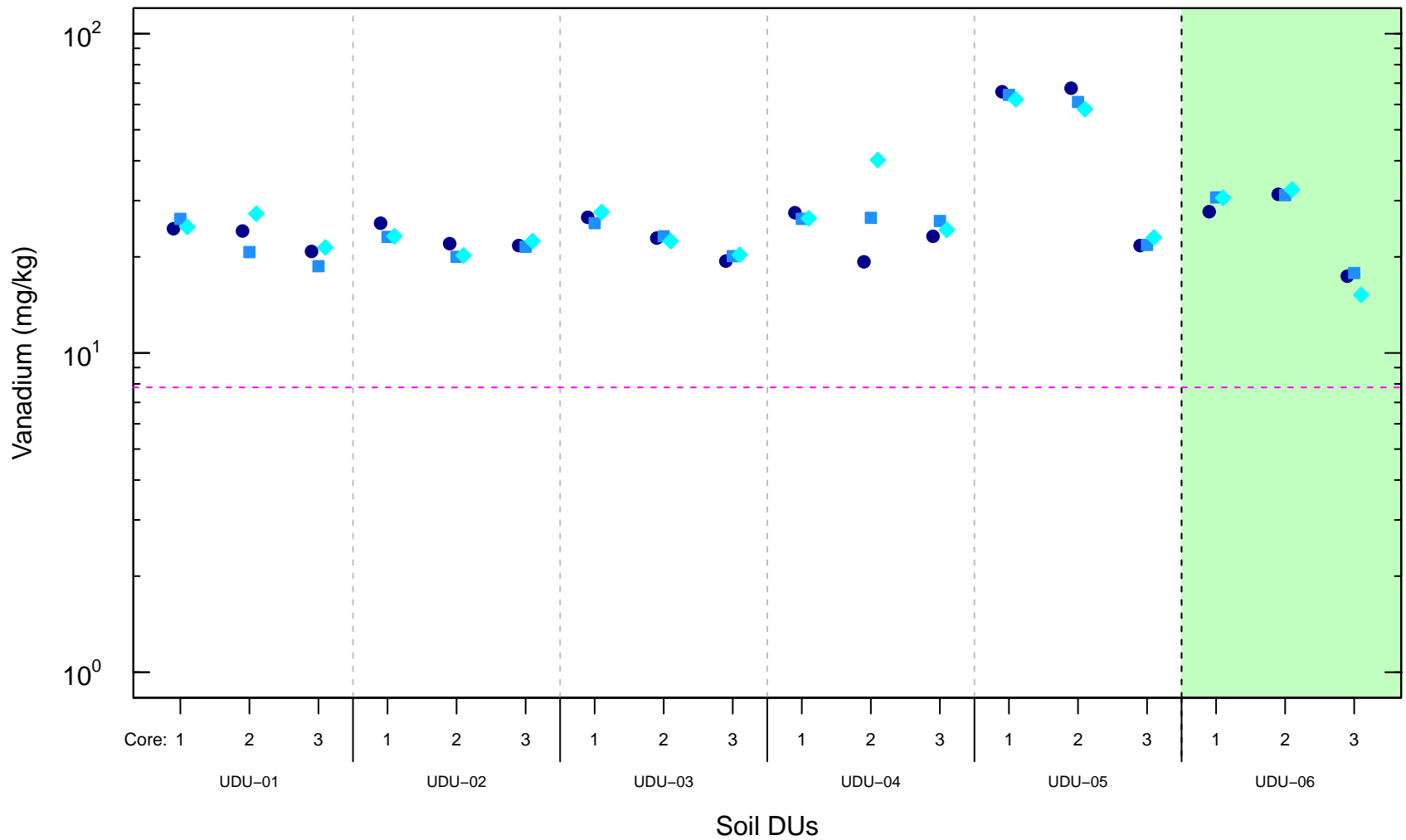
Depth
 ● 0–15 cm ■ 15–30 cm ◆ 30–45 cm

□ East Bank – Bossburg
 ■ West Bank – Cable Ferry Landing
 ■ East Bank – Evans Campground
 - - - Eco-SSL*

*Eco-SSL for vanadium is 7.8 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5–12aq. Vanadium Concentrations in < 2–mm Sediment Fractions of Core Samples



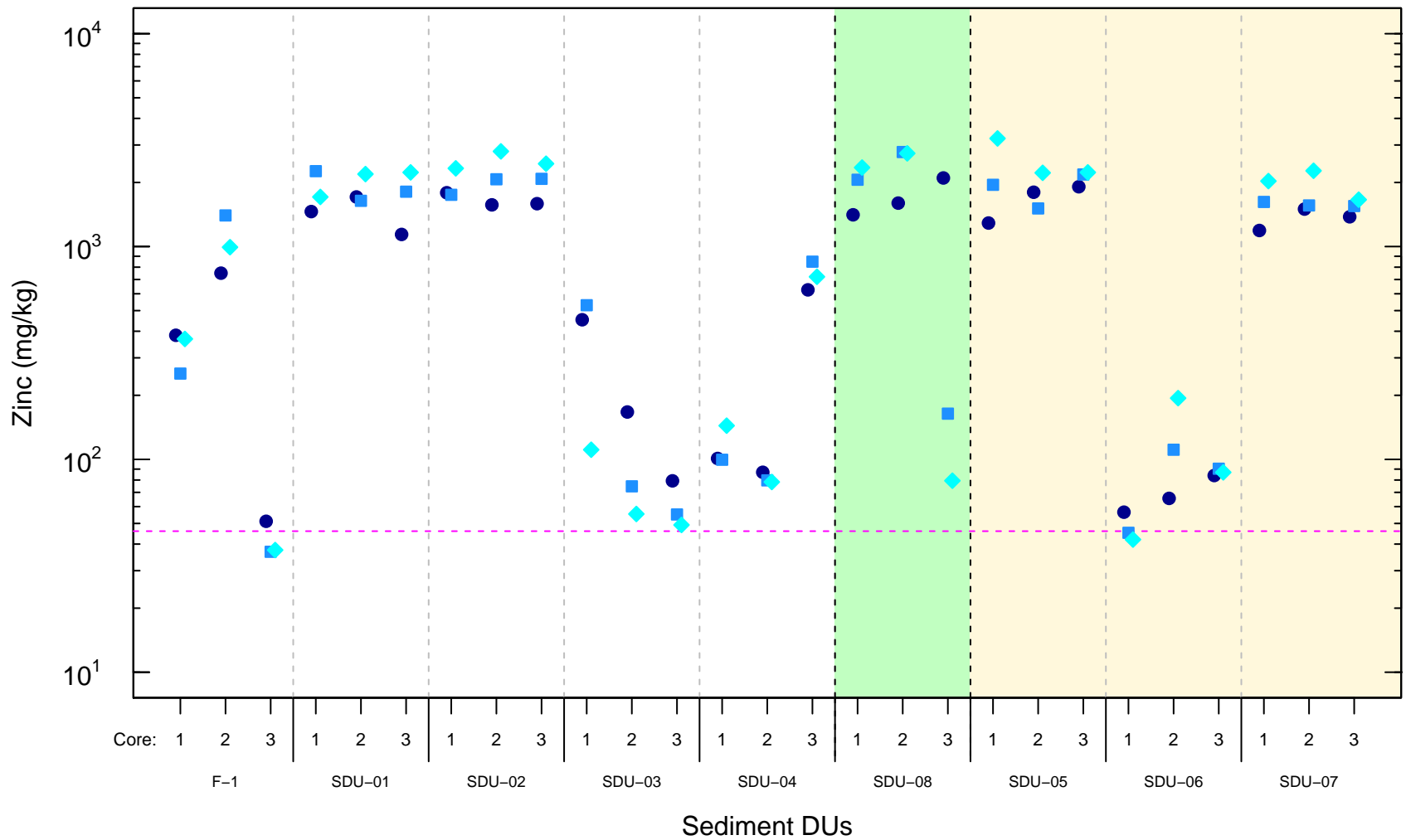
Depth
 ● 0-15 cm ■ 15-30 cm ◆ 30-45 cm

□ East Bank – Bossburg
 ■ West Bank – Cable Ferry Landing
 - - - Eco-SSL*

*Eco-SSL for vanadium is 7.8 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5-12ar. Vanadium Concentrations in < 2-mm Soil Fractions of Core Samples



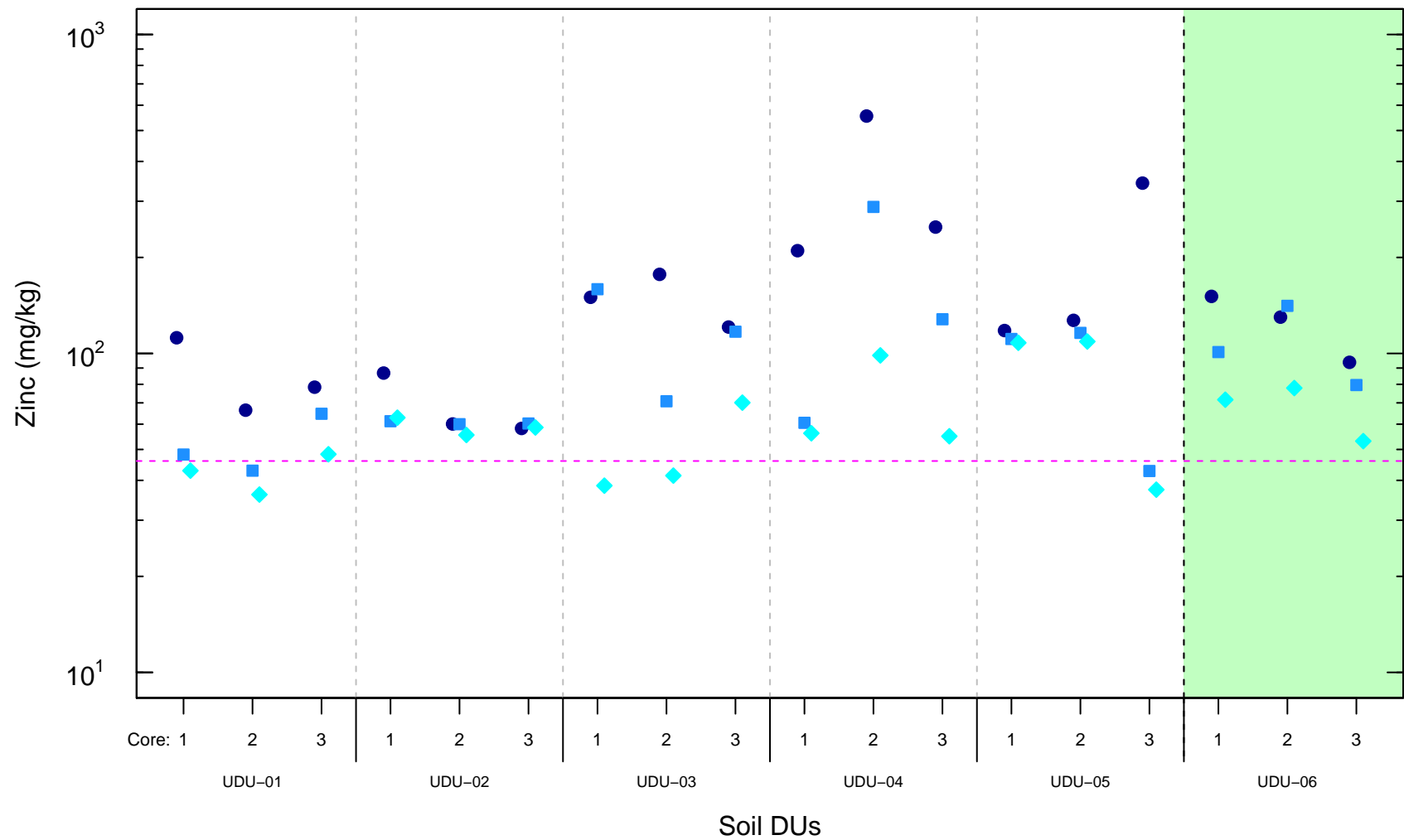
Depth
 ● 0–15 cm ■ 15–30 cm ◆ 30–45 cm

□ East Bank – Bossburg
 ■ West Bank – Cable Ferry Landing
 ■ East Bank – Evans Campground
 - - - Eco-SSL*

*Eco-SSL for zinc is 46 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5–12as. Zinc Concentrations in <2–mm Sediment Fractions of Core Samples



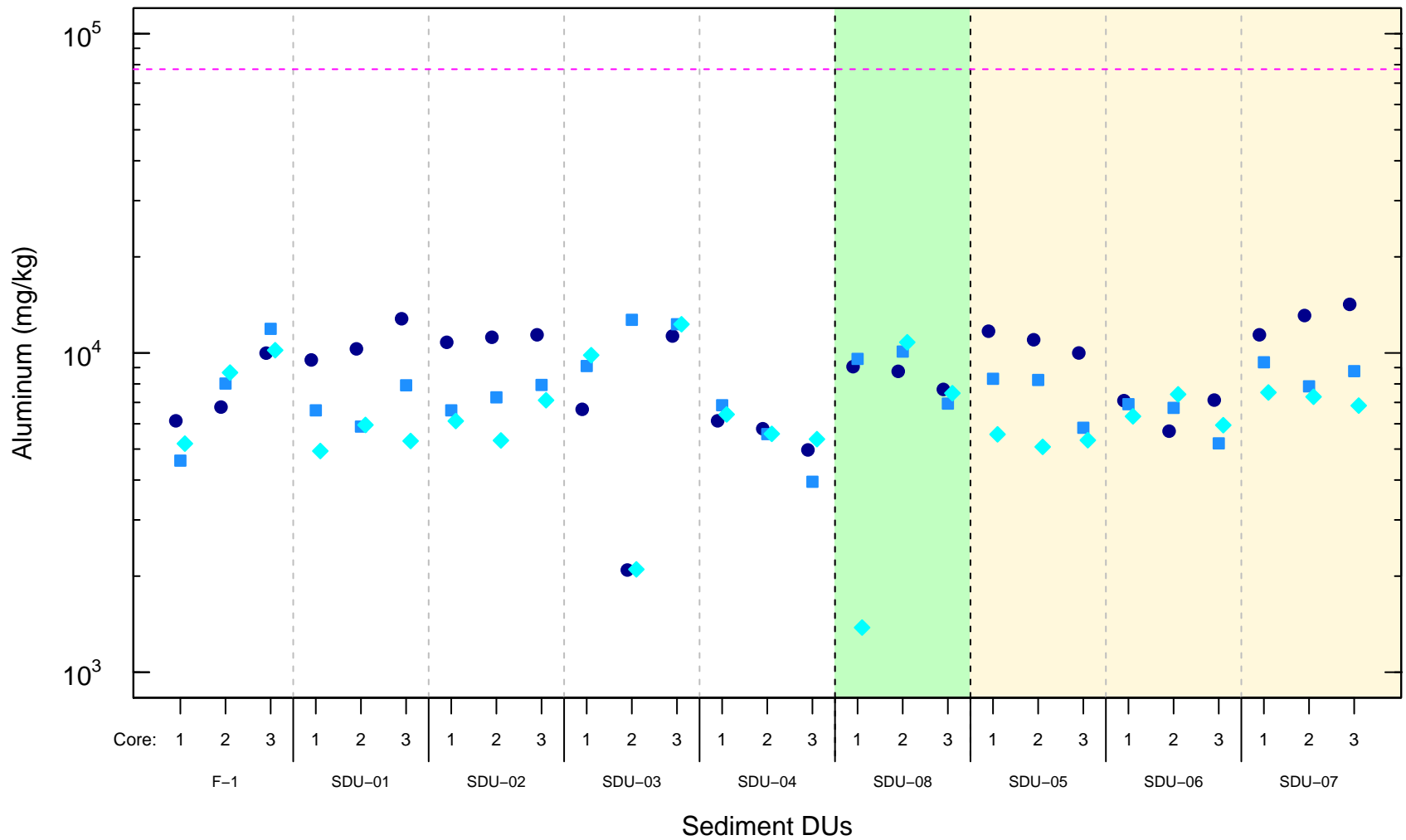
Depth
 ● 0–15 cm ■ 15–30 cm ◆ 30–45 cm

□ East Bank – Bossburg
 ■ West Bank – Cable Ferry Landing
 - - - Eco-SSL*

*Eco-SSL for zinc is 46 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5–12at. Zinc Concentrations in < 2–mm Soil Fractions of Core Samples



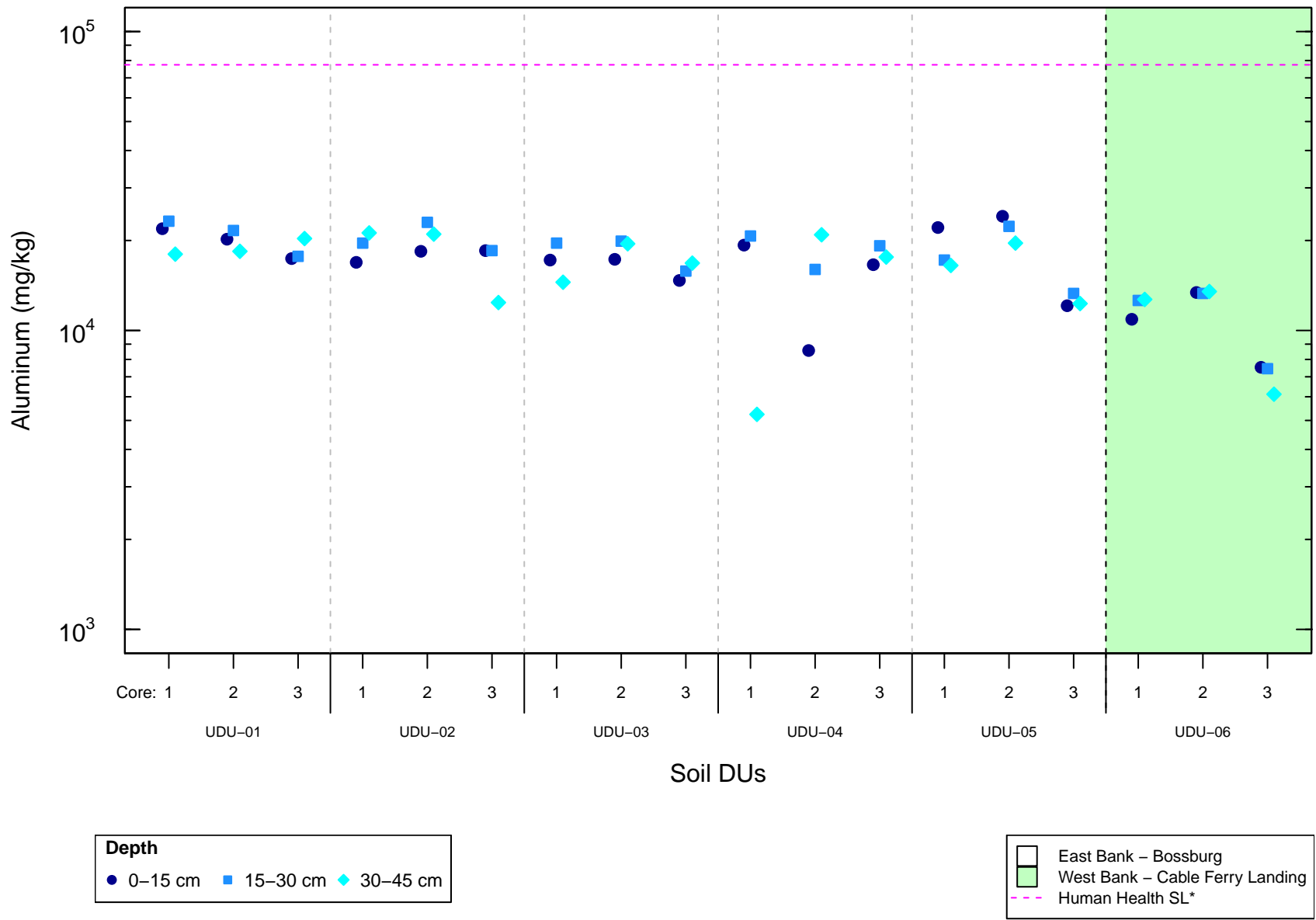
Depth
 ● 0–15 cm ■ 15–30 cm ◆ 30–45 cm

□ East Bank – Bossburg
 ■ West Bank – Cable Ferry Landing
 ■ East Bank – Evans Campground
 - - - Human Health SL*

*Human health SL for aluminum is 77,400 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

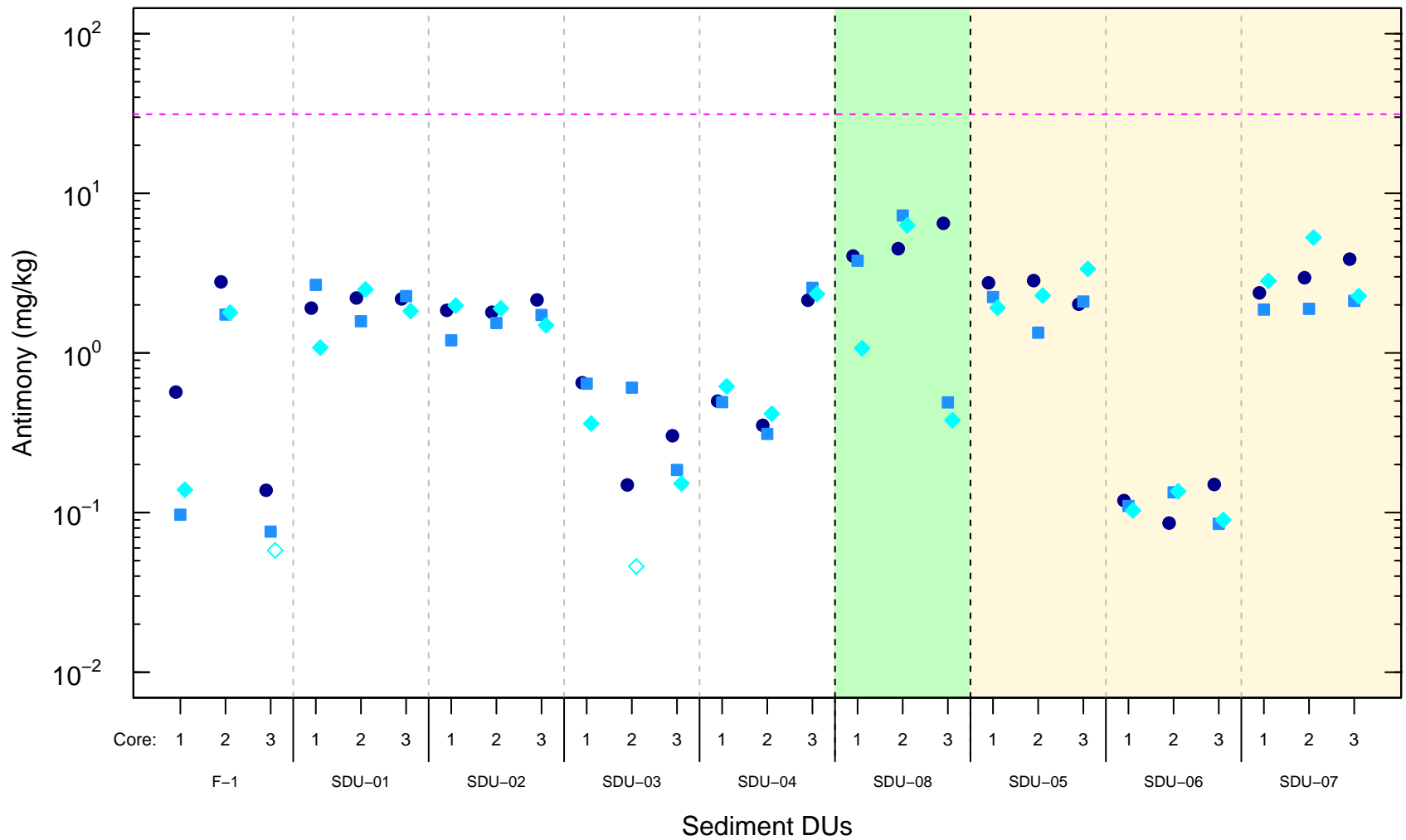
Figure 5–13a. Aluminum Concentrations in < 250- μ m Sediment Fractions of Core Samples



*Human health SL for aluminum is 77,400 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5–13b. Aluminum Concentrations in < 150-µm Soil Fractions of Core Samples



Depth

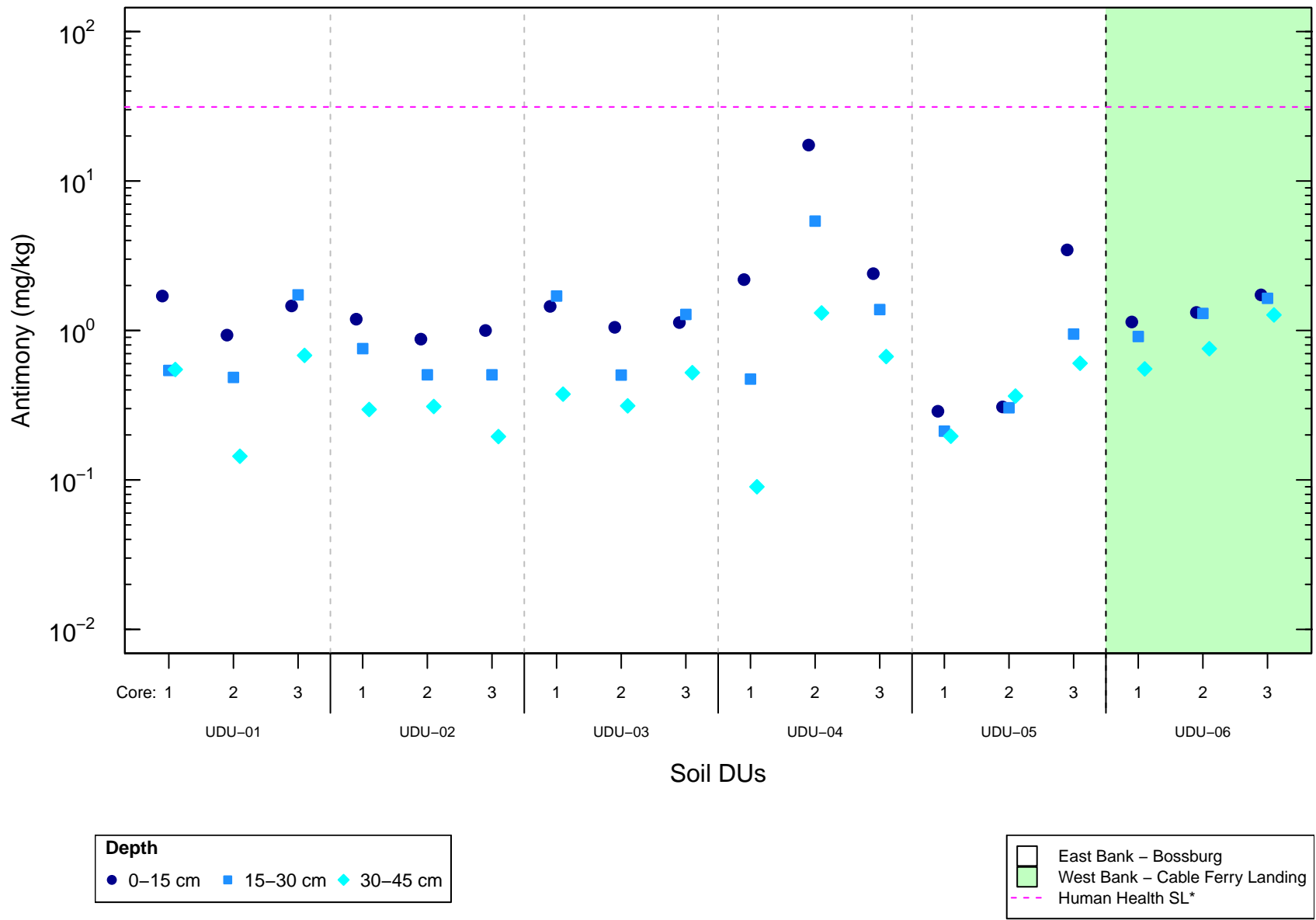
- 0–15 cm
- 15–30 cm
- ◆ 30–45 cm
- ◇ 30–45 cm (below detection limit)

- East Bank – Bossburg
- West Bank – Cable Ferry Landing
- East Bank – Evans Campground
- Human Health SL*

*Human health SL for antimony is 31.3 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

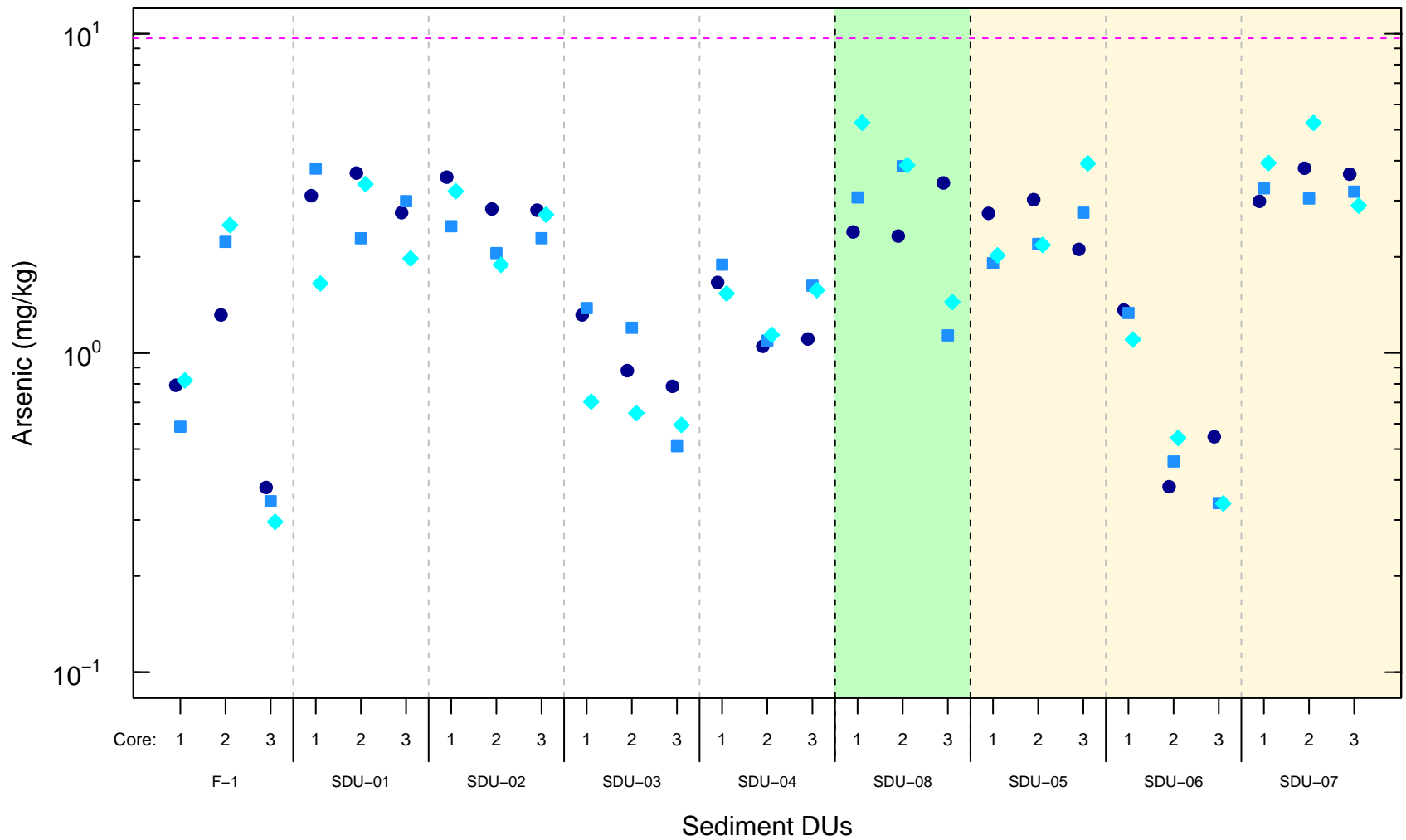
Figure 5–13c. Antimony Concentrations in < 250- μ m Sediment Soil Fractions of Core Samples



*Human health SL for antimony is 31.3 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5–13d. Antimony Concentrations in < 150- μ m Soil Fractions of Core Samples



Depth
 ● 0–15 cm ■ 15–30 cm ◆ 30–45 cm

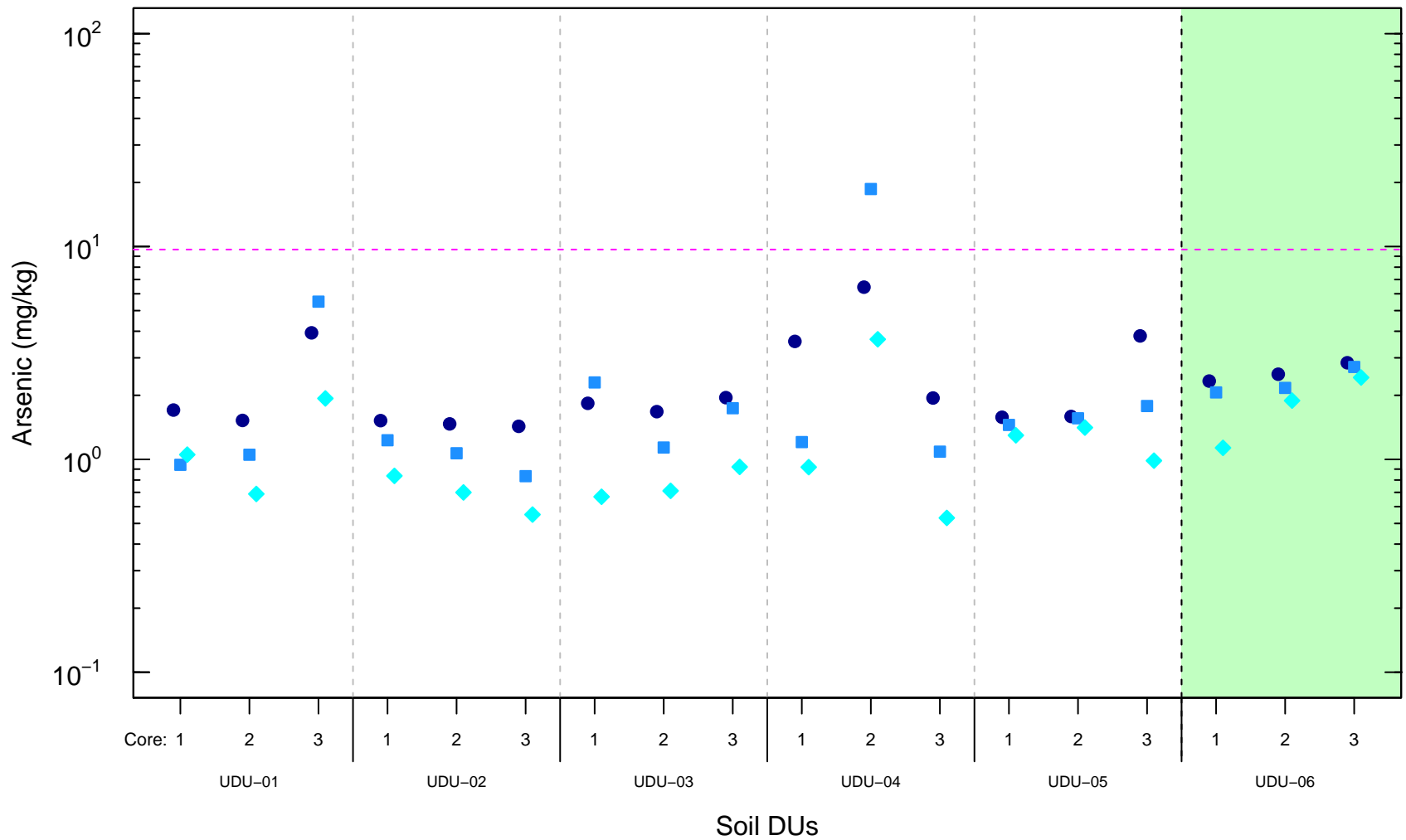
□ East Bank – Bossburg
 ■ West Bank – Cable Ferry Landing
 ■ East Bank – Evans Campground
 - - - Human Health SL*

Concentrations have been adjusted for site-specific relative bioavailability (RBA).

*Human health SL for arsenic is 9.68 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5–13e. Arsenic Concentrations in < 250- μ m Sediment Fractions of Core Samples



Depth
 ● 0-15 cm ■ 15-30 cm ◆ 30-45 cm

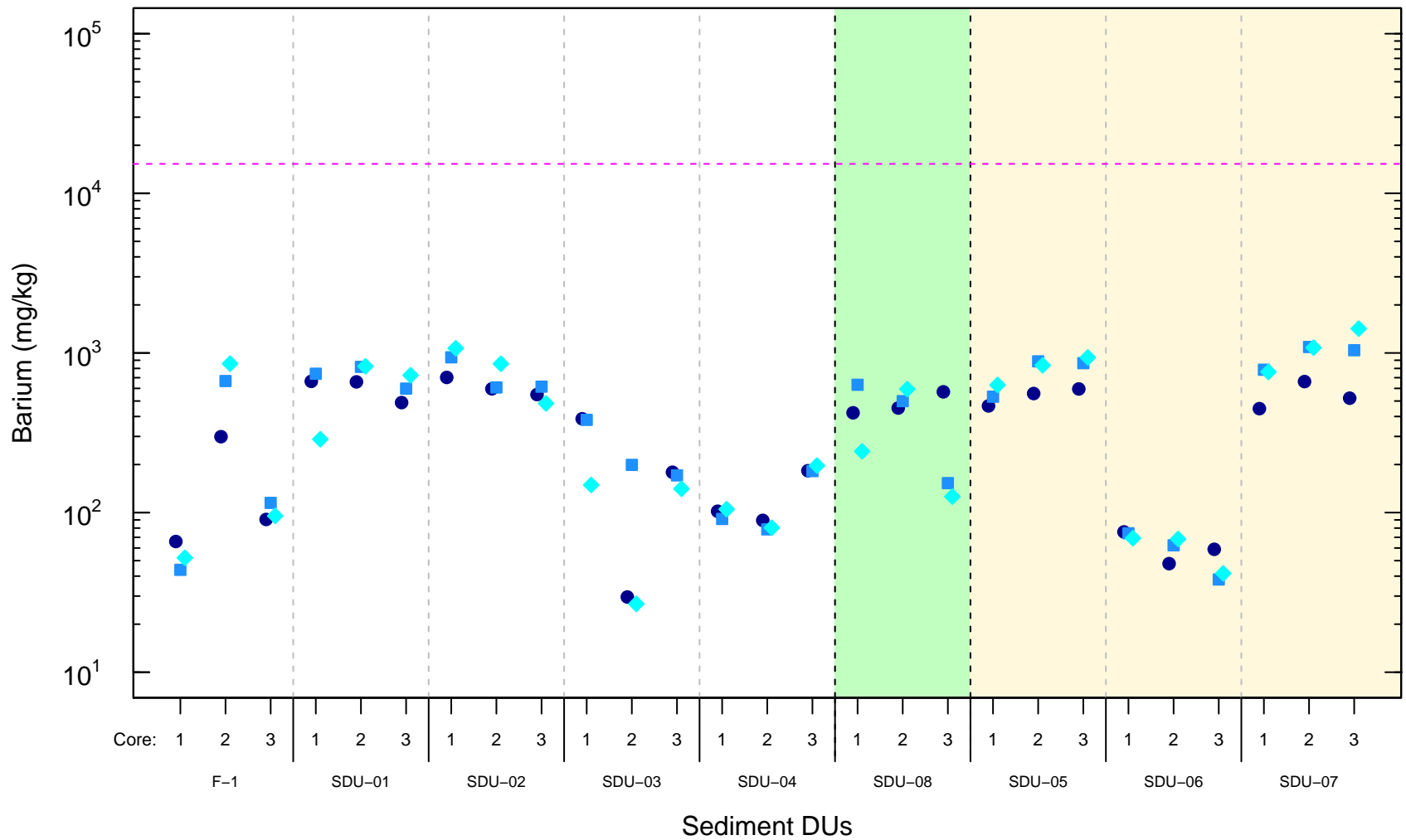
□ East Bank – Bossburg
 ■ West Bank – Cable Ferry Landing
 - - - Human Health SL*

Concentrations have been adjusted for site-specific relative bioavailability (RBA).

*Human health SL for arsenic is 9.68 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5-13f. Arsenic Concentrations in < 150-µm Soil Fractions of Core Samples



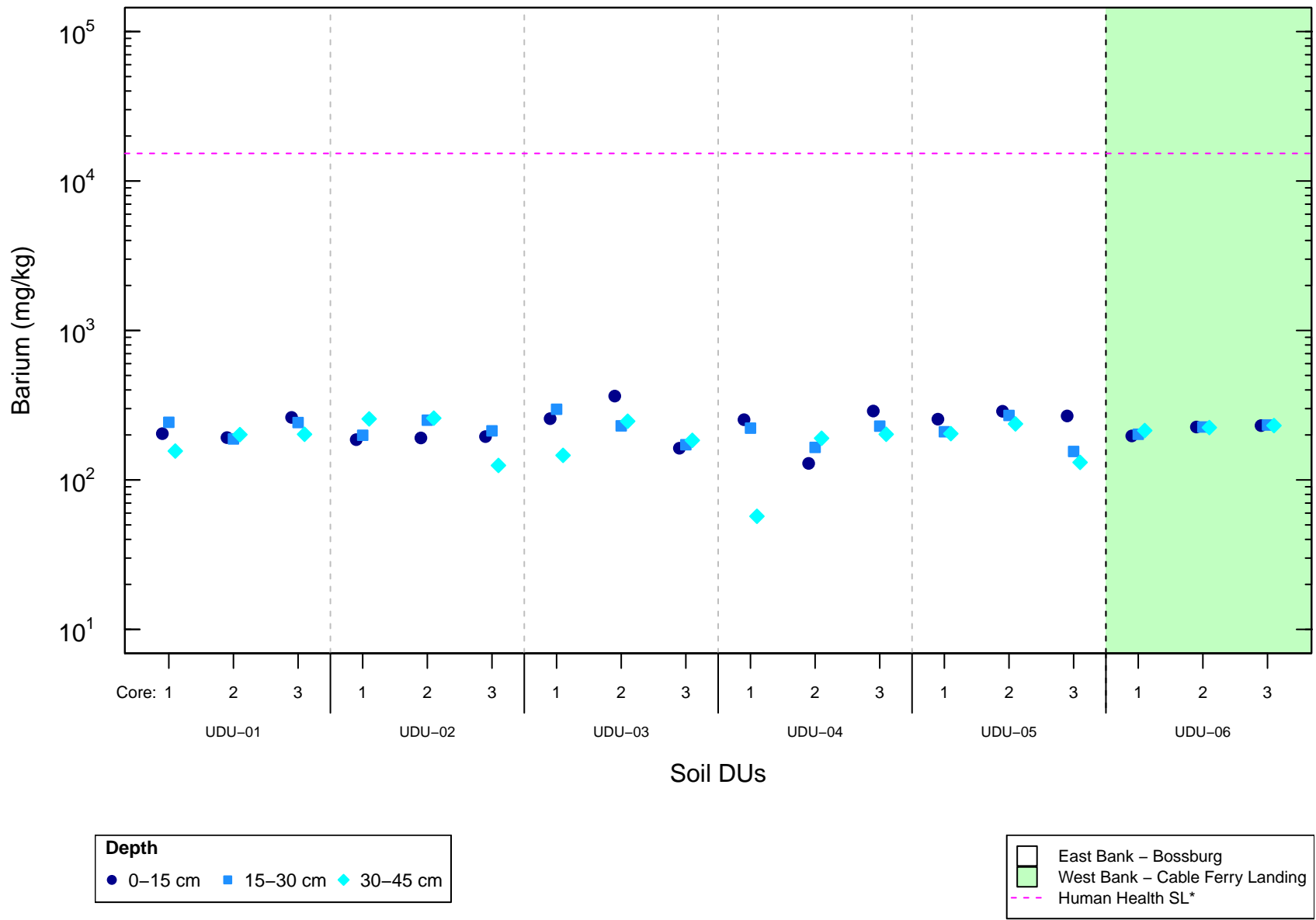
Depth
 ● 0–15 cm ■ 15–30 cm ◆ 30–45 cm

□ East Bank – Bossburg
 ■ West Bank – Cable Ferry Landing
 ■ East Bank – Evans Campground
 - - - Human Health SL*

*Human health SL for barium is 15,300 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

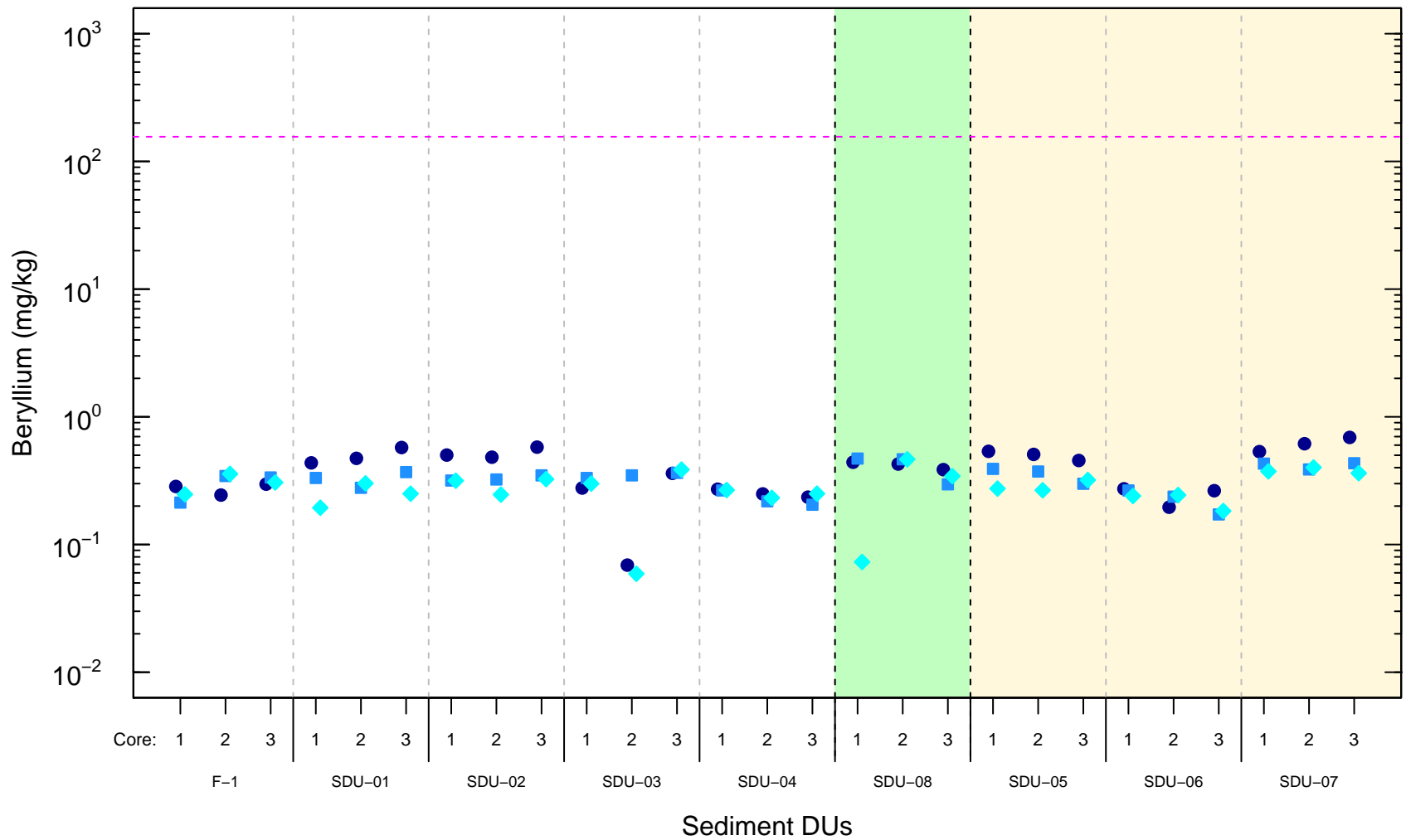
Figure 5–13g. Barium Concentrations in < 250–µm Sediment Fractions of Core Samples



*Human health SL for barium is 15,300 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5-13h. Barium Concentrations in < 150- μ m Soil Fractions of Core Samples



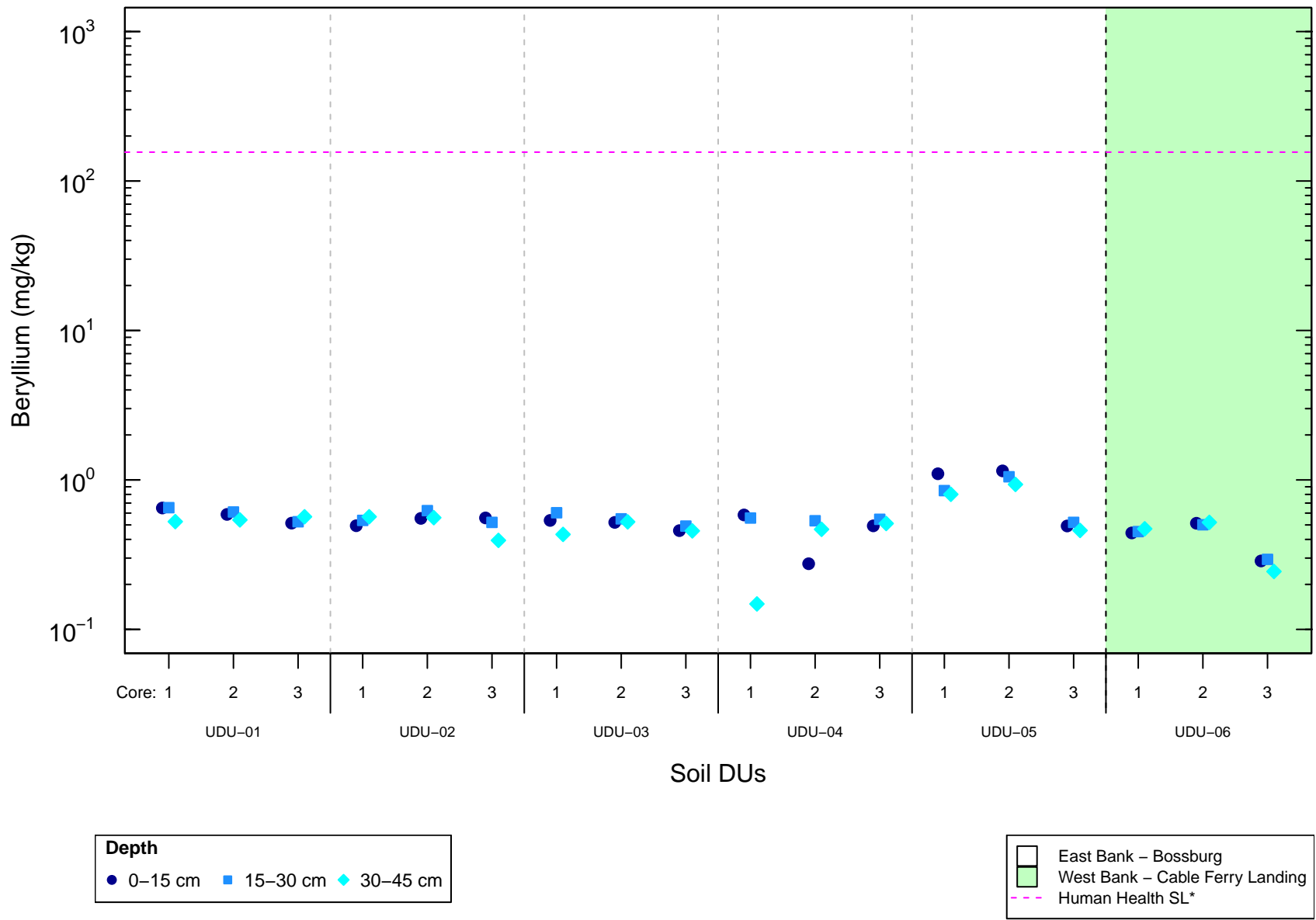
Depth
 ● 0–15 cm ■ 15–30 cm ◆ 30–45 cm

□ East Bank – Bossburg
 ■ West Bank – Cable Ferry Landing
 □ East Bank – Evans Campground
 - - - Human Health SL*

*Human health SL for beryllium is 156 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

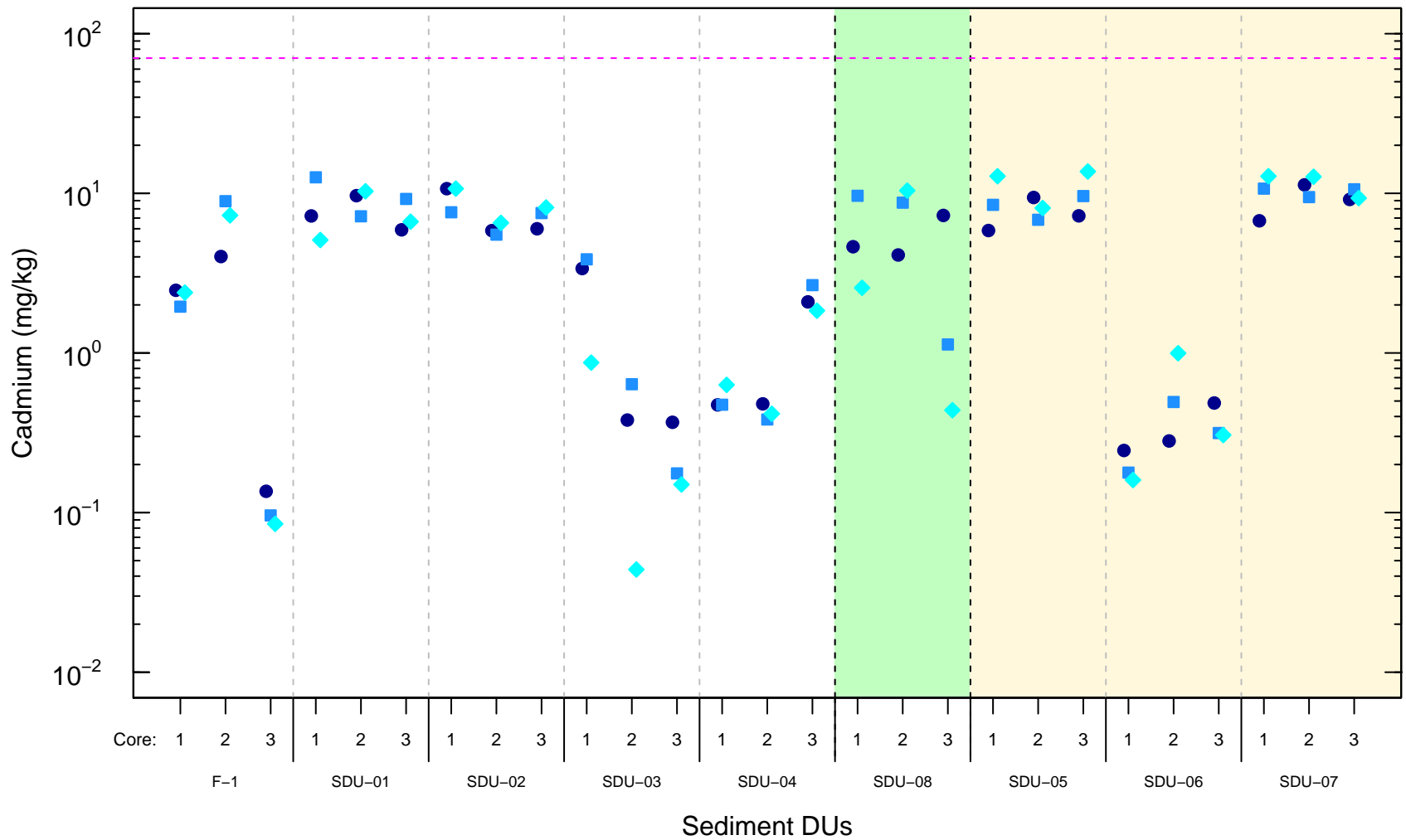
Figure 5–13i. Beryllium Concentrations in < 250–µm Sediment Fractions of Core Samples



*Human health SL for beryllium is 156 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5-13j. Beryllium Concentrations in < 150- μ m Soil Fractions of Core Samples



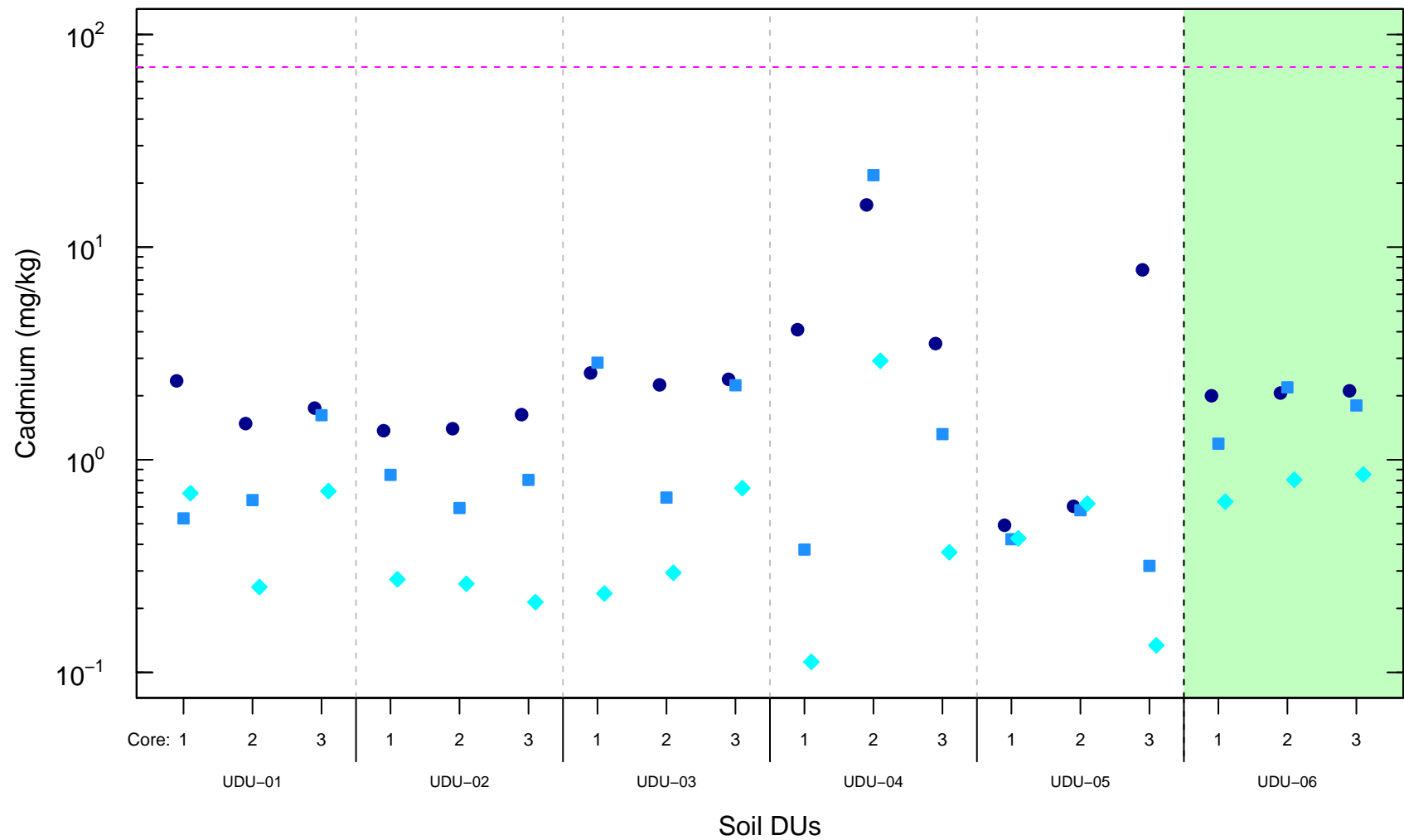
Depth
 ● 0–15 cm ■ 15–30 cm ◆ 30–45 cm

□ East Bank – Bossburg
 ■ West Bank – Cable Ferry Landing
 □ East Bank – Evans Campground
 - - - Human Health SL*

*Human health SL for cadmium is 70.3 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5–13k. Cadmium Concentrations in < 250–µm Sediment Fractions of Core Samples



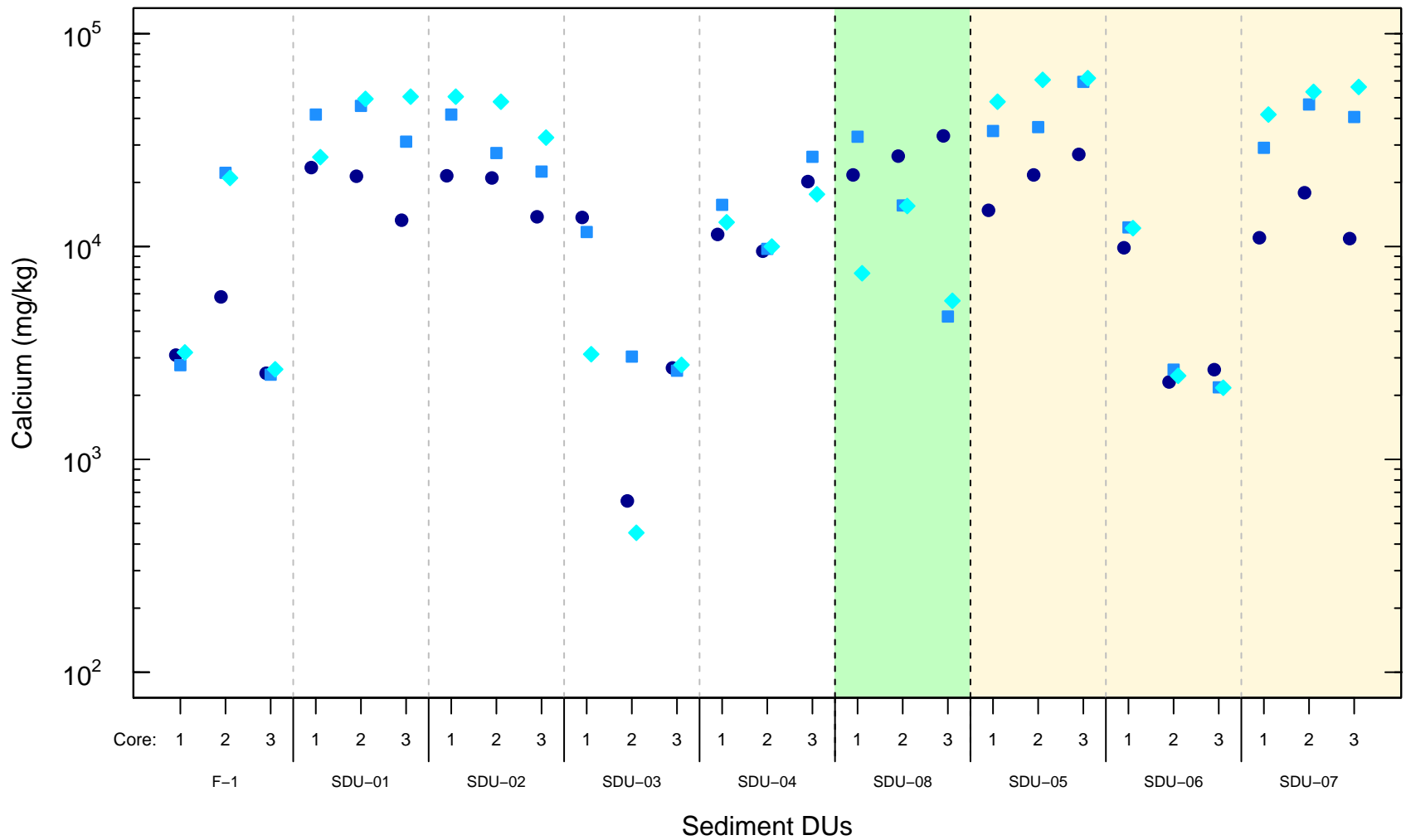
Depth
 ● 0-15 cm ■ 15-30 cm ◆ 30-45 cm

□ East Bank – Bossburg
 ■ West Bank – Cable Ferry Landing
 - - - Human Health SL*

*Human health SL for cadmium is 70.3 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5-13l. Cadmium Concentrations in < 150-µm Soil Fractions of Core Samples



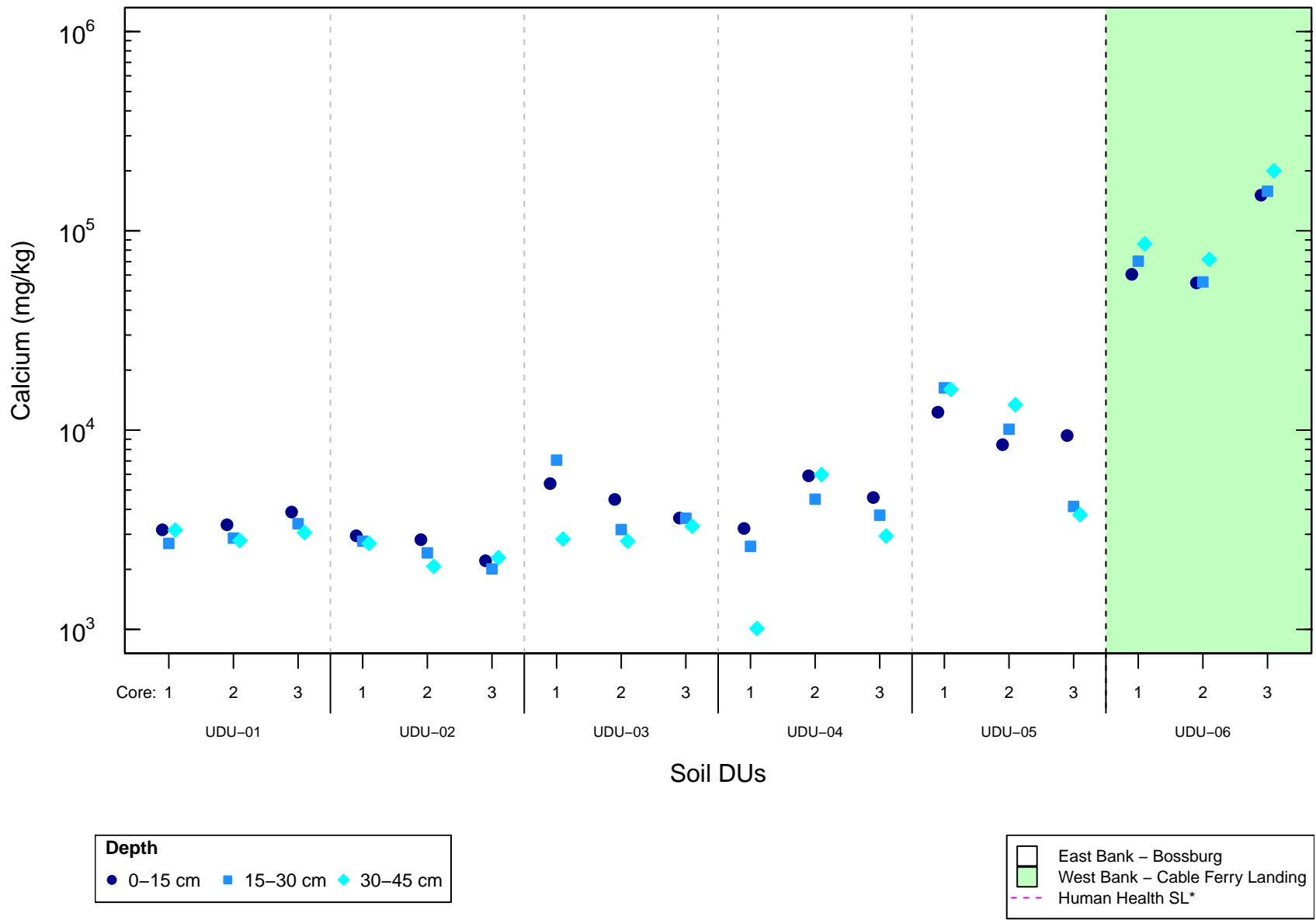
Depth
 ● 0–15 cm ■ 15–30 cm ◆ 30–45 cm

□ East Bank – Bossburg
 ■ West Bank – Cable Ferry Landing
 ■ East Bank – Evans Campground
 - - - Human Health SL*

*No human health SL is available for calcium

Decision Units are presented upstream to downstream within an area of the Site.

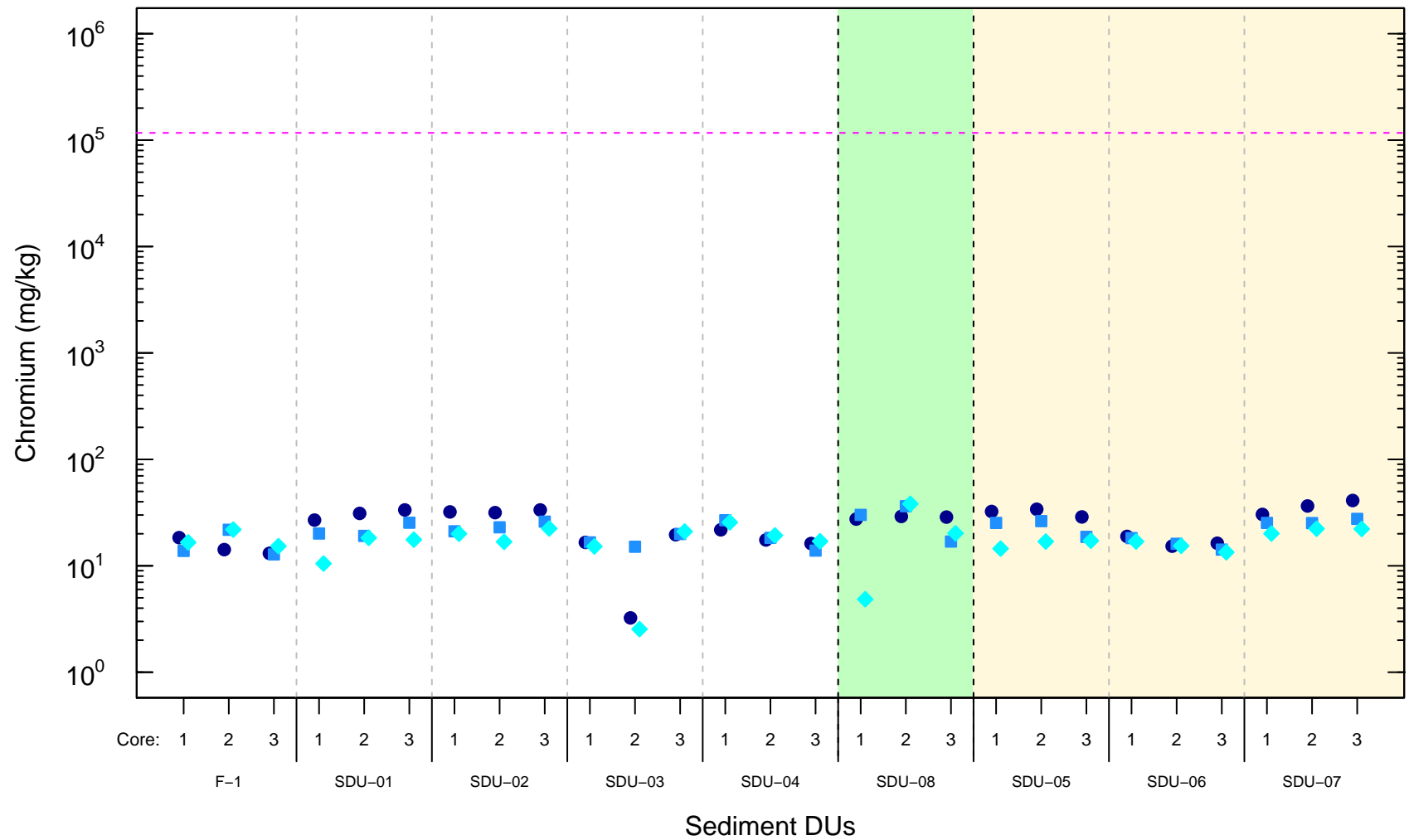
Figure 5–13m. Calcium Concentrations in < 250- μ m Sediment Soil Fractions of Core Samples



*No human health SL is available for calcium

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5-13n. Calcium Concentrations in < 150- μ m Soil Fractions of Core Samples



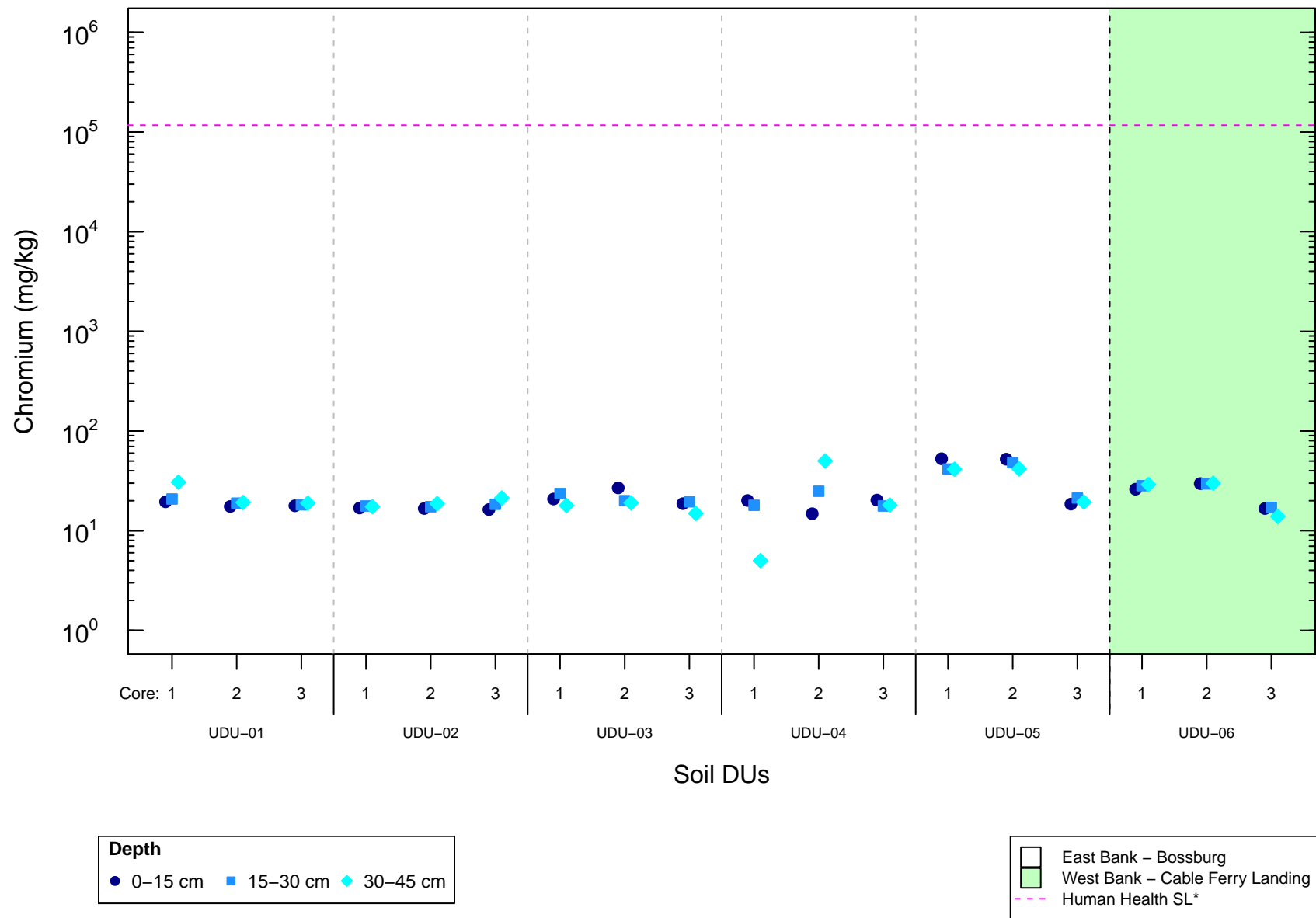
Depth
 ● 0–15 cm ■ 15–30 cm ◆ 30–45 cm

□ East Bank – Bossburg
 ■ West Bank – Cable Ferry Landing
 ■ East Bank – Evans Campground
 - - - Human Health SL*

*Human health SL for chromium is 117,000 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

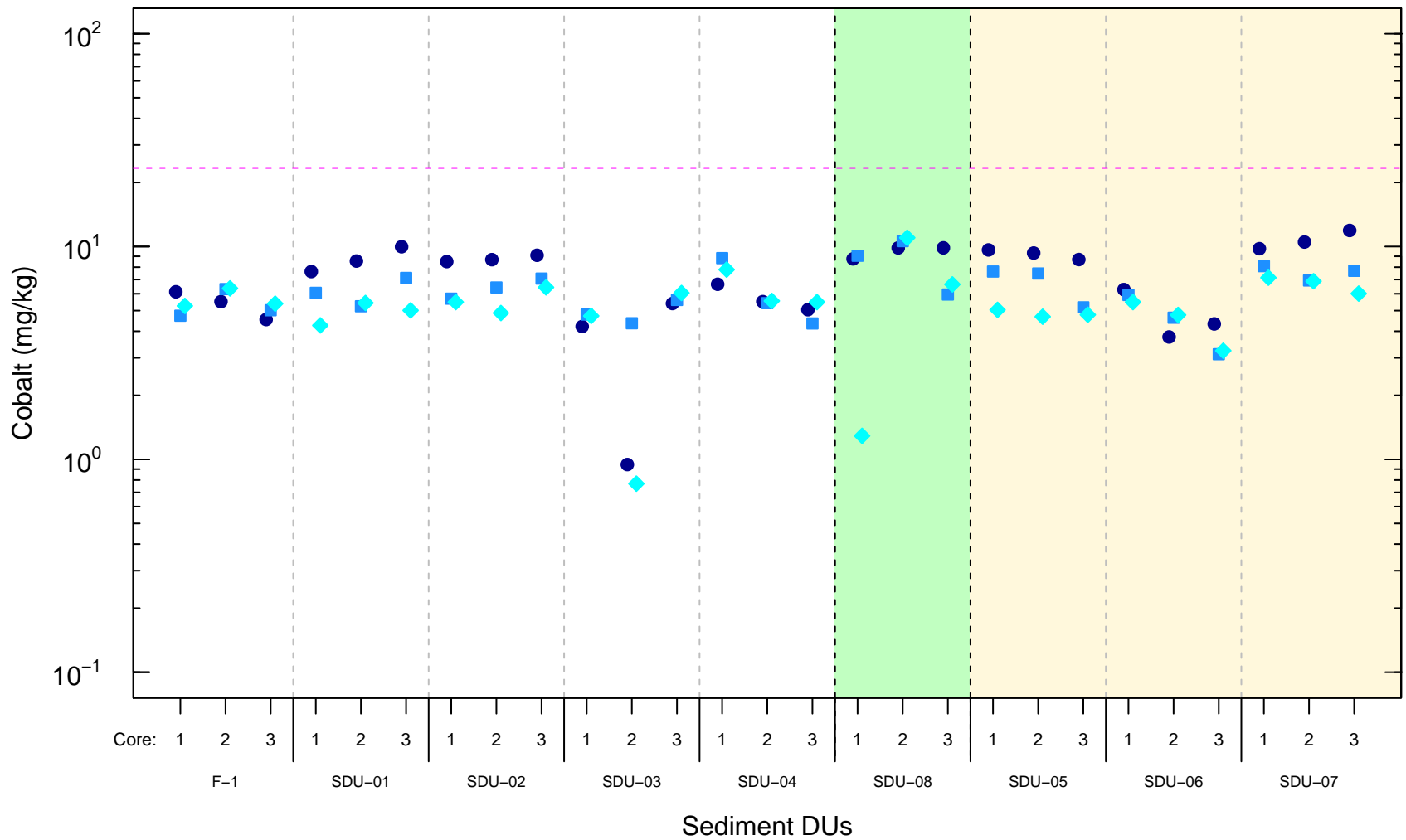
Figure 5–13o. Chromium Concentrations in < 250–µm Sediment Fractions of Core Samples



*Human health SL for chromium is 117,000 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5–13p. Chromium Concentrations in < 150-µm Soil Fractions of Core Samples



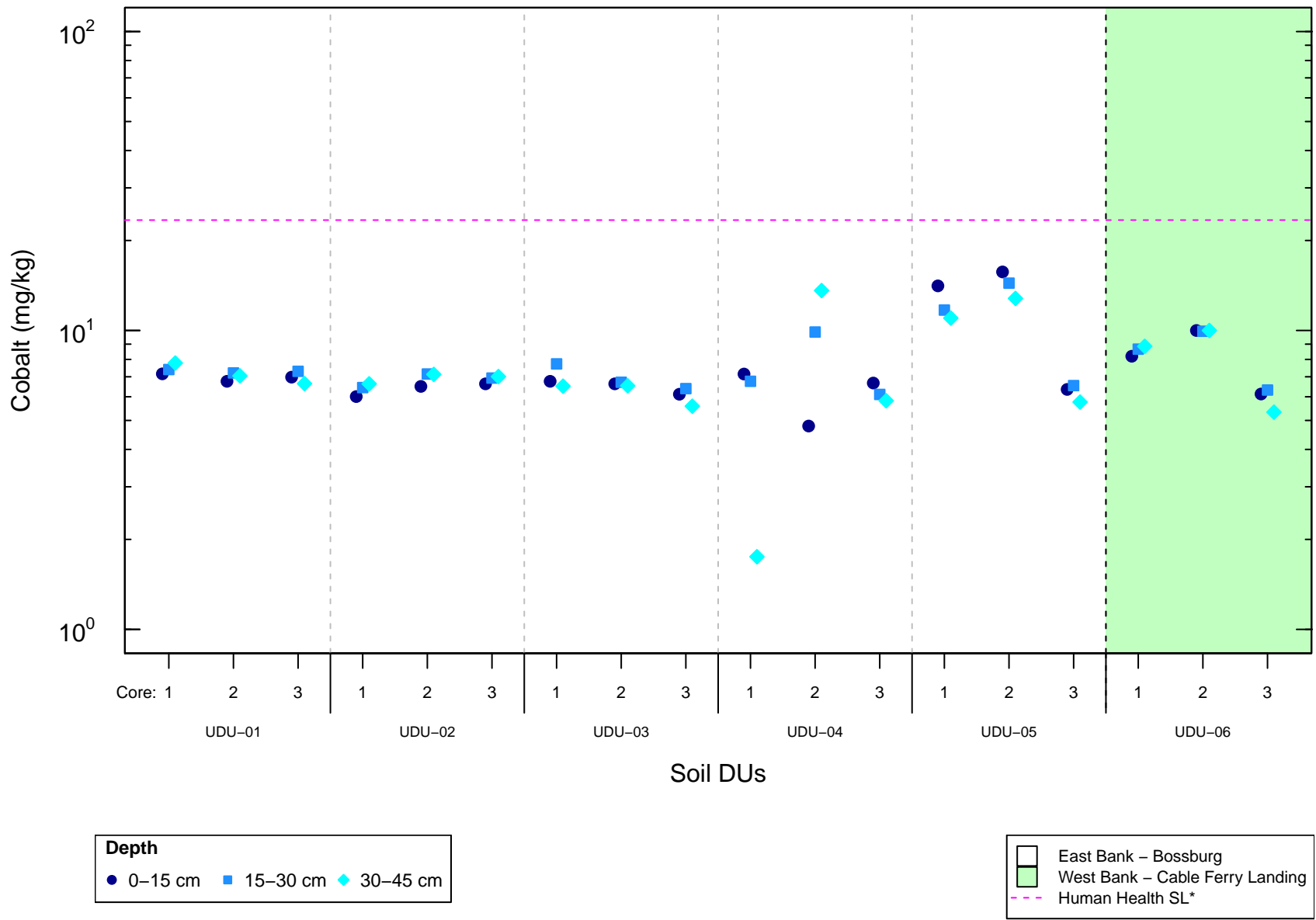
Depth
 ● 0–15 cm ■ 15–30 cm ◆ 30–45 cm

□ East Bank – Bossburg
 ■ West Bank – Cable Ferry Landing
 ■ East Bank – Evans Campground
 - - - Human Health SL*

*Human health SL for cobalt is 23.4 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

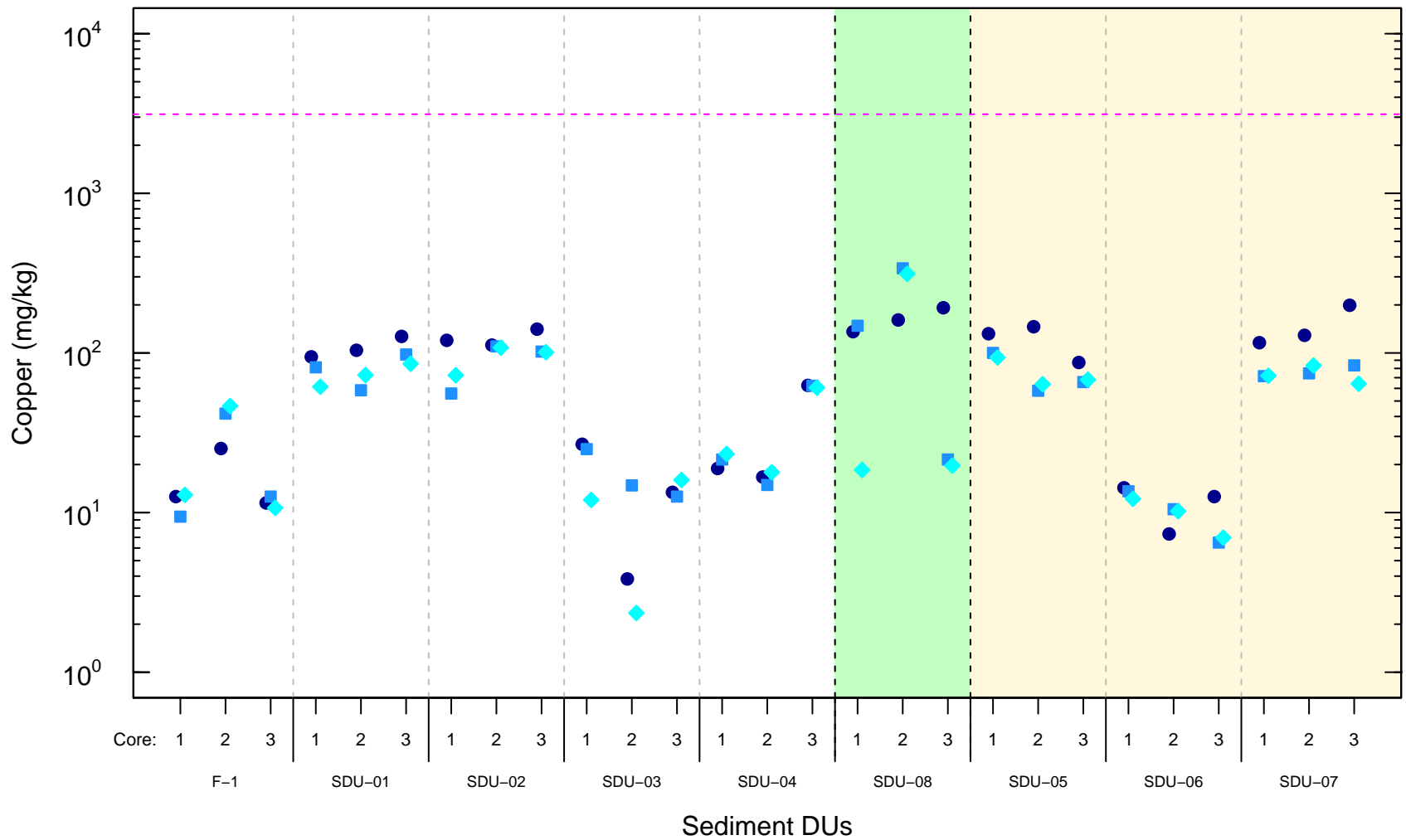
Figure 5–13q. Cobalt Concentrations in < 250–µm Sediment Fractions of Core Samples



*Human health SL for cobalt is 23.4 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5-13r. Cobalt Concentrations in < 150- μ m Soil Fractions of Core Samples



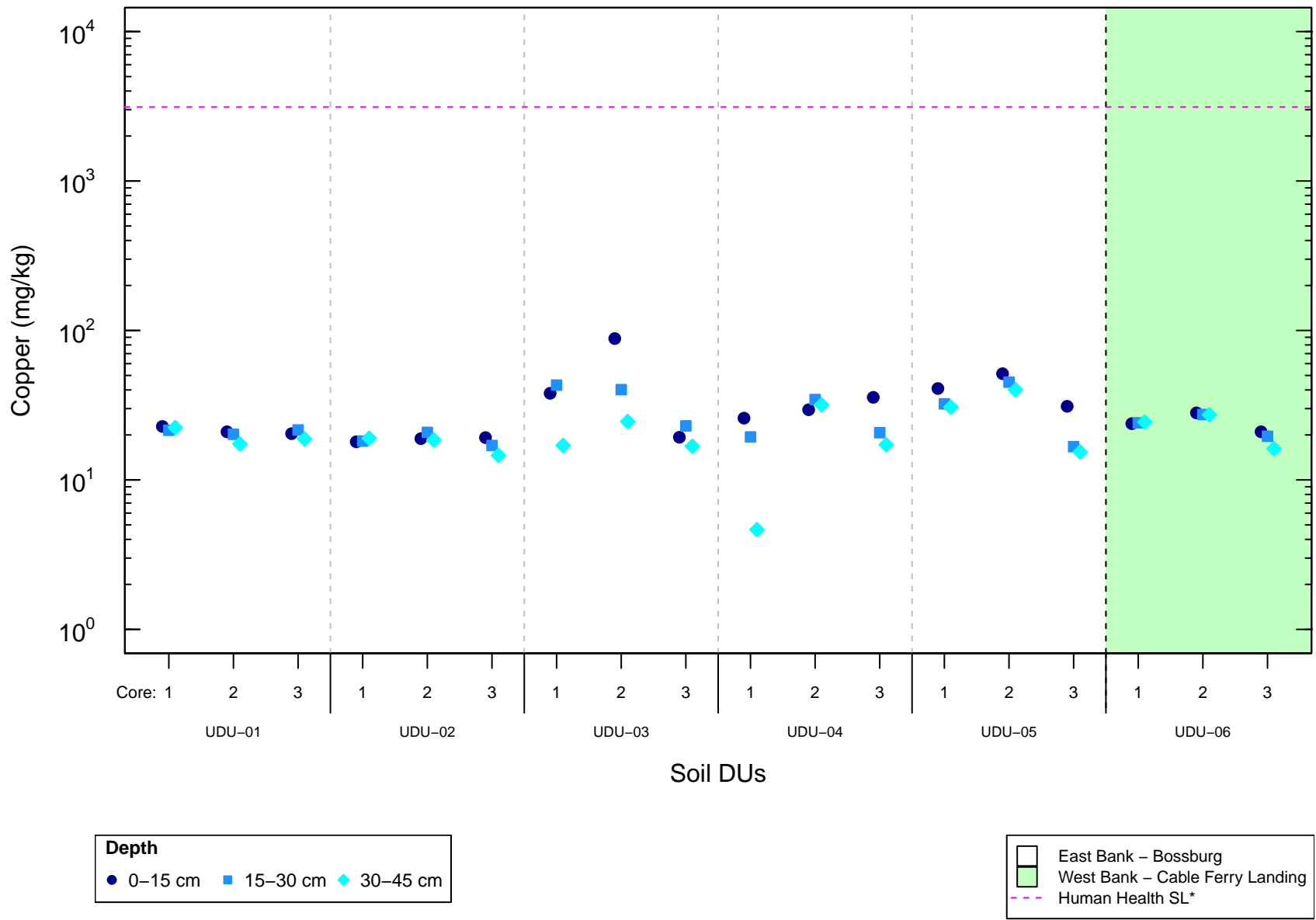
Depth
 ● 0–15 cm ■ 15–30 cm ◆ 30–45 cm

□ East Bank – Bossburg
 ■ West Bank – Cable Ferry Landing
 ■ East Bank – Evans Campground
 - - - Human Health SL*

*Human health SL for copper is 3,130 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

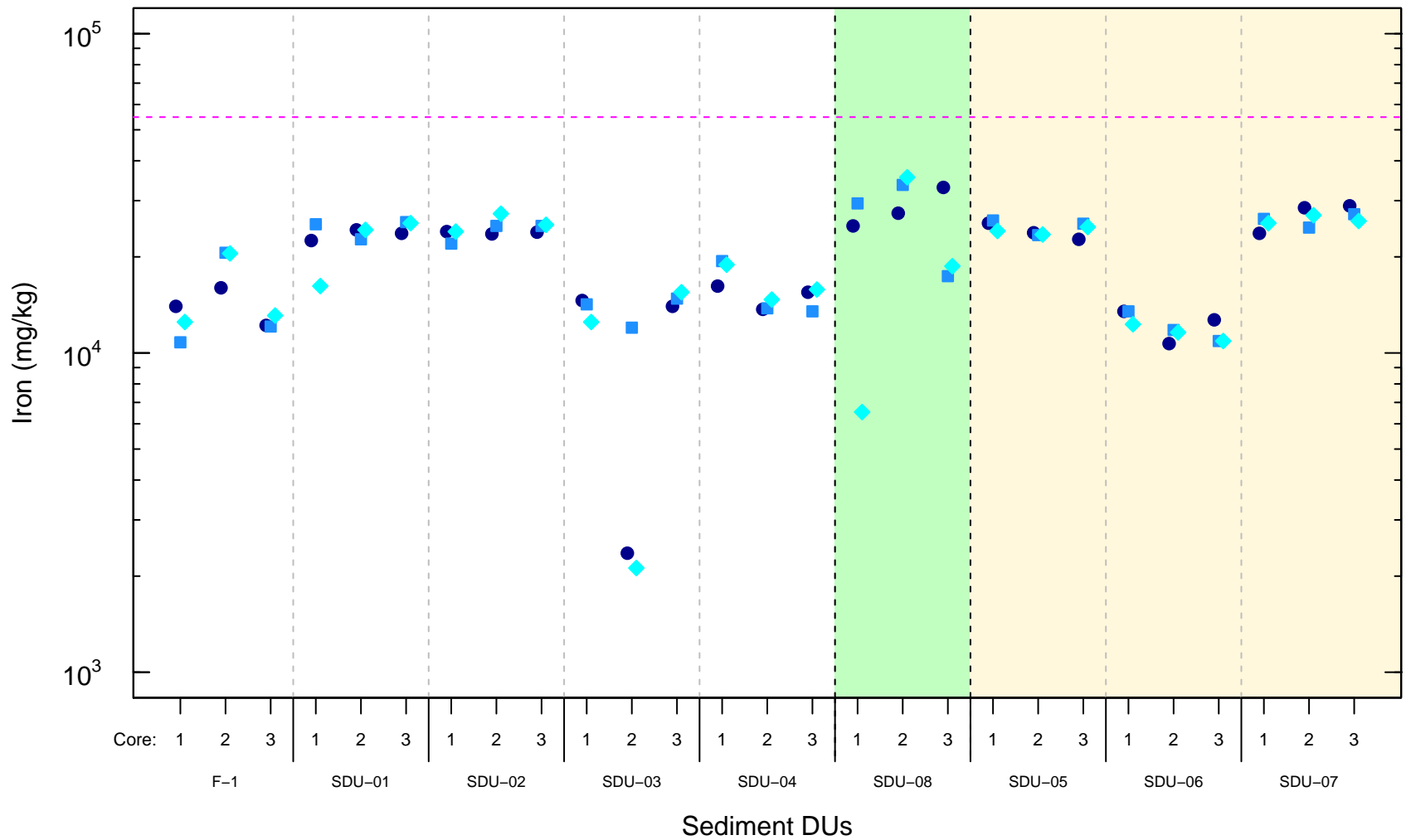
Figure 5–13s. Copper Concentrations in < 250–µm Sediment Fractions of Core Samples



*Human health SL for copper is 3,130 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5-13t. Copper Concentrations in < 150-µm Soil Fractions of Core Samples



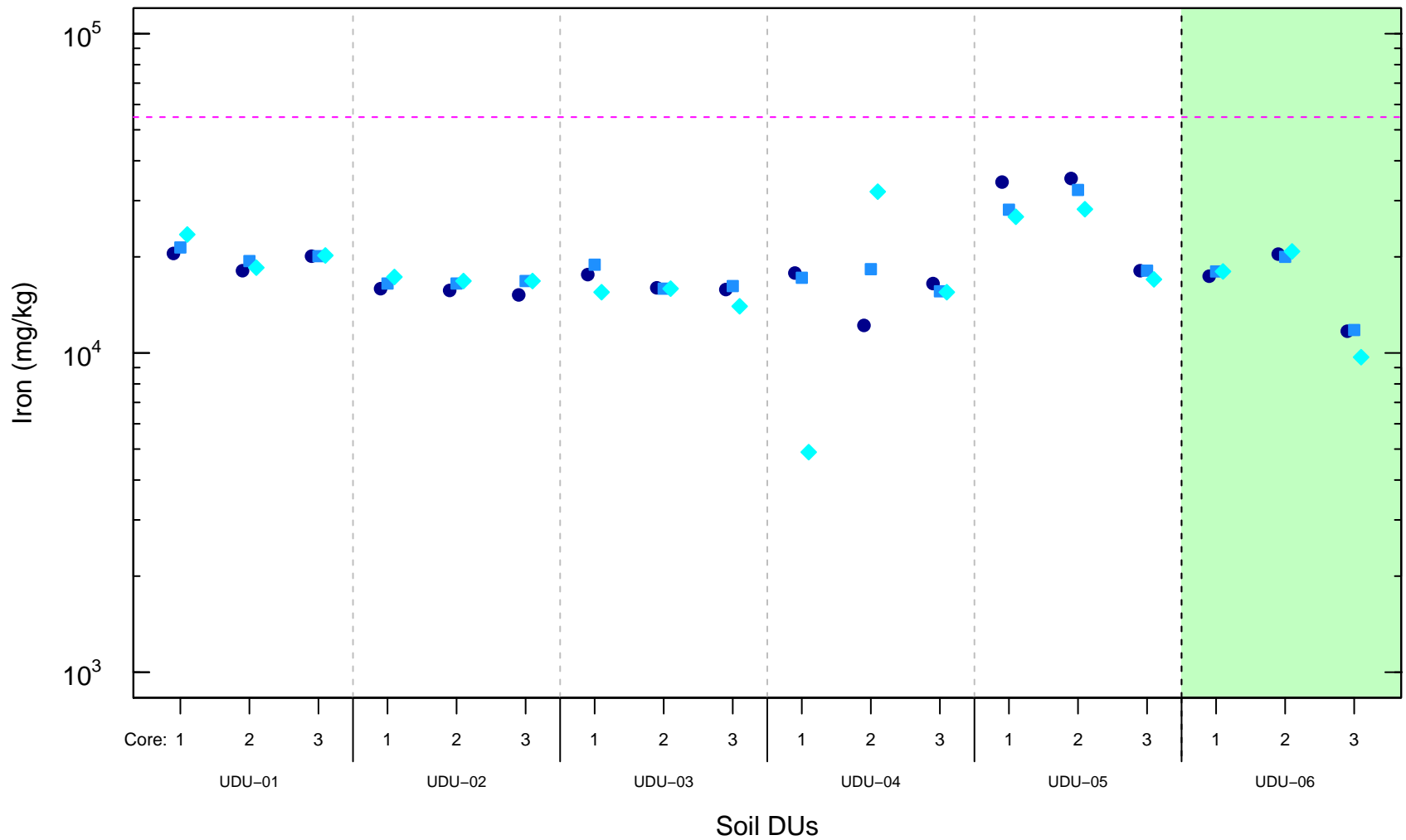
Depth
 ● 0–15 cm ■ 15–30 cm ◆ 30–45 cm

□ East Bank – Bossburg
 ■ West Bank – Cable Ferry Landing
 ■ East Bank – Evans Campground
 - - - Human Health SL*

*Human health SL for iron is 54,800 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5–13u. Iron Concentrations in < 250–µm Sediment Fractions of Core Samples



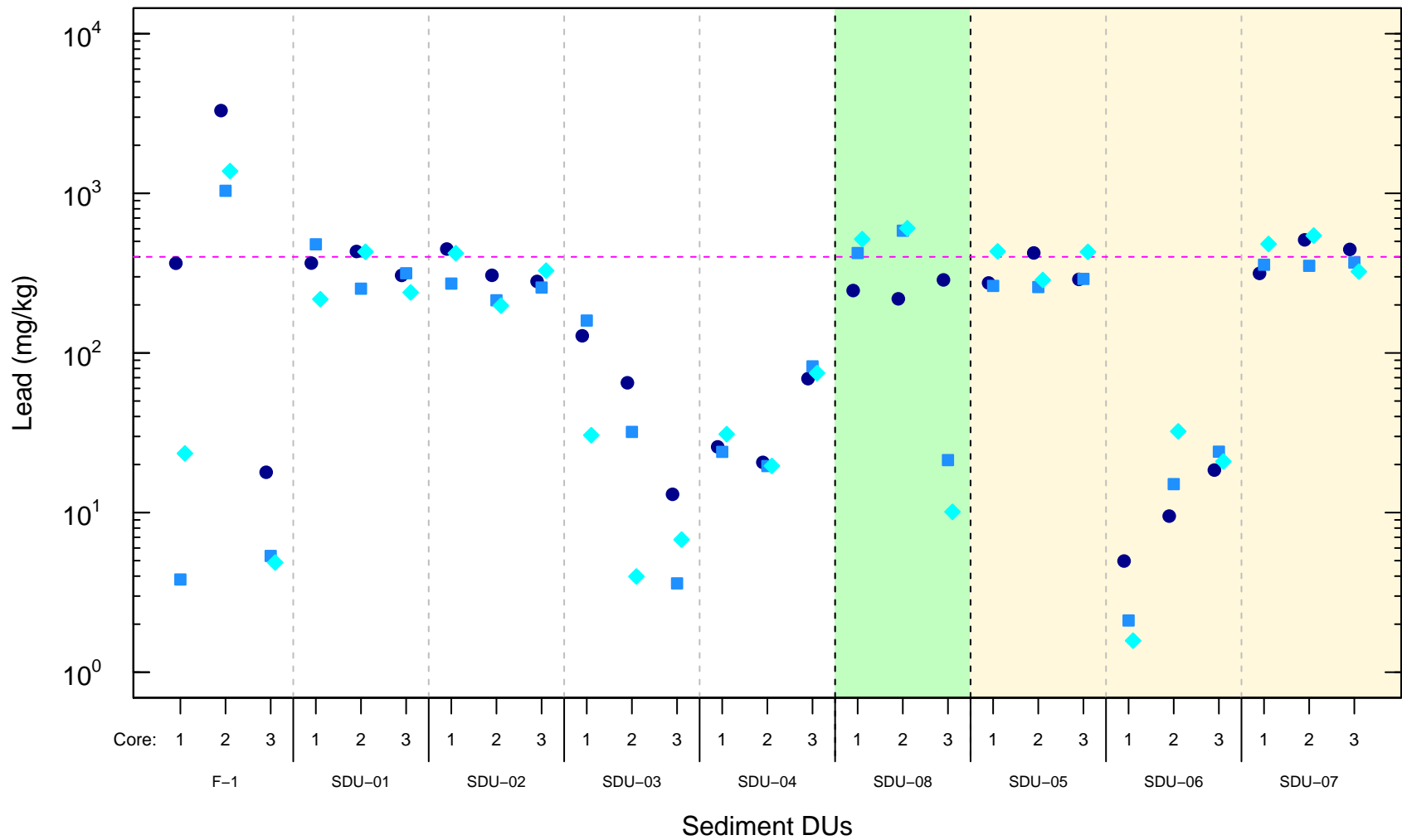
Depth
 ● 0-15 cm ■ 15-30 cm ◆ 30-45 cm

□ East Bank – Bossburg
 ■ West Bank – Cable Ferry Landing
 - - - Human Health SL*

*Human health SL for iron is 54,800 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5-13v. Iron Concentrations in < 150-µm Soil Fractions of Core Samples



Depth
 ● 0–15 cm ■ 15–30 cm ◆ 30–45 cm

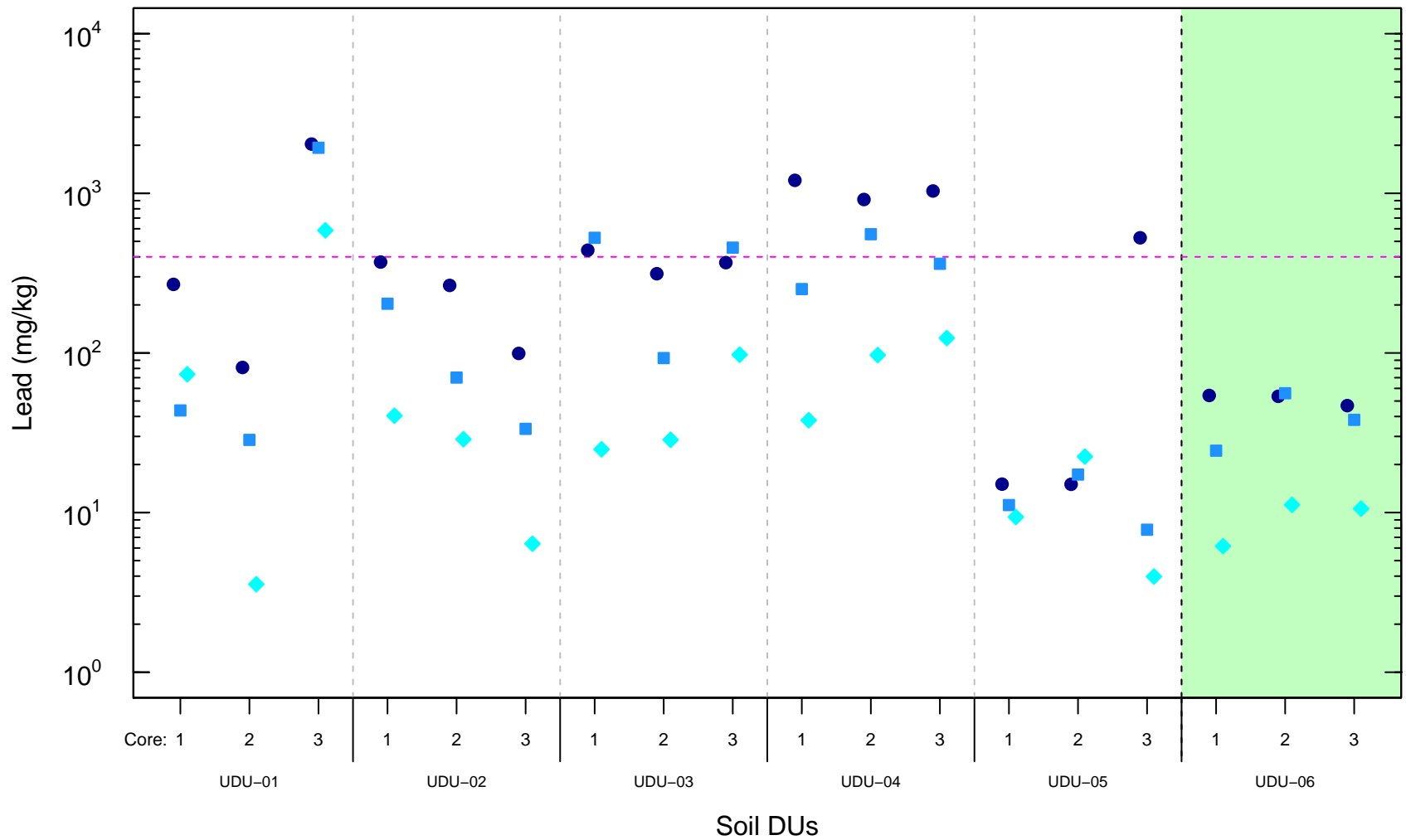
□ East Bank – Bossburg
 ■ West Bank – Cable Ferry Landing
 ■ East Bank – Evans Campground
 - - - Human Health SL*

Concentrations have been adjusted for the ratio of site-specific relative bioavailability (RBA) to EPA's default RBA.

*Human health SL for lead is 400 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5–13w. Lead Concentrations in < 250-µm Sediment Fractions of Core Samples



Depth
 ● 0-15 cm ■ 15-30 cm ◆ 30-45 cm

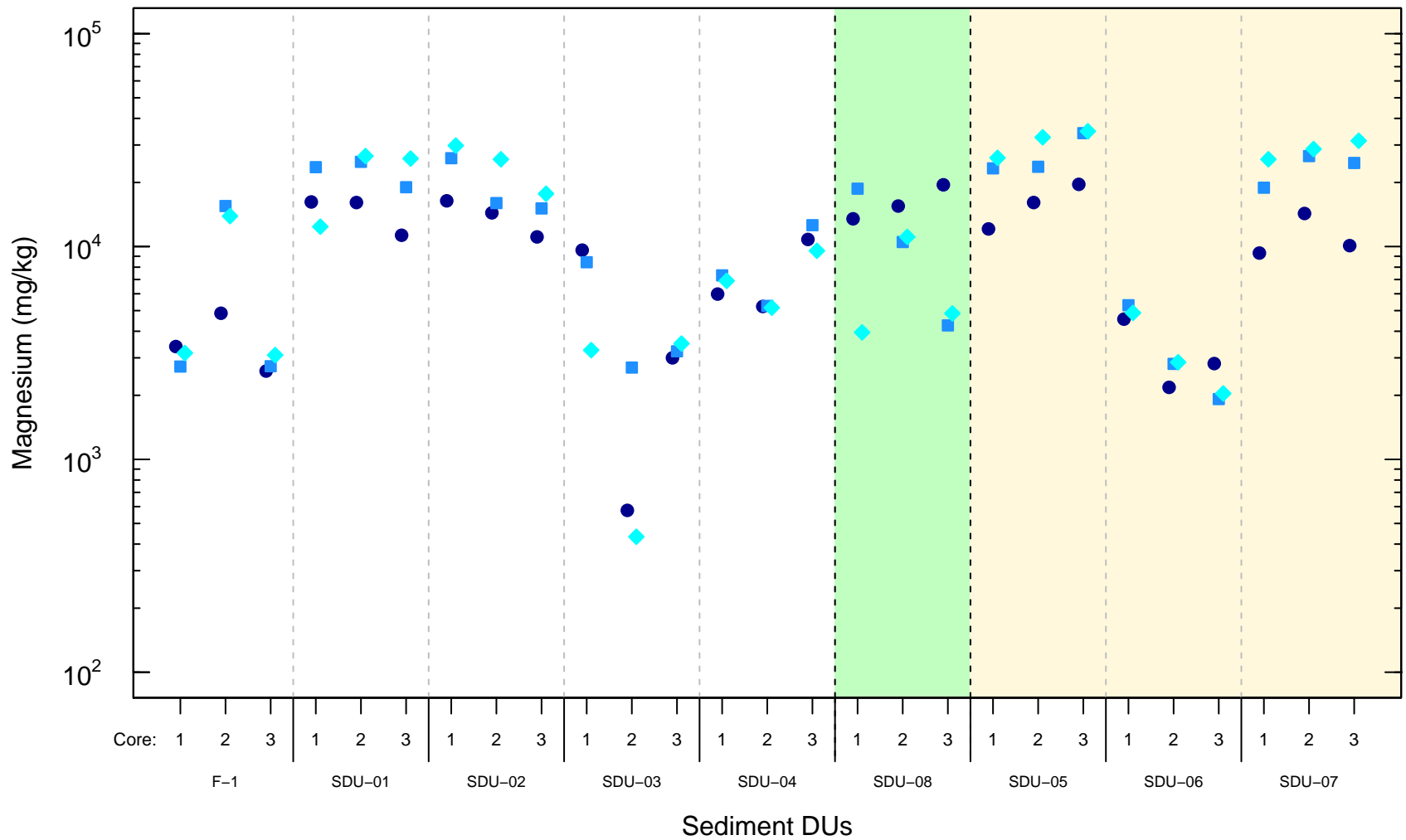
□ East Bank – Bossburg
 ■ West Bank – Cable Ferry Landing
 - - - Human Health SL*

Concentrations have been adjusted for the ratio of site-specific relative bioavailability (RBA) to EPA's default RBA.

*Human health SL for lead is 400 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5-13x. Lead Concentrations in < 150-µm Soil Fractions of Core Samples



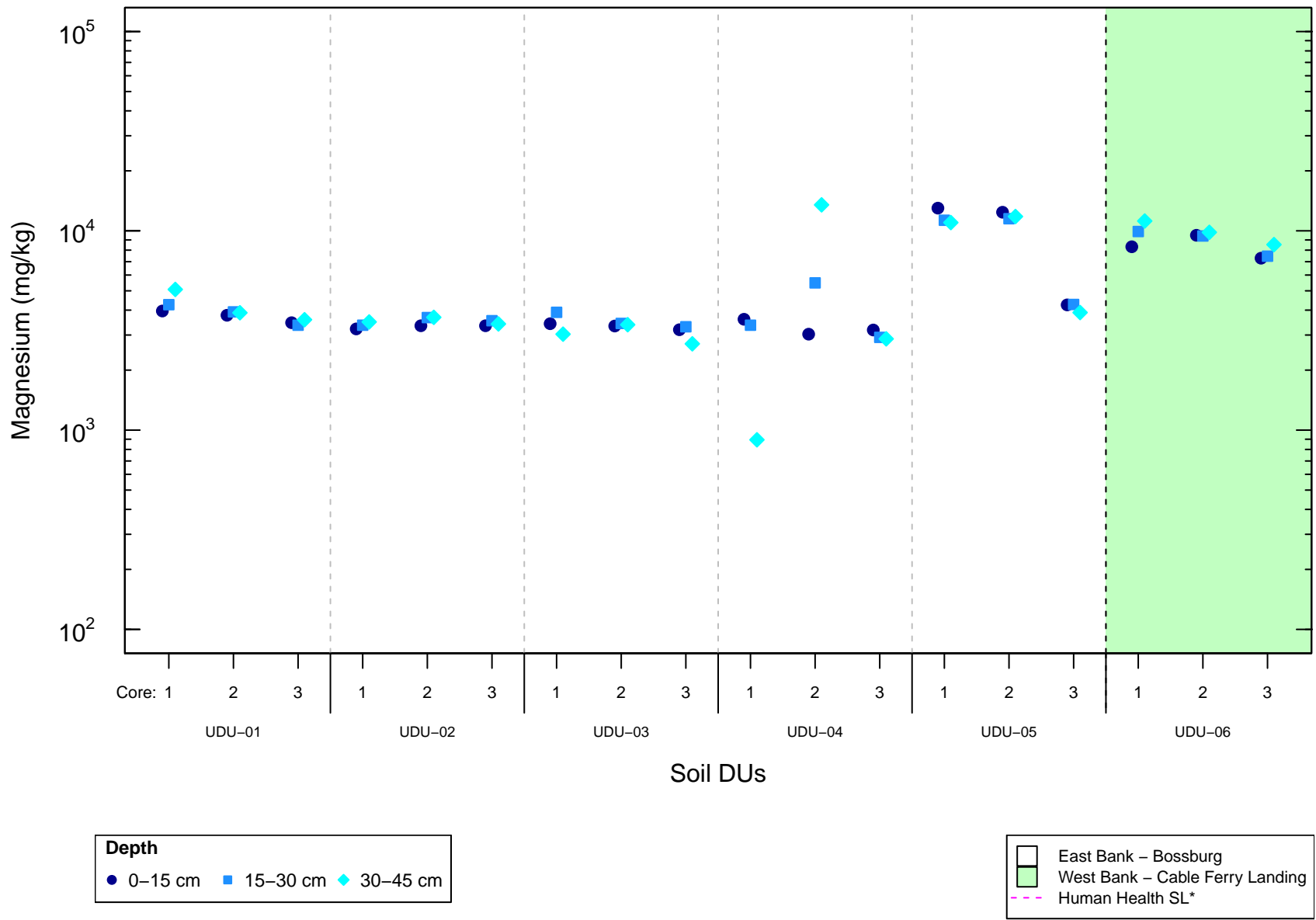
Depth
 ● 0–15 cm ■ 15–30 cm ◆ 30–45 cm

□ East Bank – Bossburg
 ■ West Bank – Cable Ferry Landing
 ■ East Bank – Evans Campground
 - - - Human Health SL*

*No human health SL is available for magnesium

Decision Units are presented upstream to downstream within an area of the Site.

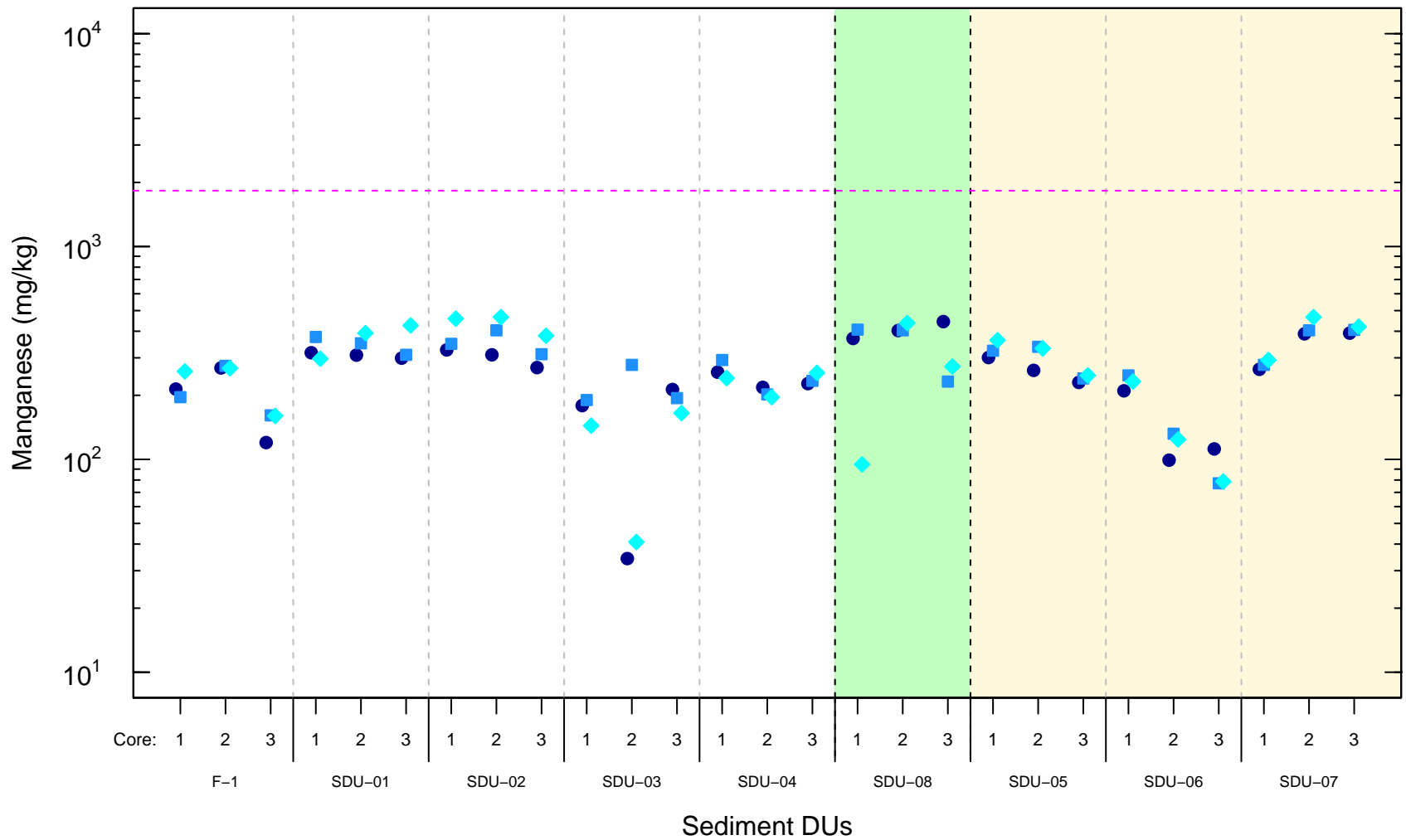
Figure 5–13y. Magnesium Concentrations in < 250- μ m Sediment Fractions of Core Samples



*No human health SL is available for magnesium

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5–13z. Magnesium Concentrations in < 150-µm Soil Fractions of Core Samples



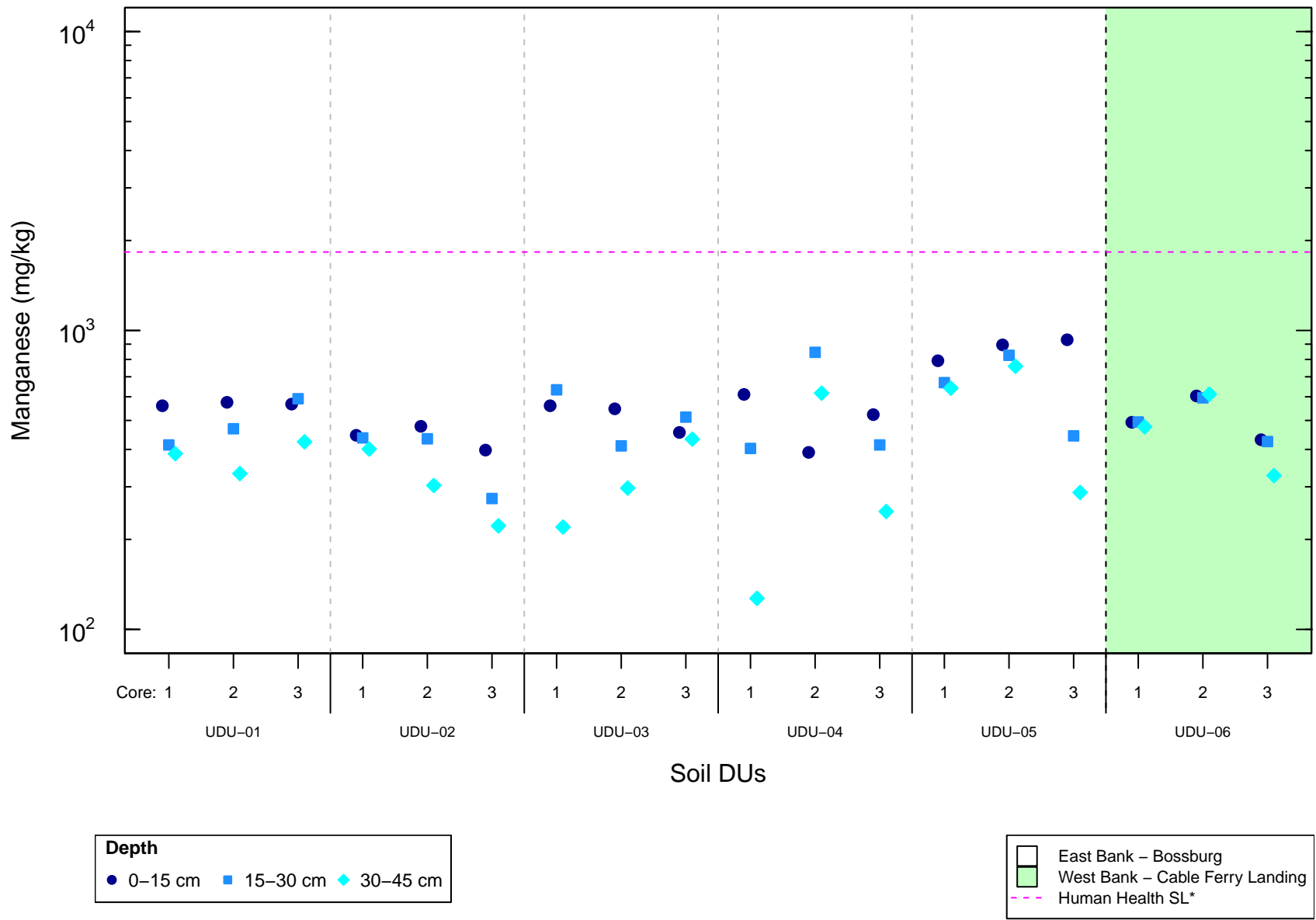
Depth
 ● 0–15 cm ■ 15–30 cm ◆ 30–45 cm

□ East Bank – Bossburg
 ■ West Bank – Cable Ferry Landing
 ■ East Bank – Evans Campground
 - - - Human Health SL*

*Human health SL for manganese is 1,830 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

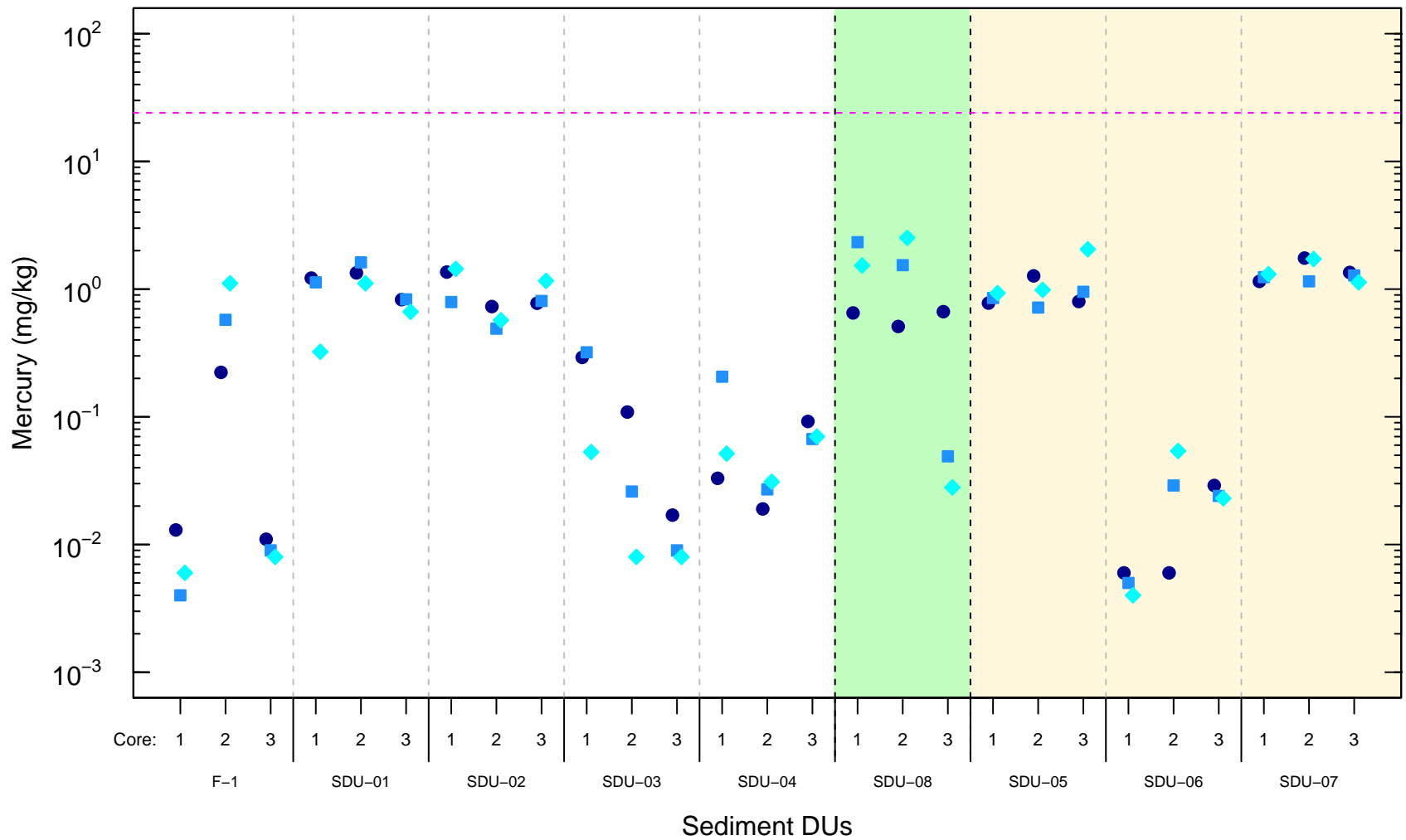
Figure 5–13aa. Manganese Concentrations in < 250–µm Sediment Fractions of Core Samples



*Human health SL for manganese is 1,830 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5–13ab. Manganese Concentrations in < 150-µm Soil Fractions of Core Samples



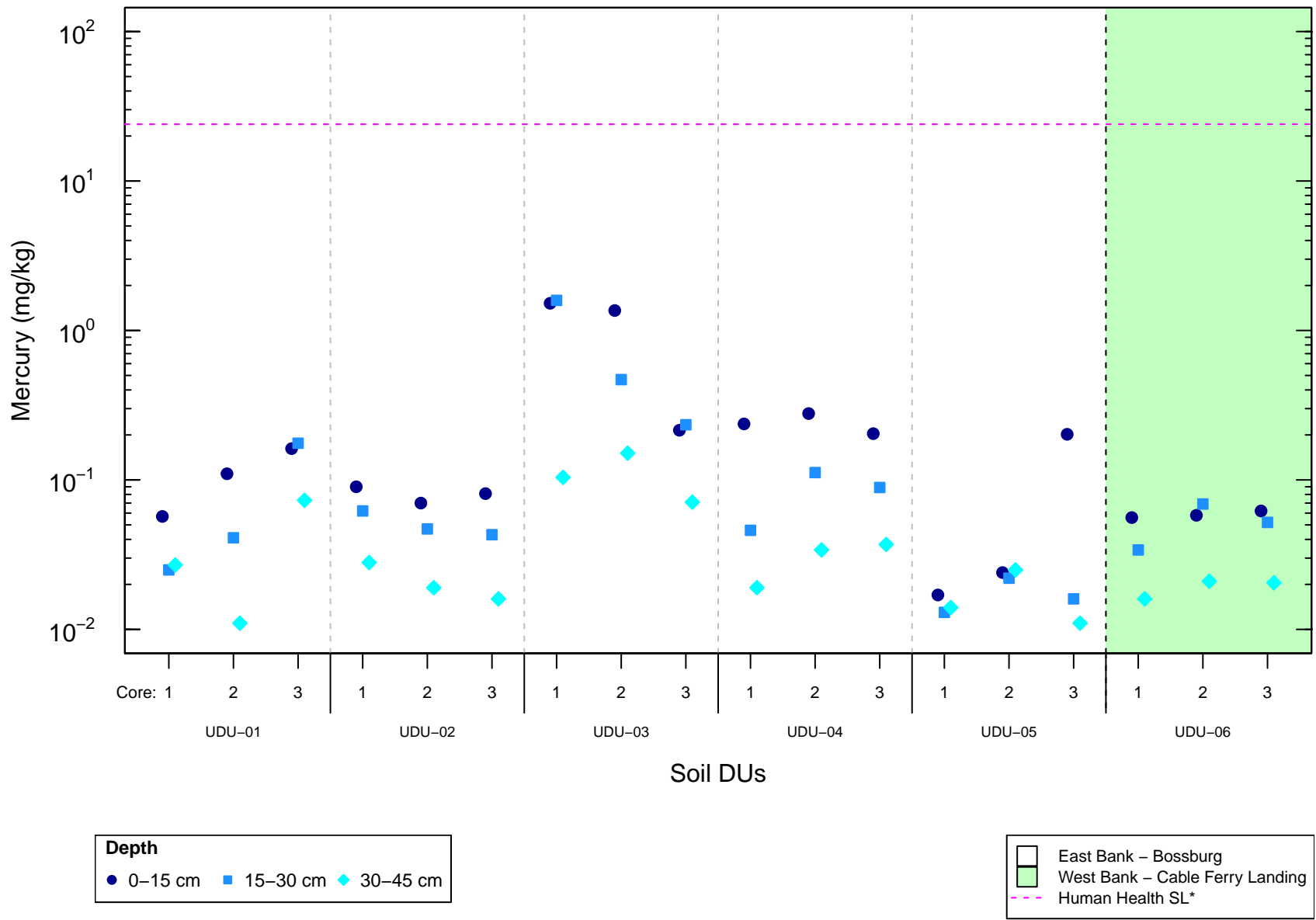
Depth
 ● 0–15 cm ■ 15–30 cm ◆ 30–45 cm

□ East Bank – Bossburg
 ■ West Bank – Cable Ferry Landing
 ■ East Bank – Evans Campground
 - - - Human Health SL*

*Human health SL for mercury is 24 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

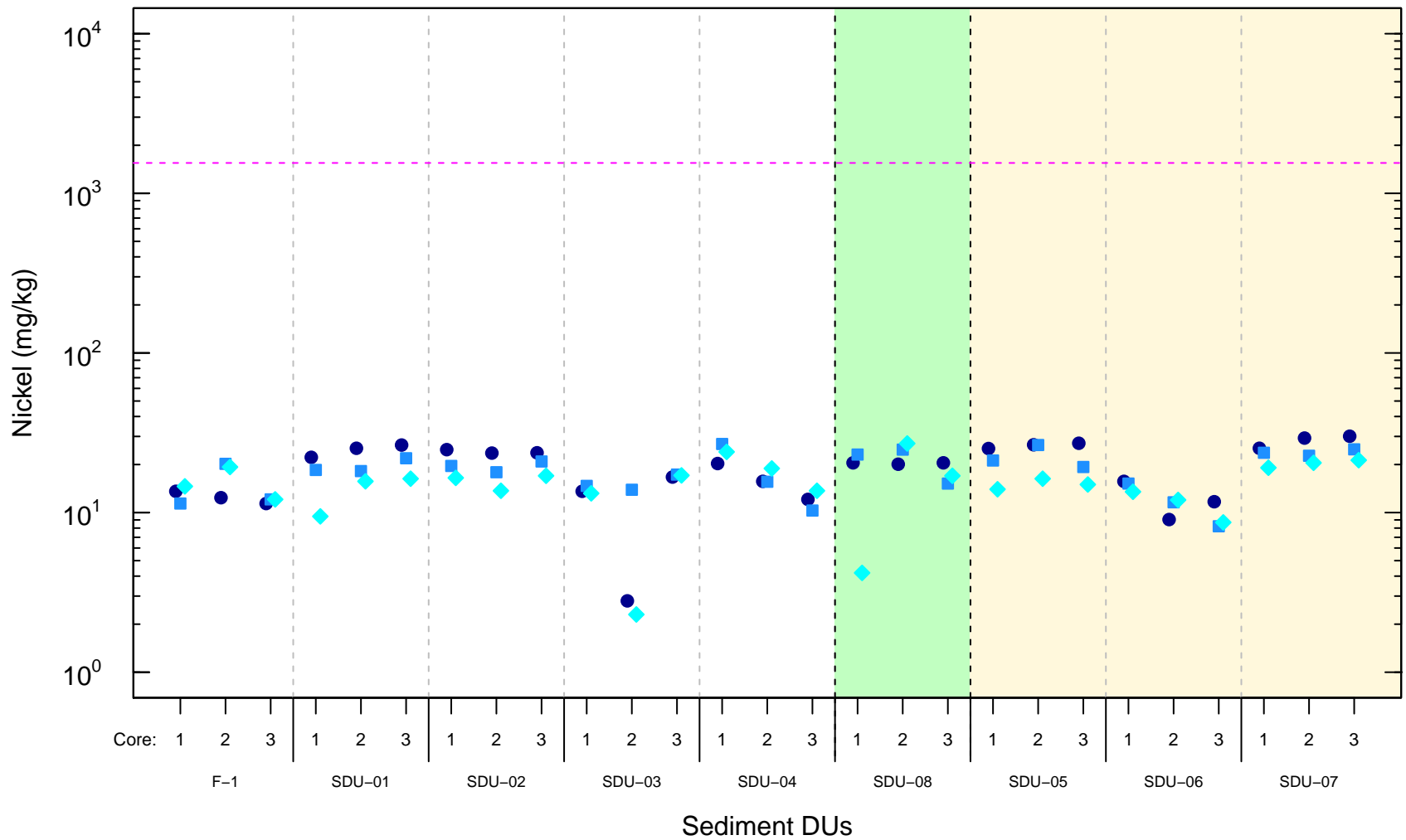
Figure 5–13ac. Mercury Concentrations in < 250–µm Sediment Fractions of Core Samples



*Human health SL for mercury is 24 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5–13ad. Mercury Concentrations in < 150- μ m Soil Fractions of Core Samples



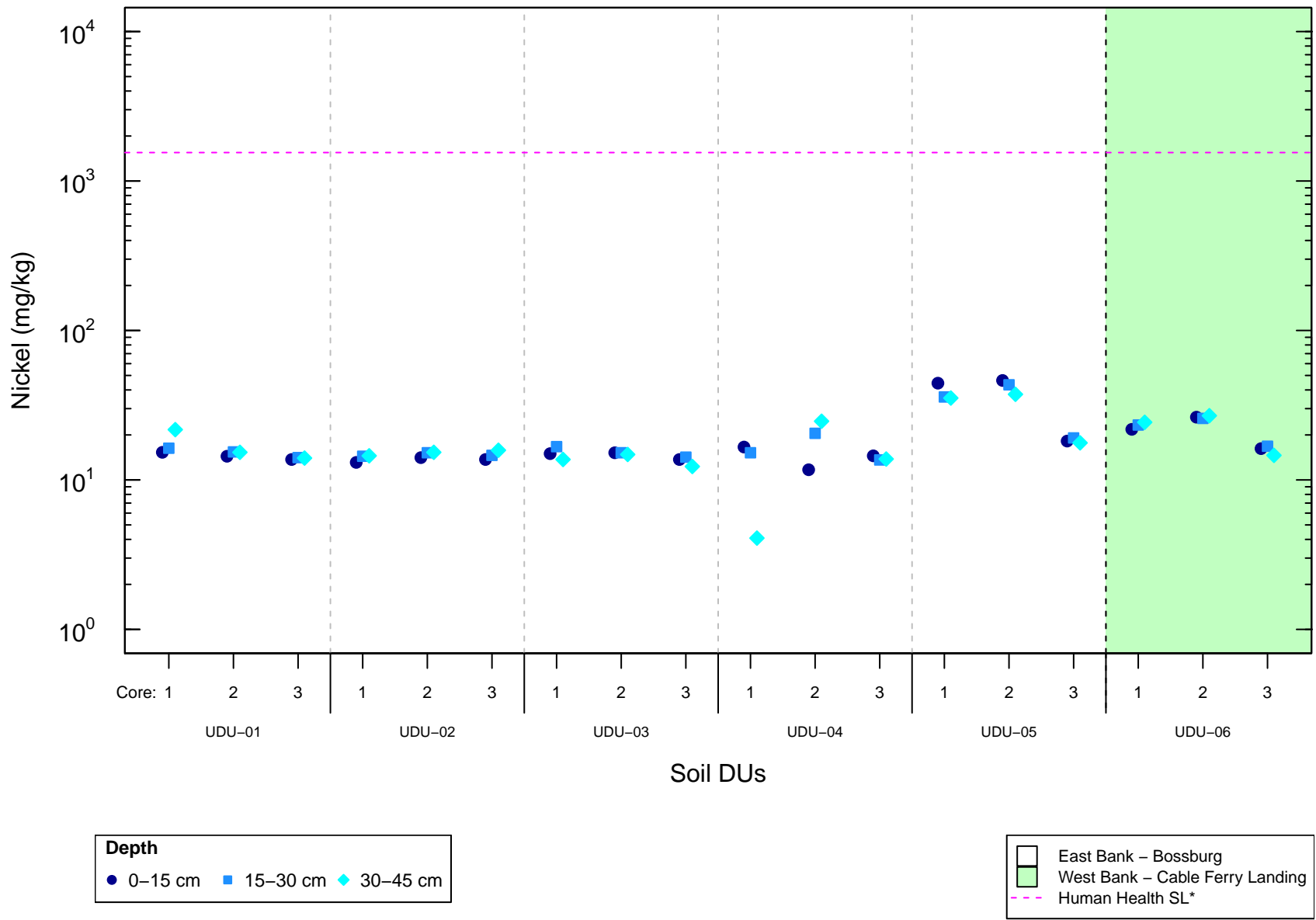
Depth
 ● 0–15 cm ■ 15–30 cm ◆ 30–45 cm

□ East Bank – Bossburg
 ■ West Bank – Cable Ferry Landing
 ■ East Bank – Evans Campground
 - - - Human Health SL*

*Human health SL for nickel is 1,550 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

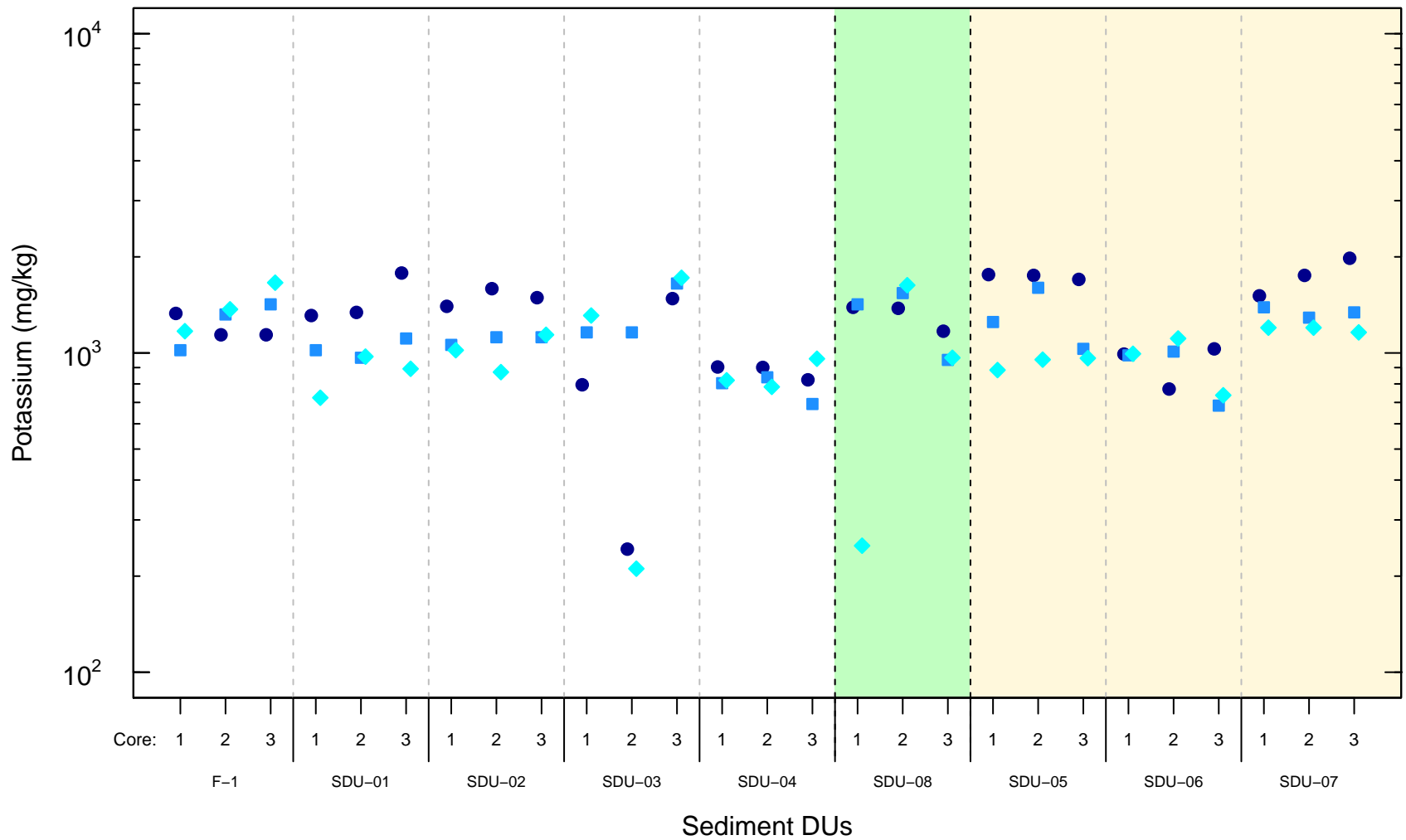
Figure 5–13ae. Nickel Concentrations in < 250–µm Sediment Fractions of Core Samples



*Human health SL for nickel is 1,550 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5-13af. Nickel Concentrations in < 150-µm Soil Fractions of Core Samples



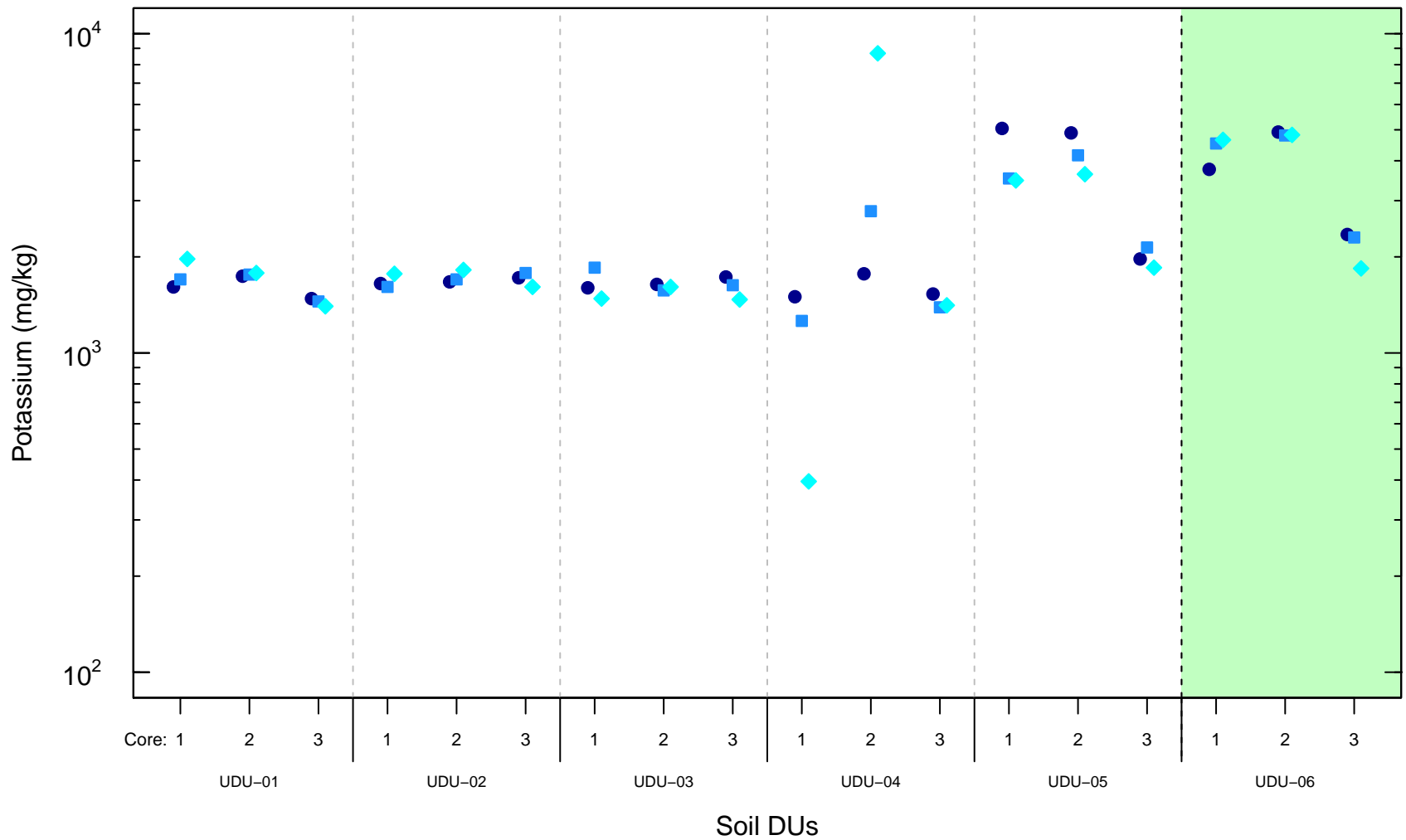
Depth
 ● 0–15 cm ■ 15–30 cm ◆ 30–45 cm

□ East Bank – Bossburg
 ■ West Bank – Cable Ferry Landing
 □ East Bank – Evans Campground
 - - - Human Health SL*

*No human health SL is available for potassium

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5–13ag. Potassium Concentrations in < 250- μ m Sediment Fractions of Core Samples



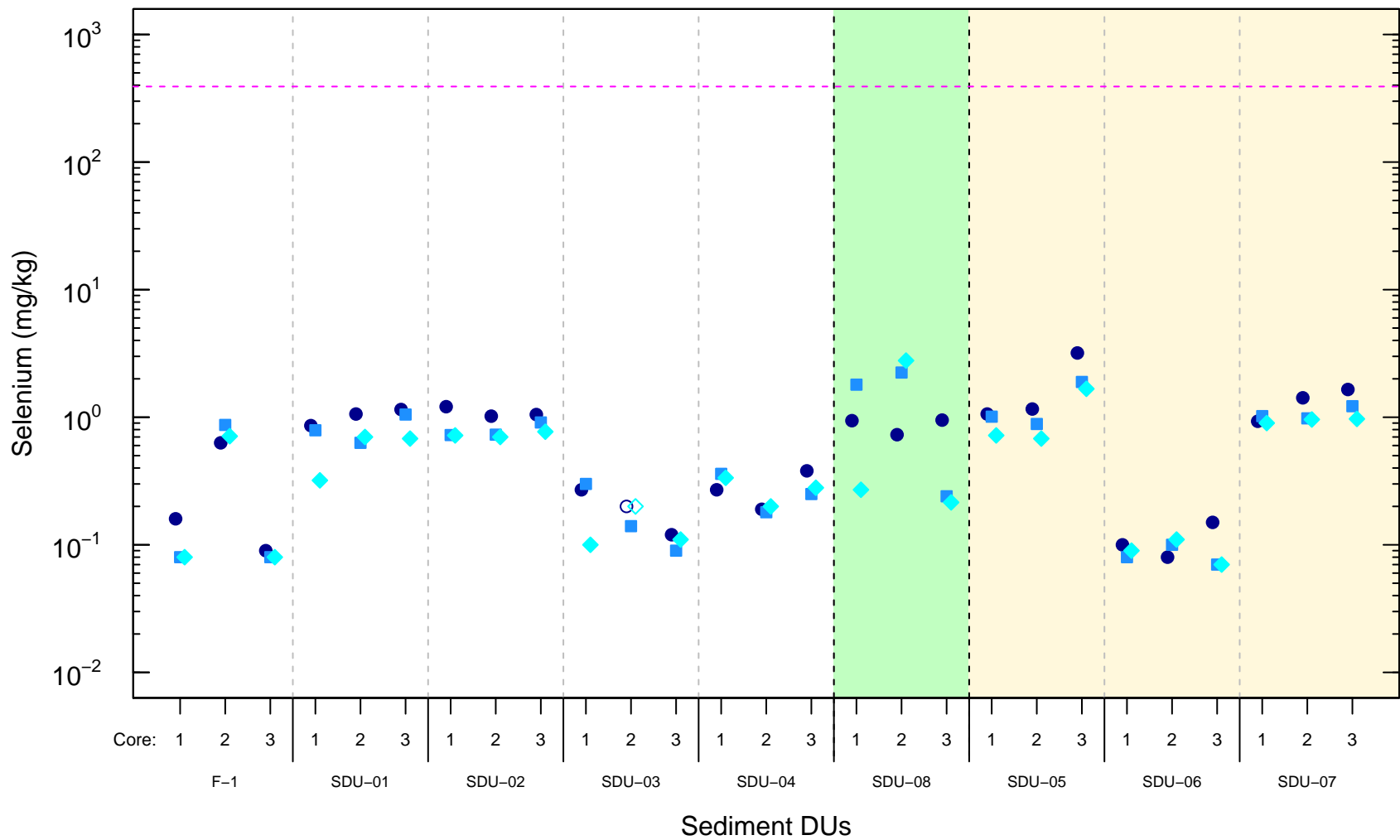
Depth
 ● 0–15 cm ■ 15–30 cm ◆ 30–45 cm

□ East Bank – Bossburg
 ■ West Bank – Cable Ferry Landing
 - - - Human Health SL*

*No human health SL is available for potassium

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5–13ah. Potassium Concentrations in < 150–µm Soil Fractions of Core Samples

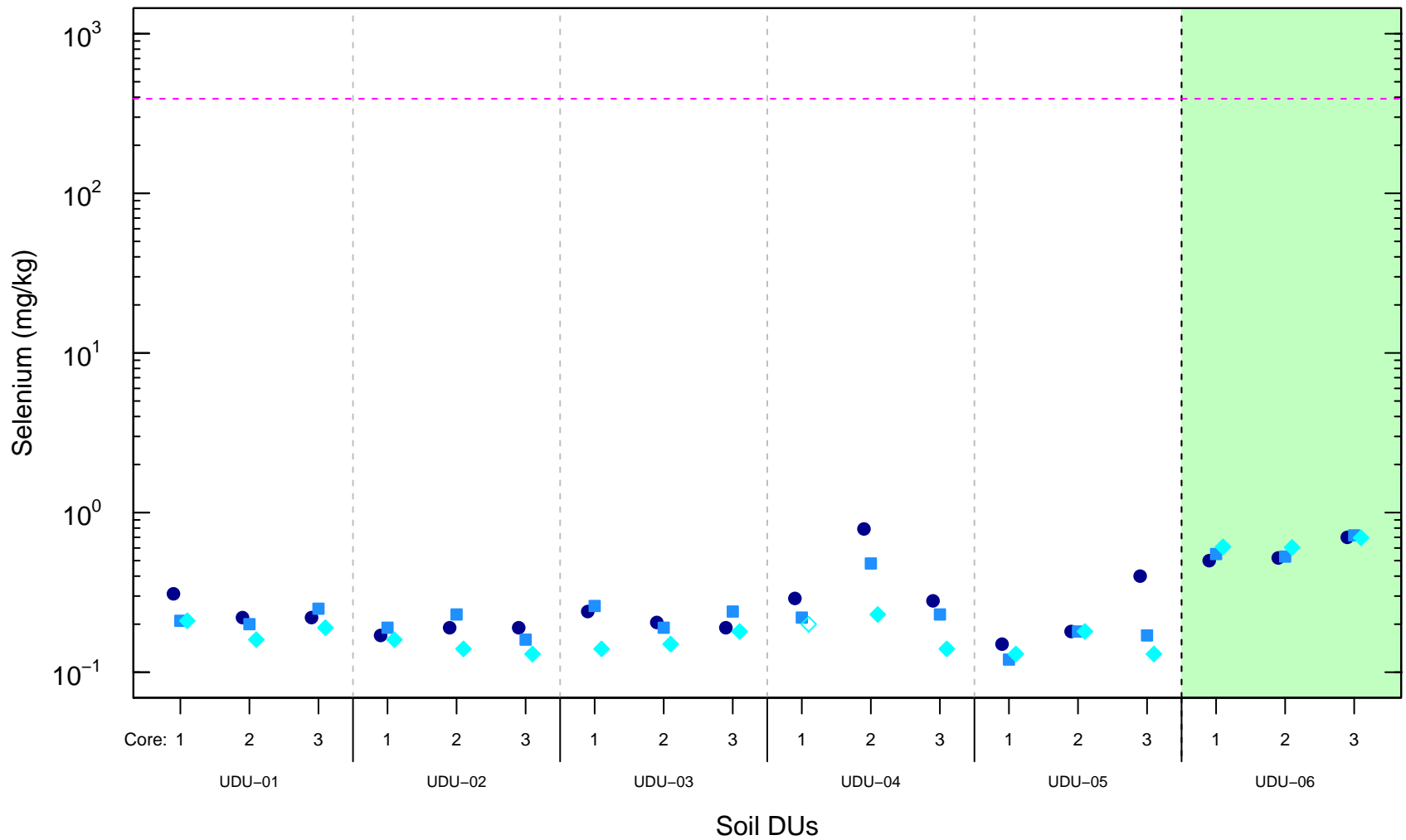


Depth			
● 0–15 cm	■ 15–30 cm	◇ 30–45 cm (below detection limit)	□ East Bank – Bossburg
○ 0–15 cm (below detection limit)	◆ 30–45 cm		■ West Bank – Cable Ferry Landing
			□ East Bank – Evans Campground
			--- Human Health SL*

*Human health SL for selenium is 391 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5–13ai. Selenium Concentrations in < 250–µm Sediment Fractions of Core Samples



Depth

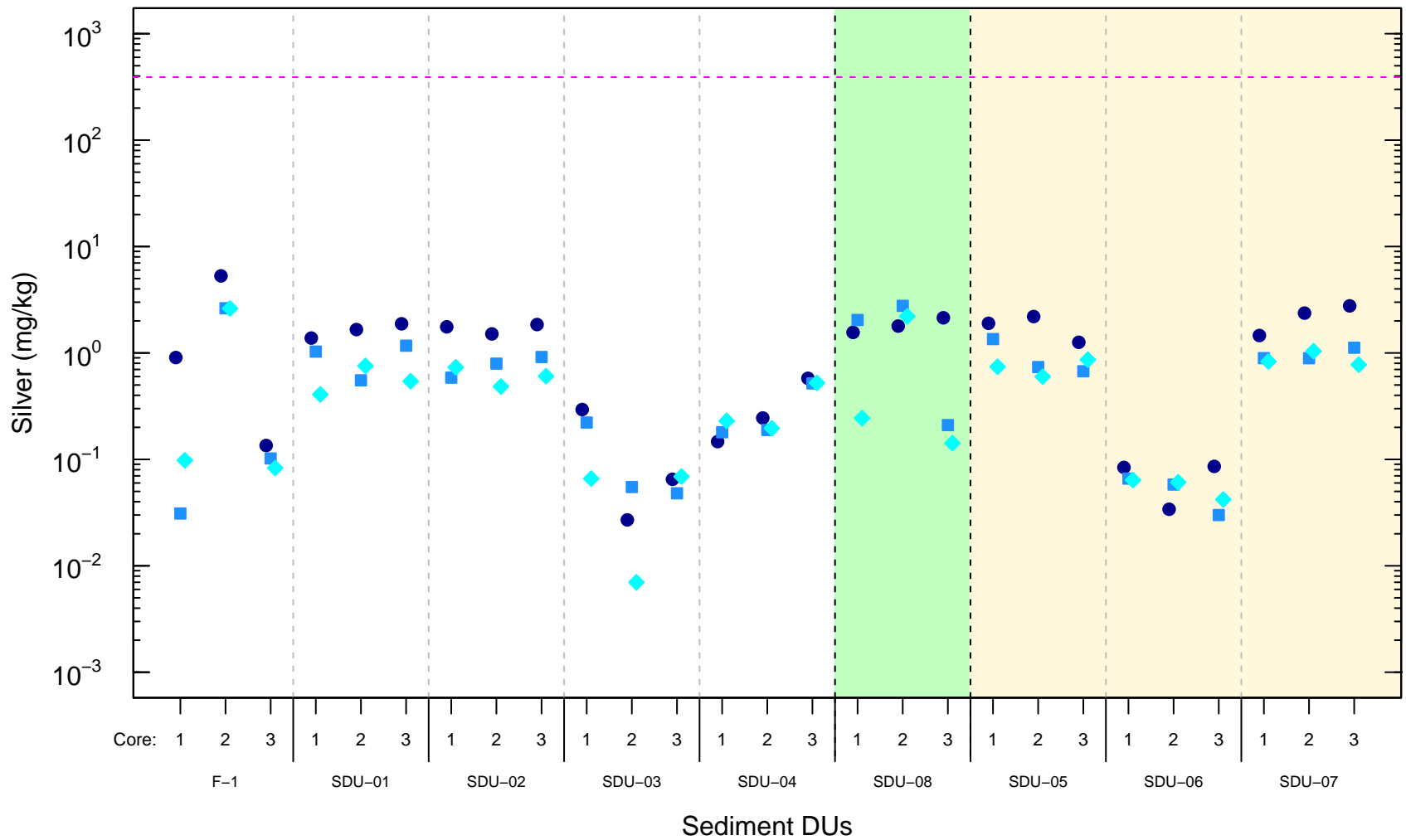
- 0–15 cm
- 15–30 cm
- ◆ 30–45 cm
- ◇ 30–45 cm (below detection limit)

- East Bank – Bossburg
- West Bank – Cable Ferry Landing
- - - Human Health SL*

*Human health SL for selenium is 391 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5–13aj. Selenium Concentrations in < 150-µm Soil Fractions of Core Samples



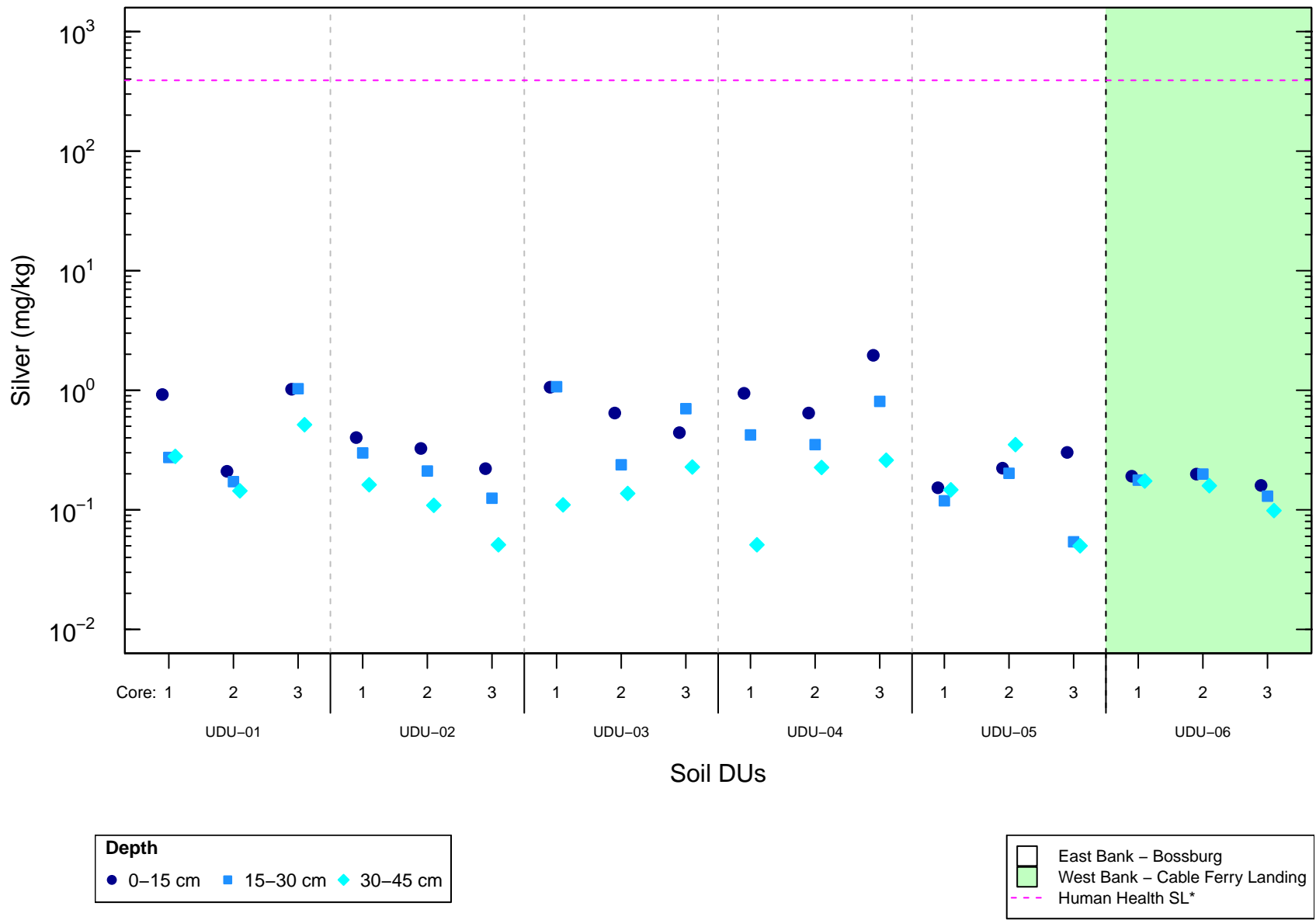
Depth
 ● 0–15 cm ■ 15–30 cm ◆ 30–45 cm

□ East Bank – Bossburg
 ■ West Bank – Cable Ferry Landing
 ■ East Bank – Evans Campground
 - - - Human Health SL*

*Human health SL for silver is 391 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

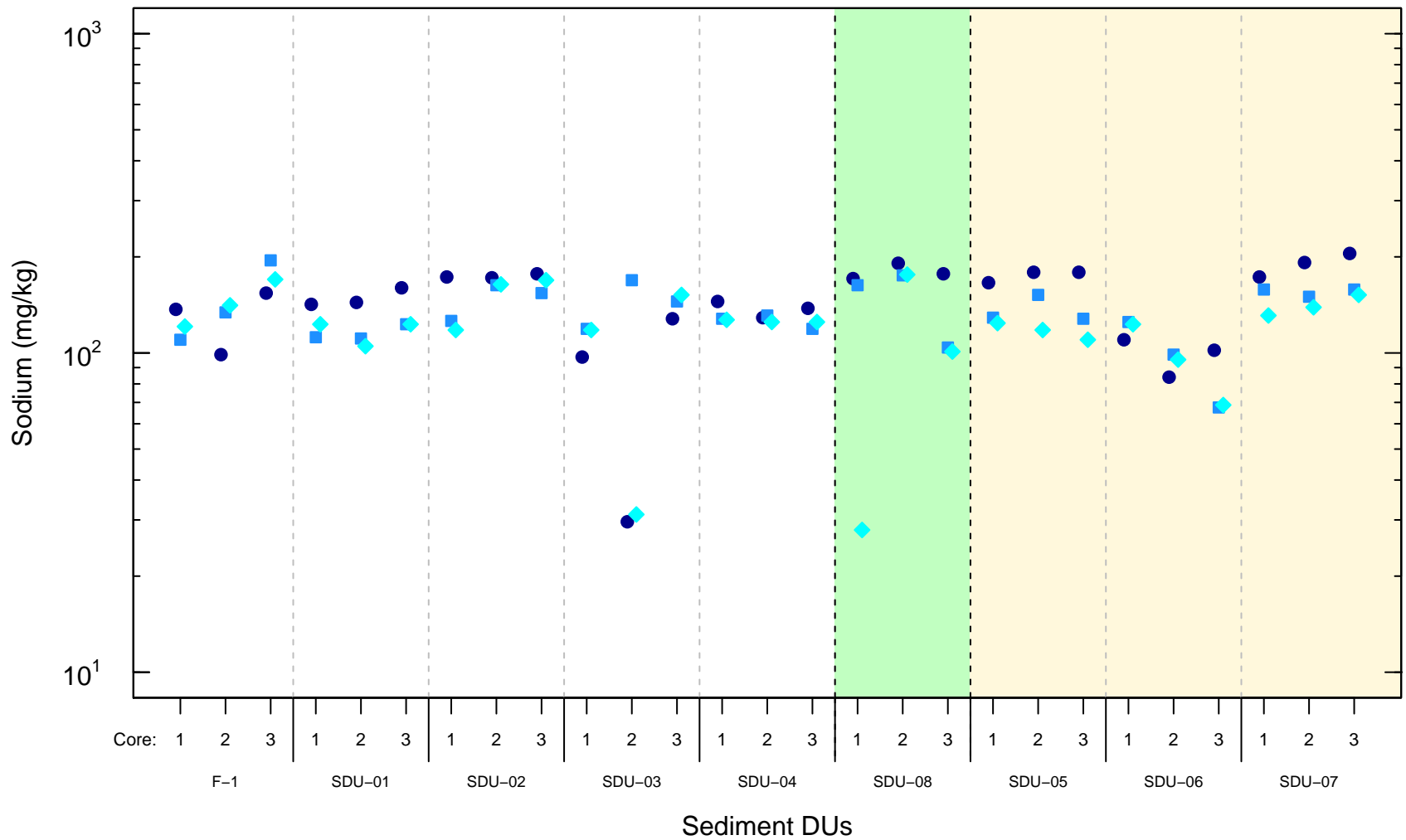
Figure 5–13ak. Silver Concentrations in < 250–µm Sediment Fractions of Core Samples



*Human health SL for silver is 391 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5-13al. Silver Concentrations in < 150- μ m Soil Fractions of Core Samples



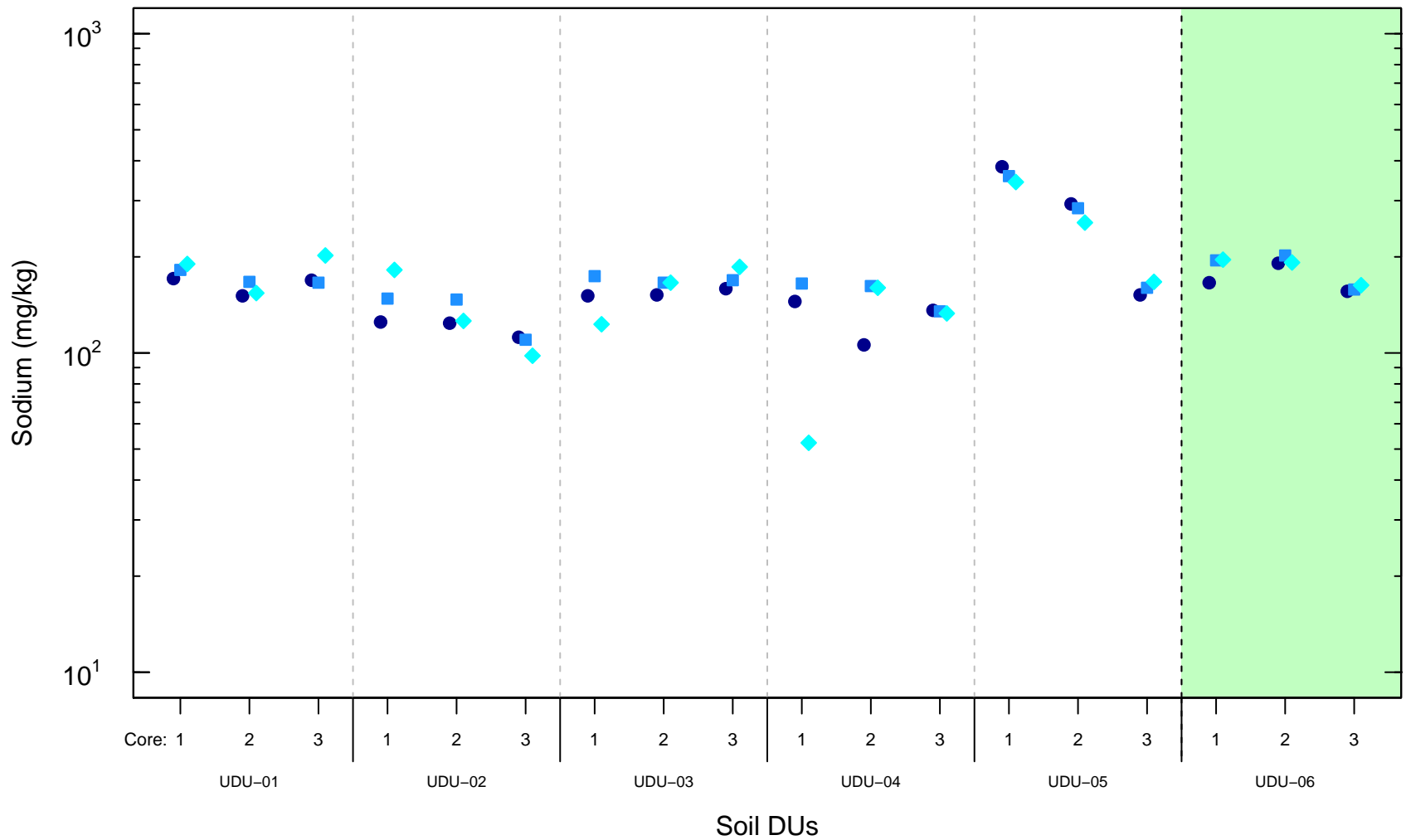
Depth
 ● 0–15 cm ■ 15–30 cm ◆ 30–45 cm

□ East Bank – Bossburg
 ■ West Bank – Cable Ferry Landing
 □ East Bank – Evans Campground
 - - - Human Health SL*

*No human health SL is available for sodium

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5–13am. Sodium Concentrations in < 250–µm Sediment Fractions of Core Samples



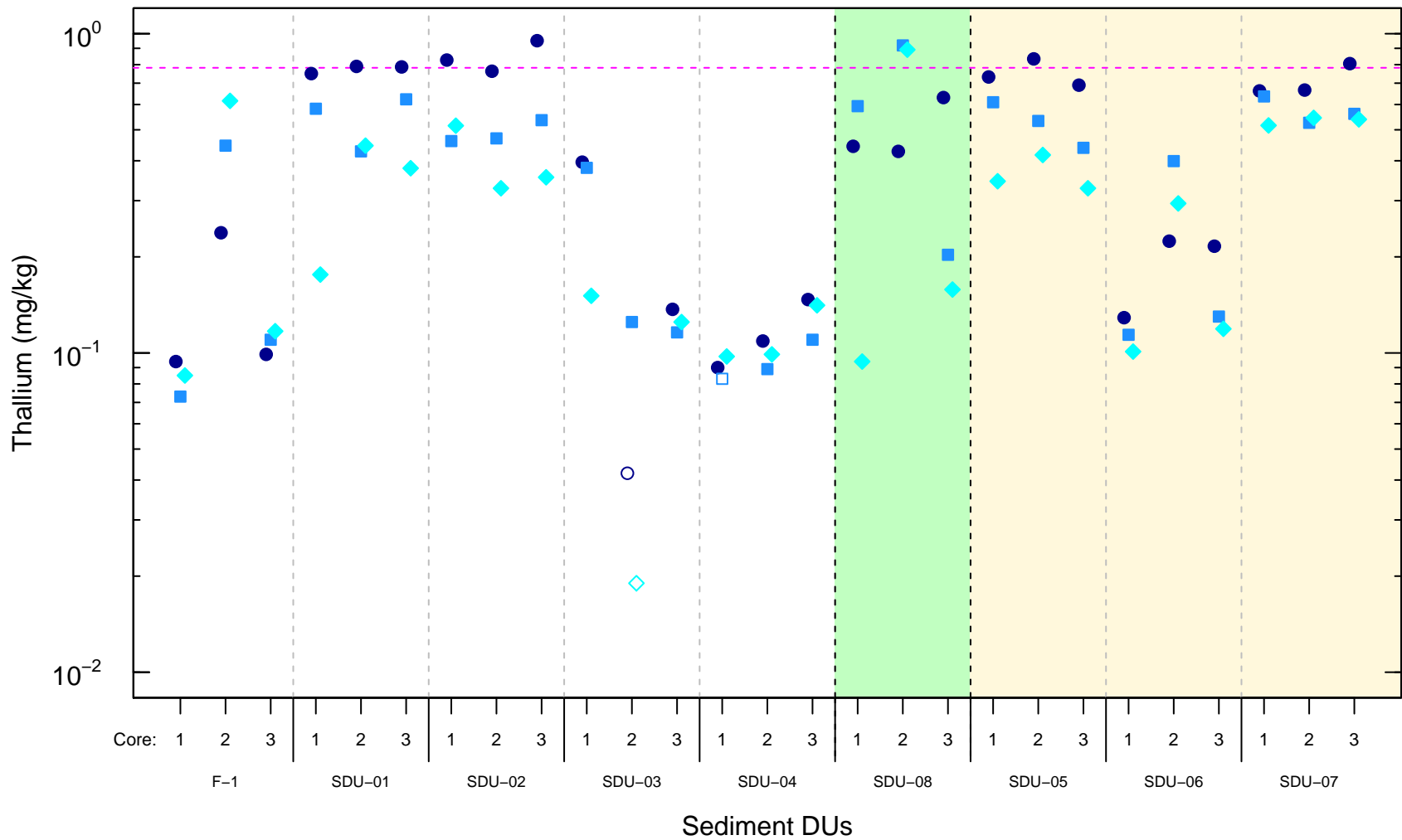
Depth
 ● 0-15 cm ■ 15-30 cm ◆ 30-45 cm

□ East Bank – Bossburg
 ■ West Bank – Cable Ferry Landing
 - - - Human Health SL*

*No human health SL is available for sodium

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5-13an. Sodium Concentrations in < 150-µm Soil Fractions of Core Samples

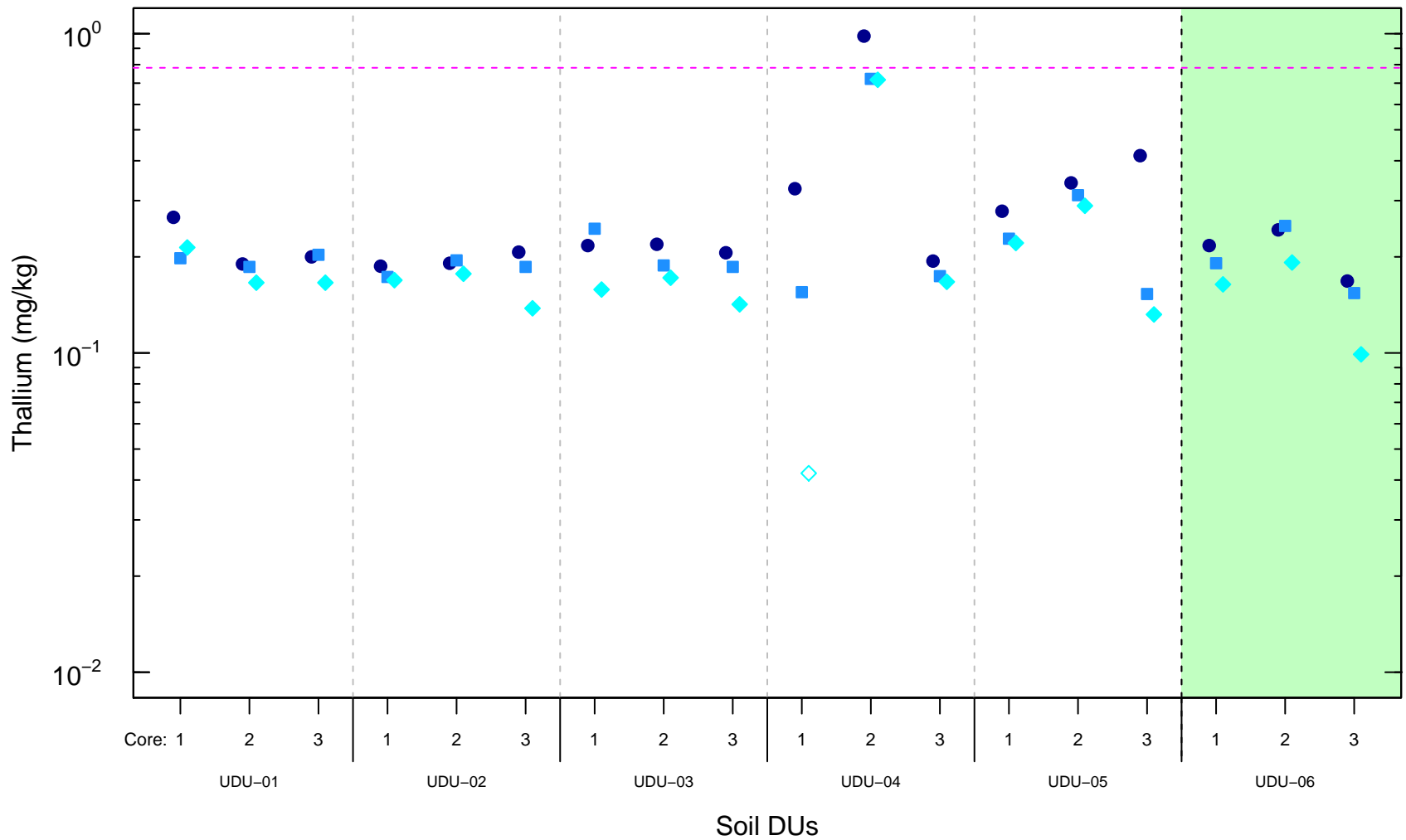


Depth			Location		
● 0–15 cm	■ 15–30 cm	◆ 30–45 cm	□ East Bank – Bossburg	■ West Bank – Cable Ferry Landing	□ East Bank – Evans Campground
○ 0–15 cm (below detection limit)	□ 15–30 cm (below detection limit)	◇ 30–45 cm (below detection limit)	- - - Human Health SL*		

*Human health SL for thallium is 0.782 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5–13ao. Thallium Concentrations in < 250–µm Sediment Fractions of Core Samples



Depth

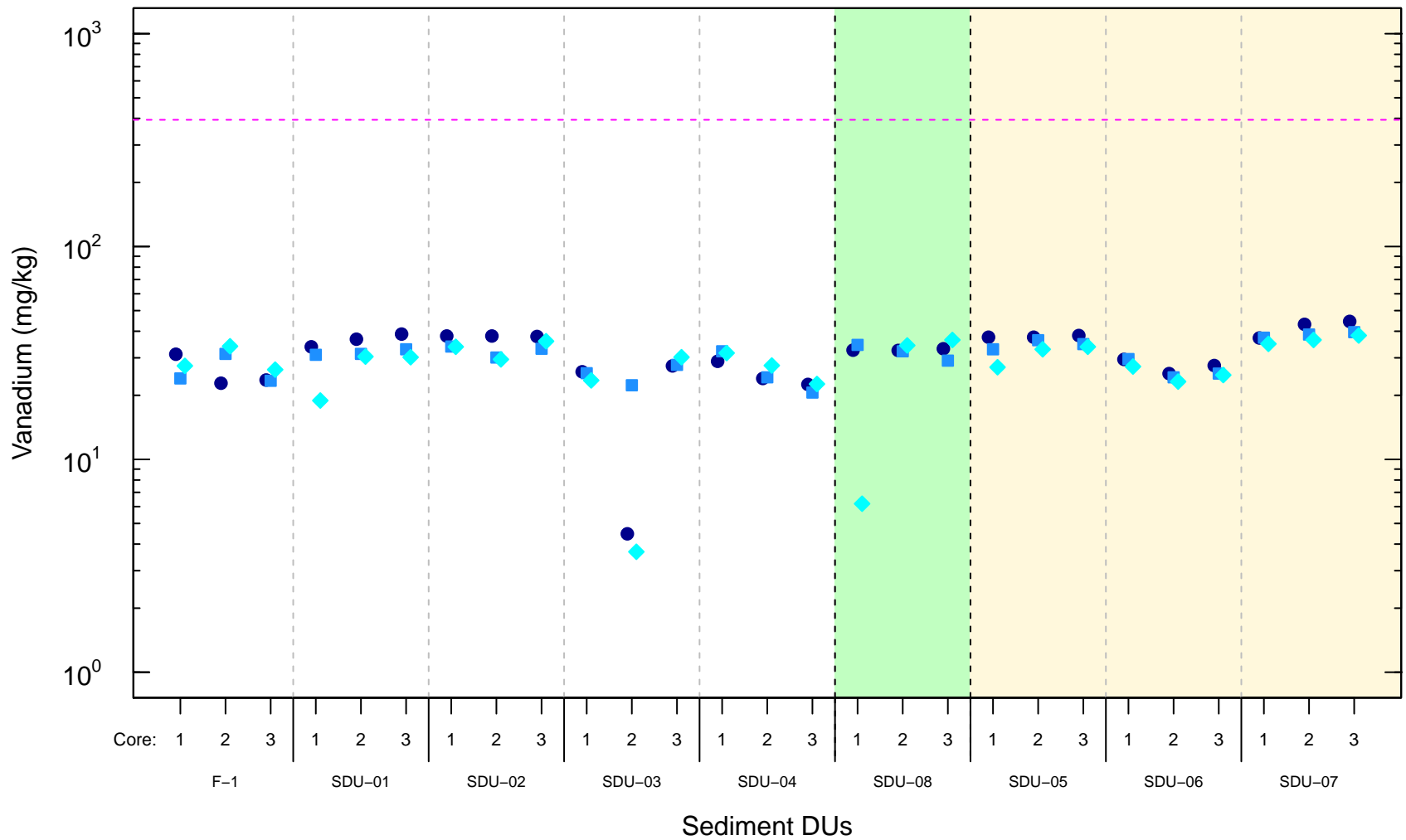
- 0-15 cm
- 15-30 cm
- ◆ 30-45 cm
- ◇ 30-45 cm (below detection limit)

- East Bank - Bossburg
- West Bank - Cable Ferry Landing
- - - Human Health SL*

*Human health SL for thallium is 0.782 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5-13ap. Thallium Concentrations in < 150-µm Soil Fractions of Core Samples



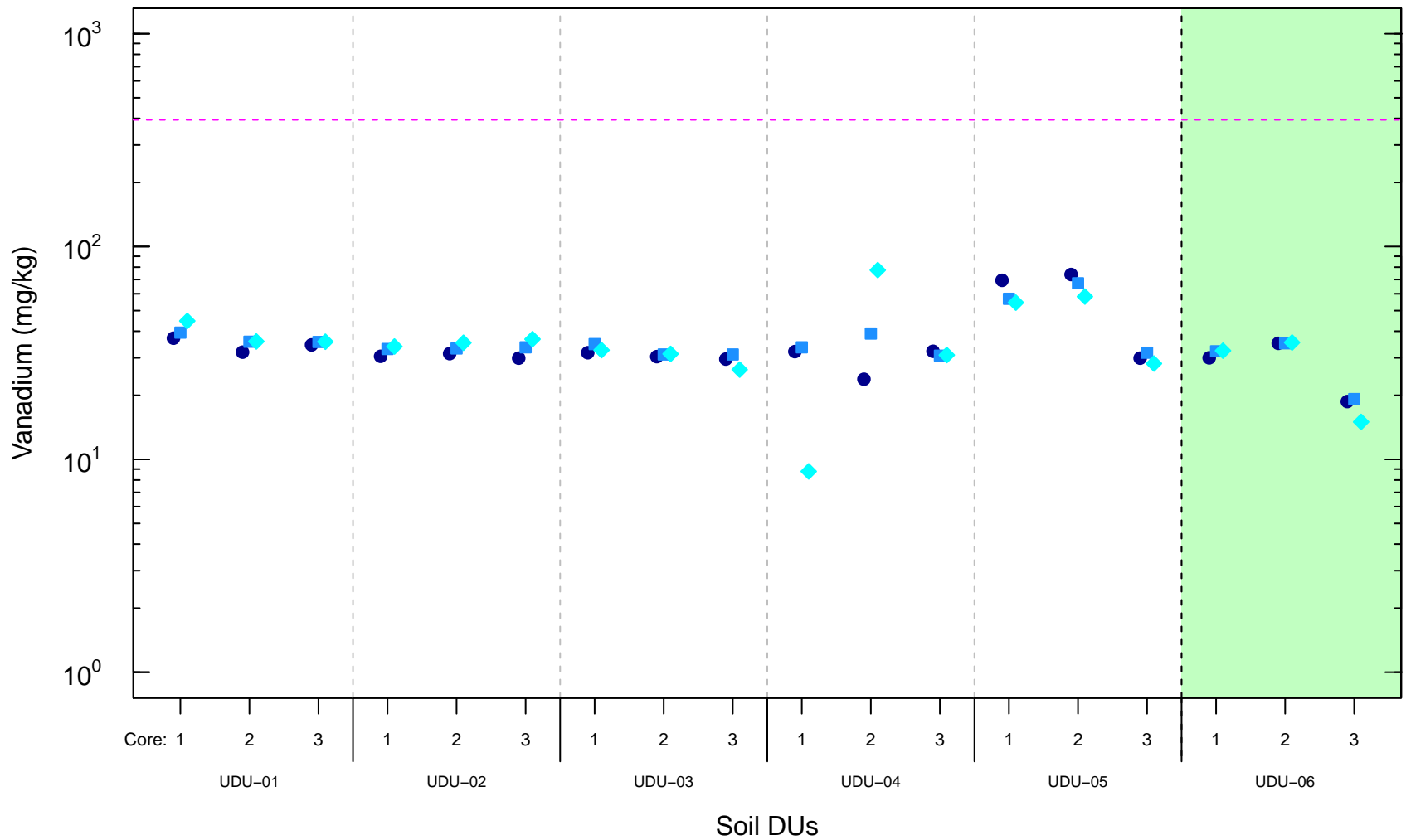
Depth
 ● 0–15 cm ■ 15–30 cm ◆ 30–45 cm

□ East Bank – Bossburg
 ■ West Bank – Cable Ferry Landing
 ■ East Bank – Evans Campground
 - - - Human Health SL*

*Human health SL for vanadium is 394 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5–13aq. Vanadium Concentrations in < 250-µm Sediment Fractions of Core Samples



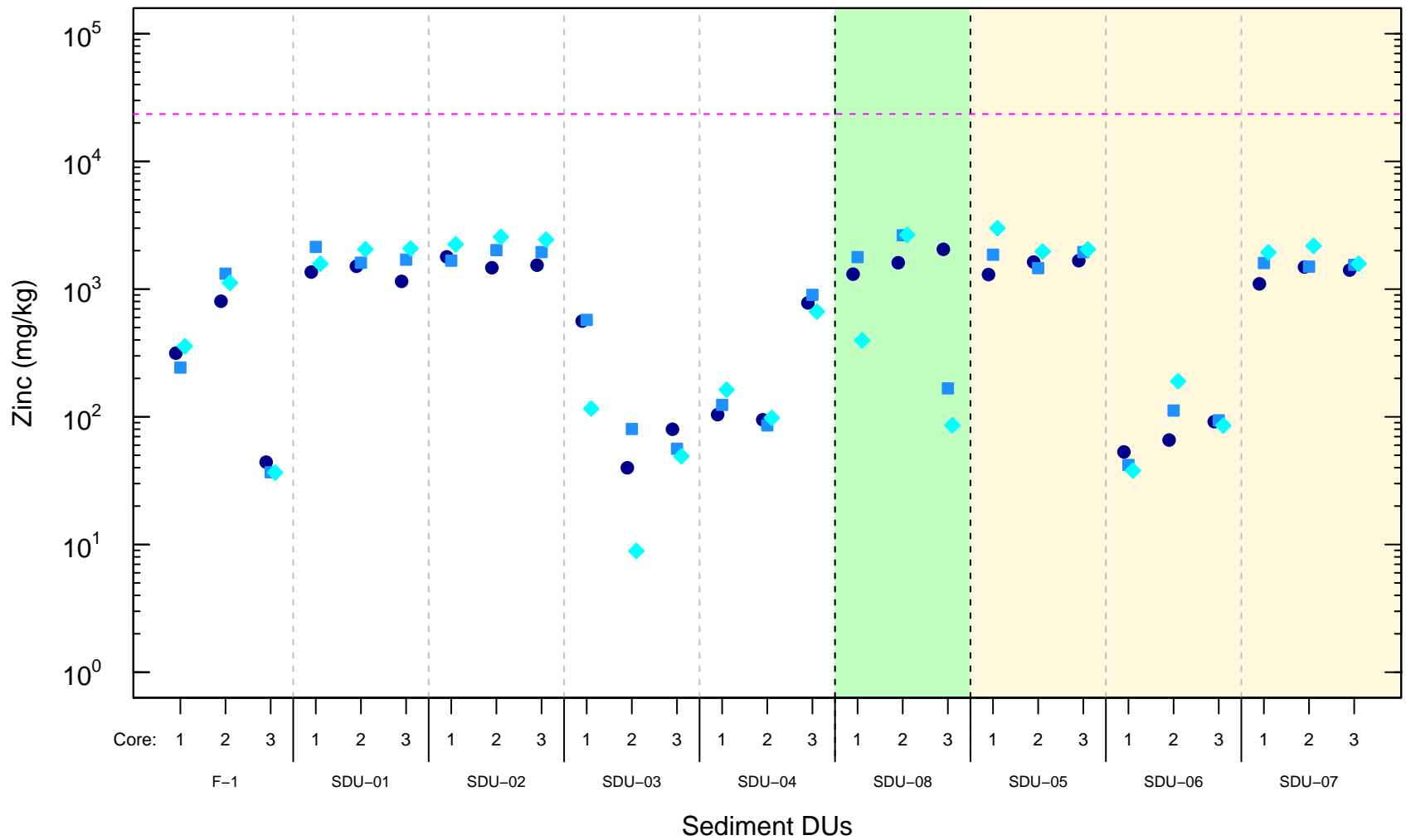
Depth
 ● 0-15 cm ■ 15-30 cm ◆ 30-45 cm

□ East Bank – Bossburg
 ■ West Bank – Cable Ferry Landing
 - - - Human Health SL*

*Human health SL for vanadium is 394 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5-13ar. Vanadium Concentrations in < 150-µm Soil Fractions of Core Samples



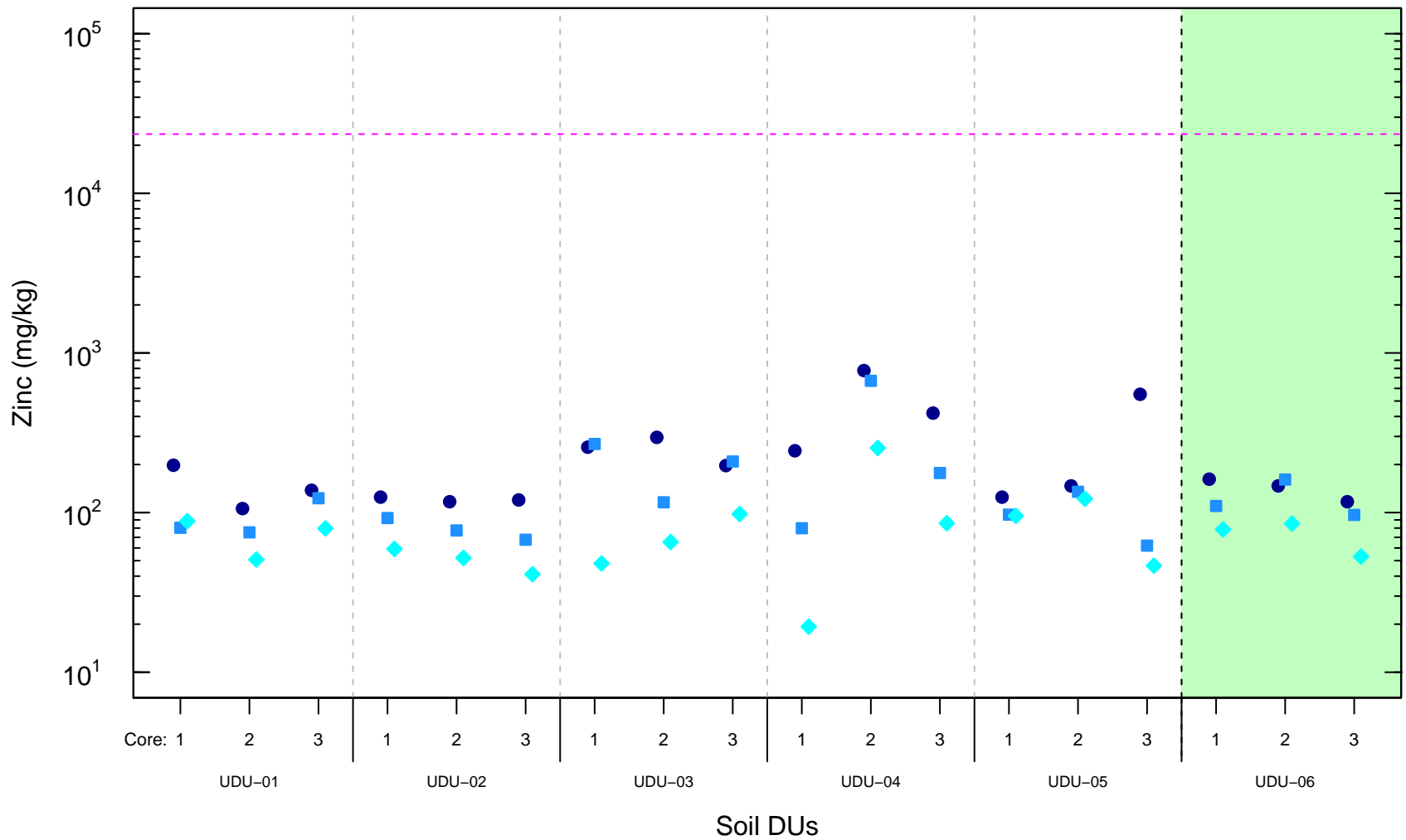
Depth
 ● 0–15 cm ■ 15–30 cm ◆ 30–45 cm

□ East Bank – Bossburg
 ■ West Bank – Cable Ferry Landing
 ■ East Bank – Evans Campground
 - - - Human Health SL*

*Human health SL for zinc is 23,500 mg/kg

Decision Units are presented upstream to downstream within an area of the Site.

Figure 5–13as. Zinc Concentrations in < 250–µm Sediment Fractions of Core Samples



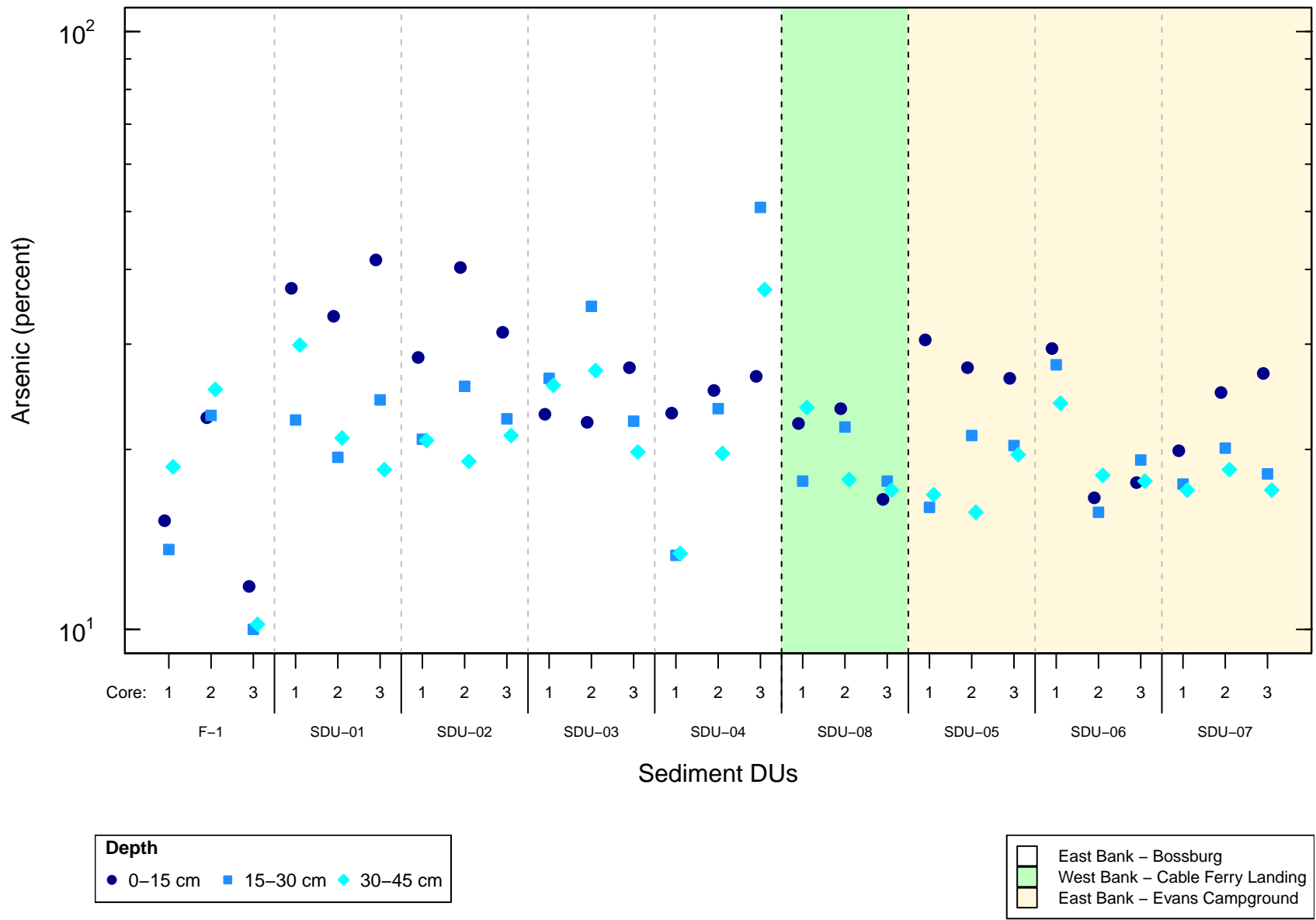
Depth
 ● 0-15 cm ■ 15-30 cm ◆ 30-45 cm

□ East Bank – Bossburg
 ■ West Bank – Cable Ferry Landing
 - - - Human Health SL*

*Human health SL for zinc is 23,500 mg/kg

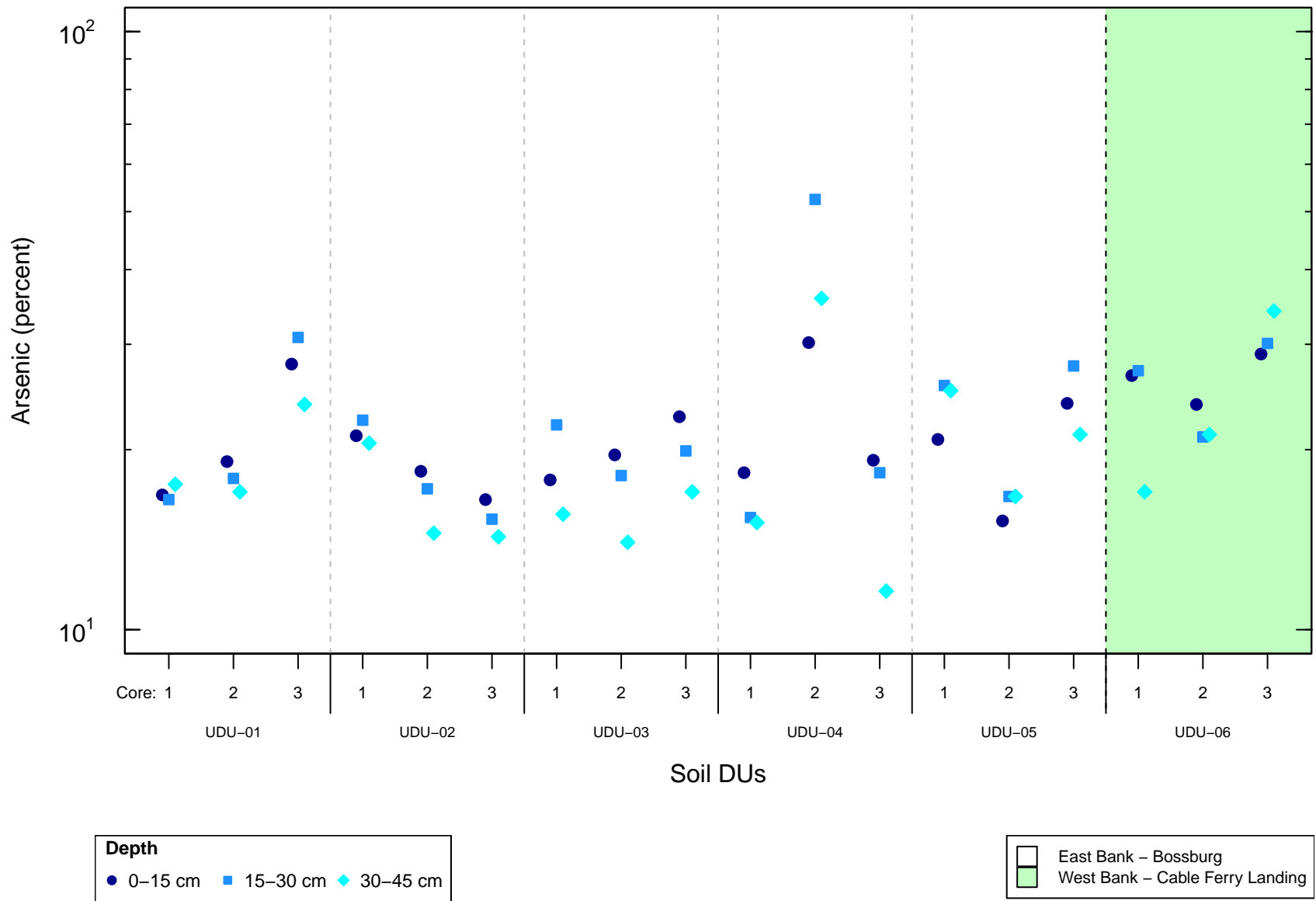
Decision Units are presented upstream to downstream within an area of the Site.

Figure 5-13at. Zinc Concentrations in < 150-µm Soil Fractions of Core Samples



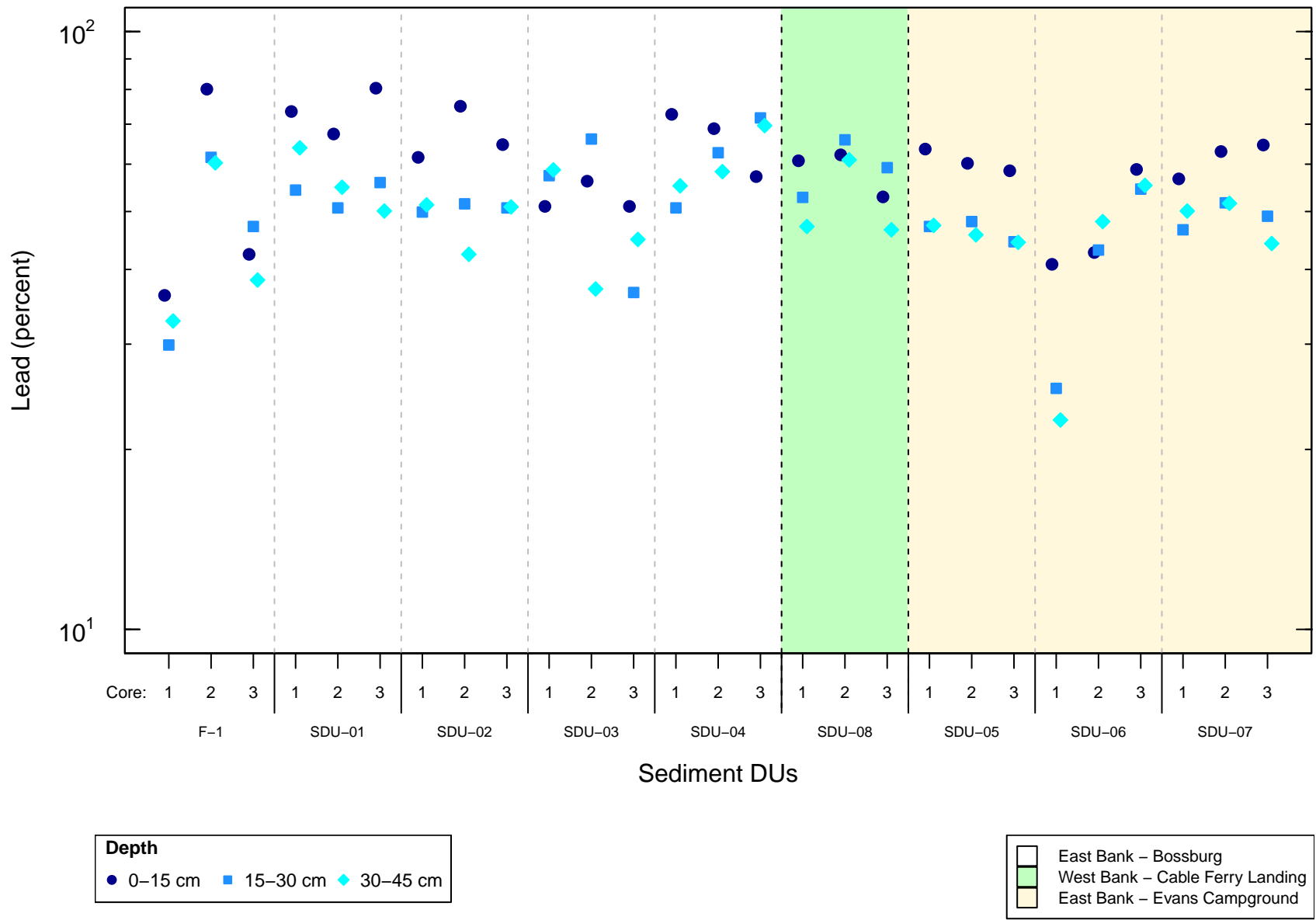
Decision Units are presented upstream to downstream within an area of the Site.

Figure 5-14a. Percent Bioaccessible Arsenic in < 250-μm Sediment Fractions of Core Samples



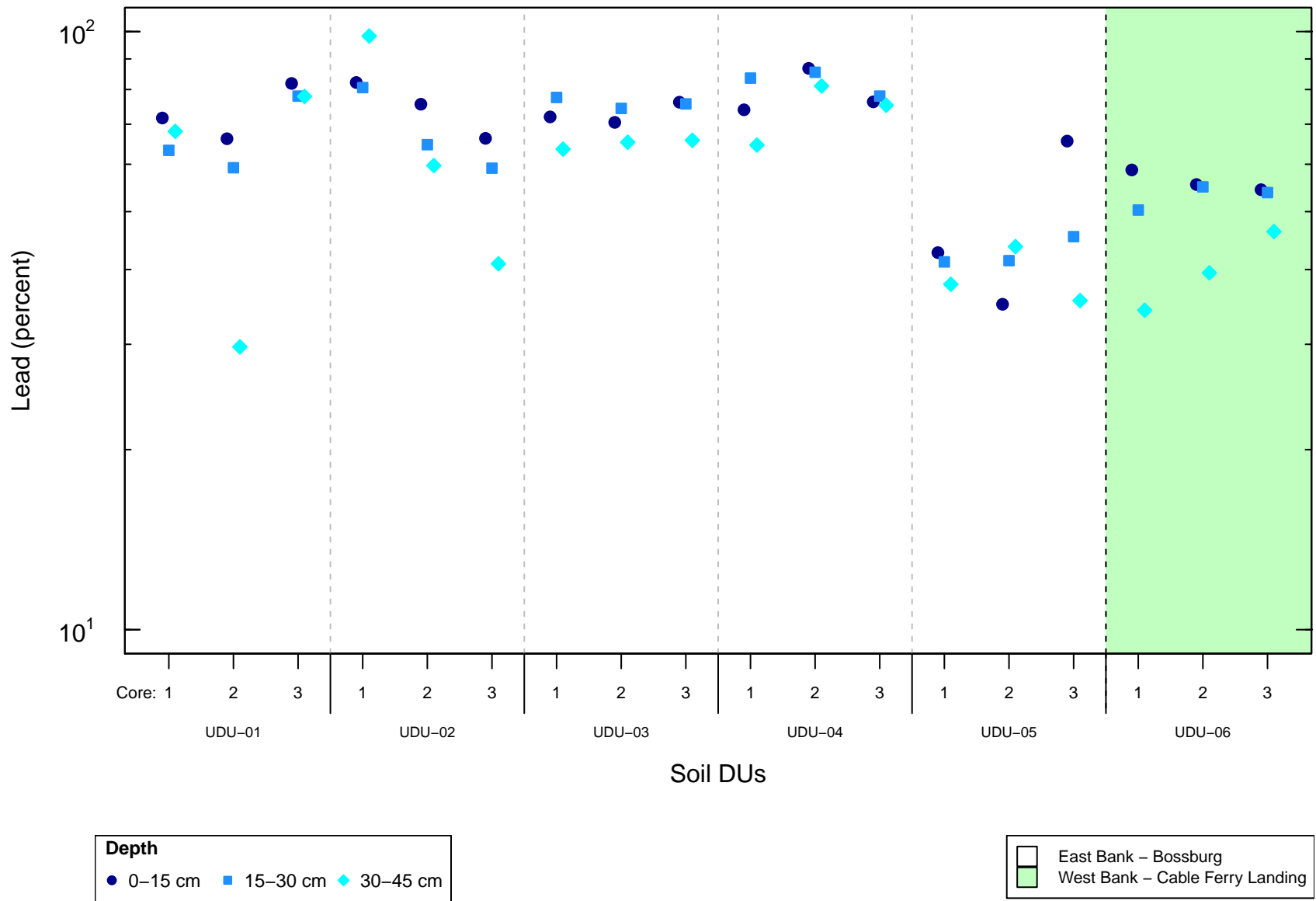
Decision Units are presented upstream to downstream within an area of the Site.

Figure 5–14b. Percent Bioaccessible Arsenic in < 150–µm Soil Fractions of Core Samples



Decision Units are presented upstream to downstream within an area of the Site.

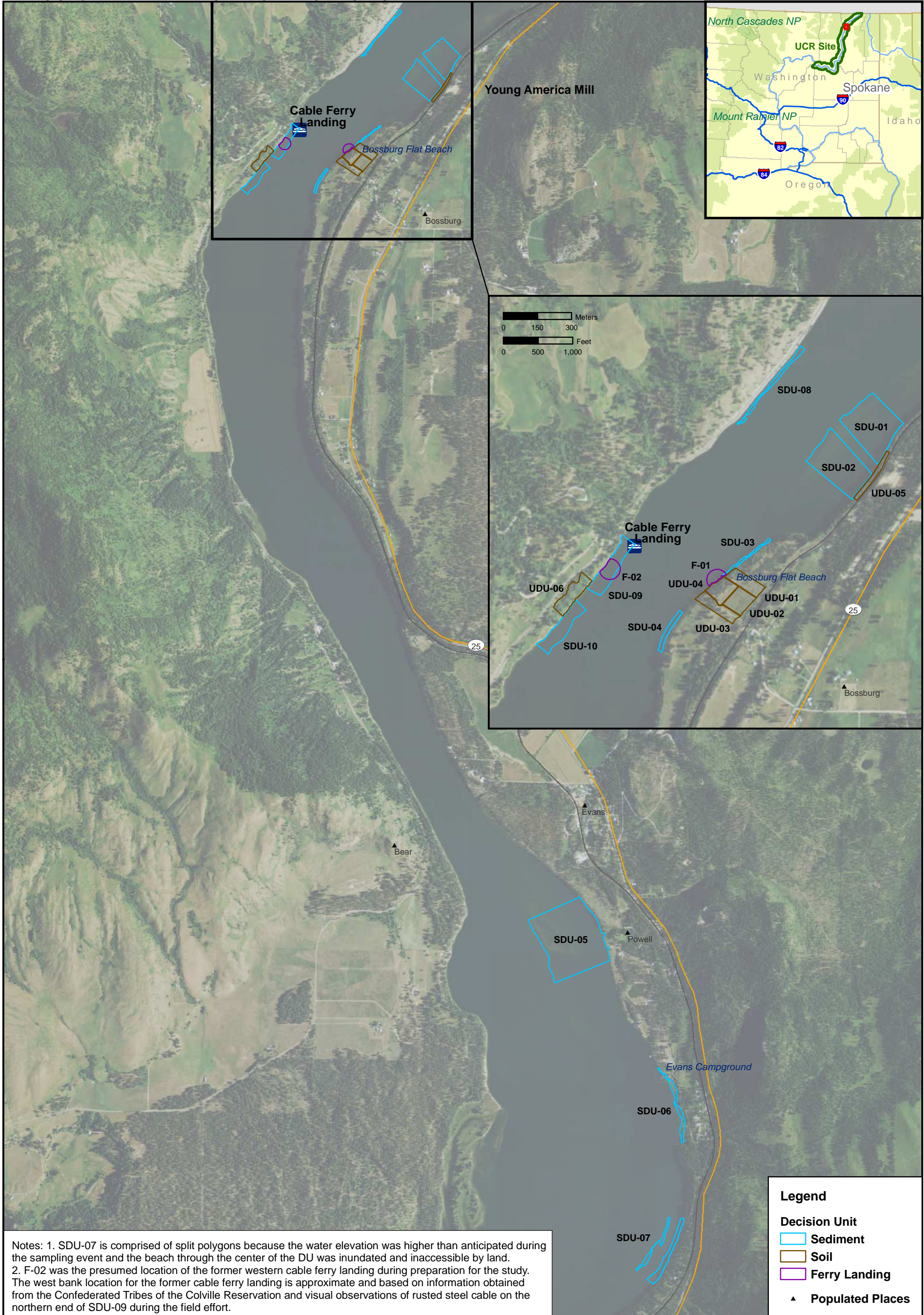
Figure 5-14c. Percent Bioaccessible Lead in < 250-µm Sediment Fractions of Core Samples



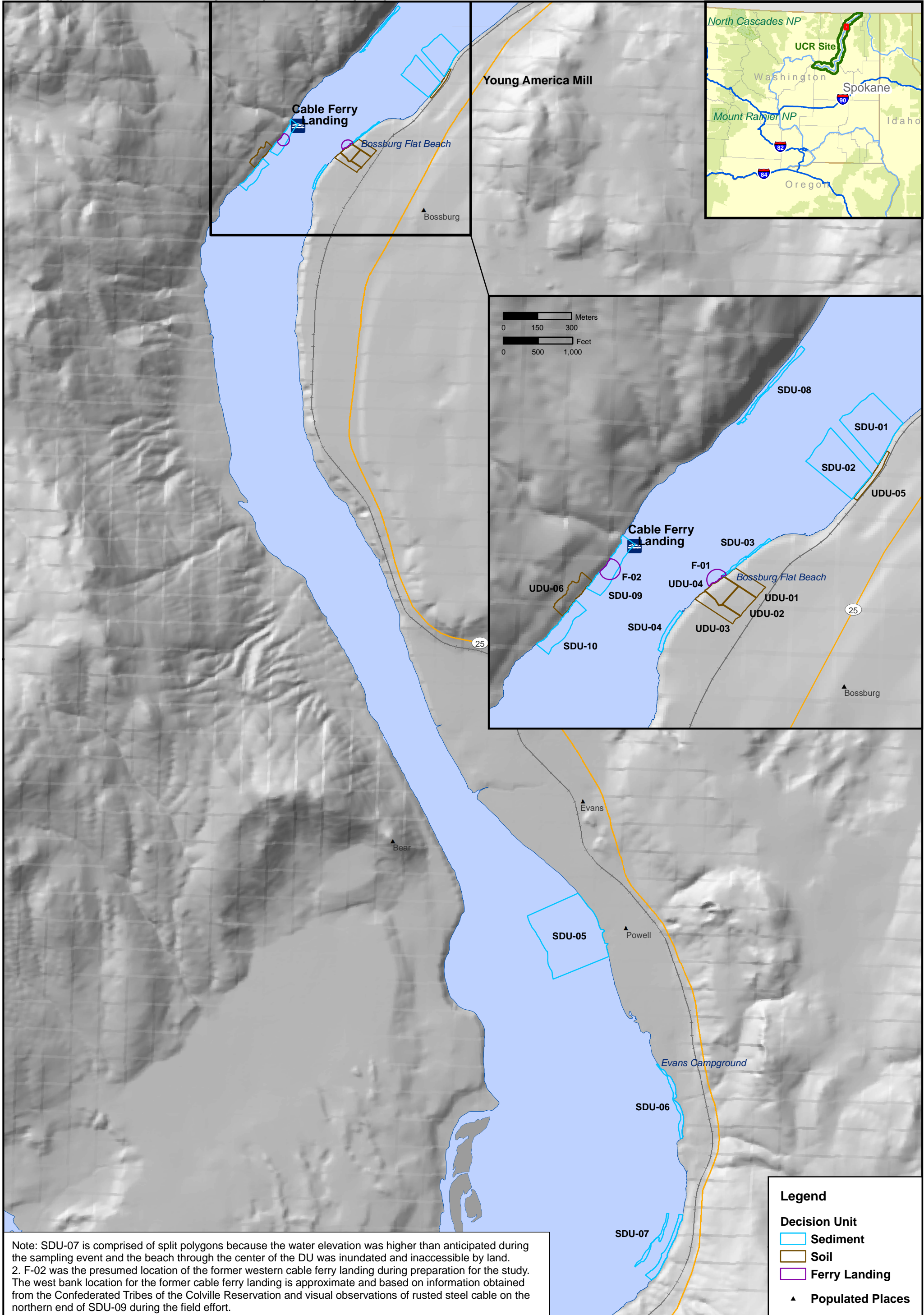
Decision Units are presented upstream to downstream within an area of the Site.

Figure 5–14d. Percent Bioaccessible Lead in < 150–µm Soil Fractions of Core Samples

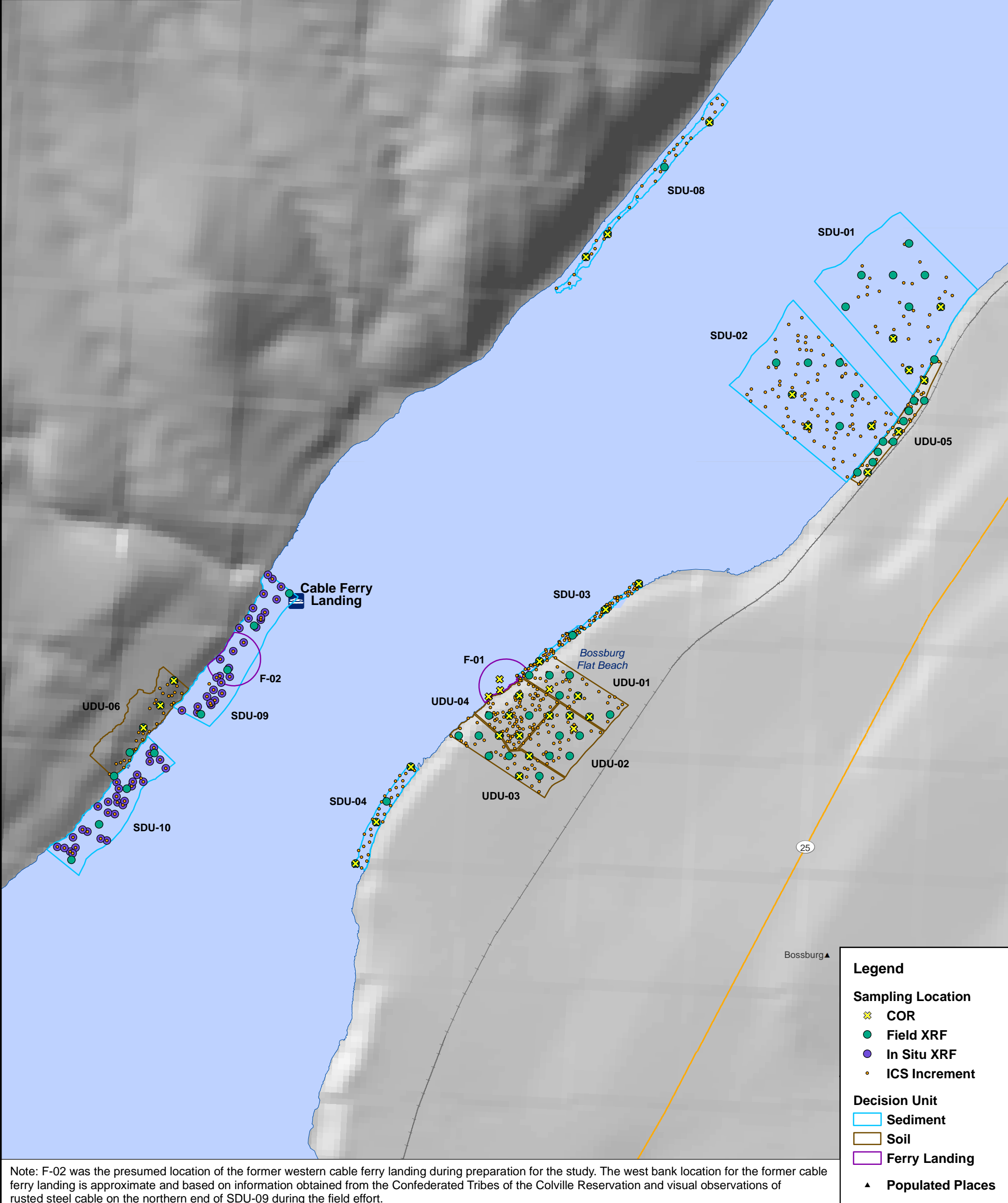
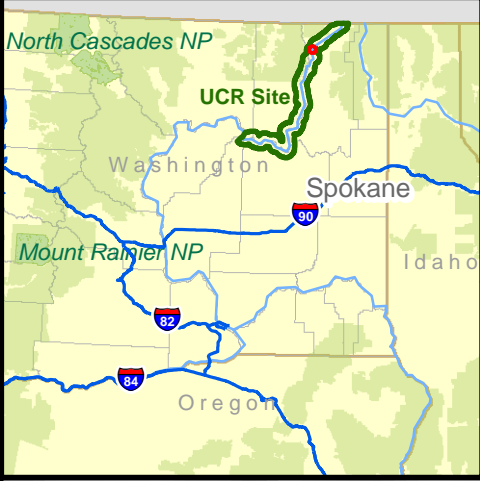
MAPS



Notes: 1. SDU-07 is comprised of split polygons because the water elevation was higher than anticipated during the sampling event and the beach through the center of the DU was inundated and inaccessible by land.
 2. F-02 was the presumed location of the former western cable ferry landing during preparation for the study. The west bank location for the former cable ferry landing is approximate and based on information obtained from the Confederated Tribes of the Colville Reservation and visual observations of rusted steel cable on the northern end of SDU-09 during the field effort.



Note: SDU-07 is comprised of split polygons because the water elevation was higher than anticipated during the sampling event and the beach through the center of the DU was inundated and inaccessible by land.
 2. F-02 was the presumed location of the former western cable ferry landing during preparation for the study. The west bank location for the former cable ferry landing is approximate and based on information obtained from the Confederated Tribes of the Colville Reservation and visual observations of rusted steel cable on the northern end of SDU-09 during the field effort.



Note: F-02 was the presumed location of the former western cable ferry landing during preparation for the study. The west bank location for the former cable ferry landing is approximate and based on information obtained from the Confederated Tribes of the Colville Reservation and visual observations of rusted steel cable on the northern end of SDU-09 during the field effort.

Legend

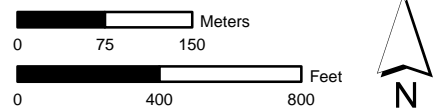
Sampling Location

- ✕ COR
- Field XRF
- In Situ XRF
- ICS Increment

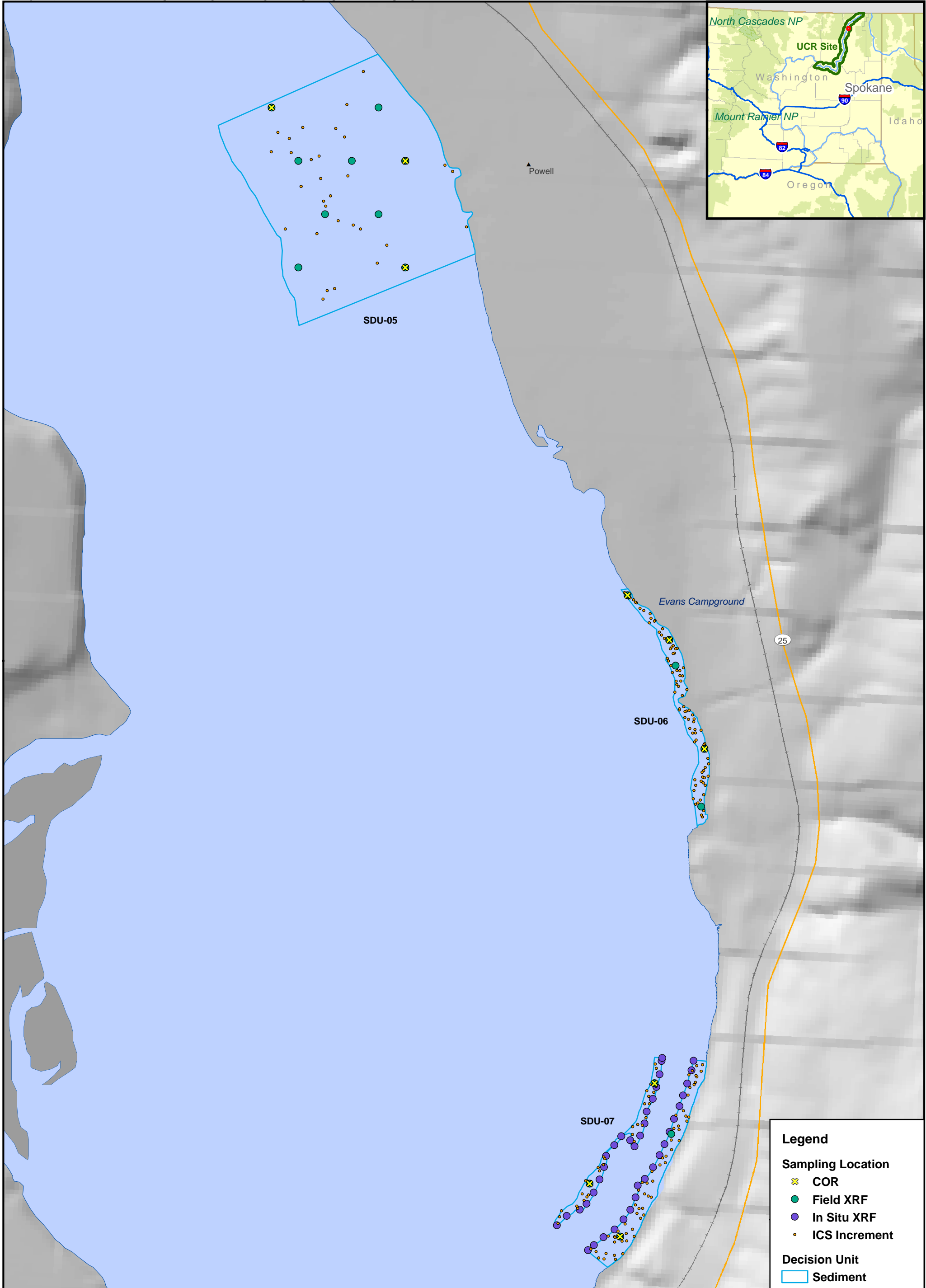
Decision Unit

- Sediment
- Soil
- Ferry Landing

▲ Populated Places



Map 2-2. Sampling Locations in the Bossburg Flat Beach Area
Upper Columbia River, WA



Legend

Sampling Location

- ✕ COR
- Field XRF
- In Situ XRF
- ICS Increment

Decision Unit

- Sediment

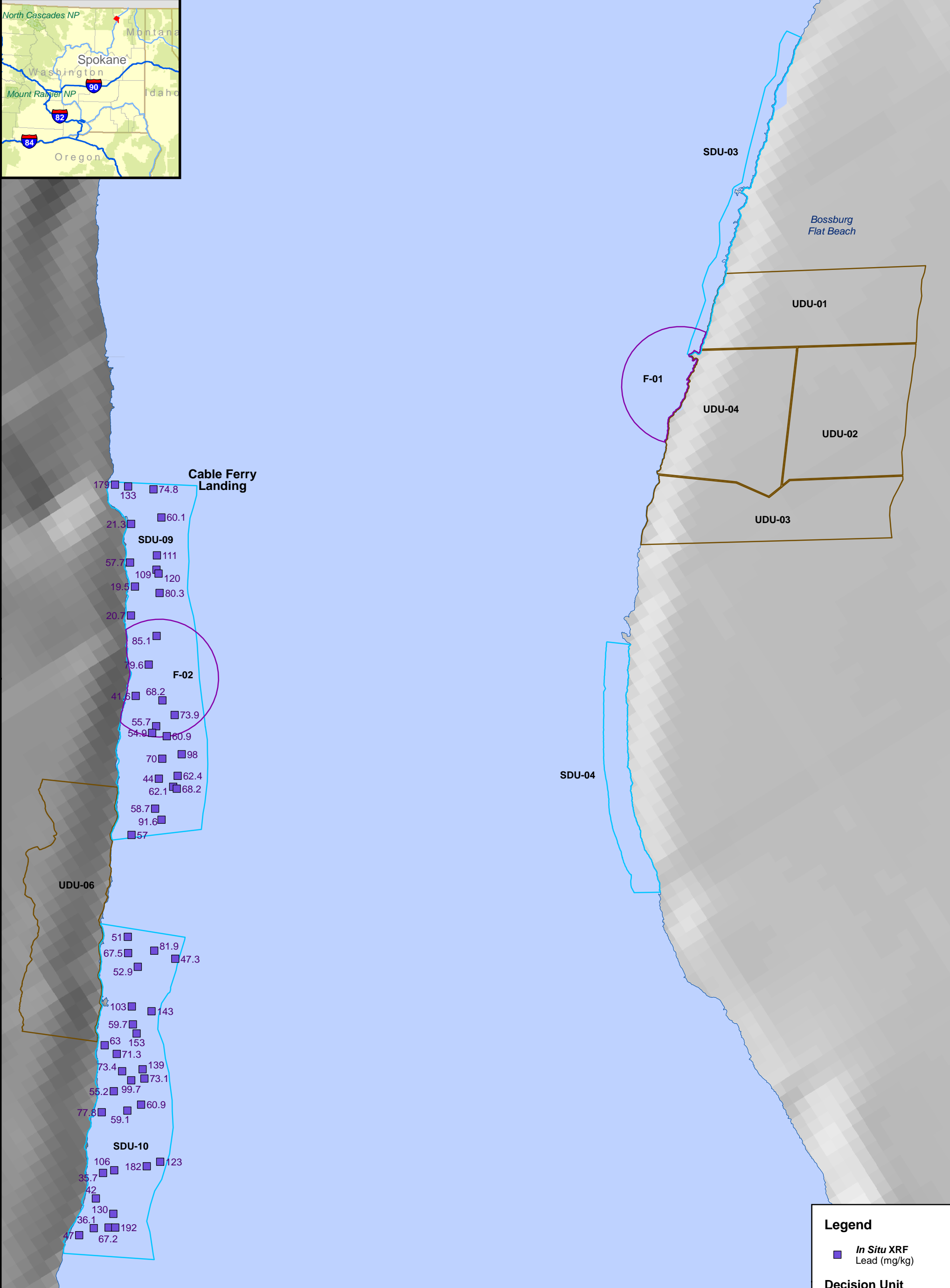
▲ Populated Places

Note: SDU-07 is comprised of split polygons because the water elevation was higher than anticipated during the sampling event and the beach through the center of the DU was inundated and inaccessible by land.

0 80 160 Meters

0 490 980 Feet

Map 2-3. Sampling Locations in the Evans Campground Beach Area
Upper Columbia River, WA

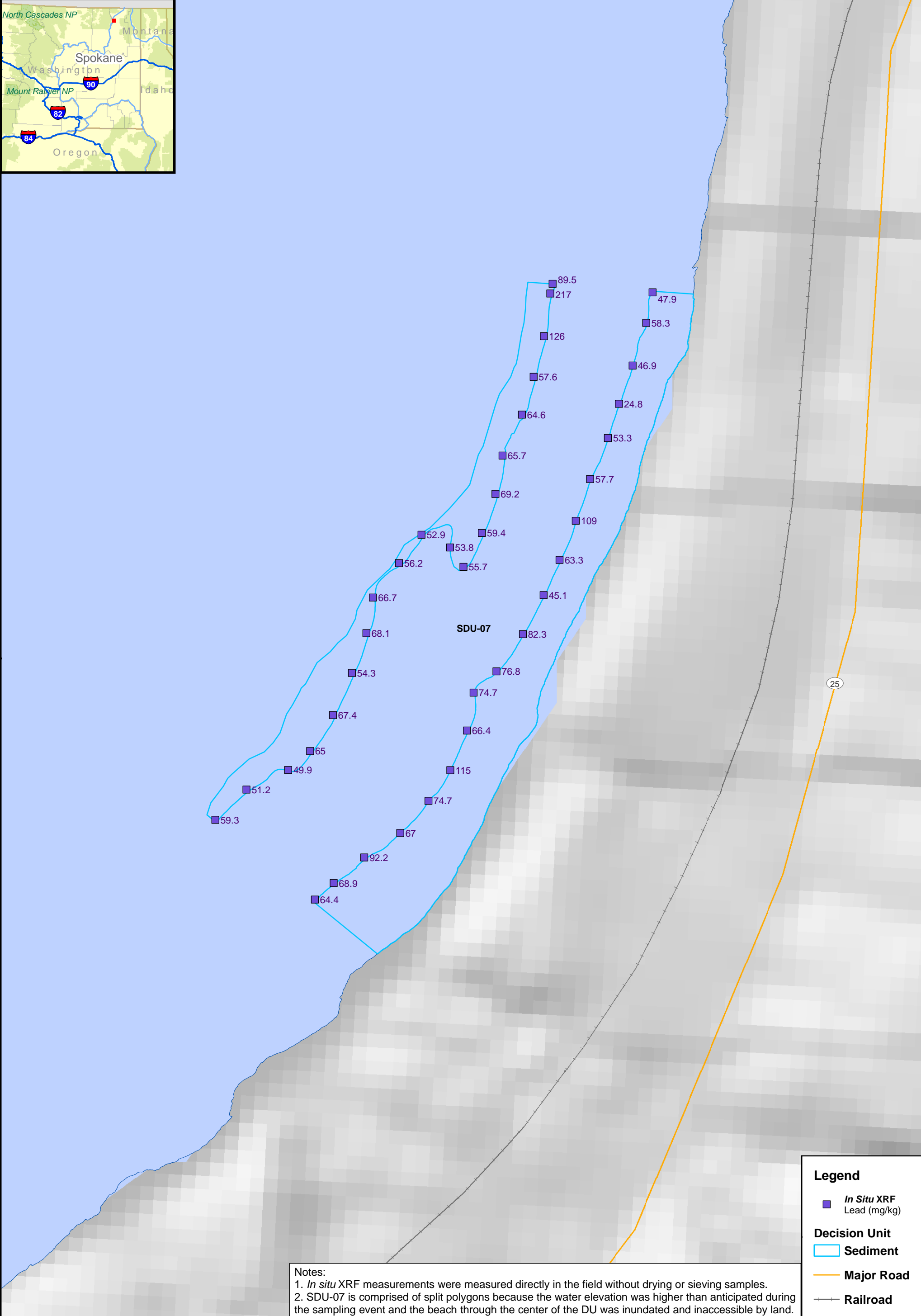


Note:

1. *In situ* XRF measurements were measured directly in the field without drying or sieving samples.
2. Note: F-02 was the presumed location of the former western cable ferry landing during preparation for the study. The west bank location for the former cable ferry landing is approximate and based on information obtained from the Confederated Tribes of the Colville Reservation and visual observations of rusted steel cable on the northern end of SDU-09 during the field effort.



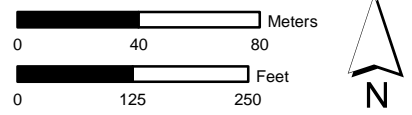
Map 5-1. *In Situ* XRF Measurements of Lead Concentrations in SDU-09 and SDU-10 Upper Columbia River, WA



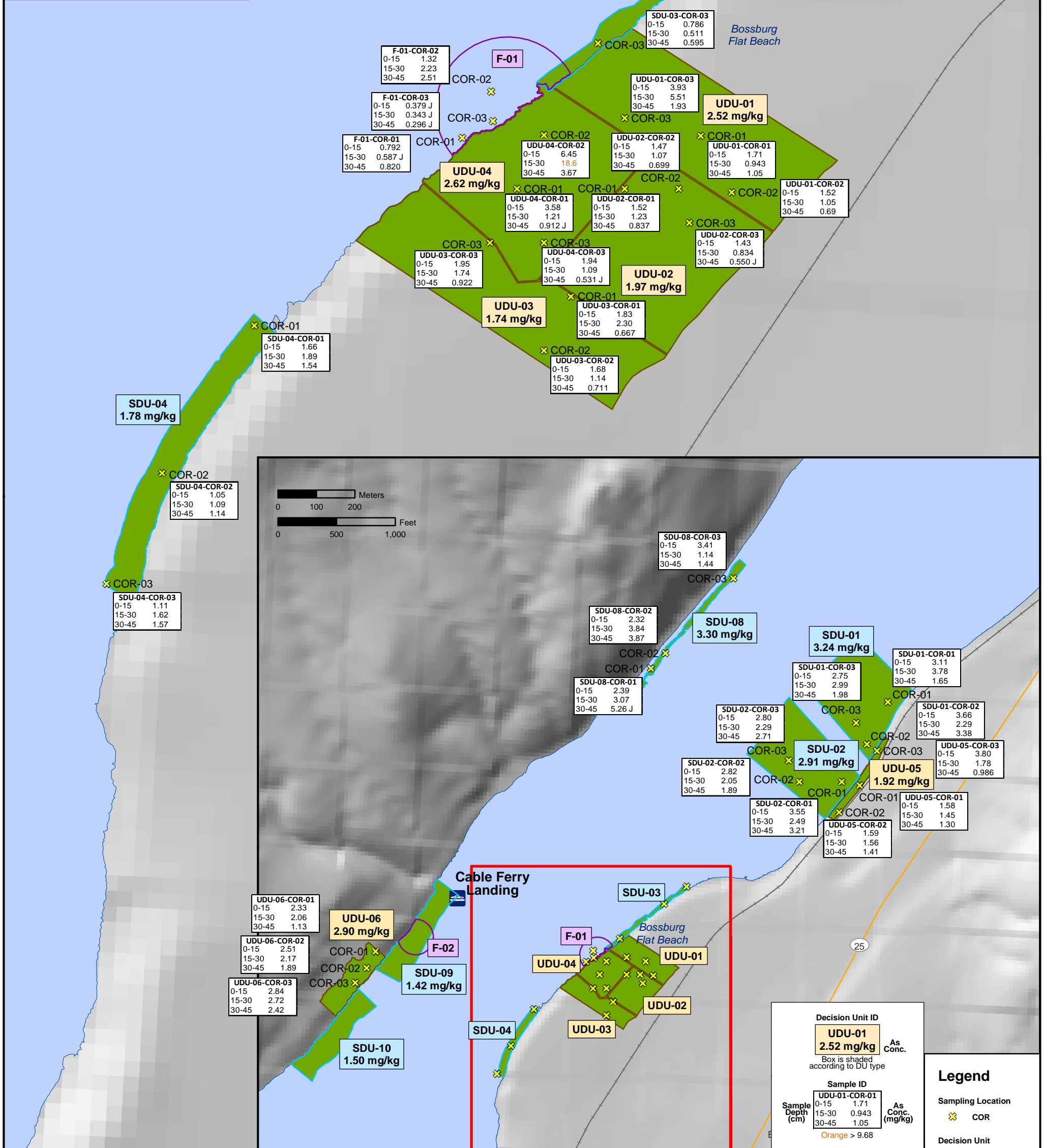
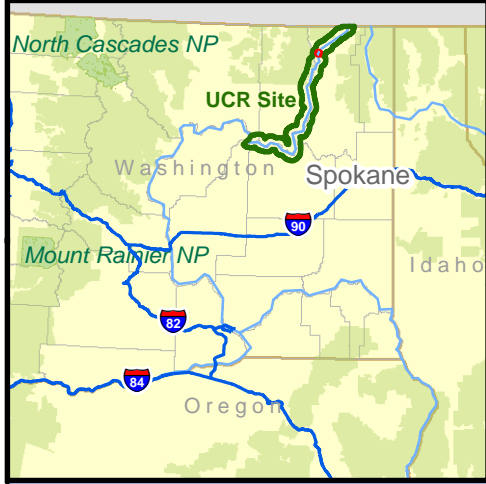
Notes:
 1. *In situ* XRF measurements were measured directly in the field without drying or sieving samples.
 2. SDU-07 is comprised of split polygons because the water elevation was higher than anticipated during the sampling event and the beach through the center of the DU was inundated and inaccessible by land.

Legend

- *In Situ* XRF Lead (mg/kg)
- Decision Unit Sediment
- Major Road
- Railroad

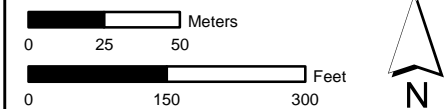


Map 5-2. *In Situ* XRF Measurements of Lead Concentrations in SDU-07

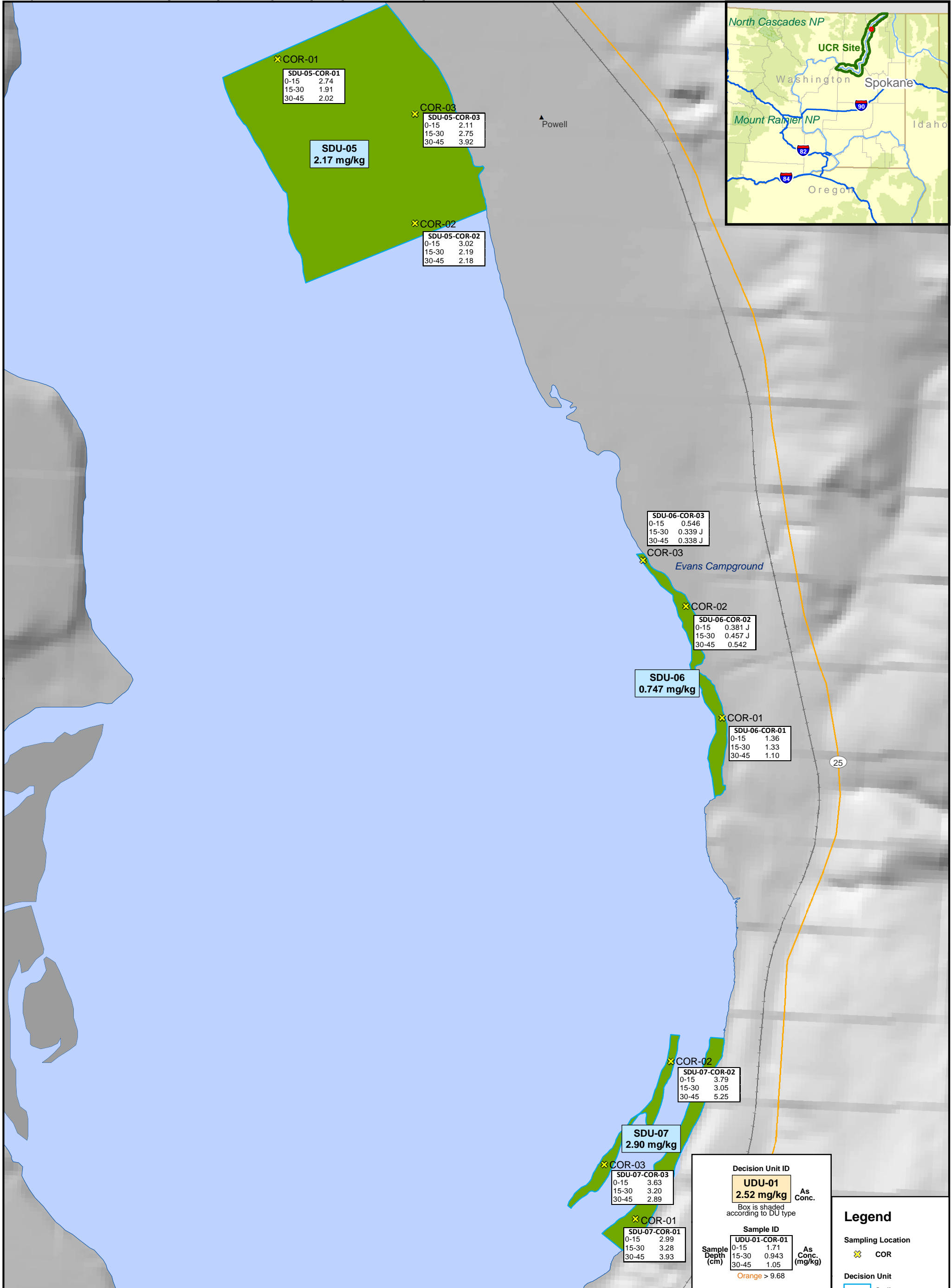


Notes:

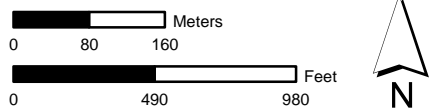
1. Arsenic concentrations are based on samples sieved to < 250 µm for sediment and < 150 µm for soil; adjusted for site-specific relative bioavailability (Bradham 2015). Duplicate and field triplicate samples results have been averaged. The human health screening level for arsenic is 9.68 mg/kg.
2. F-02 was the presumed location of the former western cable ferry landing during preparation for the study. The west bank location for the former cable ferry landing is approximate and based on information obtained from the Confederated Tribes of the Colville Reservation and visual observations of rusted steel cable on the northern end of SDU-09 during the field effort.



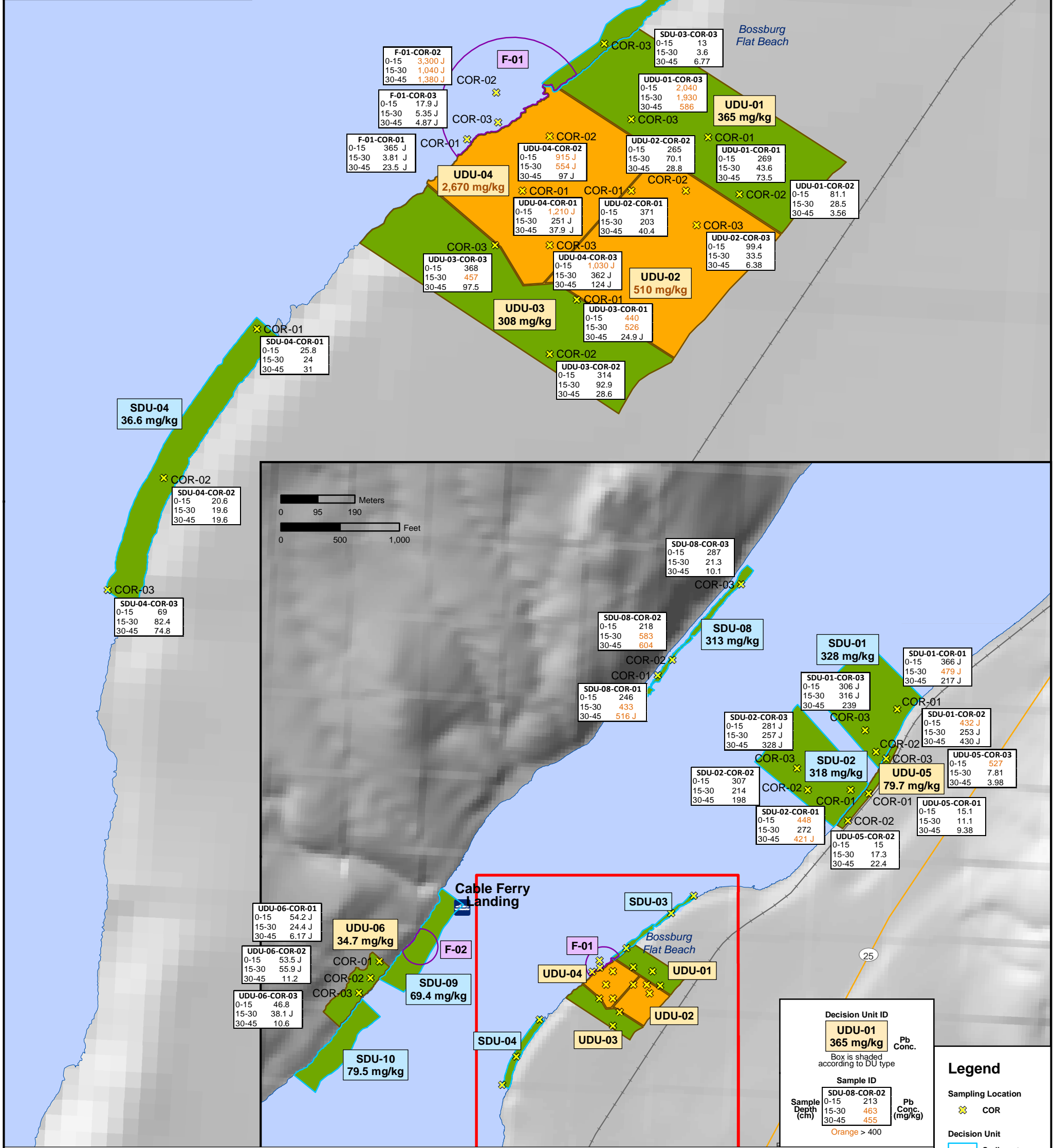
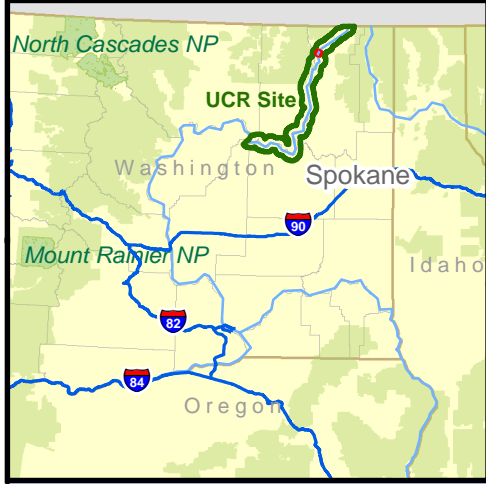
Map 5-3. Arsenic Concentrations in the < 250-µm Sediment and < 150-µm Soil Fractions in the Bossburg Flat Beach Area
Upper Columbia River, WA



Notes:
 1. Arsenic concentrations are based on samples sieved to < 250 µm for sediment and < 150 µm for soil; adjusted for site-specific relative bioavailability (Bradham 2015). Duplicate and field triplicate samples results have been averaged. The human health screening level for arsenic is 9.68 mg/kg.
 2. SDU-07 is comprised of split polygons because the water elevation was higher than anticipated during the sampling event and the beach through the center of the DU was inundated and inaccessible by land.



Map 5-4. Arsenic Concentrations in the < 250-µm Sediment and < 150-µm Soil Fractions in the Evans Campground Beach Area
 Upper Columbia River, WA



Notes:
 1. Lead concentrations are based on samples sieved to < 250 μm for sediment and < 150 μm for soil; adjusted for the ratio of site-specific relative oral bioavailability (RBA) to EPA's default RBA (USEPA 2007). RBA equation from EPA (2007) for lead estimation guidance) is: $RBA = 0.878 \cdot IVBA \cdot 0.028$. IVBA – in vitro bioaccessibility. Duplicate and field triplicate samples results have been averaged. The human health screen level for lead is 400 mg/kg.
 2. F-02 was the presumed location of the former western cable ferry landing during preparation for the study. The west bank location for the former cable ferry landing is approximate and based on information obtained from the Confederated Tribes of the Colville Reservation and visual observations of rusted steel cable on the northern end of SDU-09 during the field effort.

Decision Unit ID
 UDU-01
 365 mg/kg Pb Conc.
 Box is shaded according to DU type

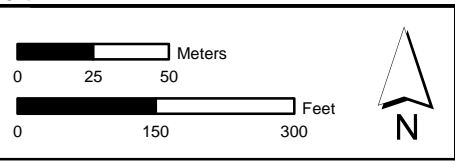
Sample ID
 SDU-08-COR-02
 0-15 213
 15-30 463
 30-45 455 Pb Conc. (mg/kg)
 Orange > 400

Legend

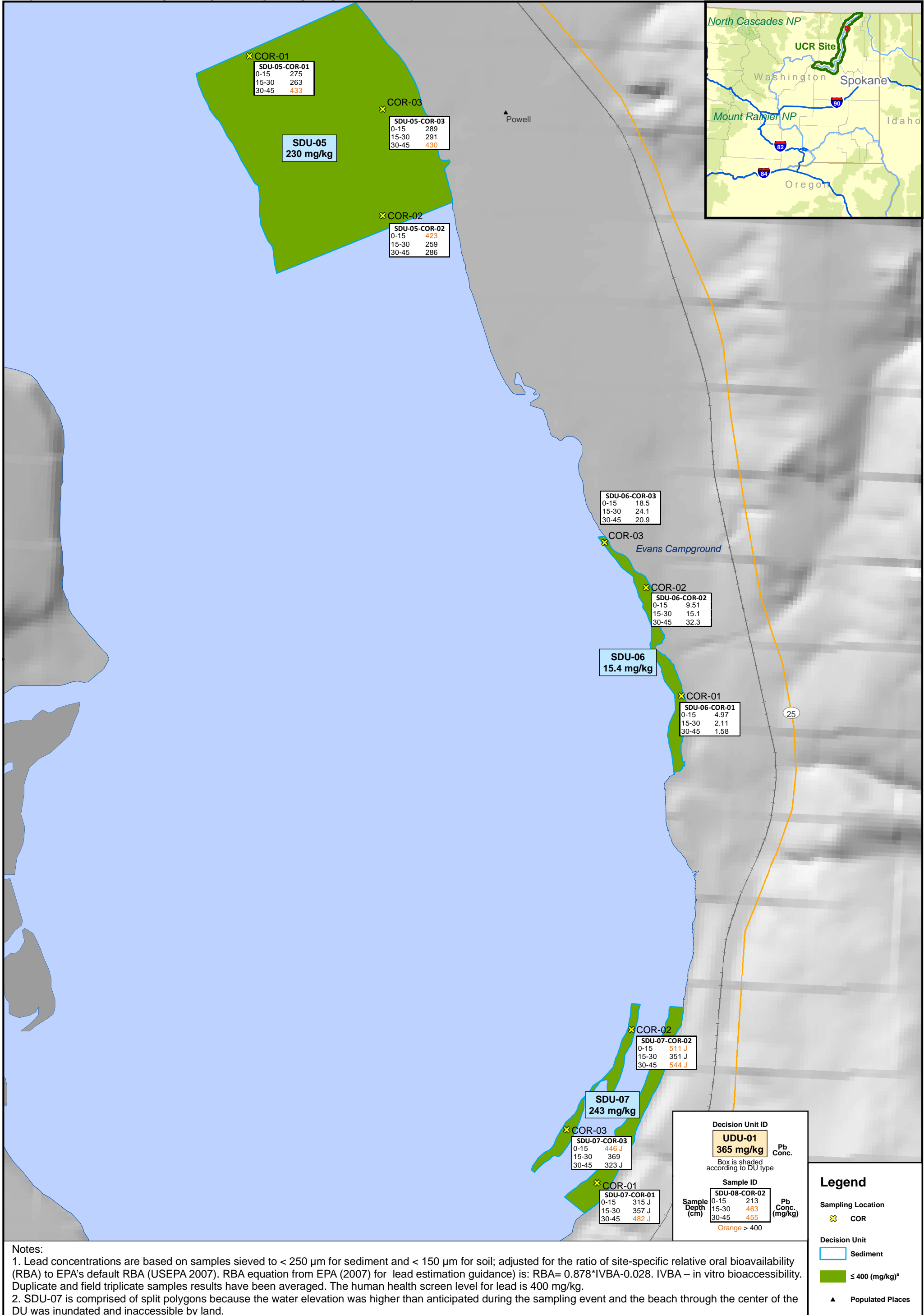
Sampling Location
 ✕ COR

Decision Unit
 Sediment (light blue)
 Soil (orange)
 Ferry Landing (purple)

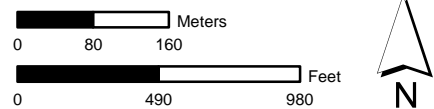
> 400 (mg/kg) (orange)
 ≤ 400 (mg/kg) (green)



Map 5-5. Lead Concentrations in the < 250-μm Sediment and < 150-μm Soil Fractions in the Bossburg Flat Beach Area
 Upper Columbia River, WA



Notes:
 1. Lead concentrations are based on samples sieved to < 250 µm for sediment and < 150 µm for soil; adjusted for the ratio of site-specific relative oral bioavailability (RBA) to EPA's default RBA (USEPA 2007). RBA equation from EPA (2007) for lead estimation guidance is: $RBA = 0.878 * IVBA - 0.028$. IVBA – in vitro bioaccessibility. Duplicate and field triplicate samples results have been averaged. The human health screen level for lead is 400 mg/kg.
 2. SDU-07 is comprised of split polygons because the water elevation was higher than anticipated during the sampling event and the beach through the center of the DU was inundated and inaccessible by land.



Map 5-6. Lead Concentrations in the < 250-µm Sediment and < 150-µm Soil Fractions in the Evans Campground Beach Area
 Upper Columbia River, WA

TABLES

Table 2-1. Number of Planned and Actual Samples by Area

Decision Unit or Area	ICS ^a		Field Laboratory XRF ^b		<i>In Situ</i> XRF ^c		Cores (depth)					
	Planned	Actual	Planned	Actual	Planned	Actual	0-15 cm		15-30 cm		30-45 cm	
							Planned	Actual	Planned	Actual	Planned	Actual
Sediment												
SDU-01	1	1	9	9	0	0	3	3	3	3	3	3
SDU-02	3 ^d	3 ^d	8	8	0	0	3	3	3	3	3	3
SDU-03	3 ^d	3 ^d	4	4	0	0	3	3	3	3	3	3
SDU-04	1	1	4	4	0	0	3	3	3	3	3	3
SDU-05	1	1	9	9	0	0	3	3	3	3	3	3
SDU-06	3 ^d	3 ^d	5	5	0	0	3	3	3	3	3	3
SDU-07	1	3 ^d	4	4	0	39	3	3	3	3	3	3
SDU-08	1	1	4	4	0	0	3	3	3	3	3	3
SDU-09	3 ^d	1	4	4	0	30	3	0 ^e	3	0 ^e	3	0 ^e
SDU-10	1	1	4	4	0	30	0	0	0	0	0	0
F-01	0	0	0	0	0	0	3	3	3	3	3	3
F-02	0	0	0	0	0	0	3	0 ^e	3	0 ^e	3	0 ^e
Total	18	18	55	55	0	99	33	27	33	27	33	27
Soil												
UDU-01	1	1	7	7	0	0	3	3	3	3	3	3
UDU-02	1	1	6	6	0	0	3	3	3	3	3	3
UDU-03	1	1	8	8	0	0	3	3	3	3	3	3
UDU-04	3 ^d	3 ^d	5	5	0	0	3	3	3	3	3	3
UDU-05	1	1	13	13	0	0	3	3	3	3	3	3
UDU-06	1	1	5	5	0	0	3	3	3	3	3	3
Total	8	8	44	44	0	0	18	18	18	18	18	18

Notes:

^a When using incremental composite sampling (ICS) methods, 30 increments were collected and composited in the field to form a single sample for each decision unit (DU).

^b Laboratory analyses were conducted on 24 percent of the field laboratory X-ray fluorescence (XRF) samples to confirm lead concentrations measured using the handheld XRF analyzer (i.e., confirmatory XRF samples). The confirmatory XRF samples are summarized in Tables 5-6a and b.

^c The decision to collect *in situ* XRF measurements was made during the field effort and was not originally part of the study design in the quality assurance project plan (QAPP) (HDR et al. 2015a).

^d Triplicate samples collected using ICS methods (ITRC 2012).

^e The planned sediment cores were not collected in SDU-09 and F-02 due to cultural sensitivities.

SDU - sediment decision unit

UDU - upland decision unit

Table 2-2a. Decision Units Sampled Using ICS Methods

Decision Unit	Collection Date	Number of Increments Sampled	Field Quality Control Samples Collected	Coordinates ^{a,b}	
				X	Y
Sediment					
SDU-01	4/21/2015	30	EPA split	423547.41	5401577.53
SDU-02	4/21-4/22/2015	90	Field triplicate, field split	423388.50	5401427.04
SDU-03	4/23-4/24/2015	90	EPA split, field triplicate	422978.20	5401015.01
SDU-04	5/2-5/4/2015	30		422641.82	5400699.31
SDU-05	4/24-4/25/2015	30		424451.54	5395123.92
SDU-06	4/27-4/28/2015	90	Field triplicate, field split	425254.66	5393921.40
SDU-07	5/4-5/6/2015	90	Field triplicate	425145.82	5392844.64
SDU-08	5/5-5/6/2015	30		423105.03	5401796.78
SDU-09	4/30-5/1/2015	30		422384.50	5400978.97
SDU-10	4/27-5/2/2015	30	EPA split	422174.96	5400716.63
Soil					
UDU-01	4/14-4/16/2015	30		422970.59	5400921.65
UDU-02	4/16/2015	30		422944.51	5400831.60
UDU-03	4/16-4/17/2015	30	EPA split	422855.78	5400798.99
UDU-04	4/17-4/20/2015	90	Field triplicate	422878.66	5400863.19
UDU-05	4/29-4/30/2015	30		423537.61	5401376.80
UDU-06	5/7/2015	30	Field split	422239.21	5400859.63

Notes:

^a Coordinates for decision units sampled in triplicate (SDU-02, SDU-03, SDU-06, SDU-07, and UDU-04) are from triplicate 'A'.

^b WGS84 UTM Zone 11N coordinates - meters.

ICS - incremental composite sampling

SDU - sediment decision unit

UDU - upland decision unit

Table 2-2b. Field Laboratory and *In Situ* XRF Sampling Locations

Decision Unit	Location	Collection Date	Method Quality Control Samples Collected	Coordinates ^a	
				X	Y
Field Laboratory XRF					
Sediment					
SDU-01	SDU-01-XRF-01	4/20/2015		423555.56	5401691.38
SDU-01	SDU-01-XRF-02	4/20/2015		423473.06	5401636.38
SDU-01	SDU-01-XRF-03	4/20/2015	Confirmatory XRF	423528.06	5401636.38
SDU-01	SDU-01-XRF-04	4/20/2015	Confirmatory XRF	423583.06	5401636.38
SDU-01	SDU-01-XRF-05	4/20/2015		423445.56	5401581.38
SDU-01	SDU-01-XRF-06	4/20/2015		423555.56	5401581.38
SDU-01	SDU-01-XRF-07	4/20/2015	Confirmatory XRF	423610.56	5401581.38
SDU-01	SDU-01-XRF-08	4/20/2015		423528.06	5401526.38
SDU-01	SDU-01-XRF-09	4/20/2015		423555.56	5401471.38
SDU-02	SDU-02-XRF-01	4/21/2015	Confirmatory XRF ^b	423325.30	5401483.87
SDU-02	SDU-02-XRF-02	4/21/2015		423380.30	5401483.87
SDU-02	SDU-02-XRF-03	4/21/2015		423435.30	5401483.87
SDU-02	SDU-02-XRF-04	4/21/2015		423352.80	5401428.87
SDU-02	SDU-02-XRF-05	4/21/2015		423462.80	5401428.87
SDU-02	SDU-02-XRF-06	4/21/2015		423380.30	5401373.87
SDU-02	SDU-02-XRF-07	4/21/2015		423435.30	5401373.87
SDU-02	SDU-02-XRF-08	4/21/2015		423490.30	5401373.87
SDU-03	SDU-03-XRF-01	4/20/2015		423086.79	5401100.46
SDU-03	SDU-03-XRF-02	4/20/2015		423029.29	5401055.46
SDU-03	SDU-03-XRF-03	4/20/2015		422971.79	5401010.46
SDU-03	SDU-03-XRF-04	4/20/2015		422914.29	5400965.46
SDU-04	SDU-04-XRF-01	5/2/2015		422691.14	5400781.85
SDU-04	SDU-04-XRF-02	5/2/2015		422649.14	5400721.85
SDU-04	SDU-04-XRF-03	5/2/2015		422631.14	5400685.85
SDU-04	SDU-04-XRF-04	5/2/2015		422595.14	5400613.85
SDU-05	SDU-05-XRF-01	4/24/2015		424294.01	5395316.60
SDU-05	SDU-05-XRF-02	4/25/2015		424544.00	5395316.59
SDU-05	SDU-05-XRF-03	4/24/2015		424356.51	5395191.60
SDU-05	SDU-05-XRF-04	4/25/2015		424606.51	5395191.60
SDU-05	SDU-05-XRF-05	4/25/2015		424419.01	5395066.60
SDU-05	SDU-05-XRF-06	4/25/2015		424544.01	5395066.60
SDU-05	SDU-05-XRF-08	4/24/2015		424356.51	5394941.60
SDU-05	SDU-05-XRF-09	4/25/2015		424606.51	5394941.60
SDU-05	SDU-05-XRF-R03	4/24/2015	Confirmatory XRF	424481.51	5395191.60
SDU-06	SDU-06-XRF-01	4/28/2015		425126.24	5394173.90
SDU-06	SDU-06-XRF-02	4/28/2015		425223.74	5394068.90
SDU-06	SDU-06-XRF-04	4/28/2015		425306.24	5393813.90
SDU-06	SDU-06-XRF-05	4/28/2015		425298.74	5393678.90
SDU-06	SDU-06-XRF-R02	4/28/2015		425238.74	5394008.90
SDU-07	SDU-07-F-XRF	5/5/2015		425142.54	5392867.85
SDU-07	SDU-07-XRF-01	5/2/2015		425189.32	5393030.74
SDU-07	SDU-07-XRF-02	5/2/2015		425228.73	5392911.31
SDU-07	SDU-07-XRF-03	5/2/2015		425037.58	5392795.06
SDU-07	SDU-07-XRF-04	5/2/2015		425108.73	5392671.31
SDU-08	SDU-08-XRF-01	5/2/2015		423209.27	5401902.00
SDU-08	SDU-08-XRF-02	5/2/2015	Confirmatory XRF	423131.27	5401824.00
SDU-08	SDU-08-XRF-04	5/2/2015		422994.77	5401668.00
SDU-08	SDU-08-XRF-R03	5/2/2015	Confirmatory XRF	423032.42	5401708.03
SDU-09	SDU-09-XRF-01	4/27/2015	Confirmatory XRF	422480.15	5401083.34
SDU-09	SDU-09-XRF-02	4/27/2015	Confirmatory XRF ^c	422419.13	5401027.18

Table 2-2b. Field Laboratory and *In Situ* XRF Sampling Locations

Decision Unit	Location	Collection Date	Method Quality Control Samples Collected	Coordinates ^a	
				X	Y
Field Laboratory XRF (continued)					
Sediment (continued)					
SDU-09	SDU-09-XRF-03	4/27/2015		422373.05	5400950.09
SDU-09	SDU-09-XRF-04	4/27/2015	Confirmatory XRF	422326.96	5400873.00
SDU-10	SDU-10-XRF-01	4/27/2015		422246.13	5400805.54
SDU-10	SDU-10-XRF-02	4/27/2015	Confirmatory XRF	422198.11	5400743.74
SDU-10	SDU-10-XRF-03	4/27/2015		422150.09	5400681.94
SDU-10	SDU-10-XRF-04	4/27/2015	Confirmatory XRF	422102.07	5400620.14
Soil					
UDU-01	UDU-01-XRF-01	4/15/2015	Confirmatory XRF	422896.73	5400940.79
UDU-01	UDU-01-XRF-02	4/15/2015		422931.73	5400940.79
UDU-01	UDU-01-XRF-03	4/15/2015		422966.73	5400940.79
UDU-01	UDU-01-XRF-04	4/15/2015	Confirmatory XRF	422981.04	5400905.24
UDU-01	UDU-01-XRF-05	4/15/2015		423001.14	5400868.54
UDU-01	UDU-01-XRF-06	4/15/2015		423036.81	5400872.38
UDU-01	UDU-01-XRF-07	4/15/2015	Confirmatory XRF ^b	422949.23	5400905.79
UDU-02	UDU-02-XRF-01	4/16/2015		422931.73	5400870.79
UDU-02	UDU-02-XRF-02	4/16/2015	Confirmatory XRF	422966.73	5400870.79
UDU-02	UDU-02-XRF-03	4/16/2015		422949.23	5400835.79
UDU-02	UDU-02-XRF-04	4/17/2015		422984.23	5400835.79
UDU-02	UDU-02-XRF-05	4/16/2015		422931.73	5400800.79
UDU-02	UDU-02-XRF-06	4/16/2015	Confirmatory XRF	422966.73	5400800.79
UDU-03	UDU-03-XRF-01	4/16/2015	Confirmatory XRF ^b	422879.23	5400765.79
UDU-03	UDU-03-XRF-02	4/16/2015	Confirmatory XRF	422774.23	5400835.79
UDU-03	UDU-03-XRF-03	4/16/2015		422809.23	5400835.79
UDU-03	UDU-03-XRF-04	4/16/2015		422844.23	5400835.79
UDU-03	UDU-03-XRF-05	4/16/2015		422826.73	5400800.79
UDU-03	UDU-03-XRF-06	4/16/2015		422861.73	5400800.79
UDU-03	UDU-03-XRF-07	4/16/2015		422896.73	5400800.79
UDU-03	UDU-03-XRF-08	4/17/2015		422914.23	5400765.79
UDU-04	UDU-04-XRF-02	4/18/2015	Confirmatory XRF	422879.23	5400905.79
UDU-04	UDU-04-XRF-03	4/18/2015		422826.73	5400870.79
UDU-04	UDU-04-XRF-04	4/18/2015		422896.73	5400870.79
UDU-04	UDU-04-XRF-05	4/18/2015	Confirmatory XRF	422879.23	5400835.79
UDU-04	UDU-04-XRF-R01	4/18/2015	Confirmatory XRF	422861.73	5400870.79
UDU-05	UDU-05-XRF-01	4/30/2015	Confirmatory XRF	423466.12	5401293.40
UDU-05	UDU-05-XRF-02	4/30/2015		423483.94	5401293.40
UDU-05	UDU-05-XRF-03	4/30/2015		423492.85	5401311.22
UDU-05	UDU-05-XRF-04	4/30/2015		423501.76	5401329.04
UDU-05	UDU-05-XRF-05	4/30/2015		423510.67	5401346.86
UDU-05	UDU-05-XRF-06	4/30/2015		423528.49	5401346.86
UDU-05	UDU-05-XRF-07	4/30/2015		423537.40	5401364.68
UDU-05	UDU-05-XRF-08	4/29/2015		423546.31	5401382.50
UDU-05	UDU-05-XRF-09	4/29/2015		423555.22	5401400.32
UDU-05	UDU-05-XRF-10	4/29/2015		423564.13	5401418.14
UDU-05	UDU-05-XRF-11	4/29/2015		423581.95	5401418.14
UDU-05	UDU-05-XRF-12	4/29/2015		423581.95	5401453.78
UDU-05	UDU-05-XRF-13	4/29/2015		423599.77	5401489.42
UDU-06	UDU-06-XRF-01	5/6/2015		422279.68	5400932.04
UDU-06	UDU-06-XRF-02	5/6/2015		422256.18	5400888.83
UDU-06	UDU-06-XRF-03	5/6/2015		422226.90	5400850.08
UDU-06	UDU-06-XRF-04	5/6/2015		422203.39	5400806.87
UDU-06	UDU-06-XRF-05	5/6/2015	Confirmatory XRF ^c	422176.34	5400765.82

Table 2-2b. Field Laboratory and *In Situ* XRF Sampling Locations

Decision Unit	Location	Collection Date	Method Quality Control Samples Collected	Coordinates ^a	
				X	Y
<i>In Situ</i> XRF					
Sediment					
SDU-07	SDU-07-F-XRF-01	5/5/2015		424961.21	5392697.59
SDU-07	SDU-07-F-XRF-02	5/5/2015		424983.96	5392719.77
SDU-07	SDU-07-F-XRF-03	5/5/2015		425014.46	5392734.06
SDU-07	SDU-07-F-XRF-04	5/5/2015		425030.36	5392747.98
SDU-07	SDU-07-F-XRF-05	5/5/2015		425047.16	5392774.26
SDU-07	SDU-07-F-XRF-06	5/5/2015		425060.97	5392805.05
SDU-07	SDU-07-F-XRF-07	5/5/2015		425071.55	5392834.19
SDU-07	SDU-07-F-XRF-08	5/5/2015		425076.35	5392860.26
SDU-07	SDU-07-F-XRF-09	5/5/2015		425095.42	5392885.38
SDU-07	SDU-07-F-XRF-10	5/5/2015		425111.82	5392906.12
SDU-07	SDU-07-F-XRF-11	5/5/2015		425132.58	5392896.87
SDU-07	SDU-07-F-XRF-12	5/5/2015		425142.49	5392882.64
SDU-07	SDU-07-F-XRF-13	5/5/2015		425155.89	5392907.46
SDU-07	SDU-07-F-XRF-14	5/5/2015		425165.89	5392936.06
SDU-07	SDU-07-F-XRF-15	5/5/2015		425171.05	5392964.19
SDU-07	SDU-07-F-XRF-16	5/5/2015		425185.16	5392994.12
SDU-07	SDU-07-F-XRF-17	5/5/2015		425193.64	5393021.73
SDU-07	SDU-07-F-XRF-18	5/5/2015		425201.16	5393051.46
SDU-07	SDU-07-F-XRF-19	5/5/2015		425205.88	5393082.66
SDU-07	SDU-07-F-XRF-20	5/5/2015		425207.60	5393089.74
SDU-07	SDU-07-F-XRF-21	5/5/2015		425280.60	5393083.49
SDU-07	SDU-07-F-XRF-22	5/5/2015		425275.95	5393061.17
SDU-07	SDU-07-F-XRF-23	5/5/2015		425266.00	5393030.00
SDU-07	SDU-07-F-XRF-24	5/5/2015		425256.00	5393002.00
SDU-07	SDU-07-F-XRF-25	5/5/2015		425248.00	5392977.00
SDU-07	SDU-07-F-XRF-26	5/5/2015		425235.00	5392947.00
SDU-07	SDU-07-F-XRF-27	5/5/2015		425224.51	5392916.47
SDU-07	SDU-07-F-XRF-28	5/5/2015		425212.61	5392887.75
SDU-07	SDU-07-F-XRF-29	5/5/2015		425201.00	5392862.00
SDU-07	SDU-07-F-XRF-30	5/5/2015		425185.86	5392833.47
SDU-07	SDU-07-F-XRF-31	5/5/2015		425166.63	5392806.27
SDU-07	SDU-07-F-XRF-32	5/5/2015		425149.88	5392790.74
SDU-07	SDU-07-F-XRF-33	5/5/2015		425145.00	5392763.00
SDU-07	SDU-07-F-XRF-34	5/5/2015		425132.85	5392733.99
SDU-07	SDU-07-F-XRF-35	5/5/2015		425116.80	5392711.57
SDU-07	SDU-07-F-XRF-36	5/5/2015		425096.28	5392687.88
SDU-07	SDU-07-F-XRF-37	5/5/2015		425070.00	5392670.00
SDU-07	SDU-07-F-XRF-38	5/5/2015		425047.66	5392651.34
SDU-07	SDU-07-F-XRF-39	5/5/2015		425033.93	5392639.27
SDU-09	SDU-09A-01	5/6/2015		422430.76	5401037.59
SDU-09	SDU-09A-02	5/6/2015		422435.61	5401082.55
SDU-09	SDU-09A-03	5/6/2015		422351.04	5400897.25
SDU-09	SDU-09A-04	5/6/2015		422438.00	5401050.17
SDU-09	SDU-09A-05	5/6/2015		422294.12	5400879.79
SDU-09	SDU-09A-06	5/6/2015		422360.19	5400968.44
SDU-09	SDU-09A-07	5/6/2015		422458.27	5401072.98
SDU-09	SDU-09A-08	5/6/2015		422409.52	5401039.95
SDU-09	SDU-09A-10	5/6/2015		422362.03	5400928.07
SDU-09	SDU-09A-11	5/6/2015		422443.05	5401115.47
SDU-09	SDU-09A-12	5/6/2015		422348.84	5400915.49
SDU-09	SDU-09A-13	5/6/2015		422337.51	5400903.97

Table 2-2b. Field Laboratory and *In Situ* XRF Sampling Locations

Decision Unit	Location	Collection Date	Method Quality Control Samples Collected	Coordinates ^a	
				X	Y
<i>In Situ</i> XRF (continued)					
Sediment (continued)					
SDU-09	SDU-09A-14	5/6/2015		422344.59	5400889.35
SDU-09	SDU-09A-15	5/6/2015		422465.99	5401094.87
SDU-09	SDU-09A-16	5/6/2015		422422.63	5401024.47
SDU-09	SDU-09A-17	5/6/2015		422320.56	5400876.04
SDU-09	SDU-09A-19	5/6/2015		422375.45	5400953.30
SDU-09	SDU-09A-20	5/6/2015		422417.33	5401057.80
SDU-09	SDU-09A-22	5/6/2015		422401.03	5400997.91
SDU-09	SDU-09A-23	5/6/2015		422359.64	5400939.42
SDU-09	SDU-09A-24	5/6/2015		422450.74	5401108.37
SDU-09	SDU-09A-25	5/6/2015		422393.67	5401022.95
SDU-09	SDU-09A-26	5/6/2015		422363.44	5400909.49
SDU-09	SDU-09A-27	5/6/2015		422431.15	5401041.07
SDU-09	SDU-09A-28	5/6/2015		422382.92	5400982.83
SDU-09	SDU-09A-29	5/6/2015		422376.76	5400938.26
SDU-09	SDU-09A-R02	5/6/2015		422321.41	5400886.16
SDU-09	SDU-09A-R03	5/6/2015		422343.19	5400892.22
SDU-09	SDU-09A-R04	5/6/2015		422354.02	5400936.84
SDU-10	SDU-10-01	5/8/2015		422121.36	5400672.62
SDU-10	SDU-10-02	5/8/2015		422238.00	5400804.41
SDU-10	SDU-10-03	5/8/2015		422100.04	5400634.56
SDU-10	SDU-10-06	5/8/2015		422266.05	5400779.23
SDU-10	SDU-10-07	5/8/2015		422226.71	5400755.86
SDU-10	SDU-10-10	5/8/2015		422104.99	5400659.23
SDU-10	SDU-10-11	5/8/2015		422165.70	5400721.01
SDU-10	SDU-10-12	5/8/2015		422165.60	5400702.18
SDU-10	SDU-10-13	5/8/2015		422182.00	5400720.14
SDU-10	SDU-10-14	5/8/2015		422208.57	5400755.72
SDU-10	SDU-10-15	5/8/2015		422216.02	5400767.96
SDU-10	SDU-10-16	5/8/2015		422184.58	5400743.91
SDU-10	SDU-10-17	5/8/2015		422090.19	5400640.86
SDU-10	SDU-10-18	5/8/2015		422152.81	5400657.01
SDU-10	SDU-10-19	5/8/2015		422104.39	5400631.43
SDU-10	SDU-10-20	5/8/2015		422191.34	5400715.34
SDU-10	SDU-10-21	5/8/2015		422109.42	5400641.25
SDU-10	SDU-10-22	5/8/2015		422180.66	5400755.08
SDU-10	SDU-10-23	5/8/2015		422148.21	5400712.80
SDU-10	SDU-10-24	5/8/2015		422255.98	5400794.06
SDU-10	SDU-10-25	5/8/2015		422180.22	5400730.27
SDU-10	SDU-10-26	5/8/2015		422194.40	5400722.15
SDU-10	SDU-10-27	5/8/2015		422129.88	5400669.28
SDU-10	SDU-10-28	5/8/2015		422206.87	5400748.16
SDU-10	SDU-10-29	5/8/2015		422238.06	5400791.04
SDU-10	SDU-10-30	5/8/2015		422177.32	5400699.77
SDU-10	SDU-10-R02	5/8/2015		422245.19	5400815.12
SDU-10	SDU-10-R04	5/8/2015		422077.60	5400642.89
SDU-10	SDU-10-R06	5/8/2015		422163.66	5400653.81

Notes:

^a WGS84 UTM Zone 11N coordinates - meters.

^b An EPA split sample was collected for this X-ray fluorescence (XRF) confirmatory sample.

^c A field split sample was collected for this XRF confirmatory sample.

SDU - sediment decision unit

UDU - upland decision unit

Table 2-2c. Core Sampling Locations

Location	Decision Unit	Collection Date	Field Quality Control Samples Collected	Coordinates ^a	
				X	Y
Sediment					
SDU-01-XRF-08	SDU-01	4/29/2015	EPA split, field split	423528.06	5401526.38
SDU-01-XRF-09	SDU-01	4/29/2015		423555.56	5401471.38
SDU-02-XRF-04	SDU-02	4/29/2015	EPA split	423352.80	5401428.87
SDU-02-XRF-06	SDU-02	4/29/2015		423380.30	5401373.87
SDU-02-XRF-08	SDU-02	4/29/2015	EPA split, field splits (2)	423490.30	5401373.87
SDU-03-XRF-01	SDU-03	4/25/2015		423086.79	5401100.46
SDU-03-XRF-02	SDU-03	4/25/2015		423029.29	5401055.46
SDU-03-XRF-04	SDU-03	4/25/2015	EPA split	422914.29	5400965.46
SDU-04-XRF-01	SDU-04	5/4/2015	Field split	422691.14	5400781.85
SDU-04-XRF-03	SDU-04	5/4/2015	EPA split	422631.14	5400685.85
SDU-04-XRF-04	SDU-04	5/4/2015		422595.14	5400613.85
SDU-05-XRF-01	SDU-05	5/1/2015	EPA split, field split	424294.01	5395316.60
SDU-05-XRF-04	SDU-05	4/30/2015		424606.51	5395191.60
SDU-05-XRF-09	SDU-05	5/1/2015	Field split	424606.51	5394941.60
SDU-06-XRF-01	SDU-06	4/29/2015	EPA split	425126.24	5394173.90
SDU-06-XRF-02	SDU-06	4/29/2015		425223.74	5394068.90
SDU-06-XRF-04	SDU-06	4/29/2015		425306.24	5393813.90
SDU-07-XRF-01	SDU-07	5/6/2015		425189.32	5393030.74
SDU-07-XRF-03	SDU-07	5/6/2015	EPA split, field split	425037.58	5392795.06
SDU-07-XRF-04	SDU-07	5/6/2015	EPA split	425108.73	5392671.31
SDU-08-XRF-01	SDU-08	5/6/2015	EPA split, field split	423209.27	5401902.00
SDU-08-XRF-04	SDU-08	5/6/2015		422994.77	5401668.00
SDU-08-XRF-R03	SDU-08	5/6/2015	EPA split	423032.42	5401708.03
F-01-COR-01	F-01	4/25/2015		422826.10	5400904.05
F-01-COR-02	F-01	4/25/2015	EPA split	422844.83	5400934.17
F-01-COR-03	F-01	4/25/2015		422846.07	5400915.01
Soil					
UDU-01-COR-03	UDU-01	4/18/2015	EPA split	422931.66	5400916.77
UDU-01-XRF-04	UDU-01	4/18/2015		422981.04	5400905.24
UDU-01-XRF-05	UDU-01	4/18/2015	EPA split	423001.14	5400868.54
UDU-02-COR-03	UDU-02	4/20/2015		422973.65	5400848.58
UDU-02-XRF-01	UDU-02	4/20/2015	EPA split	422931.73	5400870.79
UDU-02-XRF-02	UDU-02	4/20/2015		422966.73	5400870.79
UDU-03-XRF-01	UDU-03	4/24/2015	Field split	422879.23	5400765.79
UDU-03-XRF-04	UDU-03	4/24/2015	EPA split, field split	422844.23	5400835.79
UDU-03-XRF-07	UDU-03	4/25/2015		422896.73	5400800.79
UDU-04-XRF-02	UDU-04	4/25/2015	EPA split	422879.23	5400905.79
UDU-04-XRF-05	UDU-04	4/25/2015		422879.23	5400835.79
UDU-04-XRF-R01	UDU-04	4/24/2015	EPA split	422861.73	5400870.79
UDU-05-XRF-02	UDU-05	5/1/2015		423483.94	5401293.40
UDU-05-XRF-07	UDU-05	5/1/2015	Field split	423537.40	5401364.68
UDU-05-XRF-12	UDU-05	5/1/2015	EPA split	423581.95	5401453.78
UDU-06-XRF-01	UDU-06	5/7/2015	EPA split	422279.68	5400932.04
UDU-06-XRF-02	UDU-06	5/7/2015	Field split	422256.18	5400888.83
UDU-06-XRF-03	UDU-06	5/7/2015	Field splits (2)	422226.90	5400850.08

Notes:

Cores were not collected in F-02 because of cultural resource sensitivities identified in the area.

^a WGS84 UTM Zone 11N coordinates - meters.

SDU - sediment decision unit

UDU - upland decision unit

Table 2-3. Sediment and Soil Sample Analysis Summary

	Bulk Sediment or Soil			< 2-mm Sediment or Soil Fraction				< 250-µm Sediment Fraction		< 150-µm Soil Fraction	
	Grain Size	pH	Percent Moisture	TAL Metals	Percent Moisture	TOC	CEC	TAL Metals	IVBA (Lead and Arsenic)	TAL Metals	IVBA (Lead and Arsenic)
Sediment											
ICS	X	X	X	X	X	X		X	X		
Core	X	X	X	X	X	X		X	X		
Field Laboratory XRF				X (Lead only)							
Soil											
ICS	X	X	X	X	X	X	X			X	X
Core	X	X	X	X	X	X	X			X	X
Field Laboratory XRF				X (Lead only)							

Notes:

CEC - cation exchange capacity

ICS - incremental composite sampling

IVBA - in vitro bioaccessibility assay

TAL - target analyte list

TOC - total organic carbon

XRF - X-ray fluorescence

Table 2-4. Analytical Methods for Sediment and Soil Samples

Analytes	Laboratory	Sample Preparation		Quantitative Analysis	
		Protocol	Procedure	Protocol	Procedure
Conventional Parameters (< 2-mm fraction only except for grain size and pH which utilizes whole samples prior to sieving)					
Grain size	ALS	NA	NA	PSEP	Sieves and pipette
pH	ALS	NA	NA	EPA 9045D	Electrometric
CEC (soils only)	ALS	EPA 9080	Displacement with ammonium acetate	EPA 9080	AAS
TOC	ALS	SOP: GEN-ASTM	NA	ASTM D4129-05	Coulometric
Percent moisture	ALS	NA	NA	EPA 160.3	Gravimetric
TAL Metals/Metalloids (< 2-mm fraction for sediments and soils; < 250-µm fraction for sediments only; < 150-µm fraction for soils only)					
Calcium (Ca), iron (Fe), magnesium (Mg), potassium (K), and sodium (Na)	ALS	EPA 3050B	Acid digestion	EPA 6010C	ICP-AES
Aluminum (Al), antimony (Sb), arsenic (As), barium (Ba), beryllium (Be), cadmium (Cd), chromium (Cr), cobalt (Co), copper (Cu), lead (Pb), manganese (Mn), nickel (Ni), selenium (Se), silver (Ag), thallium (Tl), vanadium (V), and zinc (Zn) ^a	ALS	EPA 3050B	Acid digestion	EPA 6020A	ICP-MS
Mercury (Hg) (total)	ALS	EPA 7471B	Acid digestion/oxidation	EPA 7471B	CVAA
IVBA Metals (< 250-µm fraction for sediments only; < 150-µm fraction for soils only)					
Lead	ALS	Ruby Extraction	<i>In vitro</i> extraction	EPA 6020A	ICP/MS
Arsenic	ALS	Ruby Extraction	<i>In vitro</i> extraction	EPA 6020A	ICP/MS
XRF (< 2-mm fraction only for soils and sediments)					
Lead	Field	See XRF SOP	See XRF SOP	See XRF SOP	See XRF SOP

Notes:

^a Metals reported by U.S. Environmental Protection Agency (EPA) Method 6010 rather than EPA Method 6020 if the analyte concentrations are sufficiently high.

AAS - atomic absorption spectrometry

AES - atomic emission spectrometry

ALS - ALS Environmental

ASTM - American Society for Testing and Materials

CEC - cation exchange capacity

CVAA - cold vapor atomic absorption spectrometry

ICP - inductively coupled plasma

IVBA - in vitro bioaccessibility

MS - mass spectrometry

NA - not applicable

PSEP - Puget Sound Estuary Program

SOP - standard operating procedure

SOP: GEN-ASTM - ALS standard operating procedure

TAL - target analyte list

TOC - total organic carbon

XRF - X-ray fluorescence

Table 4-1. Summary of TAL Metal/Metalloid Qualifiers for Equipment Blank and Experimental Blank Samples

Analyte	Basis	Number of Samples	Rejected Results	Accepted Results	Count of Results with No Flags	Count of Accepted Results Laboratory Flags		Count of Accepted Results Validator Flags			Laboratory Flags, % of Accepted Results		Validator Flags, % of Accepted Results		
						J	U	J	U	UJ	J	U	J	U	UJ
						Equipment Blanks									
Aluminum	Total	50	0 (0%)	50 (100%)	41	9	0	9	0	0	18	0	18	0	0
Antimony	Total	50	0 (0%)	50 (100%)	0	18	32	18	32	0	36	64	36	64	0
Arsenic	Total	50	0 (0%)	50 (100%)	0	1	49	1	49	0	2	98	2	98	0
Barium	Total	50	0 (0%)	50 (100%)	48	2	0	2	0	0	4	0	4	0	0
Beryllium	Total	50	0 (0%)	50 (100%)	0	1	49	1	49	0	2	98	2	98	0
Cadmium	Total	50	0 (0%)	50 (100%)	6	16	28	16	28	0	32	56	32	56	0
Calcium	Total	50	0 (0%)	50 (100%)	17	5	0	33	0	0	10	0	66	0	0
Chromium	Total	50	0 (0%)	50 (100%)	41	9	0	9	0	0	18	0	18	0	0
Cobalt	Total	50	0 (0%)	50 (100%)	38	6	6	6	6	0	12	12	12	12	0
Copper	Total	50	0 (0%)	50 (100%)	35	11	4	11	4	0	22	8	22	8	0
Iron	Total	50	0 (0%)	50 (100%)	42	7	1	7	1	0	14	2	14	2	0
Lead	Total	50	0 (0%)	50 (100%)	39	8	1	10	1	0	16	2	20	2	0
Magnesium	Total	50	0 (0%)	50 (100%)	26	5	0	24	0	0	10	0	48	0	0
Manganese	Total	50	0 (0%)	50 (100%)	49	1	0	1	0	0	2	0	2	0	0
Mercury	Total	50	0 (0%)	50 (100%)	0	0	50	0	50	0	0	100	0	100	0
Nickel	Total	50	0 (0%)	50 (100%)	42	7	1	7	1	0	14	2	14	2	0
Potassium	Total	50	0 (0%)	50 (100%)	3	17	30	17	30	0	34	60	34	60	0
Selenium	Total	50	0 (0%)	50 (100%)	0	0	50	0	50	0	0	100	0	100	0
Silver	Total	50	0 (0%)	50 (100%)	1	9	40	9	40	0	18	80	18	80	0
Sodium	Total	50	0 (0%)	50 (100%)	6	18	26	18	26	0	36	52	36	52	0
Thallium	Total	50	0 (0%)	50 (100%)	0	4	46	4	46	0	8	92	8	92	0
Vanadium	Total	50	0 (0%)	50 (100%)	0	16	34	16	34	0	32	68	32	68	0
Zinc	Total	50	0 (0%)	50 (100%)	39	10	1	10	1	0	20	2	20	2	0
Experimental Blanks															
Aluminum	Total	40	0 (0%)	40 (100%)	30	1	9	1	9	0	3	23	3	23	0
Antimony	Total	40	0 (0%)	40 (100%)	1	17	22	17	22	0	43	55	43	55	0
Arsenic	Total	40	0 (0%)	40 (100%)	0	4	36	4	36	0	10	90	10	90	0
Barium	Total	40	0 (0%)	40 (100%)	30	6	4	6	4	0	15	10	15	10	0
Beryllium	Total	40	0 (0%)	40 (100%)	3	1	36	1	36	0	3	90	3	90	0
Cadmium	Total	40	0 (0%)	40 (100%)	5	13	22	13	22	0	33	55	33	55	0
Chromium	Total	40	0 (0%)	40 (100%)	30	0	10	0	10	0	0	25	0	25	0
Chromium	Total	40	0 (0%)	40 (100%)	4	19	17	19	17	0	48	43	48	43	0
Cobalt	Total	40	0 (0%)	40 (100%)	6	18	16	18	16	0	45	40	45	40	0
Copper	Total	40	0 (0%)	40 (100%)	29	1	10	1	10	0	3	25	3	25	0
Iron	Total	40	0 (0%)	40 (100%)	7	17	13	20	0	13	43	33	50	0	33
Lead	Total	40	0 (0%)	40 (100%)	28	2	10	2	10	0	5	25	5	25	0
Magnesium	Total	40	0 (0%)	40 (100%)	28	3	9	3	9	0	8	23	8	23	0
Manganese	Total	40	0 (0%)	40 (100%)	30	0	10	0	10	0	0	25	0	25	0
Mercury	Total	40	0 (0%)	40 (100%)	0	1	39	1	39	0	3	98	3	98	0
Nickel	Total	40	0 (0%)	40 (100%)	6	21	13	21	13	0	53	33	53	33	0
Potassium	Total	40	0 (0%)	40 (100%)	2	9	29	9	29	0	23	73	23	73	0
Selenium	Total	40	0 (0%)	40 (100%)	0	0	40	0	40	0	0	100	0	100	0
Silver	Total	40	0 (0%)	40 (100%)	0	4	36	4	36	0	10	90	10	90	0
Sodium	Total	40	0 (0%)	40 (100%)	1	23	16	23	16	0	58	40	58	40	0
Thallium	Total	40	0 (0%)	40 (100%)	1	4	35	4	35	0	10	88	10	88	0
Vanadium	Total	40	0 (0%)	40 (100%)	2	8	30	8	30	0	20	75	20	75	0
Zinc	Total	40	0 (0%)	40 (100%)	27	3	10	3	10	0	8	25	8	25	0

Notes:

Data excludes laboratory QC sample data.

TAL - target analyte list

Laboratory

J The result is an estimated value that was detected outside the quantitation range.

U The analyte was analyzed for, but was not detected at or above the method reporting limit/method detection limit (MRL/MDL).

Validator

J Quantitation is approximate due to limitations identified during the QA review (data validation).

U This analyte was not detected at or above the associated detection limit.

UJ This analyte was not detected, but the detection limit is probably higher due to a low bias identified during the QA review.

Table 4-2. Summary of Qualifiers for Sediment ICS Samples

Analyte	Number of Samples	Reject Results	Accepted Results	Count of Results with No Flags	Count of Accepted Results Laboratory Flags			Count of Accepted Results Validator Flags	Laboratory Flags, % of Accepted Results			Validator Flags, % of Accepted Results
					H	J	N	J	H	J	N	J
Bulk Sediment												
Conventional Parameters												
pH	20	0 (0%)	20 (100%)	0	20	0	0	1	100	0	0	5
Solids	20	0 (0%)	20 (100%)	20	0	0	0	0	0	0	0	0
Grain Size												
Clay	20	0 (0%)	20 (100%)	20	0	0	0	0	0	0	0	0
Silt	20	0 (0%)	20 (100%)	20	0	0	0	0	0	0	0	0
Very fine sand	20	0 (0%)	20 (100%)	20	0	0	0	0	0	0	0	0
Fine sand	20	0 (0%)	20 (100%)	20	0	0	0	0	0	0	0	0
Medium sand	20	0 (0%)	20 (100%)	20	0	0	0	0	0	0	0	0
Coarse sand	20	0 (0%)	20 (100%)	20	0	0	0	0	0	0	0	0
Very coarse sand	20	0 (0%)	20 (100%)	20	0	0	0	0	0	0	0	0
Gravel	20	0 (0%)	20 (100%)	20	0	0	0	0	0	0	0	0
<2-mm Fraction												
Conventional Parameters												
Organic carbon	20	0 (0%)	20 (100%)	17	0	0	0	3	0	0	0	15
Solids	20	0 (0%)	20 (100%)	20	0	0	0	0	0	0	0	0
TAL Metals/Metalloids												
Aluminum	20	0 (0%)	20 (100%)	20	0	0	0	0	0	0	0	0
Antimony	20	0 (0%)	20 (100%)	0	0	0	20	20	0	0	100	100
Arsenic	20	0 (0%)	20 (100%)	20	0	0	0	0	0	0	0	0
Barium	20	0 (0%)	20 (100%)	20	0	0	0	0	0	0	0	0
Beryllium	20	0 (0%)	20 (100%)	20	0	0	0	0	0	0	0	0
Cadmium	20	0 (0%)	20 (100%)	17	0	0	0	3	0	0	0	15
Calcium	20	0 (0%)	20 (100%)	11	0	0	0	9	0	0	0	45
Chromium	20	0 (0%)	20 (100%)	20	0	0	0	0	0	0	0	0
Cobalt	20	0 (0%)	20 (100%)	20	0	0	0	0	0	0	0	0
Copper	20	0 (0%)	20 (100%)	11	0	0	0	9	0	0	0	45
Iron	20	0 (0%)	20 (100%)	11	0	0	0	9	0	0	0	45
Lead	20	0 (0%)	20 (100%)	18	0	0	0	2	0	0	0	10
Magnesium	20	0 (0%)	20 (100%)	11	0	0	0	9	0	0	0	45
Manganese	20	0 (0%)	20 (100%)	20	0	0	0	0	0	0	0	0
Mercury	20	0 (0%)	20 (100%)	12	0	1	0	8	0	5	0	40
Nickel	20	0 (0%)	20 (100%)	20	0	0	0	0	0	0	0	0
Potassium	20	0 (0%)	20 (100%)	20	0	0	0	0	0	0	0	0
Selenium	20	0 (0%)	20 (100%)	13	0	7	0	7	0	35	0	35
Silver	20	0 (0%)	20 (100%)	13	0	4	0	7	0	20	0	35
Sodium	20	0 (0%)	20 (100%)	19	0	0	0	1	0	0	0	5
Thallium	20	0 (0%)	20 (100%)	18	0	0	0	2	0	0	0	10
Vanadium	20	0 (0%)	20 (100%)	20	0	0	0	0	0	0	0	0
Zinc	20	0 (0%)	20 (100%)	20	0	0	0	0	0	0	0	0
<250-µm Fraction												
Conventional Parameters												
Solids	20	0 (0%)	20 (100%)	20	0	0	0	0	0	0	0	0
TAL Metals/Metalloids												
Aluminum	20	0 (0%)	20 (100%)	20	0	0	0	0	0	0	0	0
Antimony	20	0 (0%)	20 (100%)	0	0	0	20	20	0	0	100	100
Arsenic	20	0 (0%)	20 (100%)	20	0	0	0	0	0	0	0	0
Barium	20	0 (0%)	20 (100%)	20	0	0	0	0	0	0	0	0
Beryllium	20	0 (0%)	20 (100%)	20	0	0	0	0	0	0	0	0
Cadmium	20	0 (0%)	20 (100%)	17	0	0	0	3	0	0	0	15
Calcium	20	0 (0%)	20 (100%)	11	0	0	0	9	0	0	0	45
Chromium	20	0 (0%)	20 (100%)	20	0	0	0	0	0	0	0	0
Cobalt	20	0 (0%)	20 (100%)	20	0	0	0	0	0	0	0	0
Copper	20	0 (0%)	20 (100%)	11	0	0	0	9	0	0	0	45
Iron	20	0 (0%)	20 (100%)	11	0	0	0	9	0	0	0	45
Lead	20	0 (0%)	20 (100%)	18	0	0	0	2	0	0	0	10

Table 4-2. Summary of Qualifiers for Sediment ICS Samples

Analyte	Number of Samples	Reject Results	Accepted Results	Count of Results with No Flags	Count of Accepted Results Laboratory Flags			Count of Accepted Results Validator Flags	Laboratory Flags, % of Accepted Results			Validator Flags, % of Accepted Results
					H	J	N	J	H	J	N	J
<250-µm Fraction (continued)												
TAL Metals/Metalloids (continued)												
Magnesium	20	0 (0%)	20 (100%)	10	0	0	0	10	0	0	0	50
Manganese	20	0 (0%)	20 (100%)	20	0	0	0	0	0	0	0	0
Mercury	20	0 (0%)	20 (100%)	17	0	0	0	3	0	0	0	15
Nickel	20	0 (0%)	20 (100%)	20	0	0	0	0	0	0	0	0
Potassium	20	0 (0%)	20 (100%)	20	0	0	0	0	0	0	0	0
Selenium	20	0 (0%)	20 (100%)	13	0	7	0	7	0	35	0	35
Silver	20	0 (0%)	20 (100%)	16	0	4	0	4	0	20	0	20
Sodium	20	0 (0%)	20 (100%)	18	0	0	0	2	0	0	0	10
Thallium	20	0 (0%)	20 (100%)	18	0	0	0	2	0	0	0	10
Vanadium	20	0 (0%)	20 (100%)	20	0	0	0	0	0	0	0	0
Zinc	20	0 (0%)	20 (100%)	20	0	0	0	0	0	0	0	0
In Vitro Bioaccessibility Assay												
Arsenic	20	0 (0%)	20 (100%)	20	0	0	0	0	0	0	0	0
Lead	20	0 (0%)	20 (100%)	18	0	0	0	2	0	0	0	10

Notes:

- Data excludes laboratory QC sample data.
- Data includes field split samples and field triplicate samples.
- ICS - incremental composite sampling
- TAL - target analyte list

Laboratory

- H The sample was analyzed as soon as possible after collection to minimize holding time.
- J The result is an estimated value that was detected outside the quantitation range.
- N The matrix spike sample recovery is not within control limits. See case narrative.

Validator

- J Quantitation is approximate due to limitations identified during the QA review (data validation).

Table 4-3. Summary of Qualifiers for Soil ICS Samples

Analyte	Number of Samples	Reject Results	Accepted Results	Count of Results with No Flags	Count of Accepted Results Laboratory Flags			Count of Accepted Results Validator Flags	Laboratory Flags, % of Accepted Results			Validator Flags, % of Accepted Results
					H	J	N		H	J	N	
Bulk Sediment												
Conventional Parameters												
pH	9	0 (0%)	9 (100%)	0	9	0	0	0	100	0	0	0
Solids	9	0 (0%)	9 (100%)	9	0	0	0	0	0	0	0	0
Grain Size												
Clay	9	0 (0%)	9 (100%)	9	0	0	0	0	0	0	0	0
Silt	9	0 (0%)	9 (100%)	9	0	0	0	0	0	0	0	0
Very fine sand	9	0 (0%)	9 (100%)	9	0	0	0	0	0	0	0	0
Fine sand	9	0 (0%)	9 (100%)	9	0	0	0	0	0	0	0	0
Medium sand	9	0 (0%)	9 (100%)	9	0	0	0	0	0	0	0	0
Coarse sand	9	0 (0%)	9 (100%)	9	0	0	0	0	0	0	0	0
Very coarse sand	9	0 (0%)	9 (100%)	9	0	0	0	0	0	0	0	0
Gravel	9	0 (0%)	9 (100%)	9	0	0	0	0	0	0	0	0
<2-mm Fraction												
Conventional Parameters												
Cation exchange capacity	9	0 (0%)	9 (100%)	9	0	0	0	0	0	0	0	0
Organic carbon	9	0 (0%)	9 (100%)	9	0	0	0	0	0	0	0	0
Solids	9	0 (0%)	9 (100%)	9	0	0	0	0	0	0	0	0
TAL Metals/Metalloids												
Aluminum	9	0 (0%)	9 (100%)	9	0	0	0	0	0	0	0	0
Antimony	9	0 (0%)	9 (100%)	0	0	0	9	9	0	0	100	100
Arsenic	9	0 (0%)	9 (100%)	9	0	0	0	0	0	0	0	0
Barium	9	0 (0%)	9 (100%)	9	0	0	0	0	0	0	0	0
Beryllium	9	0 (0%)	9 (100%)	9	0	0	0	0	0	0	0	0
Cadmium	9	0 (0%)	9 (100%)	9	0	0	0	0	0	0	0	0
Calcium	9	0 (0%)	9 (100%)	9	0	0	0	0	0	0	0	0
Chromium	9	0 (0%)	9 (100%)	9	0	0	0	0	0	0	0	0
Cobalt	9	0 (0%)	9 (100%)	9	0	0	0	0	0	0	0	0
Copper	9	0 (0%)	9 (100%)	9	0	0	0	0	0	0	0	0
Iron	9	0 (0%)	9 (100%)	9	0	0	0	0	0	0	0	0
Lead	9	0 (0%)	9 (100%)	6	0	0	0	3	0	0	0	33
Magnesium	9	0 (0%)	9 (100%)	7	0	0	0	2	0	0	0	22
Manganese	9	0 (0%)	9 (100%)	9	0	0	0	0	0	0	0	0
Mercury	9	0 (0%)	9 (100%)	9	0	0	0	0	0	0	0	0
Nickel	9	0 (0%)	9 (100%)	9	0	0	0	0	0	0	0	0
Potassium	9	0 (0%)	9 (100%)	9	0	0	0	0	0	0	0	0
Selenium	9	0 (0%)	9 (100%)	2	0	7	0	7	0	78	0	78
Silver	9	0 (0%)	9 (100%)	6	0	0	0	3	0	0	0	33
Sodium	9	0 (0%)	9 (100%)	9	0	0	0	0	0	0	0	0
Thallium	9	0 (0%)	9 (100%)	9	0	0	0	0	0	0	0	0
Vanadium	9	0 (0%)	9 (100%)	9	0	0	0	0	0	0	0	0
Zinc	9	0 (0%)	9 (100%)	9	0	0	0	0	0	0	0	0
<150-µm Fraction												
Conventional Parameters												
Solids	9	0 (0%)	9 (100%)	9	0	0	0	0	0	0	0	0
TAL Metals/Metalloids												
Aluminum	9	0 (0%)	9 (100%)	9	0	0	0	0	0	0	0	0
Antimony	9	0 (0%)	9 (100%)	0	0	0	9	9	0	0	100	100
Arsenic	9	0 (0%)	9 (100%)	9	0	0	0	0	0	0	0	0
Barium	9	0 (0%)	9 (100%)	9	0	0	0	0	0	0	0	0
Beryllium	9	0 (0%)	9 (100%)	9	0	0	0	0	0	0	0	0
Cadmium	9	0 (0%)	9 (100%)	9	0	0	0	0	0	0	0	0
Calcium	9	0 (0%)	9 (100%)	9	0	0	0	0	0	0	0	0
Chromium	9	0 (0%)	9 (100%)	9	0	0	0	0	0	0	0	0
Cobalt	9	0 (0%)	9 (100%)	9	0	0	0	0	0	0	0	0
Copper	9	0 (0%)	9 (100%)	9	0	0	0	0	0	0	0	0

Table 4-3. Summary of Qualifiers for Soil ICS Samples

Analyte	Number of Samples	Reject Results	Accepted Results	Count of Results with No Flags	Count of Accepted Results Laboratory Flags			Count of Accepted Results Validator Flags	Laboratory Flags, % of Accepted Results			Validator Flags, % of Accepted Results
					H	J	N		H	J	N	
<150-µm Fraction (continued)												
TAL Metals/Metalloids (continued)												
Iron	9	0 (0%)	9 (100%)	9	0	0	0	0	0	0	0	0
Lead	9	0 (0%)	9 (100%)	6	0	0	0	3	0	0	0	33
Magnesium	9	0 (0%)	9 (100%)	7	0	0	0	2	0	0	0	22
Manganese	9	0 (0%)	9 (100%)	9	0	0	0	0	0	0	0	0
Mercury	9	0 (0%)	9 (100%)	9	0	0	0	0	0	0	0	0
Nickel	9	0 (0%)	9 (100%)	9	0	0	0	0	0	0	0	0
Potassium	9	0 (0%)	9 (100%)	9	0	0	0	0	0	0	0	0
Selenium	9	0 (0%)	9 (100%)	7	0	2	0	2	0	22	0	22
Silver	9	0 (0%)	9 (100%)	6	0	0	0	3	0	0	0	33
Sodium	9	0 (0%)	9 (100%)	9	0	0	0	0	0	0	0	0
Thallium	9	0 (0%)	9 (100%)	9	0	0	0	0	0	0	0	0
Vanadium	9	0 (0%)	9 (100%)	9	0	0	0	0	0	0	0	0
Zinc	9	0 (0%)	9 (100%)	9	0	0	0	0	0	0	0	0
In Vitro Bioaccessibility Assay												
Arsenic	9	0 (0%)	9 (100%)	9	0	0	0	0	0	0	0	0
Lead	9	0 (0%)	9 (100%)	0	0	0	0	9	0	0	0	100

Notes:

- Data excludes laboratory QC sample data.
- Data includes field split samples and field triplicate samples.
- ICS - incremental composite sampling
- TAL - target analyte list

Laboratory

- H The sample was analyzed as soon as possible after collection to minimize holding time.
- J The result is an estimated value that was detected outside the quantitation range.
- N The matrix spike sample recovery is not within control limits. See case narrative.

Validator

- J Quantitation is approximate due to limitations identified during the QA review (data validation).

Table 4-4. Summary of Qualifiers for Sediment and Soil XRF Confirmatory Samples

Analyte	Number of Samples	Reject Results	Accepted Results	Count of Results with No Flags	Count of Accepted Results Laboratory Flags							Count of Accepted Results Validator Flags			Laboratory Flags, % of Accepted Results							Validator Flags, % of Accepted Results				
					*	B	H	J	J,N	N	U	J	U	U*	*	B	H	J	J,N	N	U	J	U	U*		
Sediment																										
Conventional Parameters																										
Solids	13	0 (0%)	13 (100%)	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Metals/Metalloids																										
Lead	13	0 (0%)	13 (100%)	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Soil																										
Conventional Parameters																										
Solids	13	0 (0%)	13 (100%)	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Metals/Metalloids																										
Lead	13	0 (0%)	13 (100%)	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Notes:

Data excludes laboratory QC sample data.
 Data includes field split samples and field triplicate samples.
 XRF - X-ray fluorescence

Laboratory

- * The result is an outlier. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result.
- H The sample was analyzed as soon as possible after collection to minimize holding time.
- J The result is an estimated value that was detected outside the quantitation range.
- N The matrix spike sample recovery is not within control limits. See case narrative.
- U The analyte was analyzed for, but was not detected at or above the method reporting limit/method detection limit (MRL/MDL).

Validator

- J Quantitation is approximate due to limitations identified during the QA review (data validation).
- U This analyte was not detected at or above the associated detection limit.
- U* This analyte should be considered non-detected because it was detected in an associated blank at a similar level.

Table 4-5. Summary of Qualifiers for Sediment Core Samples

Analyte	Number of Samples	Reject Results	Accepted Results	Count of Results with No Flags	Count of Accepted Results Laboratory Flags					Count of Accepted Results Validator Flags			Laboratory Flags, % of Accepted Results					Validator Flags, % of Accepted Results		
					H	J	J,N	N	U	J	U	U*	H	J	J,N	N	U	J	U	U*
Bulk Sediment																				
Conventional Parameters																				
pH	88	0 (0%)	88 (100%)	0	88	0	0	0	0	0	0	0	100	0	0	0	0	0	0	0
Solids	89	0 (0%)	89 (100%)	89	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grain Size																				
Clay	89	0 (0%)	89 (100%)	89	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Silt	89	0 (0%)	89 (100%)	89	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Very fine sand	89	0 (0%)	89 (100%)	89	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fine sand	89	0 (0%)	89 (100%)	89	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Medium sand	89	0 (0%)	89 (100%)	89	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Coarse sand	89	0 (0%)	89 (100%)	89	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Very coarse sand	89	0 (0%)	89 (100%)	89	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gravel	89	0 (0%)	89 (100%)	89	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<2-mm Fraction																				
Conventional Parameters																				
Organic carbon	89	0 (0%)	89 (100%)	85	0	2	0	0	0	4	0	0	0	2	0	0	0	4	0	0
Solids	89	0 (0%)	89 (100%)	89	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TAL Metals/Metalloids																				
Aluminum	89	0 (0%)	89 (100%)	89	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Antimony	89	0 (0%)	89 (100%)	0	0	0	0	88	0	89	0	0	0	0	0	99	0	100	0	0
Arsenic	89	0 (0%)	89 (100%)	89	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Barium	89	0 (0%)	89 (100%)	89	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Beryllium	89	0 (0%)	89 (100%)	80	0	0	0	0	0	9	0	0	0	0	0	0	0	10	0	0
Cadmium	89	0 (0%)	89 (100%)	89	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Calcium	89	0 (0%)	89 (100%)	59	0	0	0	0	0	30	0	0	0	0	0	0	0	34	0	0
Chromium	89	0 (0%)	89 (100%)	89	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cobalt	89	0 (0%)	89 (100%)	89	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Copper	89	0 (0%)	89 (100%)	89	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Iron	89	0 (0%)	89 (100%)	39	0	0	0	0	0	50	0	0	0	0	0	0	0	56	0	0
Lead	89	0 (0%)	89 (100%)	79	0	0	0	9	0	10	0	0	0	0	0	10	0	11	0	0
Magnesium	89	0 (0%)	89 (100%)	67	0	0	0	0	0	22	0	0	0	0	0	0	0	25	0	0
Manganese	89	0 (0%)	89 (100%)	69	0	0	0	0	0	20	0	0	0	0	0	0	0	22	0	0
Mercury	89	0 (0%)	89 (100%)	34	0	15	0	40	0	45	0	0	0	17	0	45	0	51	0	0
Nickel	89	0 (0%)	89 (100%)	89	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Potassium	89	0 (0%)	89 (100%)	79	0	0	0	10	0	10	0	0	0	0	0	11	0	11	0	0
Selenium	89	0 (0%)	89 (100%)	66	0	23	0	0	0	23	0	0	0	26	0	0	0	26	0	0
Silver	89	0 (0%)	89 (100%)	81	0	8	0	0	0	8	0	0	0	9	0	0	0	9	0	0
Sodium	89	0 (0%)	89 (100%)	78	0	0	0	0	0	11	0	0	0	0	0	0	0	12	0	0
Thallium	89	0 (0%)	89 (100%)	86	0	0	0	0	0	1	0	2	0	0	0	0	0	1	0	2
Vanadium	89	0 (0%)	89 (100%)	89	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Zinc	89	0 (0%)	89 (100%)	79	0	0	0	10	0	10	0	0	0	0	0	11	0	11	0	0

Table 4-5. Summary of Qualifiers for Sediment Core Samples

Analyte	Number of Samples	Reject Results	Accepted Results	Count of Results with No Flags	Count of Accepted Results Laboratory Flags					Count of Accepted Results Validator Flags			Laboratory Flags, % of Accepted Results					Validator Flags, % of Accepted Results		
					H	J	J,N	N	U	J	U	U*	H	J	J,N	N	U	J	U	U*
<250-μm Fraction																				
Conventional Parameters																				
Solids	89	0 (0%)	89 (100%)	89	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TAL Metals/Metalloids																				
Aluminum	89	0 (0%)	89 (100%)	87	0	0	0	0	0	2	0	0	0	0	0	0	0	2	0	0
Antimony	89	0 (0%)	89 (100%)	0	0	0	1	87	0	87	0	2	0	0	1	98	0	98	0	2
Arsenic	92 ^a	3 (3%)	89 (97%)	86	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0	0
Barium	89	0 (0%)	89 (100%)	87	0	0	0	0	0	2	0	0	0	0	0	0	0	2	0	0
Beryllium	89	0 (0%)	89 (100%)	80	0	0	0	0	0	9	0	0	0	0	0	0	0	10	0	0
Cadmium	89	0 (0%)	89 (100%)	89	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Calcium	89	0 (0%)	89 (100%)	59	0	0	0	0	0	30	0	0	0	0	0	0	0	34	0	0
Chromium	89	0 (0%)	89 (100%)	89	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cobalt	89	0 (0%)	89 (100%)	87	0	0	0	0	0	2	0	0	0	0	0	0	0	2	0	0
Copper	89	0 (0%)	89 (100%)	87	0	0	0	0	0	2	0	0	0	0	0	0	0	2	0	0
Iron	89	0 (0%)	89 (100%)	39	0	0	0	0	0	50	0	0	0	0	0	0	0	56	0	0
Lead	92 ^a	3 (3%)	89 (97%)	76	0	0	0	9	0	13	0	0	0	0	10	0	15	0	0	
Magnesium	89	0 (0%)	89 (100%)	65	0	0	0	0	0	24	0	0	0	0	0	0	27	0	0	
Manganese	89	0 (0%)	89 (100%)	69	0	0	0	0	0	20	0	0	0	0	0	0	22	0	0	
Mercury	89	0 (0%)	89 (100%)	34	0	15	0	40	0	45	0	0	0	17	0	45	0	51	0	
Nickel	89	0 (0%)	89 (100%)	89	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Potassium	89	0 (0%)	89 (100%)	79	0	0	0	10	0	10	0	0	0	0	11	0	11	0	0	
Selenium	89	0 (0%)	89 (100%)	62	0	23	0	0	2	25	2	0	0	26	0	2	28	2	0	
Silver	89	0 (0%)	89 (100%)	77	0	10	0	0	0	12	0	0	0	11	0	0	13	0	0	
Sodium	89	0 (0%)	89 (100%)	75	0	3	0	0	0	14	0	0	0	3	0	0	16	0	0	
Thallium	89	0 (0%)	89 (100%)	85	0	1	0	0	0	1	0	3	0	1	0	0	1	0	3	
Vanadium	89	0 (0%)	89 (100%)	89	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Zinc	89	0 (0%)	89 (100%)	79	0	0	0	10	0	10	0	0	0	0	11	0	11	0	0	
In Vitro Bioaccessibility Assay																				
Arsenic	92 ^a	3 (3%)	89 (97%)	78	0	0	0	0	0	11	0	0	0	0	0	0	12	0	0	
Lead	92 ^a	3 (3%)	89 (97%)	44	0	0	0	0	0	45	0	0	0	0	0	0	51	0	0	

Notes:

^aBoth the initial and the reanalyzed results were reported for IVBA in three samples. The data validator rejected the initial results in favor of the re-analyses.

Data excludes laboratory QC sample data.

Data includes field split samples and field triplicate samples.

TAL - target analyte list

Laboratory

H The sample was analyzed as soon as possible after collection to minimize holding time.

J The result is an estimated value that was detected outside the quantitation range.

N The matrix spike sample recovery is not within control limits. See case narrative.

U The analyte was analyzed for, but was not detected at or above the method reporting limit/method detection limit (MRL/MDL).

Validator

J Quantitation is approximate due to limitations identified during the QA review (data validation).

U This analyte was not detected at or above the associated detection limit.

U* This analyte should be considered non-detected because it was detected in an associated blank at a similar level.

Table 4-6. Summary of Qualifiers for Soil Core Samples

Analyte	Number of Samples	Reject Results	Accepted Results	Count of Results with No Flags	Count of Accepted Results Laboratory Flags						Count of Accepted Results Validator Flags						Validator Flags, % of Accepted Results						Validator Flags, % of Accepted Results		
					*	B	H	J	N	U	J	U	U*	*	B	H	J	N	U	J	U	U*			
Bulk Sediment																									
Conventional Parameters																									
pH	60	0 (0%)	60 (100%)	0	0	0	60	0	0	0	0	0	0	0	0	100	0	0	0	0	0	0			
Solids	60	0 (0%)	60 (100%)	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Grain Size																									
Clay	60	0 (0%)	60 (100%)	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Silt	60	0 (0%)	60 (100%)	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Very fine sand	60	0 (0%)	60 (100%)	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Fine sand	60	0 (0%)	60 (100%)	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Medium sand	60	0 (0%)	60 (100%)	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Coarse sand	60	0 (0%)	60 (100%)	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Very coarse sand	60	0 (0%)	60 (100%)	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Gravel	60	0 (0%)	60 (100%)	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
<2-mm Fraction																									
Conventional Parameters																									
Cation exchange capacity	60	0 (0%)	60 (100%)	55	4	1	0	0	0	0	4	0	1	7	2	0	0	0	0	7	0	2			
Organic carbon	60	0 (0%)	60 (100%)	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Solids	60	0 (0%)	60 (100%)	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
TAL Metals/Metalloids																									
Aluminum	60	0 (0%)	60 (100%)	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Antimony	60	0 (0%)	60 (100%)	0	0	0	0	0	60	0	60	0	0	0	0	0	0	100	0	100	0	0			
Arsenic	60	0 (0%)	60 (100%)	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Barium	60	0 (0%)	60 (100%)	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Beryllium	60	0 (0%)	60 (100%)	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Cadmium	60	0 (0%)	60 (100%)	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Calcium	60	0 (0%)	60 (100%)	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Chromium	60	0 (0%)	60 (100%)	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Cobalt	60	0 (0%)	60 (100%)	50	0	0	0	0	0	10	0	0	0	0	0	0	0	0	0	17	0	0			
Copper	60	0 (0%)	60 (100%)	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Iron	60	0 (0%)	60 (100%)	51	0	0	0	0	0	9	0	0	0	0	0	0	0	0	0	15	0	0			
Lead	60	0 (0%)	60 (100%)	59	0	0	0	0	1	0	1	0	0	0	0	0	0	2	0	2	0	0			
Magnesium	60	0 (0%)	60 (100%)	51	0	0	0	0	0	9	0	0	0	0	0	0	0	0	0	15	0	0			
Manganese	60	0 (0%)	60 (100%)	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Mercury	60	0 (0%)	60 (100%)	39	0	0	0	21	0	21	0	0	0	0	0	35	0	0	35	0	0	0			
Nickel	60	0 (0%)	60 (100%)	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Potassium	60	0 (0%)	60 (100%)	48	0	0	0	0	0	12	0	0	0	0	0	0	0	0	0	20	0	0			
Selenium	60	0 (0%)	60 (100%)	16	0	0	0	44	0	44	0	0	0	0	0	73	0	0	73	0	0	0			
Silver	60	0 (0%)	60 (100%)	53	0	0	0	7	0	7	0	0	0	0	0	12	0	0	12	0	0	0			
Sodium	60	0 (0%)	60 (100%)	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Thallium	60	0 (0%)	60 (100%)	49	0	0	0	0	0	9	0	2	0	0	0	0	0	0	15	0	3	0			
Vanadium	60	0 (0%)	60 (100%)	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Zinc	60	0 (0%)	60 (100%)	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			

Table 4-6. Summary of Qualifiers for Soil Core Samples

Analyte	Number of Samples	Reject Results	Accepted Results	Count of Results with No Flags	Count of Accepted Results Laboratory Flags						Count of Accepted Results Validator Flags						Laboratory Flags, % of Accepted Results						Validator Flags, % of Accepted Results		
					*	B	H	J	N	U	J	U	U*	*	B	H	J	N	U	J	U	U*			
<150-µm Fraction																									
Conventional Parameters																									
Solids	60	0 (0%)	60 (100%)	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
TAL Metals/Metalloids																									
Aluminum	60	0 (0%)	60 (100%)	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Antimony	60	0 (0%)	60 (100%)	0	0	0	0	0	60	0	60	0	0	0	0	0	0	0	100	0	100	0	0		
Arsenic	62 ^a	2 (3%)	60 (97%)	60	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2	0	0			
Barium	60	0 (0%)	60 (100%)	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Beryllium	60	0 (0%)	60 (100%)	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Cadmium	60	0 (0%)	60 (100%)	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Calcium	60	0 (0%)	60 (100%)	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Chromium	60	0 (0%)	60 (100%)	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Cobalt	60	0 (0%)	60 (100%)	50	0	0	0	0	0	0	10	0	0	0	0	0	0	0	0	17	0	0			
Copper	60	0 (0%)	60 (100%)	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Iron	60	0 (0%)	60 (100%)	51	0	0	0	0	0	0	9	0	0	0	0	0	0	0	0	15	0	0			
Lead	62 ^a	2 (3%)	60 (97%)	59	0	0	0	0	1	0	2	0	0	0	0	0	2	0	3	0	0	0			
Magnesium	60	0 (0%)	60 (100%)	52	0	0	0	0	0	0	8	0	0	0	0	0	0	0	13	0	0	0			
Manganese	60	0 (0%)	60 (100%)	59	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0			
Mercury	60	0 (0%)	60 (100%)	49	0	0	0	11	0	0	11	0	0	0	0	0	18	0	18	0	0	0			
Nickel	60	0 (0%)	60 (100%)	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Potassium	60	0 (0%)	60 (100%)	48	0	0	0	0	0	0	12	0	0	0	0	0	0	0	20	0	0	0			
Selenium	60	0 (0%)	60 (100%)	34	0	0	0	25	0	1	25	1	0	0	0	42	0	2	42	2	0	0			
Silver	60	0 (0%)	60 (100%)	59	0	0	0	1	0	0	1	0	0	0	0	2	0	0	2	0	0	0			
Sodium	60	0 (0%)	60 (100%)	59	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0			
Thallium	60	0 (0%)	60 (100%)	51	0	0	0	0	0	0	8	0	1	0	0	0	0	0	13	0	2	0			
Vanadium	60	0 (0%)	60 (100%)	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Zinc	60	0 (0%)	60 (100%)	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
In Vitro Bioaccessibility Assay																									
Arsenic	62 ^a	2 (3%)	60 (97%)	57	0	0	0	0	0	0	3	0	0	0	0	0	0	0	5	0	0	0			
Lead	62 ^a	2 (3%)	60 (97%)	38	0	0	0	0	0	0	22	0	0	0	0	0	0	0	37	0	0	0			

Notes:

^aBoth the initial and the reanalyzed results were reported for IVBA in three samples. The data validator rejected the initial results in favor of the re-analyses.

Data excludes laboratory QC sample data.

Data includes field split samples and field triplicate samples.

TAL - target analyte list

Laboratory

* The result is an outlier. See case narrative.

B The analyte was found in the associated method blank at a level that is significant relative to the sample result.

H The sample was analyzed as soon as possible after collection to minimize holding time.

J The result is an estimated value that was detected outside the quantitation range.

N The matrix spike sample recovery is not within control limits. See case narrative.

U The analyte was analyzed for, but was not detected at or above the method reporting limit/method detection limit (MRL/MDL).

Validator

J Quantitation is approximate due to limitations identified during the QA review (data validation).

U This analyte was not detected at or above the associated detection limit.

U* This analyte should be considered non-detected because it was detected in an associated blank at a similar level.

Table 5-1a. Summary Statistics for Bulk Sediment and Soil ICS Samples

Analyte	Number of Samples	Number of Detected Values	Minimum Detected Values	Mean Detected Values	Maximum Detected Values	Minimum Non-detected Value	Mean Non-detected Value	Maximum Non-detected Value	Overall Minimum Value	Overall Mean Value	Overall Maximum Value
Sediment											
Conventional Parameters											
pH	10	10	6.94	7.42	7.86	--	--	--	6.94	7.42	7.86
Solids (%)	10	10	67.7	86.4	97.5	--	--	--	67.7	86.4	97.5
Grain Size (%)											
Clay	10	10	0.47	2.57	5.74	--	--	--	0.47	2.57	5.74
Silt	10	10	6.34	23.4	45.03	--	--	--	6.34	23.4	45.03
Very fine sand	10	10	5.94	16.2	23.95	--	--	--	5.94	16.2	23.95
Fine sand	10	10	10	19.4	33.2	--	--	--	10	19.4	33.2
Medium sand	10	10	6.43	11	21.7	--	--	--	6.43	11	21.7
Coarse sand	10	10	2.89	5.93	11.4	--	--	--	2.89	5.93	11.4
Very coarse sand	10	10	2.32	4.77	9.66	--	--	--	2.32	4.77	9.66
Gravel	10	10	0.987	16.8	44.25	--	--	--	0.987	16.8	44.25
Soil											
Conventional Parameters											
pH	10	10	6.94	7.42	7.86	--	--	--	6.94	7.42	7.86
Solids (%)	10	10	67.7	86.4	97.5	--	--	--	67.7	86.4	97.5
Grain Size (%)											
Clay	10	10	0.47	2.57	5.74	--	--	--	0.47	2.57	5.74
Silt	10	10	6.34	23.4	45.03	--	--	--	6.34	23.4	45.03
Very fine sand	10	10	5.94	16.2	23.95	--	--	--	5.94	16.2	23.95
Fine sand	10	10	10	19.4	33.2	--	--	--	10	19.4	33.2
Medium sand	10	10	6.43	11	21.7	--	--	--	6.43	11	21.7
Coarse sand	10	10	2.89	5.93	11.4	--	--	--	2.89	5.93	11.4
Very coarse sand	10	10	2.32	4.77	9.66	--	--	--	2.32	4.77	9.66
Gravel	10	10	0.987	16.8	44.25	--	--	--	0.987	16.8	44.25

Notes:

Data were replicate-averaged (detected values were averaged; if there were no detected values, the minimum detection limit is reported).

Averaged results have three significant figures applied.

-- no value

ICS - incremental composite sampling

Table 5-1b. Summary Statistics for < 2-mm-Fraction Sediment and Soil ICS Samples

Analyte	Number of Samples	Number of Detected Values	Minimum Detected Values	Mean Detected Values	Maximum Detected Values	Minimum Non-detected Value	Mean Non-detected Value	Maximum Non-detected Value	Overall Minimum Value	Overall Mean Value	Overall Maximum Value
Sediment											
Conventional Parameters (%)											
Organic carbon	10	10	0.218	1.07	2.65	--	--	--	0.218	1.07	2.65
Solids	10	10	94	97.9	99.7	--	--	--	94	97.9	99.7
TAL Metals/Metalloids (mg/kg)											
Aluminum	10	10	6700	8620	10800	--	--	--	6700	8620	10800
Antimony	10	10	0.162	1.6	3.31	--	--	--	0.162	1.6	3.31
Arsenic	10	10	3.9	8.67	12.4	--	--	--	3.9	8.67	12.4
Barium	10	10	76.6	284	514	--	--	--	76.6	284	514
Beryllium	10	10	0.253	0.349	0.506	--	--	--	0.253	0.349	0.506
Cadmium	10	10	0.572	3.78	8.07	--	--	--	0.572	3.78	8.07
Calcium	10	10	3490	16900	44300	--	--	--	3490	16900	44300
Chromium	10	10	16.3	23.3	31.1	--	--	--	16.3	23.3	31.1
Cobalt	10	10	5.01	7.37	9.37	--	--	--	5.01	7.37	9.37
Copper	10	10	12.9	70.5	142	--	--	--	12.9	70.5	142
Iron	10	10	13200	19600	26200	--	--	--	13200	19600	26200
Lead	10	10	22.5	195	414	--	--	--	22.5	195	414
Magnesium	10	10	3350	9680	16700	--	--	--	3350	9680	16700
Manganese	10	10	171	272	404	--	--	--	171	272	404
Mercury	10	10	0.0263	0.416	1.02	--	--	--	0.0263	0.416	1.02
Nickel	10	10	13.2	19.6	25.3	--	--	--	13.2	19.6	25.3
Potassium	10	10	953	1210	1530	--	--	--	953	1210	1530
Selenium	10	10	0.117	0.62	1.24	--	--	--	0.117	0.62	1.24
Silver	10	10	0.0683	0.784	1.77	--	--	--	0.0683	0.784	1.77
Sodium	10	10	96.9	128	150	--	--	--	96.9	128	150
Thallium	10	10	0.108	0.387	0.76	--	--	--	0.108	0.387	0.76
Vanadium	10	10	24.8	30.6	36.6	--	--	--	24.8	30.6	36.6
Zinc	10	10	82.1	802	1790	--	--	--	82.1	802	1790
Soil											
Conventional Parameters											
Cation exchange capacity (me/100 gm)	6	6	5.47	9.91	21.3	--	--	--	5.47	9.91	21.3
Organic carbon (%)	6	6	1.08	1.9	4.15	--	--	--	1.08	1.9	4.15
Solids (%)	6	6	93.1	97.9	99.2	--	--	--	93.1	97.9	99.2
TAL Metals/Metalloids (mg/kg)											
Aluminum	6	6	8810	10400	12100	--	--	--	8810	10400	12100
Antimony	6	6	0.652	8.6	46.2	--	--	--	0.652	8.6	46.2
Arsenic	6	6	5.86	6.97	10.1	--	--	--	5.86	6.97	10.1

Table 5-1b. Summary Statistics for < 2-mm-Fraction Sediment and Soil ICS Samples

Analyte	Number of Samples	Number of Detected Values	Minimum Detected Values	Mean Detected Values	Maximum Detected Values	Minimum Non-detected Value	Mean Non-detected Value	Maximum Non-detected Value	Overall Minimum Value	Overall Mean Value	Overall Maximum Value
Soil (continued)											
TAL Metals/Metalloids (continued)											
Barium	6	6	106	137	177	--	--	--	106	137	177
Beryllium	6	6	0.31	0.363	0.466	--	--	--	0.31	0.363	0.466
Cadmium	6	6	0.909	1.15	1.57	--	--	--	0.909	1.15	1.57
Calcium	6	6	2140	15800	78900	--	--	--	2140	15800	78900
Chromium	6	6	11.8	16.2	24.1	--	--	--	11.8	16.2	24.1
Cobalt	6	6	3.99	5.08	7.42	--	--	--	3.99	5.08	7.42
Copper	6	6	13.4	24.3	55.4	--	--	--	13.4	24.3	55.4
Iron	6	6	11600	13700	18600	--	--	--	11600	13700	18600
Lead	6	6	38.2	456	1800	--	--	--	38.2	456	1800
Magnesium	6	6	2550	4390	9160	--	--	--	2550	4390	9160
Manganese	6	6	277	330	396	--	--	--	277	330	396
Mercury	6	6	0.031	0.0948	0.224	--	--	--	0.031	0.0948	0.224
Nickel	6	6	9.65	13.8	20.9	--	--	--	9.65	13.8	20.9
Potassium	6	6	999	1490	2360	--	--	--	999	1490	2360
Selenium	6	6	0.11	0.231	0.69	--	--	--	0.11	0.231	0.69
Silver	6	6	0.127	0.372	1.24	--	--	--	0.127	0.372	1.24
Sodium	6	6	72.7	110	166	--	--	--	72.7	110	166
Thallium	6	6	0.115	0.143	0.189	--	--	--	0.115	0.143	0.189
Vanadium	6	6	21.2	25.4	37.5	--	--	--	21.2	25.4	37.5
Zinc	6	6	98.8	119	162	--	--	--	98.8	119	162

Notes:

Data were replicate-averaged (detected values were averaged; if there were no detected values, the minimum detection limit is reported).

Averaged results have three significant figures applied.

-- no value

ICS - incremental composite sampling

TAL - target analyte list

Table 5-1c. Summary Statistics for < 250- μ m-Fraction Sediment and < 150- μ m-Fraction Soil ICS Samples

Analyte	Number of Samples	Number of Detected Values	Minimum Detected Values	Mean Detected Values	Maximum Detected Values	Minimum Non-detected Value	Mean Non-detected Value	Maximum Non-detected Value	Overall Minimum Value	Overall Mean Value	Overall Maximum Value
Sediment											
Conventional Parameters (%)											
Solids	10	10	84.3	97.2	99.7	--	--	--	84.3	97.2	99.7
TAL Metals/Metalloids (mg/kg)											
Aluminum	10	10	6350	8520	11600	--	--	--	6350	8520	11600
Antimony	10	10	0.145	1.63	3.29	--	--	--	0.145	1.63	3.29
Arsenic	10	10	3.45	8.44	12.4	--	--	--	3.45	8.44	12.4
Barium	10	10	72	317	550	--	--	--	72	317	550
Beryllium	10	10	0.24	0.355	0.539	--	--	--	0.24	0.355	0.539
Cadmium	10	10	0.521	3.89	7.36	--	--	--	0.521	3.89	7.36
Calcium	10	10	3260	17900	37400	--	--	--	3260	17900	37400
Chromium	10	10	15.7	23.4	34.1	--	--	--	15.7	23.4	34.1
Cobalt	10	10	5.09	7.22	10.2	--	--	--	5.09	7.22	10.2
Copper	10	10	11.9	70	137	--	--	--	11.9	70	137
Iron	10	10	12700	19700	26600	--	--	--	12700	19700	26600
Lead	10	10	22.3	203	396	--	--	--	22.3	203	396
Magnesium	10	10	3060	10800	17900	--	--	--	3060	10800	17900
Manganese	10	10	156	270	387	--	--	--	156	270	387
Mercury	10	10	0.0262	0.45	0.942	--	--	--	0.0262	0.45	0.942
Nickel	10	10	12.5	19.2	27.3	--	--	--	12.5	19.2	27.3
Potassium	10	10	944	1240	1670	--	--	--	944	1240	1670
Selenium	10	10	0.107	0.612	1.16	--	--	--	0.107	0.612	1.16
Silver	10	10	0.0633	0.847	2.06	--	--	--	0.0633	0.847	2.06
Sodium	10	10	106	133	162	--	--	--	106	133	162
Thallium	10	10	0.123	0.399	0.78	--	--	--	0.123	0.399	0.78
Vanadium	10	10	24.4	31.1	40.8	--	--	--	24.4	31.1	40.8
Zinc	10	10	82.3	873	1800	--	--	--	82.3	873	1800
<i>In Vitro</i> Bioaccessibility Assay (%)											
Lead	10	10	16.6	25.3	31.7	--	--	--	16.6	25.3	31.7
Arsenic	10	10	50.6	59.8	68.4	--	--	--	50.6	59.8	68.4
Soil											
Conventional Parameters (%)											
Solids	6	6	92.9	97.3	98.8	--	--	--	92.9	97.3	98.8
TAL Metals/Metalloids (mg/kg)											
Aluminum	6	6	9830	14600	19500	--	--	--	9830	14600	19500
Antimony	6	6	0.909	2.94	9.8	--	--	--	0.909	2.94	9.8
Arsenic	6	6	7.98	10.2	12.3	--	--	--	7.98	10.2	12.3

Table 5-1c. Summary Statistics for < 250-µm-Fraction Sediment and < 150-µm-Fraction Soil ICS Samples

Analyte	Number of Samples	Number of Detected Values	Minimum Detected Values	Mean Detected Values	Maximum Detected Values	Minimum Non-detected Value	Mean Non-detected Value	Maximum Non-detected Value	Overall Minimum Value	Overall Mean Value	Overall Maximum Value
Soil (continued)											
TAL Metals/Metalloids (continued)											
Barium	6	6	145	196	257	--	--	--	145	196	257
Beryllium	6	6	0.388	0.512	0.655	--	--	--	0.388	0.512	0.655
Cadmium	6	6	1.33	1.82	2.44	--	--	--	1.33	1.82	2.44
Calcium	6	6	2980	18100	87600	--	--	--	2980	18100	87600
Chromium	6	6	17.5	20.7	24.5	--	--	--	17.5	20.7	24.5
Cobalt	6	6	5.54	6.36	7.17	--	--	--	5.54	6.36	7.17
Copper	6	6	23.1	27.7	40.9	--	--	--	23.1	27.7	40.9
Iron	6	6	15900	17200	19000	--	--	--	15900	17200	19000
Lead	6	6	42.9	659	2570	--	--	--	42.9	659	2570
Magnesium	6	6	3050	4910	10500	--	--	--	3050	4910	10500
Manganese	6	6	382	452	555	--	--	--	382	452	555
Mercury	6	6	0.039	0.184	0.45	--	--	--	0.039	0.184	0.45
Nickel	6	6	13.5	16.6	22.2	--	--	--	13.5	16.6	22.2
Potassium	6	6	1420	1890	2580	--	--	--	1420	1890	2580
Selenium	6	6	0.14	0.292	0.71	--	--	--	0.14	0.292	0.71
Silver	6	6	0.169	0.606	1.85	--	--	--	0.169	0.606	1.85
Sodium	6	6	120	146	184	--	--	--	120	146	184
Thallium	6	6	0.162	0.219	0.268	--	--	--	0.162	0.219	0.268
Vanadium	6	6	28.1	32.6	36.6	--	--	--	28.1	32.6	36.6
Zinc	6	6	111	179	237	--	--	--	111	179	237
<i>In Vitro</i> Bioaccessibility Assay (%)											
Lead	6	6	18.7	22.5	27.2	--	--	--	18.7	22.5	27.2
Arsenic	6	6	58.7	67.3	74.4	--	--	--	58.7	67.3	74.4

Notes:

Data were replicate-averaged (detected values were averaged; if there were no detected values, the minimum detection limit is reported).

Averaged results have three significant figures applied.

-- no value

ICS - incremental composite sampling

TAL - target analyte list

Table 5-2a. Summary Lead Concentration Statistics for Sediment and Soil Field Laboratory and *In Situ* XRF Samples (mg/kg)

	Number of Samples	Minimum Value	Mean Value	Maximum Value
Sediment				
Field Laboratory XRF				
SDU-01	9	191	322	449
SDU-02	8	317	426	614
SDU-03	4	16.4	101	253
SDU-04	4	29.3	54.4	113
SDU-05	9	206	355	446
SDU-06	5	14.5	23.2	32.9
SDU-07	4	83.9	370	504
SDU-08	4	159	335	583
SDU-09	4	12.3	83.5	134
SDU-10	4	79.9	144	305
<i>In Situ</i> Measurements				
SDU-07	39	24.8	70.2	217
SDU-09	30	19.5	72.7	179
SDU-10	29	35.7	86	192
Soil				
UDU-01	7	55.9	94.3	166
UDU-02	6	63.1	161	312
UDU-03	8	83.7	183	355
UDU-04	5	283	749	1380
UDU-05	13	16.3	135	1040
UDU-06	5	21.4	50	65.1

Notes:

Data were replicate-averaged (detected values were averaged; if there were no detected values, the minimum detection limit is reported).

Averaged results have three significant figures applied.

X-ray fluorescence (XRF) analysis was conducted on the < 2-mm fraction of sediment and soil.

SDU - sediment decision unit

UDU - upland decision unit

Table 5-2b. Summary Statistics for Sediment and Soil Confirmatory XRF Samples

Analyte	Number of Samples	Number of Detected Values	Minimum Detected Values	Mean Detected Values	Maximum Detected Values	Minimum Non-detected Value	Mean Non-detected Value	Maximum Non-detected Value	Overall Minimum Value	Overall Mean Value	Overall Maximum Value
Sediment											
Conventional Parameters (%)											
Solids	12	12	99.7	99.9	100	--	--	--	99.7	99.9	100
TAL Metals/Metalloids (mg/kg)											
Lead	12	12	11.4	229	466	--	--	--	11.4	229	466
Soil											
Conventional Parameters (%)											
Solids	12	12	99.2	99.8	100	--	--	--	99.2	99.8	100
TAL Metals/Metalloids (mg/kg)											
Lead	12	12	12.4	271	1150	--	--	--	12.4	271	1150

Notes:

Data were replicate-averaged (detected values were averaged; if there were no detected values, the minimum detection limit is reported).

Averaged results have three significant figures applied.

X-ray fluorescence (XRF) analysis was conducted on the < 2-mm fraction of sediment and soil.

-- no value

TAL - target analyte list

Table 5-3a. Summary Statistics for Bulk Core Samples

Analyte	Depth (cm)	Number of Samples	Number of Detected Values	Minimum Detected Values	Mean Detected Values	Maximum Detected Values	Minimum Non-detected Value	Mean Non-detected Value	Maximum Non-detected Value	Overall Minimum Value	Overall Mean Value	Overall Maximum Value
Sediment												
Conventional Parameters												
pH	0 - 15	27	27	6.47	7.19	8.12	--	--	--	6.47	7.19	8.12
pH	15 - 30	27	27	6.69	7.37	8.05	--	--	--	6.69	7.37	8.05
pH	30 - 45	27	27	6.65	7.45	8.29	--	--	--	6.65	7.45	8.29
Solids (%)	0 - 15	27	27	54.6	78.7	98	--	--	--	54.6	78.7	98
Solids (%)	15 - 30	27	27	57.2	83.3	98.2	--	--	--	57.2	83.3	98.2
Solids (%)	30 - 45	27	27	56.7	85.5	97.8	--	--	--	56.7	85.5	97.8
Grain Size (%)												
Clay	0 - 15	27	27	0.28	3.82	9.26	--	--	--	0.28	3.82	9.26
Clay	15 - 30	27	27	0.17	3.17	9.81	--	--	--	0.17	3.17	9.81
Clay	30 - 45	27	27	0.27	2.88	8.66	--	--	--	0.27	2.88	8.66
Silt	0 - 15	27	27	2.12	36.4	82.39	--	--	--	2.12	36.4	82.39
Silt	15 - 30	27	27	1.5	33.7	71.8	--	--	--	1.5	33.7	71.8
Silt	30 - 45	27	27	1.84	30.5	60.7	--	--	--	1.84	30.5	60.7
Very fine sand	0 - 15	27	27	2.41	17.6	36.86	--	--	--	2.41	17.6	36.86
Very fine sand	15 - 30	27	27	6.6	23.6	39.7	--	--	--	6.6	23.6	39.7
Very fine sand	30 - 45	27	27	6.3	25.7	46.11	--	--	--	6.3	25.7	46.11
Fine sand	0 - 15	27	27	0.14	15	54.06	--	--	--	0.14	15	54.06
Fine sand	15 - 30	27	27	1.71	19.5	38.76	--	--	--	1.71	19.5	38.76
Fine sand	30 - 45	27	27	3.92	22.4	69.31	--	--	--	3.92	22.4	69.31
Medium sand	0 - 15	27	27	0.05	6.54	22.73	--	--	--	0.05	6.54	22.73
Medium sand	15 - 30	27	27	0.21	5.94	14.67	--	--	--	0.21	5.94	14.67
Medium sand	30 - 45	27	27	0.16	5.17	13.29	--	--	--	0.16	5.17	13.29
Coarse sand	0 - 15	27	27	0.06	4.14	9.78	--	--	--	0.06	4.14	9.78
Coarse sand	15 - 30	27	27	0.02	2.78	12.99	--	--	--	0.02	2.78	12.99
Coarse sand	30 - 45	27	27	0.05	2.68	20.59	--	--	--	0.05	2.68	20.59
Very coarse sand	0 - 15	27	27	0	3.88	9.83	--	--	--	0	3.88	9.83
Very coarse sand	15 - 30	27	27	0.04	2.8	17.21	--	--	--	0.04	2.8	17.21
Very coarse sand	30 - 45	27	27	0.02	2.26	17.25	--	--	--	0.02	2.26	17.25
Gravel	0 - 15	27	27	0	11.8	78.72	--	--	--	0	11.8	78.72
Gravel	15 - 30	27	27	0	7.35	51.53	--	--	--	0	7.35	51.53
Gravel	30 - 45	27	27	0	6.88	59.8	--	--	--	0	6.88	59.8

Table 5-3a. Summary Statistics for Bulk Core Samples

Analyte	Depth (cm)	Number of Samples	Number of Detected Values	Minimum Detected Values	Mean Detected Values	Maximum Detected Values	Minimum Non-detected Value	Mean Non-detected Value	Maximum Non-detected Value	Overall Minimum Value	Overall Mean Value	Overall Maximum Value
Soil												
Conventional Parameters												
pH	0 - 15	18	18	4.66	6.48	7.89	--	--	--	4.66	6.48	7.89
pH	15 - 30	18	18	5.37	6.62	7.97	--	--	--	5.37	6.62	7.97
pH	30 - 45	18	18	4.99	6.82	8.25	--	--	--	4.99	6.82	8.25
Solids (%)	0 - 15	18	18	73.4	85.8	93.2	--	--	--	73.4	85.8	93.2
Solids (%)	15 - 30	18	18	73.6	87.7	95.6	--	--	--	73.6	87.7	95.6
Solids (%)	30 - 45	18	18	71	88.4	96.2	--	--	--	71	88.4	96.2
Grain Size (%)												
Clay	0 - 15	18	18	0.54	5.93	43.99	--	--	--	0.54	5.93	43.99
Clay	15 - 30	18	18	0.36	7.04	51.8	--	--	--	0.36	7.04	51.8
Clay	30 - 45	18	18	0.38	7.87	58.89	--	--	--	0.38	7.87	58.89
Silt	0 - 15	18	18	13.57	18.5	28.28	--	--	--	13.57	18.5	28.28
Silt	15 - 30	18	18	8.22	17.7	30.38	--	--	--	8.22	17.7	30.38
Silt	30 - 45	18	18	3.3	16.3	28.32	--	--	--	3.3	16.3	28.32
Very fine sand	0 - 15	18	18	2.33	5.89	8.89	--	--	--	2.33	5.89	8.89
Very fine sand	15 - 30	18	18	1.46	6.52	13.39	--	--	--	1.46	6.52	13.39
Very fine sand	30 - 45	18	18	1.48	6.45	12.63	--	--	--	1.48	6.45	12.63
Fine sand	0 - 15	18	18	4.78	18.6	36.61	--	--	--	4.78	18.6	36.61
Fine sand	15 - 30	18	18	2.81	19.5	38.21	--	--	--	2.81	19.5	38.21
Fine sand	30 - 45	18	18	2.65	18.6	37.36	--	--	--	2.65	18.6	37.36
Medium sand	0 - 15	18	18	3.34	19.4	30.8	--	--	--	3.34	19.4	30.8
Medium sand	15 - 30	18	18	2.66	18.9	29.93	--	--	--	2.66	18.9	29.93
Medium sand	30 - 45	18	18	1.94	17.9	31.47	--	--	--	1.94	17.9	31.47
Coarse sand	0 - 15	18	18	4.14	10	18.04	--	--	--	4.14	10	18.04
Coarse sand	15 - 30	18	18	3.43	8.71	18.83	--	--	--	3.43	8.71	18.83
Coarse sand	30 - 45	18	18	2.26	9.1	24.67	--	--	--	2.26	9.1	24.67
Very coarse sand	0 - 15	18	18	2.5	12.2	31.07	--	--	--	2.5	12.2	31.07
Very coarse sand	15 - 30	18	18	1.65	9.32	25.5	--	--	--	1.65	9.32	25.5
Very coarse sand	30 - 45	18	18	2.38	9.05	16.7	--	--	--	2.38	9.05	16.7
Gravel	0 - 15	18	18	2.95	9.09	19.42	--	--	--	2.95	9.09	19.42
Gravel	15 - 30	18	18	1.74	12	35.61	--	--	--	1.74	12	35.61
Gravel	30 - 45	18	18	0.3	14	53.2	--	--	--	0.3	14	53.2

Notes:

Data were replicate-averaged (detected values were averaged; if there were no detected values, the minimum detection limit is reported).

Averaged results have three significant figures applied.

-- no value

Table 5-3b. Summary Statistics for < 2-mm-Fraction Sediment and Soil Core Samples

Analyte	Depth (cm)	Number of Samples	Number of Detected Values	Minimum Detected Values	Mean Detected Values	Maximum Detected Values	Minimum Non-detected Value ^a	Mean Non-detected Value ^a	Maximum Non-detected Value ^a	Overall Minimum Value ^a	Overall Mean Value ^a	Overall Maximum Value ^a
Sediment												
Conventional Parameters (%)												
Organic carbon	0 - 15	27	27	0.09	1.39	3.31	--	--	--	0.09	1.39	3.31
Organic carbon	15 - 30	27	27	0.046	0.842	1.94	--	--	--	0.046	0.842	1.94
Organic carbon	30 - 45	27	27	0.047	0.673	1.73	--	--	--	0.047	0.673	1.73
Solids	0 - 15	27	27	90.7	98.6	99.9	--	--	--	90.7	98.6	99.9
Solids	15 - 30	27	27	97.8	99	100	--	--	--	97.8	99	100
Solids	30 - 45	27	27	97.5	99.1	99.9	--	--	--	97.5	99.1	99.9
TAL Metals/Metalloids (mg/kg)												
Aluminum	0 - 15	27	27	5750	9950	15100	--	--	--	5750	9950	15100
Aluminum	15 - 30	27	27	4690	8390	12200	--	--	--	4690	8390	12200
Aluminum	30 - 45	27	27	5220	7520	12600	--	--	--	5220	7520	12600
Antimony	0 - 15	27	27	0.086	2.14	6.42	--	--	--	0.086	2.14	6.42
Antimony	15 - 30	27	27	0.078	1.68	8.16	--	--	--	0.078	1.68	8.16
Antimony	30 - 45	27	27	0.081	1.83	7.03	--	--	--	0.081	1.83	7.03
Arsenic	0 - 15	27	27	2.1	9.26	19.9	--	--	--	2.1	9.26	19.9
Arsenic	15 - 30	27	27	2.01	9.89	18.7	--	--	--	2.01	9.89	18.7
Arsenic	30 - 45	27	27	2.55	10.8	27.8	--	--	--	2.55	10.8	27.8
Barium	0 - 15	27	27	48.3	364	721	--	--	--	48.3	364	721
Barium	15 - 30	27	27	36.8	476	1240	--	--	--	36.8	476	1240
Barium	30 - 45	27	27	48.5	520	1450	--	--	--	48.5	520	1450
Beryllium	0 - 15	27	27	0.201	0.421	0.693	--	--	--	0.201	0.421	0.693
Beryllium	15 - 30	27	27	0.177	0.351	0.55	--	--	--	0.177	0.351	0.55
Beryllium	30 - 45	27	27	0.203	0.316	0.485	--	--	--	0.203	0.316	0.485
Cadmium	0 - 15	27	27	0.264	5.08	11.2	--	--	--	0.264	5.08	11.2
Cadmium	15 - 30	27	27	0.089	5.96	13.4	--	--	--	0.089	5.96	13.4
Cadmium	30 - 45	27	27	0.099	6.15	14.9	--	--	--	0.099	6.15	14.9
Calcium	0 - 15	27	27	2370	13600	32600	--	--	--	2370	13600	32600
Calcium	15 - 30	27	27	2010	21500	56200	--	--	--	2010	21500	56200
Calcium	30 - 45	27	27	2530	26600	61400	--	--	--	2530	26600	61400
Chromium	0 - 15	27	27	12.5	26.7	41.1	--	--	--	12.5	26.7	41.1
Chromium	15 - 30	27	27	11.9	23	38.3	--	--	--	11.9	23	38.3
Chromium	30 - 45	27	27	11.7	19.9	39.3	--	--	--	11.7	19.9	39.3
Cobalt	0 - 15	27	27	3.87	8.05	12	--	--	--	3.87	8.05	12
Cobalt	15 - 30	27	27	3.36	6.86	11.4	--	--	--	3.36	6.86	11.4
Cobalt	30 - 45	27	27	4.38	6.11	11.5	--	--	--	4.38	6.11	11.5
Copper	0 - 15	27	27	7.51	94	210	--	--	--	7.51	94	210
Copper	15 - 30	27	27	7.4	74.2	365	--	--	--	7.4	74.2	365
Copper	30 - 45	27	27	9.71	66	333	--	--	--	9.71	66	333

Table 5-3b. Summary Statistics for < 2-mm-Fraction Sediment and Soil Core Samples

Analyte	Depth (cm)	Number of Samples	Number of Detected Values	Minimum Detected Values	Mean Detected Values	Maximum Detected Values	Minimum Non-detected Value ^a	Mean Non-detected Value ^a	Maximum Non-detected Value ^a	Overall Minimum Value ^a	Overall Mean Value ^a	Overall Maximum Value ^a
Sediment (continued)												
TAL Metals/Metalloids (continued)												
Iron	0 - 15	27	27	11200	21100	34000	--	--	--	11200	21100	34000
Iron	15 - 30	27	27	10800	21000	33900	--	--	--	10800	21000	33900
Iron	30 - 45	27	27	12300	21100	36100	--	--	--	12300	21100	36100
Lead	0 - 15	27	27	9.36	403	3020	--	--	--	9.36	403	3020
Lead	15 - 30	27	27	6.95	340	1560	--	--	--	6.95	340	1560
Lead	30 - 45	27	27	6.29	445	2070	--	--	--	6.29	445	2070
Magnesium	0 - 15	27	27	2250	9850	18900	--	--	--	2250	9850	18900
Magnesium	15 - 30	27	27	2230	13500	34000	--	--	--	2230	13500	34000
Magnesium	30 - 45	27	27	2880	15300	35700	--	--	--	2880	15300	35700
Manganese	0 - 15	27	27	103	286	462	--	--	--	103	286	462
Manganese	15 - 30	27	27	84.8	313	682	--	--	--	84.8	313	682
Manganese	30 - 45	27	27	107	325	528	--	--	--	107	325	528
Mercury	0 - 15	27	27	0.007	0.696	1.91	--	--	--	0.007	0.696	1.91
Mercury	15 - 30	27	27	0.003	0.73	2.93	--	--	--	0.003	0.73	2.93
Mercury	30 - 45	27	27	0.005	0.822	4	--	--	--	0.005	0.822	4
Nickel	0 - 15	27	27	9.06	21.2	30.8	--	--	--	9.06	21.2	30.8
Nickel	15 - 30	27	27	8.57	19.8	30.7	--	--	--	8.57	19.8	30.7
Nickel	30 - 45	27	27	10.6	17.2	27.4	--	--	--	10.6	17.2	27.4
Potassium	0 - 15	27	27	780	1380	2030	--	--	--	780	1380	2030
Potassium	15 - 30	27	27	689	1220	1650	--	--	--	689	1220	1650
Potassium	30 - 45	27	27	800	1140	1700	--	--	--	800	1140	1700
Selenium	0 - 15	27	27	0.08	0.89	4.2	--	--	--	0.08	0.89	4.2
Selenium	15 - 30	27	27	0.08	0.792	2.42	--	--	--	0.08	0.792	2.42
Selenium	30 - 45	27	27	0.08	0.659	3.12	--	--	--	0.08	0.659	3.12
Silver	0 - 15	27	27	0.033	1.55	4.98	--	--	--	0.033	1.55	4.98
Silver	15 - 30	27	27	0.034	0.872	3.66	--	--	--	0.034	0.872	3.66
Silver	30 - 45	27	27	0.028	0.658	2.59	--	--	--	0.028	0.658	2.59
Sodium	0 - 15	27	27	86.1	157	222	--	--	--	86.1	157	222
Sodium	15 - 30	27	27	67	140	197	--	--	--	67	140	197
Sodium	30 - 45	27	27	78.4	134	173	--	--	--	78.4	134	173
Thallium	0 - 15	27	27	0.088	0.501	1.02	--	--	--	0.088	0.501	1.02
Thallium	15 - 30	27	26	0.086	0.444	0.948	0.041	0.041	0.041	0.041	0.429	0.948
Thallium	30 - 45	27	27	0.091	0.334	0.899	--	--	--	0.091	0.334	0.899
Vanadium	0 - 15	27	27	23.2	34	44.2	--	--	--	23.2	34	44.2
Vanadium	15 - 30	27	27	22.6	31.6	41.3	--	--	--	22.6	31.6	41.3
Vanadium	30 - 45	27	27	20.6	30.8	39.2	--	--	--	20.6	30.8	39.2
Zinc	0 - 15	27	27	51.2	976	2100	--	--	--	51.2	976	2100
Zinc	15 - 30	27	27	36.8	1130	2780	--	--	--	36.8	1130	2780
Zinc	30 - 45	27	27	37.5	1310	3220	--	--	--	37.5	1310	3220

Table 5-3b. Summary Statistics for < 2-mm-Fraction Sediment and Soil Core Samples

Analyte	Depth (cm)	Number of Samples	Number of Detected Values	Minimum Detected Values	Mean Detected Values	Maximum Detected Values	Minimum Non-detected Value ^a	Mean Non-detected Value ^a	Maximum Non-detected Value ^a	Overall Minimum Value ^a	Overall Mean Value ^a	Overall Maximum Value ^a
Soil												
Conventional Parameters												
Cation exchange capacity (me/100 gm)	0 - 15	18	18	4.76	14.3	35.8	--	--	--	4.76	14.3	35.8
Cation exchange capacity (me/100 gm)	15 - 30	18	18	4.02	10.1	27.4	--	--	--	4.02	10.1	27.4
Cation exchange capacity (me/100 gm)	30 - 45	18	17	2.81	7.74	19	2.095	2.1	2.095	2.095	7.43	19
Organic carbon (%)	0 - 15	18	18	0.683	3.86	22.5	--	--	--	0.683	3.86	22.5
Organic carbon (%)	15 - 30	18	18	0.319	1.49	5.94	--	--	--	0.319	1.49	5.94
Organic carbon (%)	30 - 45	18	18	0.119	0.932	3.56	--	--	--	0.119	0.932	3.56
Solids (%)	0 - 15	18	18	91.4	98.1	99.4	--	--	--	91.4	98.1	99.4
Solids (%)	15 - 30	18	18	97.2	98.7	99.4	--	--	--	97.2	98.7	99.4
Solids (%)	30 - 45	18	18	97.6	99	99.8	--	--	--	97.6	99	99.8
TAL Metals/Metalloids (mg/kg)												
Aluminum	0 - 15	18	18	6390	11900	20500	--	--	--	6390	11900	20500
Aluminum	15 - 30	18	18	6860	12200	20100	--	--	--	6860	12200	20100
Aluminum	30 - 45	18	18	5850	11800	18900	--	--	--	5850	11800	18900
Antimony	0 - 15	18	18	0.242	1.67	13.1	--	--	--	0.242	1.67	13.1
Antimony	15 - 30	18	18	0.225	0.77	3.03	--	--	--	0.225	0.77	3.03
Antimony	30 - 45	18	18	0.14	0.418	1.1	--	--	--	0.14	0.418	1.1
Arsenic	0 - 15	18	18	3.38	7.53	15.5	--	--	--	3.38	7.53	15.5
Arsenic	15 - 30	18	18	2.95	6.37	20.3	--	--	--	2.95	6.37	20.3
Arsenic	30 - 45	18	18	2.74	4.49	8.14	--	--	--	2.74	4.49	8.14
Barium	0 - 15	18	18	74	159	250	--	--	--	74	159	250
Barium	15 - 30	18	18	84.7	150	243	--	--	--	84.7	150	243
Barium	30 - 45	18	18	72.6	141	236	--	--	--	72.6	141	236
Beryllium	0 - 15	18	18	0.191	0.412	0.999	--	--	--	0.191	0.412	0.999
Beryllium	15 - 30	18	18	0.25	0.418	0.973	--	--	--	0.25	0.418	0.973
Beryllium	30 - 45	18	18	0.217	0.4	0.908	--	--	--	0.217	0.4	0.908
Cadmium	0 - 15	18	18	0.474	2	10.6	--	--	--	0.474	2	10.6
Cadmium	15 - 30	18	18	0.19	1.16	8.26	--	--	--	0.19	1.16	8.26
Cadmium	30 - 45	18	18	0.108	0.434	0.885	--	--	--	0.108	0.434	0.885
Calcium	0 - 15	18	18	1800	16300	129000	--	--	--	1800	16300	129000
Calcium	15 - 30	18	18	1750	17300	138000	--	--	--	1750	17300	138000
Calcium	30 - 45	18	18	1640	21600	186000	--	--	--	1640	21600	186000
Chromium	0 - 15	18	18	11.1	18.8	49.2	--	--	--	11.1	18.8	49.2
Chromium	15 - 30	18	18	10.3	18.3	48.3	--	--	--	10.3	18.3	48.3
Chromium	30 - 45	18	18	11.3	19.3	47.3	--	--	--	11.3	19.3	47.3

Table 5-3b. Summary Statistics for < 2-mm-Fraction Sediment and Soil Core Samples

Analyte	Depth (cm)	Number of Samples	Number of Detected Values	Minimum Detected Values	Mean Detected Values	Maximum Detected Values	Minimum Non-detected Value ^a	Mean Non-detected Value ^a	Maximum Non-detected Value ^a	Overall Minimum Value ^a	Overall Mean Value ^a	Overall Maximum Value ^a
Soil (continued)												
TAL Metals/Metalloids (continued)												
Cobalt	0 - 15	18	18	3.31	5.97	14.2	--	--	--	3.31	5.97	14.2
Cobalt	15 - 30	18	18	3.95	6.05	13.5	--	--	--	3.95	6.05	13.5
Cobalt	30 - 45	18	18	3.92	5.98	12.6	--	--	--	3.92	5.98	12.6
Copper	0 - 15	18	18	11.3	21.1	45.9	--	--	--	11.3	21.1	45.9
Copper	15 - 30	18	18	10.1	18.2	40.6	--	--	--	10.1	18.2	40.6
Copper	30 - 45	18	18	10.3	16.2	37.5	--	--	--	10.3	16.2	37.5
Iron	0 - 15	18	18	9250	15400	31800	--	--	--	9250	15400	31800
Iron	15 - 30	18	18	10800	15000	31300	--	--	--	10800	15000	31300
Iron	30 - 45	18	18	9770	14900	29400	--	--	--	9770	14900	29400
Lead	0 - 15	18	18	24.2	252	917	--	--	--	24.2	252	917
Lead	15 - 30	18	18	7.82	133	812	--	--	--	7.82	133	812
Lead	30 - 45	18	18	5.59	49.8	234	--	--	--	5.59	49.8	234
Magnesium	0 - 15	18	18	2450	4720	11600	--	--	--	2450	4720	11600
Magnesium	15 - 30	18	18	2370	4740	12400	--	--	--	2370	4740	12400
Magnesium	30 - 45	18	18	2320	5100	12000	--	--	--	2320	5100	12000
Manganese	0 - 15	18	18	278	420	748	--	--	--	278	420	748
Manganese	15 - 30	18	18	247	382	745	--	--	--	247	382	745
Manganese	30 - 45	18	18	189	340	717	--	--	--	189	340	717
Mercury	0 - 15	18	18	0.013	0.136	0.708	--	--	--	0.013	0.136	0.708
Mercury	15 - 30	18	18	0.005	0.0795	0.656	--	--	--	0.005	0.0795	0.656
Mercury	30 - 45	18	18	0.004	0.025	0.067	--	--	--	0.004	0.025	0.067
Nickel	0 - 15	18	18	8.51	15.6	41.9	--	--	--	8.51	15.6	41.9
Nickel	15 - 30	18	18	8.47	15.6	41.8	--	--	--	8.47	15.6	41.8
Nickel	30 - 45	18	18	9.17	15.8	40.8	--	--	--	9.17	15.8	40.8
Potassium	0 - 15	18	18	946	1870	4600	--	--	--	946	1870	4600
Potassium	15 - 30	18	18	893	1780	4090	--	--	--	893	1780	4090
Potassium	30 - 45	18	18	878	1830	4120	--	--	--	878	1830	4120
Selenium	0 - 15	18	18	0.1	0.225	0.54	--	--	--	0.1	0.225	0.54
Selenium	15 - 30	18	18	0.09	0.198	0.56	--	--	--	0.09	0.198	0.56
Selenium	30 - 45	18	18	0.08	0.184	0.59	--	--	--	0.08	0.184	0.59
Silver	0 - 15	18	18	0.097	0.318	0.86	--	--	--	0.097	0.318	0.86
Silver	15 - 30	18	18	0.03	0.213	0.586	--	--	--	0.03	0.213	0.586
Silver	30 - 45	18	18	0.032	0.119	0.221	--	--	--	0.032	0.119	0.221
Sodium	0 - 15	18	18	75.1	125	314	--	--	--	75.1	125	314
Sodium	15 - 30	18	18	72.7	128	348	--	--	--	72.7	128	348
Sodium	30 - 45	18	18	67.6	130	356	--	--	--	67.6	130	356

Table 5-3b. Summary Statistics for < 2-mm-Fraction Sediment and Soil Core Samples

Analyte	Depth (cm)	Number of Samples	Number of Detected Values	Minimum Detected Values	Mean Detected Values	Maximum Detected Values	Minimum Non-detected Value ^a	Mean Non-detected Value ^a	Maximum Non-detected Value ^a	Overall Minimum Value ^a	Overall Mean Value ^a	Overall Maximum Value ^a
Soil (continued)												
TAL Metals/Metalloids (continued)												
Thallium	0 - 15	18	18	0.107	0.184	0.525	--	--	--	0.107	0.184	0.525
Thallium	15 - 30	18	17	0.106	0.158	0.31	0.044	0.044	0.044	0.044	0.152	0.31
Thallium	30 - 45	18	18	0.091	0.133	0.272	--	--	--	0.091	0.133	0.272
Vanadium	0 - 15	18	18	17.4	28.3	67.5	--	--	--	17.4	28.3	67.5
Vanadium	15 - 30	18	18	17.8	28	64.3	--	--	--	17.8	28	64.3
Vanadium	30 - 45	18	18	15.2	29	62.2	--	--	--	15.2	29	62.2
Zinc	0 - 15	18	18	58.2	160	555	--	--	--	58.2	160	555
Zinc	15 - 30	18	18	42.8	97.3	288	--	--	--	42.8	97.3	288
Zinc	30 - 45	18	18	36.1	62.3	109	--	--	--	36.1	62.3	109

Notes:

Data were replicate-averaged (detected values were averaged; if there were no detected values, the minimum detection limit is reported).

Averaged results have three significant figures applied.

^a Calculated with non-detected results at one-half of the detection limit.

-- no value

TAL - target analyte list

Table 5-3c. Summary Statistics for < 250- μ m-Fraction Sediment and < 150- μ m-Fraction Soil Core Samples

Analyte	Depth (cm)	Number of Samples	Number of Detected Values	Minimum Detected Values	Mean Detected Values	Maximum Detected Values	Minimum Non-detected Value ^a	Mean Non-detected Value ^a	Maximum Non-detected Value ^a	Overall Minimum Value ^a	Overall Mean Value ^a	Overall Maximum Value ^a
Sediment												
Conventional Parameters (%)												
Solids	0 - 15	27	27	94	98.9	100	--	--	--	94	98.9	100
Solids	15 - 30	27	27	98.1	99.2	100	--	--	--	98.1	99.2	100
Solids	30 - 45	27	27	98.1	99.4	101	--	--	--	98.1	99.4	101
TAL Metals/Metalloids (mg/kg)												
Aluminum	0 - 15	27	27	2090	8990	14200	--	--	--	2090	8990	14200
Aluminum	15 - 30	27	27	3950	7820	12700	--	--	--	3950	7820	12700
Aluminum	30 - 45	27	27	1380	6570	12300	--	--	--	1380	6570	12300
Antimony	0 - 15	27	27	0.086	1.92	6.49	--	--	--	0.086	1.92	6.49
Antimony	15 - 30	27	27	0.076	1.52	7.26	--	--	--	0.076	1.52	7.26
Antimony	30 - 45	27	25	0.09	1.7	6.3	0.023	0.026	0.029	0.023	1.58	6.3
Arsenic	0 - 15	27	27	2.05	8.43	18.4	--	--	--	2.05	8.43	18.4
Arsenic	15 - 30	27	27	1.67	9.24	17.5	--	--	--	1.67	9.24	17.5
Arsenic	30 - 45	27	27	1.75	10.3	26.5	--	--	--	1.75	10.3	26.5
Barium	0 - 15	27	27	29.6	369	703	--	--	--	29.6	369	703
Barium	15 - 30	27	27	38.1	478	1090	--	--	--	38.1	478	1090
Barium	30 - 45	27	27	26.8	472	1420	--	--	--	26.8	472	1420
Beryllium	0 - 15	27	27	0.069	0.395	0.69	--	--	--	0.069	0.395	0.69
Beryllium	15 - 30	27	27	0.172	0.326	0.471	--	--	--	0.172	0.326	0.471
Beryllium	30 - 45	27	27	0.059	0.281	0.465	--	--	--	0.059	0.281	0.465
Cadmium	0 - 15	27	27	0.136	4.66	11.3	--	--	--	0.136	4.66	11.3
Cadmium	15 - 30	27	27	0.096	5.37	12.6	--	--	--	0.096	5.37	12.6
Cadmium	30 - 45	27	27	0.044	5.39	13.7	--	--	--	0.044	5.39	13.7
Calcium	0 - 15	27	27	638	14200	33100	--	--	--	638	14200	33100
Calcium	15 - 30	27	27	2180	23100	59400	--	--	--	2180	23100	59400
Calcium	30 - 45	27	27	452	25900	61800	--	--	--	452	25900	61800
Chromium	0 - 15	27	27	3.24	24.8	41.1	--	--	--	3.24	24.8	41.1
Chromium	15 - 30	27	27	12.8	21.3	36.3	--	--	--	12.8	21.3	36.3
Chromium	30 - 45	27	27	2.54	17.9	38.2	--	--	--	2.54	17.9	38.2
Cobalt	0 - 15	27	27	0.946	7.37	11.9	--	--	--	0.946	7.37	11.9
Cobalt	15 - 30	27	27	3.12	6.27	10.6	--	--	--	3.12	6.27	10.6
Cobalt	30 - 45	27	27	0.769	5.4	11	--	--	--	0.769	5.4	11
Copper	0 - 15	27	27	3.84	82.3	199	--	--	--	3.84	82.3	199
Copper	15 - 30	27	27	6.49	63.4	339	--	--	--	6.49	63.4	339
Copper	30 - 45	27	27	2.35	56.6	313	--	--	--	2.35	56.6	313
Iron	0 - 15	27	27	2360	19900	33000	--	--	--	2360	19900	33000
Iron	15 - 30	27	27	10800	20200	33600	--	--	--	10800	20200	33600
Iron	30 - 45	27	27	2120	19100	35500	--	--	--	2120	19100	35500

Table 5-3c. Summary Statistics for < 250- μ m-Fraction Sediment and < 150- μ m-Fraction Soil Core Samples

Analyte	Depth (cm)	Number of Samples	Number of Detected Values	Minimum Detected Values	Mean Detected Values	Maximum Detected Values	Minimum Non-detected Value ^a	Mean Non-detected Value ^a	Maximum Non-detected Value ^a	Overall Minimum Value ^a	Overall Mean Value ^a	Overall Maximum Value ^a
Sediment (continued)												
TAL Metals/Metalloids (continued)												
Lead	0 - 15	27	27	9.04	370	2920	--	--	--	9.04	370	2920
Lead	15 - 30	27	27	6.59	307	1220	--	--	--	6.59	307	1220
Lead	30 - 45	27	27	5.63	368	1640	--	--	--	5.63	368	1640
Magnesium	0 - 15	27	27	576	10000	19600	--	--	--	576	10000	19600
Magnesium	15 - 30	27	27	1920	14100	34100	--	--	--	1920	14100	34100
Magnesium	30 - 45	27	27	433	14700	34800	--	--	--	433	14700	34800
Manganese	0 - 15	27	27	34.2	261	444	--	--	--	34.2	261	444
Manganese	15 - 30	27	27	77.2	282	407	--	--	--	77.2	282	407
Manganese	30 - 45	27	27	40.9	278	466	--	--	--	40.9	278	466
Mercury	0 - 15	27	27	0.006	0.594	1.75	--	--	--	0.006	0.594	1.75
Mercury	15 - 30	27	27	0.004	0.633	2.33	--	--	--	0.004	0.633	2.33
Mercury	30 - 45	27	27	0.004	0.7	2.52	--	--	--	0.004	0.7	2.52
Nickel	0 - 15	27	27	2.8	19.5	30.1	--	--	--	2.8	19.5	30.1
Nickel	15 - 30	27	27	8.21	18.4	26.9	--	--	--	8.21	18.4	26.9
Nickel	30 - 45	27	27	2.3	15.3	27.1	--	--	--	2.3	15.3	27.1
Potassium	0 - 15	27	27	243	1290	1980	--	--	--	243	1290	1980
Potassium	15 - 30	27	27	684	1150	1650	--	--	--	684	1150	1650
Potassium	30 - 45	27	27	211	1020	1720	--	--	--	211	1020	1720
Selenium	0 - 15	27	26	0.08	0.801	3.19	0.1	0.1	0.1	0.08	0.775	3.19
Selenium	15 - 30	27	27	0.07	0.693	2.24	--	--	--	0.07	0.693	2.24
Selenium	30 - 45	27	26	0.07	0.585	2.78	0.1	0.1	0.1	0.07	0.567	2.78
Silver	0 - 15	27	27	0.027	1.31	5.3	--	--	--	0.027	1.31	5.3
Silver	15 - 30	27	27	0.03	0.736	2.77	--	--	--	0.03	0.736	2.77
Silver	30 - 45	27	27	0.007	0.557	2.62	--	--	--	0.007	0.557	2.62
Sodium	0 - 15	27	27	29.6	146	205	--	--	--	29.6	146	205
Sodium	15 - 30	27	27	67.5	135	195	--	--	--	67.5	135	195
Sodium	30 - 45	27	27	27.9	121	176	--	--	--	27.9	121	176
Thallium	0 - 15	27	26	0.09	0.486	0.951	0.021	0.021	0.021	0.021	0.469	0.951
Thallium	15 - 30	27	26	0.073	0.393	0.919	0.0415	0.0415	0.0415	0.0415	0.38	0.919
Thallium	30 - 45	27	26	0.085	0.307	0.891	0.0095	0.0095	0.0095	0.0095	0.296	0.891
Vanadium	0 - 15	27	27	4.47	31.6	44.5	--	--	--	4.47	31.6	44.5
Vanadium	15 - 30	27	27	20.6	30.3	39.6	--	--	--	20.6	30.3	39.6
Vanadium	30 - 45	27	27	3.68	28.2	38.2	--	--	--	3.68	28.2	38.2
Zinc	0 - 15	27	27	39.9	942	2050	--	--	--	39.9	942	2050
Zinc	15 - 30	27	27	36.8	1080	2640	--	--	--	36.8	1080	2640
Zinc	30 - 45	27	27	8.9	1180	3000	--	--	--	8.9	1180	3000

Table 5-3c. Summary Statistics for < 250- μ m-Fraction Sediment and < 150- μ m-Fraction Soil Core Samples

Analyte	Depth (cm)	Number of Samples	Number of Detected Values	Minimum Detected Values	Mean Detected Values	Maximum Detected Values	Minimum Non-detected Value ^a	Mean Non-detected Value ^a	Maximum Non-detected Value ^a	Overall Minimum Value ^a	Overall Mean Value ^a	Overall Maximum Value ^a
Sediment (continued)												
<i>In Vitro</i> Bioaccessibility Assay (%)												
Arsenic	0 - 15	27	27	11.8	25.6	41.5	--	--	--	11.8	25.6	41.5
Arsenic	15 - 30	27	27	10	21.7	50.8	--	--	--	10	21.7	50.8
Arsenic	30 - 45	27	27	10.2	20.4	37	--	--	--	10.2	20.4	37
Lead	0 - 15	27	27	36.2	60.1	80.4	--	--	--	36.2	60.1	80.4
Lead	15 - 30	27	27	25.3	51.3	71.7	--	--	--	25.3	51.3	71.7
Lead	30 - 45	27	27	22.4	49.4	69.6	--	--	--	22.4	49.4	69.6
Soil												
Conventional Parameters (%)												
Solids	0 - 15 cm	18	18	88.2	97	98.7	--	--	--	88.2	97	98.7
Solids	15 - 30 cm	18	18	96.7	98.1	99.2	--	--	--	96.7	98.1	99.2
Solids	30 - 45 cm	18	18	97	98.5	99.5	--	--	--	97	98.5	99.5
TAL Metals/Metalloids (mg/kg)												
Aluminum	0 - 15	18	18	7530	16500	24100	--	--	--	7530	16500	24100
Aluminum	15 - 30	18	18	7450	17800	23200	--	--	--	7450	17800	23200
Aluminum	30 - 45	18	18	5240	15900	21200	--	--	--	5240	15900	21200
Antimony	0 - 15	18	18	0.288	2.28	17.4	--	--	--	0.288	2.28	17.4
Antimony	15 - 30	18	18	0.212	1.14	5.39	--	--	--	0.212	1.14	5.39
Antimony	30 - 45	18	18	0.09	0.511	1.31	--	--	--	0.09	0.511	1.31
Arsenic	0 - 15	18	18	7.07	10.8	23.5	--	--	--	7.07	10.8	23.5
Arsenic	15 - 30	18	18	4.7	9.83	44.5	--	--	--	4.7	9.83	44.5
Arsenic	30 - 45	18	18	3.22	5.69	11.8	--	--	--	3.22	5.69	11.8
Barium	0 - 15	18	18	129	231	364	--	--	--	129	231	364
Barium	15 - 30	18	18	155	219	297	--	--	--	155	219	297
Barium	30 - 45	18	18	57.1	193	259	--	--	--	57.1	193	259
Beryllium	0 - 15	18	18	0.275	0.567	1.15	--	--	--	0.275	0.567	1.15
Beryllium	15 - 30	18	18	0.294	0.578	1.05	--	--	--	0.294	0.578	1.05
Beryllium	30 - 45	18	18	0.148	0.507	0.933	--	--	--	0.148	0.507	0.933
Cadmium	0 - 15	18	18	0.492	3.09	15.8	--	--	--	0.492	3.09	15.8
Cadmium	15 - 30	18	18	0.317	2.27	21.8	--	--	--	0.317	2.27	21.8
Cadmium	30 - 45	18	18	0.112	0.586	2.92	--	--	--	0.112	0.586	2.92
Calcium	0 - 15	18	18	2210	19000	151000	--	--	--	2210	19000	151000
Calcium	15 - 30	18	18	2010	19700	158000	--	--	--	2010	19700	158000
Calcium	30 - 45	18	18	1010	23700	200000	--	--	--	1010	23700	200000
Chromium	0 - 15	18	18	14.8	23.5	52.7	--	--	--	14.8	23.5	52.7
Chromium	15 - 30	18	18	17.1	23.4	48.1	--	--	--	17.1	23.4	48.1
Chromium	30 - 45	18	18	5.01	23.7	50.1	--	--	--	5.01	23.7	50.1

Table 5-3c. Summary Statistics for < 250- μ m-Fraction Sediment and < 150- μ m-Fraction Soil Core Samples

Analyte	Depth (cm)	Number of Samples	Number of Detected Values	Minimum Detected Values	Mean Detected Values	Maximum Detected Values	Minimum Non-detected Value ^a	Mean Non-detected Value ^a	Maximum Non-detected Value ^a	Overall Minimum Value ^a	Overall Mean Value ^a	Overall Maximum Value ^a
Soil (continued)												
TAL Metals/Metalloids (continued)												
Cobalt	0 - 15	18	18	4.79	7.7	15.7	--	--	--	4.79	7.7	15.7
Cobalt	15 - 30	18	18	6.11	7.98	14.4	--	--	--	6.11	7.98	14.4
Cobalt	30 - 45	18	18	1.75	7.54	13.6	--	--	--	1.75	7.54	13.6
Copper	0 - 15	18	18	18	30.7	88.3	--	--	--	18	30.7	88.3
Copper	15 - 30	18	18	16.7	25.9	45.1	--	--	--	16.7	25.9	45.1
Copper	30 - 45	18	18	4.65	20.9	40.1	--	--	--	4.65	20.9	40.1
Iron	0 - 15	18	18	11700	18800	35200	--	--	--	11700	18800	35200
Iron	15 - 30	18	18	11800	19000	32400	--	--	--	11800	19000	32400
Iron	30 - 45	18	18	4890	18400	32000	--	--	--	4890	18400	32000
Lead	0 - 15	18	18	26	423	1770	--	--	--	26	423	1770
Lead	15 - 30	18	18	12.6	244	1770	--	--	--	12.6	244	1770
Lead	30 - 45	18	18	8.46	68.1	538	--	--	--	8.46	68.1	538
Magnesium	0 - 15	18	18	3030	5310	13000	--	--	--	3030	5310	13000
Magnesium	15 - 30	18	18	2920	5470	11500	--	--	--	2920	5470	11500
Magnesium	30 - 45	18	18	894	5880	13500	--	--	--	894	5880	13500
Manganese	0 - 15	18	18	391	570	931	--	--	--	391	570	931
Manganese	15 - 30	18	18	274	516	845	--	--	--	274	516	845
Manganese	30 - 45	18	18	127	395	759	--	--	--	127	395	759
Mercury	0 - 15	18	18	0.017	0.267	1.52	--	--	--	0.017	0.267	1.52
Mercury	15 - 30	18	18	0.013	0.174	1.59	--	--	--	0.013	0.174	1.59
Mercury	30 - 45	18	18	0.011	0.0388	0.151	--	--	--	0.011	0.0388	0.151
Nickel	0 - 15	18	18	11.7	19.1	46.3	--	--	--	11.7	19.1	46.3
Nickel	15 - 30	18	18	13.6	19.4	43.3	--	--	--	13.6	19.4	43.3
Nickel	30 - 45	18	18	4.08	18.7	37.4	--	--	--	4.08	18.7	37.4
Potassium	0 - 15	18	18	1480	2370	5050	--	--	--	1480	2370	5050
Potassium	15 - 30	18	18	1260	2330	4800	--	--	--	1260	2330	4800
Potassium	30 - 45	18	18	396	2540	8680	--	--	--	396	2540	8680
Selenium	0 - 15	18	18	0.15	0.319	0.79	--	--	--	0.15	0.319	0.79
Selenium	15 - 30	18	18	0.12	0.285	0.72	--	--	--	0.12	0.285	0.72
Selenium	30 - 45	18	17	0.13	0.246	0.695	0.1	0.1	0.1	0.1	0.238	0.695
Silver	0 - 15	18	18	0.153	0.557	1.96	--	--	--	0.153	0.557	1.96
Silver	15 - 30	18	18	0.054	0.366	1.07	--	--	--	0.054	0.366	1.07
Silver	30 - 45	18	18	0.05	0.181	0.515	--	--	--	0.05	0.181	0.515
Sodium	0 - 15	18	18	106	169	383	--	--	--	106	169	383
Sodium	15 - 30	18	18	110	180	358	--	--	--	110	180	358
Sodium	30 - 45	18	18	52.3	172	343	--	--	--	52.3	172	343

Table 5-3c. Summary Statistics for < 250- μ m-Fraction Sediment and < 150- μ m-Fraction Soil Core Samples

Analyte	Depth (cm)	Number of Samples	Number of Detected Values	Minimum Detected Values	Mean Detected Values	Maximum Detected Values	Minimum Non-detected Value ^a	Mean Non-detected Value ^a	Maximum Non-detected Value ^a	Overall Minimum Value ^a	Overall Mean Value ^a	Overall Maximum Value ^a
Soil (continued)												
TAL Metals/Metalloids (continued)												
Thallium	0 - 15	18	18	0.168	0.281	0.983	--	--	--	0.168	0.281	0.983
Thallium	15 - 30	18	18	0.153	0.228	0.722	--	--	--	0.153	0.228	0.722
Thallium	30 - 45	18	17	0.099	0.205	0.717	0.021	0.021	0.021	0.021	0.195	0.717
Vanadium	0 - 15	18	18	18.7	35.1	73.9	--	--	--	18.7	35.1	73.9
Vanadium	15 - 30	18	18	19.2	36.3	67.2	--	--	--	19.2	36.3	67.2
Vanadium	30 - 45	18	18	8.78	36.3	77.5	--	--	--	8.78	36.3	77.5
Zinc	0 - 15	18	18	106	236	776	--	--	--	106	236	776
Zinc	15 - 30	18	18	62.1	150	669	--	--	--	62.1	150	669
Zinc	30 - 45	18	18	19.3	79	254	--	--	--	19.3	79	254
<i>In Vitro</i> Bioaccessibility Assay (%)												
Arsenic	0 - 15	18	18	15.2	21.5	30.2	--	--	--	15.2	21.5	30.2
Arsenic	15 - 30	18	18	15.3	23	52.4	--	--	--	15.3	23	52.4
Arsenic	30 - 45	18	18	11.6	19.6	35.8	--	--	--	11.6	19.6	35.8
Lead	0 - 15	18	18	35	67.3	86.8	--	--	--	35	67.3	86.8
Lead	15 - 30	18	18	41.2	64.8	85.5	--	--	--	41.2	64.8	85.5
Lead	30 - 45	18	18	29.7	57.1	98.3	--	--	--	29.7	57.1	98.3

Notes:

Data were replicate-averaged (detected values were averaged; if there were no detected values, the minimum detection limit is reported).

Averaged results have three significant figures applied.

^a Calculated with non-detected results at one-half of the detection limit.

-- no value

TAL - target analyte list

Table 5-4. Field Laboratory XRF Lead Results and Core Sampling Locations

Field Laboratory XRF Location ID	Field Laboratory XRF Results for Lead (mg/kg) ^a	Selected for Collection of Core Samples	Core Location ID
Sediment			
SDU-01			
SDU-01-XRF-01	191		
SDU-01-XRF-02	209		
SDU-01-XRF-03	268		
SDU-01-XRF-04	318		
SDU-01-XRF-05	302		
SDU-01-XRF-06	327		
SDU-01-XRF-07	449	X	SDU-01-COR-01
SDU-01-XRF-08	397	X	SDU-01-COR-03
SDU-01-XRF-09	439	X	SDU-01-COR-02
SDU-02			
SDU-02-XRF-01	317		
SDU-02-XRF-02	384		
SDU-02-XRF-03	375		
SDU-02-XRF-04	412	X	SDU-02-COR-03
SDU-02-XRF-05	390		
SDU-02-XRF-06	481	X	SDU-02-COR-02
SDU-02-XRF-07	434		
SDU-02-XRF-08	614	X	SDU-02-COR-01
SDU-03			
SDU-03-XRF-01	253	X	SDU-03-COR-01
SDU-03-XRF-02	89.1	X	SDU-03-COR-02
SDU-03-XRF-03	16.4		
SDU-03-XRF-04	46.0	X	SDU-03-COR-03
SDU-04			
SDU-04-XRF-01	29.5	X	SDU-04-COR-01
SDU-04-XRF-02	45.8		SDU-04-COR-02
SDU-04-XRF-03	29.3	X	
SDU-04-XRF-04	113	X	SDU-04-COR-03
SDU-05			
SDU-05-XRF-01	41	X	SDU-05-COR-01
SDU-05-XRF-02	346		
SDU-05-XRF-03	377		
SDU-05-XRF-04	410	X	SDU-05-COR-03
SDU-05-XRF-05	324		
SDU-05-XRF-06	334		
SDU-05-XRF-08	206		
SDU-05-XRF-09	446	X	SDU-05-COR-02
SDU-05-XRF-R03	344		
SDU-06			
SDU-06-XRF-01	24.9	X	SDU-06-COR-03
SDU-06-XRF-02	25.2	X	SDU-06-COR-02
SDU-06-XRF-04	18.5	X	SDU-06-COR-01
SDU-06-XRF-05	32.9		
SDU-06-XRF-R02	14.5		
SDU-07			
SDU-07-XRF-01	504	X	SDU-07-COR-02
SDU-07-XRF-02	83.9		
SDU-07-XRF-03	400	X	SDU-07-COR-03
SDU-07-XRF-04	492	X	SDU-07-COR-01

Table 5-4. Field Laboratory XRF Lead Results and Core Sampling Locations

Field Laboratory XRF Location ID	Field Laboratory XRF Results for Lead (mg/kg) ^a	Selected for Collection of Core Samples	Core Location ID
Sediment (continued)			
SDU-08			
SDU-08-XRF-01	340	X	SDU-08-COR-03
SDU-08-XRF-02	159		
SDU-08-XRF-04	583	X	SDU-08-COR-01
SDU-08-XRF-R03	257	X	SDU-08-COR-02
SDU-09			
SDU-09-XRF-01	12.3		
SDU-09-XRF-02	80.7		
SDU-09-XRF-03	134		
SDU-09-XRF-04	107		
SDU-10			
SDU-10-XRF-01	76.9		
SDU-10-XRF-02	90.9		
SDU-10-XRF-03	98.5		
SDU-10-XRF-04	305		
F-01			
F-01-COR-01	NA ^b	X	F-01-COR-01
F-01-COR-02	NA ^b	X	F-01-COR-02
F-01-COR-03	NA ^b	X	F-01-COR-03
Soil			
UDU-01			
UDU-01-XRF-01	123		
UDU-01-XRF-02	113		
UDU-01-XRF-03	58.8		
UDU-01-XRF-04	166	X	UDU-01-COR-01
UDU-01-XRF-05	55.9	X	UDU-01-COR-02
UDU-01-XRF-06	68.3		
UDU-01-XRF-07	75		
NA	NA ^c	X	UDU-01-COR-03
UDU-02			
UDU-02-XRF-01	312	X	UDU-02-COR-01
UDU-02-XRF-02	277	X	UDU-02-COR-02
UDU-02-XRF-03	63.1		
UDU-02-XRF-04	111		
UDU-02-XRF-05	101		
UDU-02-XRF-06	99.9		
NA	NA ^c	X	UDU-02-COR-03
UDU-03			
UDU-03-XRF-01	177	X	UDU-03-COR-02
UDU-03-XRF-02	86.8		
UDU-03-XRF-03	317		
UDU-03-XRF-04	193	X	UDU-03-COR-03
UDU-03-XRF-05	141		
UDU-03-XRF-06	111		
UDU-03-XRF-07	355	X	UDU-03-COR-01
UDU-03-XRF-08	83.7		
UDU-04			
UDU-04-XRF-02	975	X	UDU-04-COR-02
UDU-04-XRF-03	283		
UDU-04-XRF-04	456		
UDU-04-XRF-05	651	X	UDU-04-COR-03
UDU-04-XRF-R01	1380	X	UDU-04-COR-01

Table 5-4. Field Laboratory XRF Lead Results and Core Sampling Locations

Field Laboratory XRF Location ID	Field Laboratory XRF Results for Lead (mg/kg) ^a	Selected for Collection of Core Samples	Core Location ID
Soil (continued)			
UDU-05			
UDU-05-XRF-01	20.9		
UDU-05-XRF-02	24.7	X	UDU-05-COR-02
UDU-05-XRF-03	16.3		
UDU-05-XRF-04	60.5		
UDU-05-XRF-05	31		
UDU-05-XRF-06	20.4		
UDU-05-XRF-07	190	X	UDU-05-COR-01
UDU-05-XRF-08	115		
UDU-05-XRF-09	158		
UDU-05-XRF-10	16.8		
UDU-05-XRF-11	18		
UDU-05-XRF-12	1040	X	UDU-05-COR-03
UDU-05-XRF-13	38.4		
UDU-06			
UDU-06-XRF-01	65.1	X	UDU-06-COR-01
UDU-06-XRF-02	60.6	X	UDU-06-COR-02
UDU-06-XRF-03	60.7	X	UDU-06-COR-03
UDU-06-XRF-04	42.4		
UDU-06-XRF-05	21.4		

Notes:

X-ray fluorescence (XRF) analysis was conducted on the < 2-mm fraction of sediment and soil.

^a Field laboratory XRF results are the mean of triplicate readings.

^b Field laboratory XRF was not conducted in area F-01

^c A non-XRF location was selected by U.S. Environmental Protection Agency (EPA) representatives for the collection of core samples.

NA - not applicable

SDU - sediment decision unit

UDU - upland decision unit

Table 5-5a. Summary of Field Split Sample RPDs and Field Triplicate Sample RSDs for Bulk ICS Samples

Analyte	Field Split Samples			Field Triplicate Samples		
	Number of Samples	Number of RPDs >35%	Maximum RPD (%)	Number of Samples	Number of RSDs >35%	Maximum RSD (%)
Sediment						
Conventionals						
pH	2	0	2.97	4	0	3.62
Solids	2	0	1.07	4	0	8.55
Grain Size						
Clay	2	1	66.7	4	0	32.3
Silt	2	0	29.9	4	0	33.4
Very fine sand	2	0	14.4	4	0	17.2
Fine sand	2	0	15.9	4	0	15.2
Medium sand	2	1	47.3	4	0	29.1
Coarse sand	2	0	18.1	4	0	18.2
Very coarse sand	2	0	23.8	4	0	20.9
Gravel	2	1	83.4	4	3	103
Soil						
Conventionals						
pH	1	0	0.375	1	0	2.47
Solids	1	0	0.965	1	0	0.854
Grain Size						
Clay	1	0	18.8	1	0	10.1
Silt	1	0	5.88	1	0	6.31
Very fine sand	1	0	2.86	1	0	6.14
Fine sand	1	0	1.51	1	0	3.63
Medium sand	1	0	7.15	1	0	5.5
Coarse sand	1	0	2.86	1	0	5.21
Very coarse sand	1	0	8.06	1	0	8.21
Gravel	1	0	17.8	1	1	46.7

Notes:

Highlighted cells identify relative percent differences (RPDs) and relative standard deviations (RSDs) greater than the control limit.

Field triplicate evaluation is based on field split sample averaged dataset.

ICS - incremental composite sampling

Table 5-5b. Summary of Field Split Sample RPDs and Field Triplicate Sample RSDs for < 2-mm-Fraction ICS Samples

Analyte	Field Split Samples			Field Triplicate Samples		
	Number of Samples	Number of RPDs >35%	Maximum RPD (%)	Number of Samples	Number of RSDs >35%	Maximum RSD (%)
Sediment						
Conventionals						
Organic carbon	2	0	31.3	4	0	28.7
Solids	2	0	1.49	4	0	4.26
TAL Metals/Metalloids						
Aluminum	2	0	7.03	4	0	14.9
Antimony	2	0	12.9	4	0	25.8
Arsenic	2	0	7.85	4	0	13.9
Barium	2	0	5.8	4	0	27.6
Beryllium	2	0	4.46	4	0	17.8
Cadmium	2	0	20.5	4	0	32.4
Calcium	2	0	11.2	4	1	51.5
Chromium	2	0	5.16	4	0	14.7
Cobalt	2	0	6.56	4	0	15.4
Copper	2	0	8.39	4	0	32.7
Iron	2	0	6.45	4	0	11.8
Lead	2	0	15.1	4	0	33.6
Magnesium	2	0	7.8	4	0	15.9
Manganese	2	0	10.7	4	0	10.9
Mercury	2	1	54.5	4	2	41.8
Nickel	2	0	8.33	4	0	12.7
Potassium	2	0	6.5	4	0	15
Selenium	2	0	33.3	4	0	33.2
Silver	2	0	20.8	4	0	35
Sodium	2	0	21.2	4	0	13.7
Thallium	2	0	12	4	0	22.4
Vanadium	2	0	4.38	4	0	8.02
Zinc	2	0	13.1	4	0	32
Soil						
Conventionals						
Cation exchange capacity	1	0	8	1	0	8.22
Organic carbon	1	0	4.82	1	0	9.77
Solids	1	0	0.215	1	0	0.21
TAL Metals/Metalloids						
Aluminum	1	0	0.227	1	0	6
Antimony	1	0	2.9	1	0	27.3
Arsenic	1	0	11.8	1	0	15.3
Barium	1	0	21.5	1	0	18.2
Beryllium	1	0	1.43	1	0	3.49
Cadmium	1	0	4.08	1	0	19.7
Calcium	1	0	3.17	1	0	12
Chromium	1	0	5.69	1	0	2.89
Cobalt	1	0	6.5	1	0	5.33
Copper	1	0	1.93	1	0	15.5
Iron	1	0	3.44	1	0	11.9
Lead	1	0	1.05	1	1	54.3
Magnesium	1	0	2.73	1	0	3.59
Manganese	1	0	0.578	1	0	8.27
Mercury	1	0	0	1	0	25.2
Nickel	1	0	7.41	1	0	2.13
Potassium	1	0	0.885	1	0	4.39

Table 5-5b. Summary of Field Split Sample RPDs and Field Triplicate Sample RSDs for < 2-mm-Fraction ICS Samples

Analyte	Field Split Samples			Field Triplicate Samples		
	Number of Samples	Number of RPDs >35%	Maximum RPD (%)	Number of Samples	Number of RSDs >35%	Maximum RSD (%)
Soil (continued)						
TAL Metals/Metalloids(continued)						
Selenium	1	0	8.7	1	0	13.1
Silver	1	0	6.3	1	1	50.8
Sodium	1	0	2.01	1	0	15.7
Thallium	1	0	0.738	1	0	19.8
Vanadium	1	0	1.52	1	0	4.65
Zinc	1	0	6.48	1	0	11.5

Notes:

Highlighted cells identify relative percent differences (RPDs) and relative standard deviations (RSDs) greater than the control limit.

Field triplicate evaluation is based on field split sample averaged dataset.

ICS - Incremental composite sampling

TAL - Target analyte list

Table 5-5c. Summary of Field Split Sample RPDs and Field Triplicate Sample RSDs for < 250- μ m-Fraction Sediment and < 150- μ m-Fraction Soil ICS Samples

Analyte	Field Split Samples			Field Triplicate Samples		
	Number of Samples	Number of RPDs >35%	Maximum RPD (%)	Number of Samples	Number of RSDs >35%	Maximum RSD (%)
Sediment						
Conventionals						
Solids	2	0	1.04	4	0	2.44
TAL Metals/Metalloids						
Aluminum	2	0	1.82	4	0	8.85
Antimony	2	0	7.69	4	0	22.3
Arsenic	2	0	3.01	4	0	13.9
Barium	2	0	5.01	4	0	15.5
Beryllium	2	0	1.96	4	0	8.82
Cadmium	2	0	3.19	4	1	35.1
Calcium	2	0	5.68	4	1	43.1
Chromium	2	0	1.22	4	0	8.13
Cobalt	2	0	4.02	4	0	7.01
Copper	2	0	4.05	4	0	20.8
Iron	2	0	4.82	4	0	6.67
Lead	2	0	4.04	4	0	29.6
Magnesium	2	0	2.81	4	0	13.8
Manganese	2	0	1.3	4	0	8.1
Mercury	2	0	8.73	4	0	34.2
Nickel	2	0	2.99	4	0	6.83
Potassium	2	0	1.45	4	0	10
Selenium	2	0	16.7	4	0	18.2
Silver	2	0	8.22	4	0	24.2
Sodium	2	0	0.897	4	0	7.82
Thallium	2	0	4.48	4	0	22.4
Vanadium	2	0	1.14	4	0	4.63
Zinc	2	0	6.51	4	0	27.8
<i>In Vitro</i> Bioaccessibility Assay						
Arsenic	2	0	4.56	4	0	9.68
Lead	2	0	19.3	4	0	13
Soil						
Conventionals						
Solids	1	0	0.108	1	0	0.203
TAL Metals/Metalloids						
Aluminum	1	0	0.305	1	0	10.8
Antimony	1	0	1.89	1	0	26.3
Arsenic	1	0	4.41	1	0	20.4
Barium	1	0	0	1	0	19.9
Beryllium	1	0	0.258	1	0	10.7
Cadmium	1	0	6.02	1	0	18.9
Calcium	1	0	0.685	1	0	16.9
Chromium	1	0	0	1	0	9.41
Cobalt	1	0	0.419	1	0	12.9
Copper	1	0	0	1	0	9.08
Iron	1	0	0.631	1	0	11.1
Lead	1	0	1.86	1	1	46.5
Magnesium	1	0	0.957	1	0	13.6
Manganese	1	0	0	1	0	12.7
Mercury	1	0	0	1	0	27.2
Nickel	1	0	0.451	1	0	10.1
Potassium	1	0	0.775	1	0	15.4
Selenium	1	0	5.63	1	0	18.5

Table 5-5c. Summary of Field Split Sample RPDs and Field Triplicate Sample RSDs for < 250- μ m-Fraction Sediment and < 150- μ m-Fraction Soil ICS Samples

Analyte	Field Split Samples			Field Triplicate Samples		
	Number of Samples	Number of RPDs >35%	Maximum RPD (%)	Number of Samples	Number of RSDs >35%	Maximum RSD (%)
Soil (continued)						
TAL Metals/Metalloids (continued)						
Silver	1	0	0	1	1	39.1
Sodium	1	0	2.17	1	0	15.1
Thallium	1	0	7.41	1	0	23
Vanadium	1	0	2.14	1	0	9.48
Zinc	1	0	0.905	1	0	7.59
<i>In Vitro</i> Bioaccessibility Assay						
Arsenic	1	0	4.79	1	0	11.7
Lead	1	0	0.853	1	0	20.3

Notes:

Highlighted cells identify relative percent differences (RPDs) and relative standard deviations (RSDs) greater than the control limit.

Field triplicate evaluation is based on field split sample averaged dataset.

ICS - Incremental composite sampling

TAL - Target analyte list

Table 5-6a. Comparison of Field Laboratory and Confirmatory XRF Lead Results

		Field Laboratory XRF ^a	Confirmatory XRF ^b	RPD (%)
		(mg/kg)	(mg/kg)	
Sediment				
SDU-01	SDU-01-XRF-03	268	267	0.374
SDU-01	SDU-01-XRF-04	318	329	3.4
SDU-01	SDU-01-XRF-07	449	466	3.72
SDU-02	SDU-02-XRF-01	317	371	15.7
SDU-05	SDU-05-XRF-R03	344	355	3.15
SDU-08	SDU-08-XRF-02	159	148	7.17
SDU-08	SDU-08-XRF-R03	257	269	4.56
SDU-09	SDU-09-XRF-01	12.3	11.4	7.59
SDU-09	SDU-09-XRF-02	80.7	75.8	6.26
SDU-09	SDU-09-XRF-04	107	95	11.9
SDU-10	SDU-10-XRF-02	90.9	90.7	0.22
SDU-10	SDU-10-XRF-04	305	269	12.5
Soil				
UDU-01	UDU-01-XRF-01	123	113	8.47
UDU-01	UDU-01-XRF-04	166	161	3.06
UDU-01	UDU-01-XRF-07	75	76.5	1.98
UDU-02	UDU-02-XRF-02	277	217	24.3
UDU-02	UDU-02-XRF-06	99.9	90.6	9.76
UDU-03	UDU-03-XRF-01	177	170	4.03
UDU-03	UDU-03-XRF-02	86.8	55.2	44.5
UDU-04	UDU-04-XRF-02	975	507	63.2
UDU-04	UDU-04-XRF-05	651	685	5.09
UDU-04	UDU-04-XRF-R01	1380	1150	18.2
UDU-05	UDU-05-XRF-01	20.9	12.4	51.1
UDU-06	UDU-06-XRF-05	21.4	18	17.3

Notes:

Highlighted cells identify relative percent differences (RPDs) greater than the control limit.

X-ray fluorescence (XRF) analysis was conducted on the < 2-mm fraction of sediment and soil.

^a Field laboratory XRF results are the mean of triplicate readings.

^b Confirmatory XRF results are results of analysis in the analytical laboratory to confirm measurement taken using the handheld XRF analyzer in the field laboratory.

SDU - sediment decision unit

UDU - upland decision unit

Table 5-6b. Summary of RPDs Comparing Concentrations of Lead in Field Laboratory and Confirmatory XRF Samples

	Number of Samples	Number of RPDs >35%	Maximum RPD (%)
Sediment			
SDU-01	3	0	3.72
SDU-02	1	0	15.7
SDU-05	1	0	3.15
SDU-08	2	0	7.17
SDU-09	3	0	11.9
SDU-10	2	0	12.5
Soil			
UDU-01	3	0	8.47
UDU-02	2	0	24.3
UDU-03	2	1	44.5
UDU-04	3	1	63.2
UDU-05	1	1	51.1
UDU-06	1	0	17.3

Notes:

Highlighted cells identify relative percent differences (RPDs) greater than the control limit.

The mean of the three field replicates was compared to the laboratory confirmation result.

X-ray fluorescence (XRF) analysis was conducted on the < 2-mm fraction of sediment and soil.

SDU - sediment decision unit

UDU - upland decision unit

Table 5-7a. Summary of Field Split Sample RPDs for Bulk Core Samples

	Number of Samples	Number of RPDs >35%	Maximum RPD (%)
Sediment			
Conventionals			
pH	8	0	5.68
Solids	8	0	25.4
Grain Size			
Clay	8	2	57.7
Silt	8	0	17.3
Very fine sand	8	0	21
Fine sand	8	1	140
Medium sand	8	2	183
Coarse sand	8	3	193
Very coarse sand	8	3	191
Gravel	8	5	200
Soil			
Conventionals			
pH	6	0	2.38
Solids	6	0	2.95
Grain Size			
Clay	6	1	196
Silt	6	2	42
Very fine sand	6	2	49
Fine sand	6	1	51.2
Medium sand	6	1	73.7
Coarse sand	6	1	88.5
Very coarse sand	6	3	123
Gravel	6	5	134

Notes:

Highlighted cells identify relative percent differences (RPDs) greater than the control limit.

Table 5-7b. Summary of Field Split Sample RPDs for < 2-mm-Fraction Core Samples

	Number of Samples	Number of RPDs >35%	Maximum RPD (%)
Sediment			
Conventionals			
Organic carbon	8	1	41.8
Solids	8	0	1.98
TAL Metals/Metalloids			
Aluminum	8	0	7.69
Antimony	8	0	26.2
Arsenic	8	0	3.04
Barium	8	0	12.3
Beryllium	8	0	10.4
Cadmium	8	0	7.34
Calcium	8	0	6.17
Chromium	8	0	7.63
Cobalt	8	0	7.71
Copper	8	0	8.73
Iron	8	0	6
Lead	8	0	3.72
Magnesium	8	0	5.85
Manganese	8	0	5.96
Mercury	8	0	33.8
Nickel	8	0	8.79
Potassium	8	0	8.66
Selenium	8	0	21.5
Silver	8	0	14.7
Sodium	8	0	15.8
Thallium	8	0	13.3
Vanadium	8	0	8.7
Zinc	8	0	4.65
Soil			
Conventionals			
Cation exchange capacity	6	0	23.8
Organic carbon	6	0	18.6
Solids	6	0	0.409
TAL Metals/Metalloids			
Aluminum	6	0	4.7
Antimony	6	0	33
Arsenic	6	0	9.07
Barium	6	0	14
Beryllium	6	0	7.61
Cadmium	6	0	5.37
Calcium	6	0	8.56
Chromium	6	0	32.7
Cobalt	6	0	5.69
Copper	6	0	8.04
Iron	6	0	23
Lead	6	0	7.24
Magnesium	6	0	3.23
Manganese	6	0	16.8
Mercury	6	0	15.4
Nickel	6	0	16.2
Potassium	6	0	6.42

Table 5-7b. Summary of Field Split Sample RPDs for < 2-mm-Fraction Core Samples

	Number of Samples	Number of RPDs >35%	Maximum RPD (%)
Soil (continued)			
TAL Metals/Metalloids (continued)			
Selenium	6	0	14.8
Silver	6	0	3.56
Sodium	6	0	12.1
Thallium	6	0	12.7
Vanadium	6	0	4.51
Zinc	6	0	5.65

Notes:

Highlighted cells identify relative percent differences (RPDs) greater than the control limit.

TAL - target analyte list

Table 5-7c. Summary of Field Split Sample RPDs for < 250- μ m-Fraction Sediment and < 150- μ m-Fraction Soil Core Samples

	Number of Samples	Number of RPDs >35%	Maximum RPD (%)
Sediment			
Conventionals			
Solids	8	0	0.958
TAL Metals/Metalloids			
Aluminum	8	1	44.2
Antimony	8	0	30
Arsenic	8	0	5.85
Barium	8	1	60.9
Beryllium	8	0	34
Cadmium	8	0	20
Calcium	8	1	79.2
Chromium	8	0	33.3
Cobalt	8	1	41.1
Copper	8	1	39.4
Iron	8	0	8.82
Lead	8	0	5.28
Magnesium	8	1	58
Manganese	8	0	10.8
Mercury	8	0	22.3
Nickel	8	0	22.9
Potassium	8	0	31.3
Selenium	8	1	43.6
Silver	8	1	58.1
Sodium	8	0	13.9
Thallium	8	0	8.56
Vanadium	8	0	3.97
Zinc	8	0	12.9
<i>In Vitro</i> Bioaccessibility Assay			
Arsenic	8	0	24.2
Lead	8	0	23.2
Soil			
Conventionals			
Solids	6	0	0.619
TAL Metals/Metalloids			
Aluminum	6	0	3.49
Antimony	6	0	8.49
Arsenic	6	0	7.74
Barium	6	0	3.34
Beryllium	6	0	4.52
Cadmium	6	0	7.86
Calcium	6	0	7.36
Chromium	6	0	5.55
Cobalt	6	0	3.59
Copper	6	0	3.66
Iron	6	0	5
Lead	6	0	10.1
Magnesium	6	0	4.51
Manganese	6	0	8.97
Mercury	6	0	15.4
Nickel	6	0	4.94
Potassium	6	0	3.98

Table 5-7c. Summary of Field Split Sample RPDs for < 250- μ m-Fraction Sediment and < 150- μ m-Fraction Soil Core Samples

	Number of Samples	Number of RPDs >35%	Maximum RPD (%)
Soil (continued)			
TAL Metals/Metalloids (continued)			
Selenium	6	0	4.88
Silver	6	0	5.74
Sodium	6	0	3.95
Thallium	6	0	10.1
Vanadium	6	0	5.11
Zinc	6	0	4.15
<i>In Vitro</i> Bioaccessibility Assay			
Arsenic	6	0	16.5
Lead	6	0	7.53

Notes:

Highlighted cells identify relative percent differences (RPDs) greater than the control limit.

TAL - Target analyte list

Table 5-8. Comparison of Actual Method Reporting Limits with Analytical Concentration Goals for Non-detected Samples

Analyte	Fraction	ACG	QAPP MRL	Minimum Actual MRL	Maximum Actual MRL	Units	Number of 1X ACG Exceedances / Total Non-detected Results
Sediment Core Samples							
Antimony	<250- μ m	0.1	0.05	0.049	0.058	mg/kg	0 / 2
Selenium	<250- μ m	0.3	0.2	0.2	0.2	mg/kg	0 / 2
Thallium	<250- μ m	1	0.02	0.02	0.083	mg/kg	0 / 3
Thallium	<2-mm	1	0.02	0.082	0.084	mg/kg	0 / 2
Soil Core Samples							
Selenium	<150- μ m	0.3	0.2	0.2	0.2	mg/kg	0 / 1
Thallium	<150- μ m	1	0.02	0.042	0.042	mg/kg	0 / 1
Thallium	<2-mm	1	0.02	0.084	0.088	mg/kg	0 / 2

Notes:

ACG - analytical concentration goal

MRL - method reporting limit

QAPP - quality assurance project plan (HDR et al. 2015a)

Table 5-9a. Comparison of Metals Data from < 2-mm Sediment and Soil Fractions in ICS Samples with Available Eco-SSLs

Decision Unit	Concentration by Analyte (mg/kg dw) [§]																
	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Manganese	Nickel	Selenium	Silver	Vanadium	Zinc		
Eco-SSL (mg/kg) ^b	0.27	18	330	21	0.36	26	13	28	11	220	38	0.52	4.2	7.8	46		
Sediment (<2-mm)																	
SDU-01	3.31	J	10.7	475	0.506	7.14	31.1	9.37	138	324	299	25.3	1.12	1.77	36.6	1360	
SDU-02	3.13		12.2	514	0.466	8.07	30.8	8.92	142	381	349	24.6	1.18	1.65	36.0	1790	
SDU-03	0.366		4.29	137	0.282	1.14	17.9	5.01	18.7	116	183	13.9	0.17	0.179	26.0	158	
SDU-04	0.721	J	7.7	102	0.262	0.709	22.9	8.32	26.9	J	32.6	294	23.3	0.4	0.188	31.4	192
SDU-05	2.32	J	10.6	425	0.368	7.04	25.6	7.49	109	323	332	20.3	0.9	1.09	33.4	1770	
SDU-06	0.162		3.9	76.6	0.258	0.572	16.3	5.39	12.9	22.5	171	13.2	0.117	0.0683	24.8	82.1	
SDU-07	1.29		9.47	251	0.374	3.54	23	7.61	63.8	180	263	20.2	0.573	0.801	32.6	490	
SDU-08	3.12	J	12.4	481	0.453	6.59	28.2	9.16	137	414	J	404	21.9	1.24	1.66	32.8	1480
SDU-09	0.76	J	6.72	203	0.253	1.45	19.4	6.13	27.1	J	73.7	212	17.5	0.26	0.2	26.6	331
SDU-10	0.82	J	8.72	178	0.271	1.5	17.6	6.28	29.4	J	82.2	216	16	0.24	0.23	26	370
Soil (<2-mm)																	
UDU-01	0.837	J	6.25	107	0.359	1.19	11.8	4.2	13.4	182	323	10.9	0.13	J	0.199	22	104
UDU-02	0.886	J	5.86	168	0.383	0.99	13.4	4.22	17.6	258	322	11.2	0.12	J	0.326	23.1	122
UDU-03	46.2	J	6.43	106	0.31	0.909	12.9	3.99	55.4	410	277	10.1	0.11	J	0.212	22	114
UDU-04	2.09		6.95	132	0.31	1.57	12	4.04	15	1800	315	9.65	0.177		1.24	21.2	162
UDU-05	0.652	J	6.24	131	0.466	1.01	24.1	7.42	23.4	48.3	396	20.9	0.16	J	0.129	37.5	116
UDU-06	0.964		10.1	177	0.35	1.23	22.9	6.62	20.7	38.2	346	20.3	0.69		0.127	26.4	98.8

Notes:

Bold and shaded cells indicate concentrations greater than the ecological soil screening level (Eco-SSL).

Averaged results have three significant figures applied.

^a For decision units (DUs) with field split and triplicate samples, summary statistics are based on the average of results for the DU. Non-detected values (NDs) are included as half the reporting limits (RLs).

^b Eco-SSL values are presented in the quality assurance project plan (QAPP) (HDR et al. 2015a) and are the lowest of the screening levels adopted by EPA for plants, soil invertebrates, birds, and mammals (USEPA 2010b).

ICS - Incremental composite sampling

J - estimated value

SDU - sediment decision unit

UDU - upland decision unit

Table 5-9b. Comparison of Metals Data from < 2-mm Sediment and Soil Fractions in Core samples with Available Eco-SSLs

Decision Unit/ Location ID	Sample ID	Sampling Depth (cm)	Concentration by Analyte (mg/kg dw) ^a															
			Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Manganese	Nickel	Selenium	Silver	Vanadium	Zinc	
Eco-SSL (mg/kg) ^b			0.27	18	330	21	0.36	26	13	28	11	220	38	0.52	4.2	7.8	46	
Soil (<2-mm) (continued)																		
UDU-06																		
UDU-06-XRF-01	UDU-06-COR-01-001	0 - 15	1.18	J	8.64	187	0.394	1.87	23.9	7.52	22.3	61	477	20.3	0.47	0.186	27.7	151
UDU-06-XRF-01	UDU-06-COR-01-002	15 - 30	0.9	J	7.85	192	0.413	1.15	25.4	7.86	21.7	33.4	476	21.4	0.49	0.148	30.7	101
UDU-06-XRF-01	UDU-06-COR-01-003	30 - 45	0.529	J	5.87	187	0.415	0.625	26	8.05	20.9	13.9	454	21.7	0.51	0.131	30.6	71.6
UDU-06-XRF-02	UDU-06-COR-02-001	0 - 15	1.16	J	9.71	194	0.44	1.79	25.9	8.61	23.9	57.9	534	22.5	0.44	0.167	31.4	130
UDU-06-XRF-02	UDU-06-COR-02-002	15 - 30	1.09	J	9.05	195	0.437	1.91	26.3	8.62	24.2	60.6	529	23	0.43	0.17	31.2	141
UDU-06-XRF-02	UDU-06-COR-02-003	30 - 45	0.661		8.14	201	0.454	0.763	31.8	8.99	22.6	20.9	544	25.4	0.45	0.128	32.5	77.9
UDU-06-XRF-03	UDU-06-COR-03-001	0 - 15	1.36		9.01	197	0.241	1.68	14.5	5.45	16.8	48.9	393	14.9	0.54	0.132	17.4	93.8
UDU-06-XRF-03	UDU-06-COR-03-002	15 - 30	1.3	J	8.52	193	0.25	1.44	15.4	5.52	16.1	41.4	365	14.9	0.56	0.098	17.8	79.6
UDU-06-XRF-03	UDU-06-COR-03-003	30 - 45	1.1		7.53	206	0.217	0.83	13.6	4.99	13.7	18.4	317	13.3	0.59	0.0765	15.2	53.1

Notes:

Bold and shaded cells indicate concentrations greater than the ecological soil screening level (Eco-SSL).

Averaged results have three significant figures applied.

^a For decision units (DUs) with field split and triplicate samples, summary statistics are based on the average of results for the DU. Non-detected values (NDs) are included as half the reporting limits (RLs).

^b Eco-SSL values are presented in the quality assurance project plan (QAPP) (HDR et al. 2015a) and are the lowest of the screening levels adopted by EPA for plants, soil invertebrates, birds, and mammals (USEPA 2010b).

J - estimated value

SDU - sediment decision unit

UDU - upland decision unit

XRF - X-ray fluorescence

Table 5-10a. Comparison of Metals Data from < 250-µm Sediment and < 150-µm Soil Fractions in ICS Samples with Available Human Health Screening Levels

Decision Unit	Sample ID	Concentration by Analyte (mg/kg dw) ^a																			
		Aluminum	Antimony ^c	Arsenic ^{d,e}	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead ^f	Manganese	Mercury ^c	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	
Human Health Screening Level (mg/kg)^b		77,400	31.3	9.68	15,300	156	70.3	117,000	23.4	3,130	54,800	400	1,830	23.5	1,550	391	391	0.782	394	23,500	
Sediment (<250-µm)																					
SDU-01	SDU-01-ICS	11,600	3.26	J 3.24	550	0.539	7.36	34.1	10.2	137	26,600	J 328	333	0.852	27.3	1.16	2.06	0.78	40.8	1570	
SDU-02	SDU-02-ICS	9970	2.76	2.91	497	0.445	7.17	29.9	8.64	125	25,400	318	334	0.784	23.8	1.06	1.48	0.713	35.2	1730	
SDU-03	SDU-03-ICS	9440	0.356	0.892	150	0.298	1.04	17.5	5.09	18.9	13,200	86.9	163	0.091	14.1	0.18	0.209	0.182	26.9	172	
SDU-04	SDU-04-ICS	6350	0.783	J 1.78	132	0.258	0.869	21.6	7.26	30.1	J 16,500	36.6	264	0.044	20.2	0.39	0.233	0.123	29	241	
SDU-05	SDU-05-ICS	8010	2.28	J 2.17	419	0.343	6.35	23.2	6.89	96.2	22,300	J 230	321	0.824	18.7	0.78	0.896	0.534	31	1800	
SDU-06	SDU-06-ICS	6510	0.145	0.747	72	0.24	0.521	15.7	5.11	11.9	12,700	15.4	156	0.0262	12.5	0.107	0.0633	0.215	24.4	82.3	
SDU-07	SDU-07-ICS	10,800	1.73	2.90	376	0.461	5.38	27.8	8.84	86.7	22,500	243	297	0.727	23.4	0.797	1.2	0.478	36.8	731	
SDU-08	SDU-08-ICS	9570	3.29	J 3.30	509	0.421	6.66	27.8	8.58	129	26,100	313	J 387	0.942	21.3	1.1	1.62	0.48	J 34	1490	
SDU-09	SDU-09-ICS	6430	0.856	J 1.42	238	0.271	1.75	19.1	5.78	31.8	J 16,300	69.4	226	0.103	15.6	0.29	0.394	0.231	27.8	427	
SDU-10	SDU-10-ICS	6510	0.83	J 1.50	230	0.278	1.76	17.5	5.79	33	J 15,800	79.5	215	0.107	15.1	0.26	0.316	0.253	24.8	486	
Soil (<150-µm)																					
UDU-01	UDU-01-ICS	18,400	1.5	J 2.52	195	0.626	2.24	19.8	6.24	23.1	17,800	365	550	0.083	15	0.23	0.401	0.268	35.8	180	
UDU-02	UDU-02-ICS	19,500	1.75	J 1.97	257	0.655	1.99	19	6.44	30.9	17,800	510	555	0.277	14.9	0.23	0.745	0.22	33.2	211	
UDU-03	UDU-03-ICS	13,100	9.8	J 1.74	160	0.458	1.5	19.2	5.64	40.9	15,900	308	402	0.211	14.1	0.14	J 0.303	0.186	31.1	181	
UDU-04	UDU-04-ICS	13,800	2.6	2.62	224	0.472	2.44	17.5	5.54	23.3	16,500	2670	434	0.45	13.5	0.27	1.85	0.239	30.8	237	
UDU-05	UDU-05-ICS	12,800	0.909	J 1.92	145	0.472	1.44	24.5	7.13	23.5	19,000	79.7	382	0.041	19.7	0.17	J 0.169	0.24	36.6	151	
UDU-06	UDU-06-ICS	9830	1.06	2.90	192	0.388	1.33	24.2	7.17	24.6	15,900	34.7	389	0.039	22.2	0.71	0.17	0.162	28.1	111	

Notes:

Bold and shaded cells indicate concentrations greater than the human health screening level.

Averaged results have three significant figures applied.

^a For decision units (DUs) with field split and triplicate samples, summary statistics are based on the average of results for the DU. Non-detected values (NDs) are included as half the reporting limits (RLs).

^b Screening level values are residential sediment screening levels from SRC (2013) and presented in the quality assurance project plan (QAPP) (HDR 2015a).

^c The screening levels for antimony and mercury were adjusted to reflect changes to the default values for those metals as discussed by SRC when developing screening levels for use in EPA's subsurface sediment screen (SRC 2013).

^d The human health screening level for arsenic is based on the default residential soil screening level for a 1 in 1 million risk level adjusted for the default RBA of 60 percent (USEPA 2015b) plus an estimate of the concentration of arsenic in natural background (9 mg/kg).

^e Arsenic concentrations adjusted for site-specific RBA using the equations from Bradham (2015): RBA (%) = 0.65 *IVBA(%) + 7.8.

^f Lead concentrations adjusted for the ratio of site-specific RBA to EPA's default RBA. RBA equation from EPA (2007-lead estimation guidance): RBA (fraction) = 0.878*IVBA (fraction) - 0.028.

ICS - Incremental composite sampling

J - estimated value

SDU - sediment decision unit

UDU - upland decision unit



Submitted to
Teck American Incorporated
501 North Riverpoint Blvd, Suite 300
Spokane, WA 99202

Submitted by
AECOM
1501 4th Avenue
Suite 1400
Seattle, WA 98101

Field Investigation Summary Report – Bossburg Flat Beach Refined Sediment and Soil Study Upper Columbia River RI/FS

Project #:60394391
July 10, 2015

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List of Acronyms and Abbreviations

AECOM	AECOM Technical Services, Inc.
CCT	Confederated Tribes of the Colville Reservation
CFR	Code of Federal Regulations
CRWG	cultural resources working group
DAHP	Department of Archaeology and Historic Preservation
DOI	Department of Interior
DU	decision unit
GNSS	Global Navigation Satellite System
GPS	global positioning system
ICS	incremental composite sample
NPS	National Park Service
QAPP	quality assurance project plan
QA/QC	quality assurance and quality control
RI/FS	Remedial Investigation and Feasibility Study
RM	river mile
SBAS	satellite-based augmentation system
SDU	sediment decision unit
SHPO	State Historic Preservation Office
THPO	Tribal Historic Preservation Officers
TAI	Teck American, Incorporated
UDU	upland or soil decision unit
U.S.	United States
USBR	United States Bureau of Reclamation
UCR	Upper Columbia River
WAAS	Wide Area Augmentation System
WGS	World Geodetic System
XRF	X-ray fluorescence
YAM	Young American Mill

1.0 Introduction

This field investigation summary report discusses near-shore sediment and soil sampling conducted by AECOM Technical Services, Inc. (AECOM) from April 13, 2015 through May 8, 2015 for the Bossburg Flat Beach Refined Sediment and Soil Study (hereafter ‘study’). Field activities were performed in accordance with the Upper Columbia River (UCR) Final Quality Assurance Project Plan for Bossburg Flat Beach Refined Sediment and Soil Study (QAPP) dated January 2015 (HDR, 2015a) and Amendment No. 1 dated March 2015 (HDR 2015b). This work was conducted as part of the UCR Remedial Investigation and Feasibility Study (RI/FS) on behalf of Teck American Incorporated (TAI).

The objective of the study was to generate data to refine exposure estimates and further inform risk evaluations for both human health and ecological receptors associated with near-shore sediments and soil adjacent to and down-gradient of the Young American Mill (YAM) site. Specifically, further additional data for near-shore sediments and soil was needed in areas adjacent to the former YAM site, the former cable ferry landings, and along the east riverbank from Bossburg Flat Beach (river mile [RM] 716) to Evans Campground Beach (RM 710) to determine the concentrations of target analyte list metals and the bioaccessibility of lead and arsenic.

1.1 Project Background

The QAPP, as approved by the United States (U.S.) Environmental Protection Agency (EPA), describes the organization, data quality objectives (DQOs), study design, analytical procedures, and quality assurance and quality control (QA/QC) procedures upon which the study was based.

This report presents final near-shore sediment and soil sampling locations, collection procedures and methodologies, QAPP modifications (changes) and deviations, and field data collected during the study. Activities described in this report were conducted under direct oversight of the EPA or their authorized representatives (CH2M Hill), in strict accordance with the QAPP and Special Use Permit #PWR LARO TCAI-009, issued by the U.S. Department of Interior, National Park Service (NPS). A copy of the Special Use Permit is included as Appendix A.

1.2 Site Description

The UCR Site, as defined within the June 2, 2006 Settlement Agreement, is the areal extent of hazardous substances contamination within the United States or adjacent to the UCR, including the Franklin D. Roosevelt Lake, from the U.S.-Canada border to the Grand Coulee Dam, and those areas in proximity to the contamination that are suitable and necessary for implementation of response actions. The study area for the Bossburg Flat Beach Refined Sediment and Soil Study was comprised of a subset of the broader UCR site that included near-shore sediments and soils in areas adjacent to the former YAM site, the former cable ferry landings, and along the east riverbank from Bossburg Flat Beach (river mile [RM] 716) to Evans Campground Beach (RM 710).

1.3 Sampling Overview

Unless otherwise noted in this report, during the field sampling program near-shore sediment and soil samples were collected from areas defined as decision units (DUs) using a variety of sample

techniques at locations specified in the QAPP. All samples were collected on U.S. Department of Interior (DOI) managed land, as the access agreement for the private property on a portion of UDU-06 was not obtained (see Section 3.0 Deviations and Modifications for further explanation).

Decision units for the study were defined as follows:

- Sediment decision unit (SDU)
- Upland decision unit (UDU)
- Ferry cable landing (sediment) decision unit (F-1 and F-2)

Sample collection techniques used are defined as follows:

- Incremental Composite Sampling (ICS) – collection of 30 increments of surface sediment or surface soil (0 to 15 cm [0 to 6 in.]) from pre-determined locations specified in the QAPP and composited into one ICS sample.
- X-ray fluorescence [XRF] field sampling – collection of discrete surface sediment or surface soil (0 to 15 cm [0 to 6 in.]) from pre-determined locations specified in the QAPP and taken to the field XRF laboratory for processing and analysis. Ten percent of these XRF samples were sent to the contract laboratory for confirmation of the field laboratory analysis.
- In-situ XRF analysis - a procedure in which the hand-held XRF analyzer is used in the field, within the DU(s) (i.e., no sample is collected out of the ground).
- Core sampling - collection of sediment or soil using a core sampling device (0 to 45 cm [0 to 18 in.]) from which three discrete samples were generated from each of three depth intervals: 0 to 15 cm (0 to 6 in.), 15 to 30 cm (6 to 12 in.), and 30 to 45 cm (12 to 18 in.). Core sample locations were determined by EPA based on their review of the field XRF data. The decision criteria communicated to AECOM by EPA on April 14, 2015, is as follows:
 1. Collect the core samples at the three highest XRF locations over 400 mg/kg or
 2. Collect core samples from locations where only one or two XRF samples exceed 400 mg/kg and select a core sample location based on visual observations of potential areas of interest or
 3. Collect core sample from randomly selected locations (using a random number generator) if no XRF samples screen over 400 mg/kg and no location chosen due to lack of visual evidence.

During the sampling program, samples were collected as follows:

- ICS Samples – a total of 26 ICS samples were collected from 16 DUs, including 10 SDUs and 6 UDUs. Samples were collected in triplicate from four SDUs and one UDU. Including all triplicate samples, a total of 18 composite samples for sediments and 8 composite samples for soil were collected. Each ICS sample was composed of 30 subsample increments for a total of 780 subsample increments collected for the study.

- Core Samples – A total of 135 discrete core samples were collected from 8 of the 10 SDUs, all the 6 UDUs, and from the former cable ferry landing area DU F-1. A total of 27 sediment cores and 18 soil cores were collected and three samples were generated from each core; one from each of three depth intervals 0 to 15 cm (0 to 6 in.), 15 to 30 cm (6 to 12 in.), and 30 to 45 cm (12 to 18 in.) for a total of 135 samples.
- XRF samples - 99 samples, including 55 samples from SDUs and 44 samples from UDUs, were collected and tested for lead at the field laboratory using a hand-held XRF analyzer.
- XRF in-situ readings - In-situ XRF analysis of lead was also conducted at 98 locations at three SDUs (SDU-07, SDU-09, and SDU-10) using a hand-held XRF analyzer in accordance with an EPA- and TAI-approved change order (see Section 3.0 below).

In addition, the following QA/QC samples were collected:

- 3 field split ICS composite samples (30 incremental subsamples per ICS composite sample)
- 4 EPA split ICS composite samples (30 incremental subsamples per composite sample)
- 14 field split core samples
- 20 EPA split core samples
- 24 XRF laboratory confirmation samples
- 2 XRF field split laboratory confirmation samples
- 3 XRF EPA split laboratory confirmation samples
- 50 equipment rinsate blank samples

Tables 1a through 1f summarizes sample collection data (i.e., station identification [ID], coordinates, and station type). Table 2 identifies the XRF samples that were sent to the laboratory for conformational testing. Table 3 identifies the locations where extra volume was collected for field and EPA split samples for each sample type (i.e., ICS, XRF, core). All split samples were generated by the laboratory following processing. No splits were generated in the field. Table 4 identifies the equipment rinsate blanks collected during sample collection. All split samples were sent to ALS in Kelso, WA for analysis and/or further processing prior to being sent to EPA's laboratory. Table 5 summarizes equipment rinsate blank sample information (i.e., ID, date of sample collection, and equipment type).

1.4 Project Staffing

Throughout the sampling program, AECOM utilized two field sampling teams (Team A and Team B) and one XRF team. Each field sampling team was comprised of three staff members, and the XRF team was comprised of two staff members. Roles and responsibilities are summarized below:

- The Field Supervisor (Mark Vetter, PG) was present at the Site or local field office throughout the sampling program and was responsible for managing all three teams, managing site safety, and communicating daily activities and questions to TAI and the AECOM project manager (Paul McCullough, PE).

- Field Sampling Team Leads (Team A -Anthony Palmieri, LG, RG; Team B – Eric Lilliwhite or Michelle Stegner) were responsible for communication with the Field Supervisor, day-to-day interactions with the EPA-approved observers, team safety, and assuring that the sampling was conducted in accordance with the QAPP.
- The XRF Team Lead (Amy Dahl, PhD) was responsible for the overall operations of the XRF Field Laboratory, which was located in a Box Truck at the Columbia Navigation office in Kettle Falls, WA. Additional responsibilities for the XRF Field Team Lead included performance or direct management of sample processing, chain-of-custody documentation, and sample shipment.
- Field Sampling Teams A and B were responsible for completing, monitoring, and documenting the sampling process, physical descriptions of conditions, and general observations under the guidance of the Sampling Team Leads and Field Supervisor. Each sampling team had one AECOM staff member who met the Secretary of Interior’s Professional Qualification Standards, as outlined in 36 Code of Federal Regulations (CFR) Part 61. Cultural monitoring for the sampling program was performed entirely by EPA-approved cultural resource monitors from the NPS and CCT.
- The XRF Team was responsible for processing the samples (sieving, drying, weighing, etc) and assisting the XRF Team Lead in her duties.

Office support for the study was provided by:

- Project Manager - Paul McCullough, PE
- Database Developer – Bradly Handziuk
- Laboratory Coordinator – Christine Gebel
- Geographic Information System Specialist – Cary Kindberg with periodic support by Seth Bergeson and Sharon Hou
- Principal Archaeologist – Sarah McDaniel, MA, RPA

1.5 Cultural Monitoring

In accordance with the protocols outlined in the Cultural Resources Coordination Plan (Appendix B of the QAPP), and as required by the NPS Special Use Permit, cultural resource monitors were present during implementation of the study. Cultural resources monitoring was provided by EPA-approved cultural resource monitors from NPS and CCT. Each field team was staffed with at least one cultural resource monitor throughout field sampling activities.

Activities conducted by cultural resource monitors included observing the area surrounding the sampling location and inspecting each increment collected. Each increment, XRF sample, and core sample was placed into a clear zip-top plastic bag and provided to the cultural resource monitor(s) for inspection prior to placing the increment (bag) into the field sample container (bucket). Only samples passing the cultural resources monitoring inspection were retained. Incremental subsamples were kept within individual clear zip-top bags within the designated bucket until all 30-subsamples were collected. Once it was verified that all 30 incremental subsamples were present, the individual bags were emptied into the bucket and composited.

Consistent with the Cultural Resources Coordination Plan (Appendix B of the QAPP), a confidential report presenting the results of archaeological monitoring activities and findings will be submitted to EPA under separate cover. To avoid vandalism and to restrict information about the location of archaeological sites, the Cultural Resources Monitoring Report is classified confidential pursuant to Section 304 of the National Historic Preservation Act, Section 9(a) of the Archaeological Resources Protection Act, and Washington State laws RCW 27.53.070 and RCW 42.56.300.

1.6 Technical Oversight and Observers

Technical oversight of the sampling activities was provided by the EPA or their designated subcontractor (CH2M Hill) throughout the project. Technical oversight personnel were present with both field sampling teams each day and were given the opportunity to observe all field tasks. AECOM personnel were made available for questions and discussions regarding field activities and consistency with the QAPP. The EPA technical oversight observers for this project are listed in the table below. Specific dates that individuals were at present at the site are noted in the AECOM Daily Reports (Appendix B).

**EPA Technical Oversight Personnel
(April 13 through May 8, 2014)**

Observer	Organization
Nicole Badon	CH2M Hill
Mark Endo	CH2M Hill
Reuben Greer	CH2M Hill
Cameron Irvine	CH2M Hill
John Kelly	CH2M Hill
Andrea LaTier	EPA
Monica Tonel	EPA
Matt Wilkening	EPA

In addition to EPA/CH2M Hill technical observers, cultural monitors and other observers were also present during the field sampling program. Names and affiliations of cultural resource monitors, observers, and visitors are provided in the table below. Specific dates that individuals were at present at the site are noted in the AECOM Daily Reports (Appendix B).

**Cultural Resource Monitors, Observers, and Visitors
(April 13 through May 8, 2014)**

Observer/Visitor	Organization
Jon Edwards	NPS Observer
Susan Ellis	CCT Cultural Resource Monitor
Keith Holliday	NPS Observer
Meghan Lyons	NPS Cultural Resource Monitor
Brent Martinez	CCT Visitor
Danica Romeyn	NPS Cultural Resource Monitor
Bill White	NPS Cultural Resource Monitor
Joe Wichmann	Citizens for a Clean Columbia - Visitor

2.0 Sampling Activities and Documentation

The following summarizes the scope of work, sampling activities, and documentation associated with the study.

2.1 Scope of Work

The scope of work for the study included the following:

- Collection of near-shore sediment and soil samples adjacent to and downgradient of the YAM site to refine exposure estimates and further inform risk evaluations for both human and ecological receptors within the UCR project area. Sample areas include near-shore sediment and soil in areas adjacent to the former YAM site, former cable ferry landings, and along the east riverbank from Bossburg Flat Beach (RM 716) to Evans Campground Beach (RM 710). Soil samples were collected, and splits produced when appropriate, using predefined multi-incremental (ICS) soil sampling design, and discrete sediment and soil sampling, as presented in the approved QAPP and Amendment No. 1.
- Collection of samples in 16 DUs, including 10 DUs for sediment and 6 DUs for soil (see Section 1.3 for sample definitions and depths and Section 2.2 for samples collected in each DU).
- Communication and coordination with property owners or land managers to schedule sampling activities. TAI was responsible for contacting property owner(s) and land managers to obtain permission to access and conduct soil sampling activities. TAI was also responsible for obtaining the Special Use Permit from the NPS.
- Maintenance of field records including field logbooks, photographic documentation, and field data forms.
- Positioning (i.e., x, y, and z coordinates) for each predefined ICS, discrete (XRF and soil core), and opportunity sample location, within DU and sampling area.
- Decontamination of sampling equipment in accordance with the QAPP.
- Collection of near-shore sediment and soil samples, sample labelling, storage, packaging and shipping to ALS in Kelso, Washington (laboratory) using defined chain of custody procedures. ALS was selected and contracted by TAI.
- Close coordination with TAI and ALS to ensure proper sampling containers were obtained, shipments tracked, and analyses performed.
- Preparation and submittal of this field investigation summary report to document field activities, modifications (changes) and deviations to the QAPP, and associated justifications.

2.2 Samples Collected

The following samples were collected as part of the sampling program:

- SDU-01: 1 ICS (30 increments); 9 XRF; and 9 core samples from 3 cores.
- SDU-02: 3 ICS (30 increments per ICS); 8 XRF; and 9 core samples from 3 cores.
- SDU-03: 3 ICS (30 increments per ICS); 4 XRF; and 9 core samples from 3 cores.
- SDU-04: 1 ICS (30 increments); 4 XRF; and 9 core samples from 3 cores.
- SDU-05: 1 ICS (30 increments); 9 XRF; and 9 core samples from 3 cores.
- SDU-06: 3 ICS (30 increments per ICS); 5 XRF and 9 core samples from 3 cores.
- SDU-07: 3 ICS (30 increments per ICS); 4 XRF and 9 core samples from 3 cores.
- SDU-08: 1 ICS (30 increments); 4 XRF; and 9 core samples from 3 cores.
- SDU-09: 1 ICS (30 increments); 4 XRF¹
- SDU-10: 1 ICS (30 increments); 4 XRF¹
- UDU-01: 1 ICS (30 increments); 7 XRF; and 9 core samples from 3 cores.
- UDU-02: 1 ICS (30 increments); 6 XRF; and 9 core samples from 3 cores.
- UDU-03: 1 ICS (30 increments); 8 XRF; and 9 core samples from 3 cores.
- UDU-04: 3 ICS (30 increments per ICS); 5 XRF; and 9 core samples from 3 cores.
- UDU-05: 1 ICS (30 increments); 13 XRF; and 9 core samples from 3 cores.
- UDU-06: 1 ICS (30 increments); 5 XRF; and 9 core samples from 3 cores.
- F-1: 9 core samples from 3 cores.
- F-2: 0 core samples from 0 cores.

Sampling locations for ICS, XRF, and core samples are presented in Tables 1a through 1f. Samples analyzed in the field laboratory using the XRF analyzer are identified in Appendix F (see Table F-1). XRF confirmation samples that were sent to ALS are summarized in Table 2. Field split samples and EPA split samples (collected by AECOM) are identified in Tables 3 and 4, respectively. Equipment rinsate blank samples are provided in Table 5.

2.3 Global Positioning System (GPS)

A handheld global positioning system (GPS) unit was used to find each sampling location using the procedures detailed in SOP-1 (Positioning at Sample Collection Areas) of the QAPP. The GPS system that was used consisted of Trimble R1 Global Navigation Satellite System (GNSS) receivers. To improve GPS accuracy, a satellite-based augmentation system (SBAS) using the Wide Area Augmentation System (WAAS) provided a real-time correction signal in the field with accuracies to better than 1 meter. The receiver connected via Bluetooth 2.1 to the Tablet PC. ESRI ArcPad 10.2 was used for GPS data collection, with an AECOM-customized

¹ Core samples were not collected from SDU-09, SDU-10, or F-2 due to concerns expressed by the CCT cultural resource monitor.

interface. As specified in the QAPP, the standard projection method that was used during field activities was the horizontal datum of World Geodetic System of 1984 (WGS 1984). The coordinates of each sampling location were uploaded to the GPS units prior to field sampling.

2.4 Field Documentation and Records

Field sampling methods and associated collection of field data were completed in accordance with the QAPP, and are not repeated in this report. Field documentation and records are provided in the following Appendices.

- Appendix A – Special Use Permit #PWR LARO TCAI-009
- Appendix B – AECOM Daily Reports
- Appendix C – QAPP Modifications and Deviations
- Appendix D – Chain-of-Custody Forms
- Appendix E – ALS Confirmation of Sample Receipt Forms
- Appendix F – XRF Field Reports (Field Lab and Insitu samples)
- Appendix G – Daily Tailgate H&S Meeting Attendance Forms
- Appendix H – Daily Logbook Entries
- Appendix I – Sample Collection Reports

2.5 Database

The data was submitted to the project database manager for incorporation into the database. The database includes a series of reports and queries to facilitate efficient access to these data, as shown below.

**Teck American Incorporated
Bossburg Flat Beach Refined Sediment and Soil Study**



Reports

Queries

Table 1a ICS Sed.	Field Splits with Sample Coordinates
Table 1b ICS Soil	EPA Splits with Sample Coordinates
Table 1c XRF Sed.	EPA Split COR Sample Coordinates
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Table F-3 XRF In Situ Report
Table F-4 Massing Run Log
Table F-5 Percent Solids

Appendix I Reports

Appendix I ICS Sample Report
Appendix I COR Sample Report
Appendix I XRF Sample Report

3.0 QAPP Modifications and Deviations

Eight modifications to the QAPP, documented as change requests, were processed for the study. Change requests and the approved modifications are summarized below. Documentation of change requests is provided in Appendix C.

Change Request No. 1 involved a revision to the western boundary of UDU-05 and the associated ICS and XRF sampling locations for this DU. The boundaries of UDU-05 and associated ICS and XRF sampling locations were revised to avoid sampling on the railroad right of way.

Change Request No. 2 involved the repositioning of three XRF sampling locations within UDU-01 (UDU-01-XRF-04, UDU-01-XRF-05, and UDU-01-XRF-06) because the original locations specified in the QAPP were found to be located outside of the UDU-01 boundary. The proper locations of these samples were accurately depicted on the figures in the QAPP. The figures in the QAPP were used to locate the revised sample coordinates.

Change Request No. 3 authorized the use of an oven to dry the XRF field samples prior to field analysis. Oven drying was necessary because the XRF samples did not air dry in a reasonable amount of time to facilitate selection of core sampling locations based on the results of the XRF analysis.

Change Request No. 4 modified the sample handling procedures for “wet” samples, as determined by the EPA/CH2M Hill technical observer. Upon the request of the EPA technical observer, wet samples were shipped to the laboratory in an individual zip-top bag, air dried, and weighed. The laboratory would then composite the individual wet sample(s) into the composite sample in consultation with TAI and EPA. As noted in Table C-1.1 of Appendix C, there were six incremental subsamples affected by Change Request No. 4 (SDU-05-19, SDU-10-RO5, UDU-06-04, UDU-06-16, UDU-06-17, and UDU-06-28).

Change Request No. 5 modified the boundaries of three DUs (SDU-04, SDU-07, and SDU-08) to avoid areas that were inundated by the lake or located on steep slopes (i.e., greater than 30-percent) and that were deemed unsafe to sample by the Field Sampling Team Lead in consultation with the EPA-approved on-site technical representative. New coordinates for sampling locations and new maps identifying the boundaries of the original DU and reconfigured DU were prepared by HDR using similar methods for randomly selecting sampling locations as were previously used in selecting the original sampling locations. Additionally, this change request authorized collection of triplicate ICS replicates at SDU-07 because triplicate replicates could not be obtained from SDU-09 due to cultural resource concerns raised during the course of the sampling program.

Change Request No. 6 authorized additional in-situ analysis of lead using a handheld XRF analyzer at two DUs (SDU-09 and SDU-10). This work was intended to aid in determining the approximate location of the west bank ferry landing, and was not intended to provide ‘definitive’

data. Direct measurements of near-shore sediments were made at the 30 increment sampling locations.

Change Request No. 7 provided supplemental field procedures in the event that primary and reserve ICS incremental sampling locations were exhausted (unsuccessful). Using this method, a new sampling location could be selected by moving in an upland direction perpendicular to the water's edge from the inundated/rejected sample until a new acceptable location on dry land was found. This procedure was used for eight locations within SDU-09 and ten locations within SDU-10 (see Table C-1.2 in Appendix C).

Change Request No. 8 was for resizing and relocating XRF and ICS increment coordinates within the boundaries of Bureau of Reclamation land within UDU-06. Redistribution of sampling locations was necessary because the access agreement with the landowner of UDU-06 could not be obtained. New coordinates for sampling locations and new maps identifying the boundaries of the original DU and resized DU were prepared by HDR using similar methods for randomly selecting sampling locations as were previously used in selecting the original sampling locations.

In addition to the above-noted modifications (change requests), a number of deviations were made in consultation with TAI and with the approval of EPA. Deviations included the following:

- A stainless steel hand auger or shovel was used to collect samples at a number of locations due to rocky conditions that prevented the use of the coring tool.
- Additional XRF confirmation samples were submitted to the laboratory to cover a broader range of lead concentrations, as measured by the field XRF device (see Appendix F).
- Core samples were not collected from SDU-09 and F-2 due to concerns expressed by the CCT cultural resource monitor. Core samples were not collected from SDU-10 pursuant to the QAPP.
- In situ XRF sampling was conducted at SDU-07 after a drop in water level exposed sediment that had been inundated during ICS and field laboratory XRF sampling. The in situ XRF measurements were made at locations along the recently exposed shoreline, rather than reselecting the ICS and XRF sampling locations in the newly exposed sediment.
- Because the core sampling met with refusal after multiple attempts, the full 30-45 cm interval for UDU-04-COR-01-003 and UDU-04-COR-03-003 could not be collected because of the presence of cobbles; instead, samples were collected from the 30-60 cm interval for UDU-04-COR-01-003 and the 30-43 cm interval for UDU-04-COR-03-003.

Details and supporting documents regarding modifications and deviations are included in Appendix C. This appendix contains the following summary tables:

- Table C-1 – Summary of Approved Change Requests
 - Table C-1.1 – Incremental samples submitted separately based on Change Request No. 4
 - Table C-1.2 – Samples Relocated based on Change Request No. 7
- Table C-2 – Summary of Deviations from QAPP
 - Table C-2.1 – Deviations from QAPP Procedures – Sample Collection
 - Table C-2.2 – Deviation from QAPP Procedure for XRF Confirmation Samples
- Table C-3 Reserve Locations Utilized²

² Sampling of reserve stations is not a deviation or modification to the QAPP but is included in the Appendix for completeness.

4.0 References

HDR. 2015a. Final Quality Assurance Project Plan Bossburg Flat Beach Refined Sediment and Soil Study. January 2015.

HDR. 2015b. Final Quality Assurance Project Plan for the Bossburg Flat Beach Refined Sediment and Soil Study. Amendment No. 1. March 2015.

Tables

Table 1a Actual Station Locations for Bossburg Flat Beach Refined Sediment and Soil Collection: Incremental Composite Sampling Stations for Sediment



Station ID	X UTM 11N*	Y UTM 11N*	Latitude**	Longitude**	Station Type	Collection Method
Sediment Decision Unit 1						
SDU-01-01	423630.844	5401600.757	48.762728	-118.039194	Primary	ICS
SDU-01-03	423561.0935	5401621.458	48.762906	-118.040147	Primary	ICS
SDU-01-04	423487.5363	5401630.903	48.762982	-118.041150	Primary	ICS
SDU-01-05	423606.1886	5401524.367	48.762038	-118.039516	Primary	ICS
SDU-01-06	423467.7621	5401598.514	48.762688	-118.041413	Primary	ICS
SDU-01-07	423546.6295	5401564.975	48.762396	-118.040334	Primary	ICS
SDU-01-09	423483.1916	5401602.384	48.762725	-118.041204	Primary	ICS
SDU-01-10	423618.442	5401607.412	48.762786	-118.039364	Primary	ICS
SDU-01-11	423578.5737	5401478.543	48.761622	-118.039883	Primary	ICS
SDU-01-12	423591.3448	5401567.336	48.762423	-118.039726	Primary	ICS
SDU-01-13	423500.8344	5401536.394	48.762133	-118.040951	Primary	ICS
SDU-01-14	423446.2824	5401580.596	48.762524	-118.041702	Primary	ICS
SDU-01-15	423497.6274	5401547.318	48.762231	-118.040997	Primary	ICS
SDU-01-16	423546.6431	5401622.761	48.762916	-118.040344	Primary	ICS
SDU-01-17	423474.3746	5401652.348	48.763173	-118.041333	Primary	ICS
SDU-01-18	423554.8629	5401525.288	48.762040	-118.040214	Primary	ICS
SDU-01-19	423574.6299	5401659.348	48.763248	-118.039970	Primary	ICS
SDU-01-20	423539.3972	5401588.883	48.762610	-118.040436	Primary	ICS
SDU-01-21	423504.0921	5401608.428	48.762781	-118.040920	Primary	ICS
SDU-01-22	423556.2292	5401551.037	48.762272	-118.040200	Primary	ICS
SDU-01-23	423547.9234	5401690.131	48.763522	-118.040339	Primary	ICS
SDU-01-24	423588.6346	5401546.525	48.762235	-118.039759	Primary	ICS
SDU-01-25	423563.4261	5401574.666	48.762485	-118.040107	Primary	ICS
SDU-01-26	423483.6623	5401615.732	48.762845	-118.041200	Primary	ICS
SDU-01-27	423592.5458	5401520.848	48.762005	-118.039701	Primary	ICS
SDU-01-28	423529.443	5401541.805	48.762185	-118.040563	Primary	ICS
SDU-01-29	423577.0298	5401458.945	48.761446	-118.039900	Primary	ICS
SDU-01-R01	423544.6347	5401479.69	48.761629	-118.040345	Reserve	ICS
SDU-01-R02	423608.2499	5401595.82	48.762681	-118.039501	Reserve	ICS
SDU-01-R03	423620.1929	5401632.543	48.763013	-118.039345	Reserve	ICS
Sediment Decision Unit 2						
SDU-02A-01	423365.9413	5401507.169	48.761854	-118.042781	Primary	ICS
SDU-02A-02	423475.3148	5401421.062	48.761093	-118.041277	Primary	ICS
SDU-02A-03	423440.985	5401312.006	48.760108	-118.041724	Primary	ICS
SDU-02A-04	423329.1377	5401424.802	48.761108	-118.043266	Primary	ICS
SDU-02A-05	423413.9593	5401404.551	48.760937	-118.042109	Primary	ICS
SDU-02A-06	423457.3046	5401408.509	48.760978	-118.041520	Primary	ICS
SDU-02A-07	423306.2225	5401432.624	48.761176	-118.043580	Primary	ICS
SDU-02A-08	423319.0162	5401437.619	48.761222	-118.043407	Primary	ICS
SDU-02A-09	423363.1268	5401531.167	48.762069	-118.042824	Primary	ICS
SDU-02A-10	423325.424	5401502.854	48.761810	-118.043332	Primary	ICS

*Coordinate System: UTM 11 North, Units: meters; Datum: WGS1984

**Geographic Coordinate System, Decimal degrees; Datum: WGS1984

Table 1a Actual Station Locations for Bossburg Flat Beach Refined Sediment and Soil Collection: Incremental Composite Sampling Stations for Sediment



Station ID	X UTM 11N*	Y UTM 11N*	Latitude**	Longitude**	Station Type	Collection Method
SDU-02A-11	423355.8691	5401381.483	48.760722	-118.042895	Primary	ICS
SDU-02A-12	423439.1975	5401459.259	48.761432	-118.041776	Primary	ICS
SDU-02A-13	423357.7844	5401431.333	48.761171	-118.042878	Primary	ICS
SDU-02A-15	423282.1321	5401438.133	48.761222	-118.043908	Primary	ICS
SDU-02A-16	423371.3085	5401377.476	48.760688	-118.042684	Primary	ICS
SDU-02A-17	423369.9693	5401426.198	48.761126	-118.042711	Primary	ICS
SDU-02A-18	423461.2853	5401323.649	48.760215	-118.041450	Primary	ICS
SDU-02A-19	423331.3752	5401445.011	48.761290	-118.043240	Primary	ICS
SDU-02A-20	423325.1257	5401475.38	48.761563	-118.043330	Primary	ICS
SDU-02A-21	423524.4982	5401394.785	48.760862	-118.040603	Primary	ICS
SDU-02A-22	423376.8515	5401528.775	48.762049	-118.042637	Primary	ICS
SDU-02A-23	423445.7585	5401480.308	48.761622	-118.041690	Primary	ICS
SDU-02A-24	423311.8661	5401476.038	48.761567	-118.043511	Primary	ICS
SDU-02A-26	423459.1017	5401368.287	48.760616	-118.041488	Primary	ICS
SDU-02A-27	423423.3045	5401421.213	48.761088	-118.041985	Primary	ICS
SDU-02A-28	423377.5298	5401505.947	48.761844	-118.042623	Primary	ICS
SDU-02A-29	423448.5004	5401285.478	48.759870	-118.041617	Primary	ICS
SDU-02A-R01	423374.9262	5401429.924	48.761160	-118.042644	Reserve	ICS
SDU-02A-R05	423424.5358	5401316.004	48.760141	-118.041948	Reserve	ICS
SDU-02A-R06	423397.5102	5401464.095	48.761470	-118.042344	Reserve	ICS
SDU-02B-01	423323.5918	5401524.359	48.762003	-118.043360	Primary	ICS
SDU-02B-02	423413.0686	5401381.784	48.760732	-118.042117	Primary	ICS
SDU-02B-03	423439.7313	5401460.955	48.761447	-118.041769	Primary	ICS
SDU-02B-04	423413.8774	5401430.311	48.761168	-118.042115	Primary	ICS
SDU-02B-05	423456.445	5401393.365	48.760841	-118.041529	Primary	ICS
SDU-02B-06	423466.72	5401430.136	48.761173	-118.041396	Primary	ICS
SDU-02B-07	423347.0395	5401550.689	48.762243	-118.043046	Primary	ICS
SDU-02B-08	423374.4447	5401419.78	48.761069	-118.042649	Primary	ICS
SDU-02B-09	423386.5705	5401403.057	48.760920	-118.042481	Primary	ICS
SDU-02B-10	423353.1126	5401440.817	48.761255	-118.042943	Primary	ICS
SDU-02B-11	423357.3101	5401352.975	48.760466	-118.042870	Primary	ICS
SDU-02B-12	423362.7025	5401521.729	48.761984	-118.042828	Primary	ICS
SDU-02B-13	423394.2109	5401419.005	48.761064	-118.042380	Primary	ICS
SDU-02B-14	423396.6821	5401453.7	48.761377	-118.042353	Primary	ICS
SDU-02B-15	423450.0666	5401358.938	48.760531	-118.041609	Primary	ICS
SDU-02B-16	423337.3744	5401373.601	48.760649	-118.043145	Primary	ICS
SDU-02B-17	423380.438	5401449.891	48.761340	-118.042573	Primary	ICS
SDU-02B-18	423457.9906	5401377.574	48.760699	-118.041505	Primary	ICS
SDU-02B-19	423462.2903	5401418.768	48.761070	-118.041454	Primary	ICS
SDU-02B-20	423382.9218	5401364.712	48.760574	-118.042524	Primary	ICS
SDU-02B-21	423413.2885	5401367.63	48.760604	-118.042111	Primary	ICS
SDU-02B-22	423344.278	5401361.698	48.760543	-118.043049	Primary	ICS

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Table 1a Actual Station Locations for Bossburg Flat Beach Refined Sediment and Soil Collection: Incremental Composite Sampling Stations for Sediment



Station ID	X UTM 11N*	Y UTM 11N*	Latitude**	Longitude**	Station Type	Collection Method
SDU-02B-23	423422.2577	5401514.362	48.761925	-118.042016	Primary	ICS
SDU-02B-24	423281.0986	5401417.25	48.761034	-118.043919	Primary	ICS
SDU-02B-25	423369.6065	5401562.307	48.762350	-118.042741	Primary	ICS
SDU-02B-26	423331.7464	5401451.677	48.761350	-118.043236	Primary	ICS
SDU-02B-27	423423.4099	5401395.224	48.760854	-118.041978	Primary	ICS
SDU-02B-28	423425.9904	5401352.995	48.760474	-118.041935	Primary	ICS
SDU-02B-29	423306.6169	5401407.494	48.760950	-118.043570	Primary	ICS
SDU-02B-30	423497.4723	5401354.654	48.760498	-118.040963	Primary	ICS
SDU-02C-01	423496.5472	5401381.424	48.760739	-118.040981	Primary	ICS
SDU-02C-02	423437.2291	5401489.513	48.761704	-118.041808	Primary	ICS
SDU-02C-03	423408.3815	5401337.721	48.760335	-118.042172	Primary	ICS
SDU-02C-04	423426.2501	5401301.173	48.760008	-118.041922	Primary	ICS
SDU-02C-05	423473.3862	5401444.365	48.761302	-118.041308	Primary	ICS
SDU-02C-07	423343.1515	5401404.696	48.760929	-118.043072	Primary	ICS
SDU-02C-08	423406.6718	5401497.615	48.761773	-118.042225	Primary	ICS
SDU-02C-09	423358.8123	5401463.185	48.761457	-118.042870	Primary	ICS
SDU-02C-10	423398.7215	5401528.357	48.762048	-118.042339	Primary	ICS
SDU-02C-11	423362.7675	5401481.905	48.761626	-118.042820	Primary	ICS
SDU-02C-12	423386.1196	5401505.298	48.761839	-118.042506	Primary	ICS
SDU-02C-13	423380.7029	5401380.75	48.760718	-118.042557	Primary	ICS
SDU-02C-14	423397.733	5401391.883	48.760821	-118.042327	Primary	ICS
SDU-02C-15	423429.1749	5401362.265	48.760558	-118.041894	Primary	ICS
SDU-02C-16	423463.5869	5401464.104	48.761478	-118.041445	Primary	ICS
SDU-02C-17	423409.7599	5401478.769	48.761604	-118.042180	Primary	ICS
SDU-02C-18	423445.551	5401465.2	48.761486	-118.041690	Primary	ICS
SDU-02C-19	423514.4976	5401376.565	48.760697	-118.040736	Primary	ICS
SDU-02C-20	423391.1309	5401347.702	48.760422	-118.042409	Primary	ICS
SDU-02C-21	423516.1871	5401396.665	48.760878	-118.040716	Primary	ICS
SDU-02C-22	423375.8879	5401518.959	48.761961	-118.042648	Primary	ICS
SDU-02C-25	423274.8057	5401428.674	48.761136	-118.044006	Primary	ICS
SDU-02C-26	423345.9175	5401390.292	48.760800	-118.043032	Primary	ICS
SDU-02C-27	423471.6177	5401356.387	48.760510	-118.041315	Primary	ICS
SDU-02C-28	423485.4331	5401413.099	48.761022	-118.041138	Primary	ICS
SDU-02C-29	423453.3023	5401373.602	48.760663	-118.041568	Primary	ICS
SDU-02C-30	423425.3519	5401335.233	48.760315	-118.041941	Primary	ICS
SDU-02C-R01	423438.6353	5401417.077	48.761052	-118.041775	Reserve	ICS
SDU-02C-R02	423497.6261	5401423.537	48.761118	-118.040974	Reserve	ICS
SDU-02C-R04	423374.1695	5401370.088	48.760622	-118.042644	Reserve	ICS
Sediment Decision Unit 3						
SDU-03A-01	423074.6009	5401083.0443	48.758003	-118.046665	Primary	ICS
SDU-03A-02	423046.1164	5401075.296	48.757930	-118.047052	Primary	ICS
SDU-03A-03	422892.831	5400942.8606	48.756720	-118.049112	Primary	ICS

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Station ID	X UTM 11N*	Y UTM 11N*	Latitude**	Longitude**	Station Type	Collection Method
SDU-03A-04	422977.574	5401017.64	48.757403	-118.047973	Primary	ICS
SDU-03A-05	422953.9822	5400993.739	48.757185	-118.048290	Primary	ICS
SDU-03A-06	423083.501	5401091.5	48.758080	-118.046546	Primary	ICS
SDU-03A-07	422881.5135	5400934.8505	48.756646	-118.049264	Primary	ICS
SDU-03A-08	422965.4171	5401004.46	48.757283	-118.048136	Primary	ICS
SDU-03A-09	422930.9801	5400977.638	48.757037	-118.048600	Primary	ICS
SDU-03A-10	422948.5738	5400993.522	48.757182	-118.048363	Primary	ICS
SDU-03A-11	422960.7385	5401013.461	48.757363	-118.048201	Primary	ICS
SDU-03A-12	422938.7076	5400982.31	48.757080	-118.048495	Primary	ICS
SDU-03A-13	423025.3107	5401056.609	48.757759	-118.047331	Primary	ICS
SDU-03A-14	422886.4067	5400944.452	48.756733	-118.049200	Primary	ICS
SDU-03A-15	423025.6607	5401050.236	48.757702	-118.047325	Primary	ICS
SDU-03A-16	422910.7876	5400958.4827	48.756862	-118.048871	Primary	ICS
SDU-03A-17	422925.4217	5400985.247	48.757105	-118.048677	Primary	ICS
SDU-03A-18	422902.5555	5400957.132	48.756849	-118.048982	Primary	ICS
SDU-03A-19	422983.9342	5401015.2661	48.757382	-118.047886	Primary	ICS
SDU-03A-20	423001.1959	5401035.844	48.757569	-118.047655	Primary	ICS
SDU-03A-21	422889.9655	5400951.476	48.756797	-118.049153	Primary	ICS
SDU-03A-22	422927.4036	5400971.821	48.756984	-118.048647	Primary	ICS
SDU-03A-23	423078.1306	5401090.091	48.758067	-118.046619	Primary	ICS
SDU-03A-24	422876.6289	5400940.087	48.756693	-118.049332	Primary	ICS
SDU-03A-25	423070.7457	5401093.519	48.758097	-118.046720	Primary	ICS
SDU-03A-26	423067.3834	5401085.687	48.758026	-118.046764	Primary	ICS
SDU-03A-27	423001.7889	5401028.3262	48.757502	-118.047646	Primary	ICS
SDU-03A-28	422990.071	5401023.098	48.757453	-118.047804	Primary	ICS
SDU-03A-29	423091.2702	5401096.308	48.758124	-118.046441	Primary	ICS
SDU-03A-30	423036.8621	5401056.281	48.757758	-118.047174	Primary	ICS
SDU-03B-01	422980.8362	5401019.305	48.757418	-118.047929	Primary	ICS
SDU-03B-02	422986.6886	5401023.927	48.757460	-118.047850	Primary	ICS
SDU-03B-03	423021.4102	5401046.163	48.757665	-118.047382	Primary	ICS
SDU-03B-04	423028.197	5401060.503	48.757795	-118.047293	Primary	ICS
SDU-03B-05	423009.7409	5401036.9198	48.757580	-118.047539	Primary	ICS
SDU-03B-06	423044.9456	5401075.95	48.757936	-118.047068	Primary	ICS
SDU-03B-07	422892.8666	5400942.884	48.756720	-118.049111	Primary	ICS
SDU-03B-08	422919.9448	5400965.0745	48.756923	-118.048747	Primary	ICS
SDU-03B-09	423022.7315	5401051.03	48.757709	-118.047365	Primary	ICS
SDU-03B-10	422875.0106	5400940.133	48.756693	-118.049354	Primary	ICS
SDU-03B-11	423033.146	5401055.805	48.757753	-118.047224	Primary	ICS
SDU-03B-12	423040.9814	5401066.338	48.757849	-118.047120	Primary	ICS
SDU-03B-13	423036.7277	5401059.306	48.757785	-118.047176	Primary	ICS
SDU-03B-14	422934.2575	5400982.52	48.757081	-118.048556	Primary	ICS
SDU-03B-15	422963.5436	5401012.843	48.757358	-118.048163	Primary	ICS

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Station ID	X UTM 11N*	Y UTM 11N*	Latitude**	Longitude**	Station Type	Collection Method
SDU-03B-16	422921.4412	5400975.301	48.757015	-118.048729	Primary	ICS
SDU-03B-17	422895.7387	5400952.352	48.756805	-118.049074	Primary	ICS
SDU-03B-18	423049.9674	5401077.134	48.757947	-118.046999	Primary	ICS
SDU-03B-19	422938.6747	5400979.154	48.757052	-118.048495	Primary	ICS
SDU-03B-20	423085.8534	5401098.639	48.758145	-118.046515	Primary	ICS
SDU-03B-21	422904.9662	5400959.699	48.756873	-118.048950	Primary	ICS
SDU-03B-22	423013.7013	5401048.796	48.757687	-118.047488	Primary	ICS
SDU-03B-23	422960.667	5401006.118	48.757297	-118.048201	Primary	ICS
SDU-03B-24	422992.6054	5401022.0554	48.757444	-118.047770	Primary	ICS
SDU-03B-25	423083.7405	5401090.5151	48.758071	-118.046543	Primary	ICS
SDU-03B-26	422926.236	5400982.512	48.757080	-118.048665	Primary	ICS
SDU-03B-27	422966.329	5401001.8887	48.757260	-118.048123	Primary	ICS
SDU-03B-28	422898.5764	5400958.005	48.756857	-118.049037	Primary	ICS
SDU-03B-29	422976.0489	5401012.382	48.757355	-118.047993	Primary	ICS
SDU-03B-30	422948.6318	5400999.494	48.757236	-118.048363	Primary	ICS
SDU-03C-01	423036.258	5401060.706	48.757797	-118.047183	Primary	ICS
SDU-03C-02	422986.5505	5401024.921	48.757469	-118.047852	Primary	ICS
SDU-03C-03	422972.2283	5401015.581	48.757384	-118.048045	Primary	ICS
SDU-03C-04	423036.7412	5401066.103	48.757846	-118.047177	Primary	ICS
SDU-03C-05	422885.3636	5400945.572	48.756743	-118.049214	Primary	ICS
SDU-03C-06	423019.4646	5401042.5437	48.757632	-118.047408	Primary	ICS
SDU-03C-07	423067.9103	5401079.035	48.757966	-118.046756	Primary	ICS
SDU-03C-08	423008.3063	5401036.051	48.757572	-118.047559	Primary	ICS
SDU-03C-09	423049.5425	5401070.3134	48.757885	-118.047004	Primary	ICS
SDU-03C-10	423087.5042	5401096.019	48.758121	-118.046492	Primary	ICS
SDU-03C-11	422949.8004	5400997.882	48.757222	-118.048347	Primary	ICS
SDU-03C-12	422924.522	5400976.805	48.757029	-118.048687	Primary	ICS
SDU-03C-13	423050.2207	5401075.115	48.757929	-118.046996	Primary	ICS
SDU-03C-14	422954.6463	5401009.867	48.757330	-118.048284	Primary	ICS
SDU-03C-15	423010.7234	5401042.769	48.757633	-118.047527	Primary	ICS
SDU-03C-16	423023.4044	5401056.867	48.757761	-118.047357	Primary	ICS
SDU-03C-17	423063.6804	5401084.215	48.758012	-118.046814	Primary	ICS
SDU-03C-18	422899.6116	5400958.323	48.756860	-118.049023	Primary	ICS
SDU-03C-19	422957.6026	5401001.917	48.757259	-118.048242	Primary	ICS
SDU-03C-20	423078.0252	5401099.884	48.758155	-118.046622	Primary	ICS
SDU-03C-21	422906.5379	5400959.685	48.756873	-118.048929	Primary	ICS
SDU-03C-22	423079.9233	5401093.279	48.758096	-118.046595	Primary	ICS
SDU-03C-23	422978.4225	5401011.2871	48.757346	-118.047960	Primary	ICS
SDU-03C-24	422917.1502	5400964.564	48.756918	-118.048785	Primary	ICS
SDU-03C-25	423070.9113	5401086.408	48.758033	-118.046716	Primary	ICS
SDU-03C-26	422935.2778	5400985.601	48.757109	-118.048543	Primary	ICS
SDU-03C-27	422887.1182	5400939.376	48.756688	-118.049189	Primary	ICS

*Coordinate System: UTM 11 North, Units: meters; Datum: WGS1984

**Geographic Coordinate System, Decimal degrees; Datum: WGS1984

Table 1a Actual Station Locations for Bossburg Flat Beach Refined Sediment and Soil Collection: Incremental Composite Sampling Stations for Sediment



Station ID	X UTM 11N*	Y UTM 11N*	Latitude**	Longitude**	Station Type	Collection Method
SDU-03C-28	423055.8233	5401077.229	48.757948	-118.046920	Primary	ICS
SDU-03C-29	423031.0184	5401063.652	48.757823	-118.047255	Primary	ICS
SDU-03C-30	422962.4279	5401012.218	48.757352	-118.048178	Primary	ICS
Sediment Decision Unit 4						
SDU-04-01	422642.4544	5400686.2301	48.754380	-118.052470	Primary	ICS
SDU-04-02	422686.8503	5400780.1904	48.755231	-118.051883	Primary	ICS
SDU-04-03	422635.9182	5400708.9214	48.754584	-118.052563	Primary	ICS
SDU-04-04	422657.5155	5400728.4612	48.754762	-118.052273	Primary	ICS
SDU-04-05	422609.1973	5400643.4906	48.753992	-118.052914	Primary	ICS
SDU-04-06	422621.3075	5400673.2308	48.754261	-118.052755	Primary	ICS
SDU-04-07	422633.9309	5400698.8015	48.754492	-118.052588	Primary	ICS
SDU-04-08	422597.2509	5400617.9209	48.753760	-118.053072	Primary	ICS
SDU-04-09	422610.4005	5400664.822	48.754184	-118.052902	Primary	ICS
SDU-04-11	422622.5009	5400662.7728	48.754167	-118.052737	Primary	ICS
SDU-04-12	422600.4578	5400636.4184	48.753927	-118.053032	Primary	ICS
SDU-04-13	422672.1642	5400766.5371	48.755106	-118.052081	Primary	ICS
SDU-04-14	422617.2235	5400628.9754	48.753862	-118.052802	Primary	ICS
SDU-04-15	422655.0718	5400741.4856	48.754879	-118.052308	Primary	ICS
SDU-04-16	422614.9399	5400617.9	48.753762	-118.052831	Primary	ICS
SDU-04-17	422624.7772	5400690.704	48.754418	-118.052711	Primary	ICS
SDU-04-18	422682.538	5400770.1108	48.755140	-118.051940	Primary	ICS
SDU-04-19	422656.1888	5400714.1608	48.754633	-118.052288	Primary	ICS
SDU-04-20	422645.4187	5400699.31	48.754498	-118.052432	Primary	ICS
SDU-04-21	422605.6303	5400606.0595	48.753655	-118.052956	Primary	ICS
SDU-04-22	422677.2509	5400747.2603	48.754934	-118.052008	Primary	ICS
SDU-04-23	422619.4217	5400651.0581	48.754061	-118.052776	Primary	ICS
SDU-04-24	422664.7454	5400756.9475	48.755019	-118.052180	Primary	ICS
SDU-04-25	422640.5372	5400720.9214	48.754692	-118.052502	Primary	ICS
SDU-04-26	422697.7252	5400775.397	48.755189	-118.051735	Primary	ICS
SDU-04-27	422668.4954	5400732.3942	48.754799	-118.052124	Primary	ICS
SDU-04-28	422605.408	5400624.7373	48.753823	-118.052962	Primary	ICS
SDU-04-29	422646.0041	5400730.9797	48.754783	-118.052430	Primary	ICS
SDU-04-30	422665.8483	5400745.6921	48.754918	-118.052163	Primary	ICS
SDU-04-R04	422677.3478	5400757.5186	48.755026	-118.052008	Reserve	ICS
Sediment Decision Unit 5						
SDU-05-01	424472.2588	5395156.32	48.704866	-118.026566	Primary	ICS
SDU-05-02	424399.9234	5395020.873	48.703639	-118.027524	Primary	ICS
SDU-05-03	424464.4609	5395247.374	48.705684	-118.026689	Primary	ICS
SDU-05-04	424423.7776	5394887.569	48.702442	-118.027176	Primary	ICS
SDU-05-05	424366.5628	5395269.89	48.705874	-118.028023	Primary	ICS
SDU-05-06	424405.1138	5395202.618	48.705274	-118.027487	Primary	ICS
SDU-05-07	424749.818	5395036.863	48.703825	-118.022772	Primary	ICS

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**Geographic Coordinate System, Decimal degrees; Datum: WGS1984

Table 1a Actual Station Locations for Bossburg Flat Beach Refined Sediment and Soil Collection: Incremental Composite Sampling Stations for Sediment



Station ID	X UTM 11N*	Y UTM 11N*	Latitude**	Longitude**	Station Type	Collection Method
SDU-05-09	424415.3321	5395097.089	48.704326	-118.027329	Primary	ICS
SDU-05-10	424335.3782	5395243.987	48.705638	-118.028442	Primary	ICS
SDU-05-11	424501.8413	5395031.62	48.703748	-118.026141	Primary	ICS
SDU-05-12	424386.7557	5395194.705	48.705201	-118.027735	Primary	ICS
SDU-05-13	424449.7462	5395051.431	48.703919	-118.026853	Primary	ICS
SDU-05-14	424420.6252	5395085.72	48.704224	-118.027255	Primary	ICS
SDU-05-16	424308.6204	5395258.431	48.705764	-118.028808	Primary	ICS
SDU-05-17	424339.8758	5395210.751	48.705339	-118.028375	Primary	ICS
SDU-05-19	424508.5721	5395400.728	48.707068	-118.026117	Primary	ICS
SDU-05-20	424326.1336	5395031.863	48.703729	-118.028529	Primary	ICS
SDU-05-21	424485.0279	5395041.344	48.703833	-118.026371	Primary	ICS
SDU-05-22	424414.2319	5394867.404	48.702260	-118.027302	Primary	ICS
SDU-05-23	424408.7182	5395150.387	48.704805	-118.027428	Primary	ICS
SDU-05-25	424443.8173	5395267.287	48.705860	-118.026973	Primary	ICS
SDU-05-26	424441.2135	5394892.315	48.702487	-118.026939	Primary	ICS
SDU-05-27	424469.8923	5395323.249	48.706367	-118.026629	Primary	ICS
SDU-05-28	424563.4062	5394993.913	48.703416	-118.025298	Primary	ICS
SDU-05-29	424541.0958	5394951.784	48.703034	-118.025593	Primary	ICS
SDU-05-R01	424362.833	5395131.717	48.704631	-118.028048	Reserve	ICS
SDU-05-R03	424293.3115	5395212.916	48.705353	-118.029008	Reserve	ICS
SDU-05-R04	424699.0934	5395181.356	48.705118	-118.023488	Reserve	ICS
SDU-05-R05	424717.1295	5395166.724	48.704989	-118.023240	Reserve	ICS
SDU-05-R06	424431.6156	5395109.465	48.704439	-118.027110	Reserve	ICS
Sediment Decision Unit 6						
SDU-06A-01	425237.0988	5393946.6026	48.694077	-118.015953	Primary	ICS
SDU-06A-03	425306.9043	5393826.0909	48.693001	-118.014983	Primary	ICS
SDU-06A-04	425212.577	5394072.5691	48.695207	-118.016309	Primary	ICS
SDU-06A-05	425302.2029	5393747.9372	48.692298	-118.015032	Primary	ICS
SDU-06A-06	425241.8433	5393997.4824	48.694535	-118.015898	Primary	ICS
SDU-06A-07	425240.7909	5394049.6066	48.695004	-118.015921	Primary	ICS
SDU-06A-08	425301.4362	5393654.3646	48.691456	-118.015026	Primary	ICS
SDU-06A-09	425235.9352	5394038.0471	48.694899	-118.015985	Primary	ICS
SDU-06A-10	425308.2328	5393728.4039	48.692123	-118.014947	Primary	ICS
SDU-06A-11	425155.5715	5394142.983	48.695833	-118.017096	Primary	ICS
SDU-06A-12	425241.4351	5393964.5999	48.694239	-118.015897	Primary	ICS
SDU-06A-13	425285.1127	5393850.9836	48.693222	-118.015283	Primary	ICS
SDU-06A-14	425254.9624	5393984.9946	48.694424	-118.015717	Primary	ICS
SDU-06A-15	425304.4309	5393763.1582	48.692435	-118.015005	Primary	ICS
SDU-06A-16	425265.2443	5393952.8871	48.694137	-118.015572	Primary	ICS
SDU-06A-17	425285.9121	5393728.6426	48.692122	-118.015250	Primary	ICS
SDU-06A-18	425227.667	5394008.9331	48.694636	-118.016092	Primary	ICS
SDU-06A-19	425260.4613	5393887.4297	48.693547	-118.015625	Primary	ICS

*Coordinate System: UTM 11 North, Units: meters; Datum: WGS1984

**Geographic Coordinate System, Decimal degrees; Datum: WGS1984

Table 1a Actual Station Locations for Bossburg Flat Beach Refined Sediment and Soil Collection: Incremental Composite Sampling Stations for Sediment



Station ID	X UTM 11N*	Y UTM 11N*	Latitude**	Longitude**	Station Type	Collection Method
SDU-06A-20	425219.5552	5394025.8899	48.694788	-118.016206	Primary	ICS
SDU-06A-21	425164.4021	5394137.827	48.695788	-118.016975	Primary	ICS
SDU-06A-22	425314.9157	5393749.9378	48.692317	-118.014860	Primary	ICS
SDU-06A-23	425282.194	5393883.9506	48.693519	-118.015329	Primary	ICS
SDU-06A-24	425298.7941	5393737.8437	48.692206	-118.015077	Primary	ICS
SDU-06A-25	425140.072	5394162.9738	48.696011	-118.017310	Primary	ICS
SDU-06A-26	425283.2484	5393830.2536	48.693036	-118.015305	Primary	ICS
SDU-06A-27	425190.6792	5394114.6705	48.695583	-118.016614	Primary	ICS
SDU-06A-28	425230.1302	5394052.5651	48.695029	-118.016067	Primary	ICS
SDU-06A-29	425302.3951	5393816.2808	48.692912	-118.015042	Primary	ICS
SDU-06A-30	425314.38	5393791.6704	48.692692	-118.014875	Primary	ICS
SDU-06A-R03	425231.2331	5393992.5218	48.694489	-118.016041	Reserve	ICS
SDU-06B-01	425304.618	5393706.6387	48.691926	-118.014992	Primary	ICS
SDU-06B-02	425268.86	5393883.0397	48.693509	-118.015510	Primary	ICS
SDU-06B-03	425303.4936	5393734.4188	48.692176	-118.015013	Primary	ICS
SDU-06B-04	425129.6137	5394178.0994	48.696146	-118.017455	Primary	ICS
SDU-06B-05	425299.2851	5393658.798	48.691496	-118.015056	Primary	ICS
SDU-06B-06	425233.4174	5394055.708	48.695058	-118.016023	Primary	ICS
SDU-06B-07	425283.6715	5393741.296	48.692236	-118.015283	Primary	ICS
SDU-06B-08	425280.2309	5393697.1891	48.691839	-118.015322	Primary	ICS
SDU-06B-09	425189.4088	5394112.8045	48.695566	-118.016631	Primary	ICS
SDU-06B-10	425280.9973	5393877.5699	48.693461	-118.015344	Primary	ICS
SDU-06B-11	425247.2838	5393905.1178	48.693705	-118.015807	Primary	ICS
SDU-06B-12	425146.9404	5394155.7605	48.695947	-118.017216	Primary	ICS
SDU-06B-13	425233.4338	5394008.6061	48.694634	-118.016014	Primary	ICS
SDU-06B-14	425307.6441	5393819.1444	48.692939	-118.014971	Primary	ICS
SDU-06B-15	425278.7656	5393850.6426	48.693219	-118.015369	Primary	ICS
SDU-06B-16	425306.0906	5393746.4357	48.692285	-118.014979	Primary	ICS
SDU-06B-17	425119.1733	5394180.1217	48.696163	-118.017598	Primary	ICS
SDU-06B-18	425248.7401	5393997.1643	48.694533	-118.015804	Primary	ICS
SDU-06B-19	425257.0352	5394003.8069	48.694594	-118.015692	Primary	ICS
SDU-06B-20	425208.2075	5394095.4384	48.695412	-118.016372	Primary	ICS
SDU-06B-21	425128.365	5394167.1495	48.696048	-118.017470	Primary	ICS
SDU-06B-22	425205.7787	5394080.2589	48.695275	-118.016403	Primary	ICS
SDU-06B-23	425264.5051	5393902.6915	48.693685	-118.015573	Primary	ICS
SDU-06B-24	425181.2824	5394119.7848	48.695628	-118.016743	Primary	ICS
SDU-06B-25	425177.1019	5394109.1339	48.695532	-118.016798	Primary	ICS
SDU-06B-26	425242.8779	5394049.3563	48.695002	-118.015893	Primary	ICS
SDU-06B-27	425291.0054	5393687.2825	48.691751	-118.015174	Primary	ICS
SDU-06B-28	425232.9191	5394036.924	48.694889	-118.016026	Primary	ICS
SDU-06B-29	425250.8889	5393972.8163	48.694314	-118.015770	Primary	ICS
SDU-06B-30	425296.4058	5393674.0828	48.691633	-118.015098	Primary	ICS

*Coordinate System: UTM 11 North, Units: meters; Datum: WGS1984

**Geographic Coordinate System, Decimal degrees; Datum: WGS1984

Table 1a Actual Station Locations for Bossburg Flat Beach Refined Sediment and Soil Collection: Incremental Composite Sampling Stations for Sediment



Station ID	X UTM 11N*	Y UTM 11N*	Latitude**	Longitude**	Station Type	Collection Method
SDU-06C-01	425179.0807	5394130.6343	48.695725	-118.016775	Primary	ICS
SDU-06C-02	425248.9	5393985.5237	48.694428	-118.015800	Primary	ICS
SDU-06C-03	425222.0089	5394019.8828	48.694734	-118.016171	Primary	ICS
SDU-06C-04	425298.3634	5393857.6477	48.693284	-118.015104	Primary	ICS
SDU-06C-05	425305.1656	5393823.0333	48.692973	-118.015006	Primary	ICS
SDU-06C-06	425284.2078	5393859.3723	48.693298	-118.015297	Primary	ICS
SDU-06C-07	425308.0756	5393770.2752	48.692499	-118.014957	Primary	ICS
SDU-06C-08	425200.4662	5394087.3161	48.695338	-118.016476	Primary	ICS
SDU-06C-09	425286.9699	5393834.376	48.693073	-118.015255	Primary	ICS
SDU-06C-11	425238.9674	5394048.1364	48.694990	-118.015946	Primary	ICS
SDU-06C-12	425271.97	5393861.5794	48.693316	-118.015464	Primary	ICS
SDU-06C-13	425257.5847	5393912.8923	48.693776	-118.015669	Primary	ICS
SDU-06C-14	425300.8781	5393758.9372	48.692396	-118.015052	Primary	ICS
SDU-06C-15	425245.6695	5393960.2759	48.694201	-118.015839	Primary	ICS
SDU-06C-16	425226.5972	5394048.2767	48.694990	-118.016114	Primary	ICS
SDU-06C-17	425296.62	5393694.123	48.691813	-118.015099	Primary	ICS
SDU-06C-18	425132.3606	5394167.3868	48.696050	-118.017416	Primary	ICS
SDU-06C-19	425254.8407	5393938.9106	48.694010	-118.015711	Primary	ICS
SDU-06C-20	425316.1068	5393779.0007	48.692579	-118.014849	Primary	ICS
SDU-06C-21	425285.5664	5393684.2054	48.691722	-118.015247	Primary	ICS
SDU-06C-22	425144.9874	5394157.4047	48.695962	-118.017243	Primary	ICS
SDU-06C-23	425240.1748	5393972.4378	48.694310	-118.015916	Primary	ICS
SDU-06C-24	425302.5149	5393680.0321	48.691687	-118.015016	Primary	ICS
SDU-06C-25	425270.6885	5393904.4058	48.693701	-118.015489	Primary	ICS
SDU-06C-26	425221.7552	5394067.6016	48.695163	-118.016183	Primary	ICS
SDU-06C-27	425281.6421	5393716.233	48.692010	-118.015306	Primary	ICS
SDU-06C-28	425247.8149	5393907.8425	48.693729	-118.015800	Primary	ICS
SDU-06C-29	425260.7395	5393901.1865	48.693671	-118.015624	Primary	ICS
SDU-06C-30	425304.3776	5393669.3183	48.691591	-118.014989	Primary	ICS
SDU-06C-R05	425278.3743	5393893.3149	48.693602	-118.015383	Reserve	ICS

Sediment Decision Unit 7

SDU-07A-01	425020.3125	5392771.1231	48.683478	-118.018685	Primary	ICS
SDU-07A-02	425181.7024	5392763.3813	48.683427	-118.016491	Primary	ICS
SDU-07A-03	425269.7817	5393050.1925	48.686018	-118.015347	Primary	ICS
SDU-07A-04	425177.406	5392982.5049	48.685398	-118.016589	Primary	ICS
SDU-07A-05	425031.9724	5392801.4254	48.683752	-118.018532	Primary	ICS
SDU-07A-06	425229.3097	5392874.6989	48.684434	-118.015865	Primary	ICS
SDU-07A-07	425024.6398	5392755.9725	48.683342	-118.018624	Primary	ICS
SDU-07A-08	425166.2865	5392982.4512	48.685396	-118.016740	Primary	ICS
SDU-07A-09	425183.4697	5392823.9917	48.683973	-118.016478	Primary	ICS
SDU-07A-10	425137.8777	5392910.3341	48.684744	-118.017113	Primary	ICS
SDU-07A-11	425272.3049	5393020.2715	48.685749	-118.015307	Primary	ICS

*Coordinate System: UTM 11 North, Units: meters; Datum: WGS1984

**Geographic Coordinate System, Decimal degrees; Datum: WGS1984

Table 1a Actual Station Locations for Bossburg Flat Beach Refined Sediment and Soil Collection: Incremental Composite Sampling Stations for Sediment



Station ID	X UTM 11N*	Y UTM 11N*	Latitude**	Longitude**	Station Type	Collection Method
SDU-07A-12	425228.6074	5392897.0206	48.684635	-118.015878	Primary	ICS
SDU-07A-13	425239.4078	5392955.4847	48.685162	-118.015742	Primary	ICS
SDU-07A-14	425071.4912	5392618.7331	48.682113	-118.017962	Primary	ICS
SDU-07A-15	424967.4717	5392717.5847	48.682990	-118.019393	Primary	ICS
SDU-07A-16	425031.5458	5392764.025	48.683415	-118.018531	Primary	ICS
SDU-07A-17	425058.0265	5392832.7579	48.684037	-118.018184	Primary	ICS
SDU-07A-18	425081.3393	5392672.1257	48.682595	-118.017838	Primary	ICS
SDU-07A-19	425076.1735	5392631.4623	48.682228	-118.017901	Primary	ICS
SDU-07A-20	425144.6036	5392745.356	48.683261	-118.016992	Primary	ICS
SDU-07A-21	425009.6691	5392737.3741	48.683173	-118.018824	Primary	ICS
SDU-07A-22	425246.7737	5392921.4927	48.684857	-118.015636	Primary	ICS
SDU-07A-23	425288.3712	5393045.5958	48.685979	-118.015093	Primary	ICS
SDU-07A-24	425269.6569	5392951.0893	48.685126	-118.015331	Primary	ICS
SDU-07A-25	425104.2935	5392683.8673	48.682703	-118.017528	Primary	ICS
SDU-07A-26	425267.7695	5393002.6313	48.685590	-118.015366	Primary	ICS
SDU-07A-27	425202.0354	5392838.9224	48.684109	-118.016229	Primary	ICS
SDU-07A-28	425160.7387	5392797.7609	48.683734	-118.016782	Primary	ICS
SDU-07A-29	425070.686	5392857.6011	48.684262	-118.018016	Primary	ICS
SDU-07A-30	425160.977	5392931.9404	48.684941	-118.016803	Primary	ICS
SDU-07B-01	425288.2228	5393071.4666	48.686211	-118.015100	Primary	ICS
SDU-07B-02	425035.0806	5392768.6507	48.683457	-118.018484	Primary	ICS
SDU-07B-03	425190.8378	5393075.418	48.686235	-118.016424	Primary	ICS
SDU-07B-04	425123.1123	5392678.3471	48.682656	-118.017272	Primary	ICS
SDU-07B-05	425262.94	5392953.2954	48.685145	-118.015422	Primary	ICS
SDU-07B-06	425285.2143	5393032.4525	48.685860	-118.015134	Primary	ICS
SDU-07B-07	425174.8514	5392766.0284	48.683450	-118.016585	Primary	ICS
SDU-07B-08	425256.9191	5392966.2383	48.685261	-118.015506	Primary	ICS
SDU-07B-09	425298.6504	5393058.743	48.686098	-118.014956	Primary	ICS
SDU-07B-10	425137.9788	5392688.0251	48.682744	-118.017072	Primary	ICS
SDU-07B-11	425185.326	5392801.068	48.683767	-118.016449	Primary	ICS
SDU-07B-12	425245.6421	5392930.0527	48.684934	-118.015653	Primary	ICS
SDU-07B-13	425096.1616	5392658.2349	48.682471	-118.017634	Primary	ICS
SDU-07B-14	425098.0775	5392617.6623	48.682107	-118.017601	Primary	ICS
SDU-07B-15	425164.4124	5392721.7315	48.683051	-118.016719	Primary	ICS
SDU-07B-16	425138.0514	5392928.498	48.684907	-118.017114	Primary	ICS
SDU-07B-17	425153.1014	5392736.5203	48.683182	-118.016875	Primary	ICS
SDU-07B-18	425141.988	5392893.9244	48.684597	-118.017054	Primary	ICS
SDU-07B-19	425247.3641	5392895.8445	48.684627	-118.015623	Primary	ICS
SDU-07B-20	425040.5575	5392641.6577	48.682316	-118.018387	Primary	ICS
SDU-07B-21	425070.0944	5392839.4958	48.684099	-118.018021	Primary	ICS
SDU-07B-22	425301.8537	5393073.9461	48.686235	-118.014915	Primary	ICS
SDU-07B-23	425277.9858	5393059.994	48.686107	-118.015237	Primary	ICS

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**Geographic Coordinate System, Decimal degrees; Datum: WGS1984

Table 1a Actual Station Locations for Bossburg Flat Beach Refined Sediment and Soil Collection: Incremental Composite Sampling Stations for Sediment



Station ID	X UTM 11N*	Y UTM 11N*	Latitude**	Longitude**	Station Type	Collection Method
SDU-07B-24	425142.0307	5392671.6474	48.682598	-118.017014	Primary	ICS
SDU-07B-25	425171.4174	5393013.0797	48.685672	-118.016676	Primary	ICS
SDU-07B-26	425216.423	5392859.3539	48.684295	-118.016037	Primary	ICS
SDU-07B-27	425096.1587	5392670.7905	48.682584	-118.017637	Primary	ICS
SDU-07B-28	425028.4416	5392802.0414	48.683757	-118.018580	Primary	ICS
SDU-07B-29	425175.8695	5392999.6017	48.685551	-118.016613	Primary	ICS
SDU-07B-30	425234.544	5392924.5824	48.684884	-118.015803	Primary	ICS
SDU-07C-01	425120.6731	5392700.7839	48.682857	-118.017309	Primary	ICS
SDU-07C-02	425060.8656	5392824.8736	48.683966	-118.018144	Primary	ICS
SDU-07C-03	425058.7696	5392620.9373	48.682131	-118.018135	Primary	ICS
SDU-07C-04	425193.7053	5393065.4814	48.686146	-118.016383	Primary	ICS
SDU-07C-05	425166.2171	5392771.2161	48.683496	-118.016703	Primary	ICS
SDU-07C-06	425214.785	5392844.1883	48.684158	-118.016057	Primary	ICS
SDU-07C-07	425124.2799	5392661.1478	48.682501	-118.017253	Primary	ICS
SDU-07C-08	425073.0202	5392853.8681	48.684228	-118.017984	Primary	ICS
SDU-07C-09	425148.4973	5392725.2898	48.683081	-118.016936	Primary	ICS
SDU-07C-10	424971.817	5392731.5699	48.683116	-118.019337	Primary	ICS
SDU-07C-11	425286.6455	5393048.4587	48.686004	-118.015117	Primary	ICS
SDU-07C-12	425095.7458	5392627.0732	48.682191	-118.017634	Primary	ICS
SDU-07C-13	425151.976	5392779.7071	48.683571	-118.016898	Primary	ICS
SDU-07C-14	425161.5078	5392737.3841	48.683191	-118.016761	Primary	ICS
SDU-07C-15	425208.1508	5392855.4738	48.684259	-118.016149	Primary	ICS
SDU-07C-16	425113.3558	5392660.2567	48.682492	-118.017401	Primary	ICS
SDU-07C-17	425169.3446	5392949.5279	48.685100	-118.016693	Primary	ICS
SDU-07C-18	425052.9514	5392635.9886	48.682266	-118.018217	Primary	ICS
SDU-07C-19	425282.1949	5393027.2372	48.685813	-118.015174	Primary	ICS
SDU-07C-20	425156.8683	5392713.7608	48.682978	-118.016820	Primary	ICS
SDU-07C-21	425180.7905	5393028.3086	48.685810	-118.016552	Primary	ICS
SDU-07C-22	425149.94	5392933.6657	48.684955	-118.016954	Primary	ICS
SDU-07C-23	424963.6173	5392701.5763	48.682845	-118.019443	Primary	ICS
SDU-07C-24	425265.1229	5392941.4356	48.685039	-118.015390	Primary	ICS
SDU-07C-25	425096.8506	5392669.3741	48.682572	-118.017627	Primary	ICS
SDU-07C-26	425171.9548	5392796.0052	48.683720	-118.016630	Primary	ICS
SDU-07C-27	425193.334	5393023.0975	48.685765	-118.016380	Primary	ICS
SDU-07C-28	425187.4549	5393009.3077	48.685640	-118.016458	Primary	ICS
SDU-07C-29	425115.1705	5392630.8965	48.682228	-118.017371	Primary	ICS
SDU-07C-30	425007.8119	5392742.3218	48.683217	-118.018850	Primary	ICS
Sediment Decision Unit 8						
SDU-08-01	423147.6206	5401854.7802	48.764953	-118.045816	Primary	ICS
SDU-08-02	423124.3983	5401816.038	48.764602	-118.046125	Primary	ICS
SDU-08-03	423035.8745	5401717.5393	48.763705	-118.047311	Primary	ICS
SDU-08-04	423209.8015	5401908.7414	48.765446	-118.044980	Primary	ICS

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**Geographic Coordinate System, Decimal degrees; Datum: WGS1984

Table 1a Actual Station Locations for Bossburg Flat Beach Refined Sediment and Soil Collection: Incremental Composite Sampling Stations for Sediment



Station ID	X UTM 11N*	Y UTM 11N*	Latitude**	Longitude**	Station Type	Collection Method
SDU-08-05	422974.3338	5401637.2739	48.762976	-118.048133	Primary	ICS
SDU-08-06	423026.3784	5401699.1565	48.763539	-118.047437	Primary	ICS
SDU-08-07	423223.0661	5401943.5638	48.765761	-118.044806	Primary	ICS
SDU-08-08	423115.6043	5401799.1842	48.764449	-118.046241	Primary	ICS
SDU-08-09	423010.8421	5401682.4521	48.763386	-118.047645	Primary	ICS
SDU-08-10	423177.2152	5401874.3402	48.765133	-118.045417	Primary	ICS
SDU-08-11	423114.9562	5401819.6186	48.764633	-118.046254	Primary	ICS
SDU-08-12	423052.221	5401735.9244	48.763873	-118.047092	Primary	ICS
SDU-08-13	423083.8989	5401772.4296	48.764205	-118.046668	Primary	ICS
SDU-08-14	423213.0433	5401933.9326	48.765673	-118.044941	Primary	ICS
SDU-08-15	422993.2809	5401666.0625	48.763237	-118.047881	Primary	ICS
SDU-08-16	423151.1049	5401844.6098	48.764862	-118.045767	Primary	ICS
SDU-08-17	423163.2996	5401875.5998	48.765143	-118.045607	Primary	ICS
SDU-08-18	423132.1043	5401834.6709	48.764771	-118.046024	Primary	ICS
SDU-08-19	423197.3903	5401907.9084	48.765437	-118.045149	Primary	ICS
SDU-08-20	423070.574	5401753.9248	48.764037	-118.046846	Primary	ICS
SDU-08-21	423219.093	5401919.6043	48.765545	-118.044856	Primary	ICS
SDU-08-22	423153.2654	5401863.1828	48.765030	-118.045741	Primary	ICS
SDU-08-23	423169.6434	5401865.4357	48.765052	-118.045519	Primary	ICS
SDU-08-24	423004.8543	5401673.199	48.763303	-118.047725	Primary	ICS
SDU-08-25	423139.5512	5401848.8345	48.764899	-118.045925	Primary	ICS
SDU-08-26	423092.3019	5401791.2061	48.764375	-118.046557	Primary	ICS
SDU-08-27	422966.2968	5401621.8766	48.762836	-118.048240	Primary	ICS
SDU-08-28	423232.1169	5401932.3547	48.765662	-118.044681	Primary	ICS
SDU-08-29	423012.8744	5401696.3675	48.763512	-118.047620	Primary	ICS
SDU-08-30	422943.9872	5401613.4557	48.762758	-118.048542	Primary	ICS
Sediment Decision Unit 9						
SDU-09A-01	422430.7636	5401037.5878	48.757514	-118.055416	Primary	ICS
SDU-09A-02	422435.6106	5401082.554	48.757919	-118.055358	Primary	ICS
SDU-09A-03	422351.0405	5400897.2474	48.756242	-118.056474	Primary	ICS
SDU-09A-04	422437.9978	5401050.1682	48.757628	-118.055320	Primary	ICS
SDU-09A-05	422294.1175	5400879.792	48.756078	-118.057245	Primary	ICS
SDU-09A-06	422360.1926	5400968.437	48.756883	-118.056363	Primary	ICS
SDU-09A-07	422458.269	5401072.975	48.757836	-118.055048	Primary	ICS
SDU-09A-08	422409.5177	5401039.95	48.757533	-118.055705	Primary	ICS
SDU-09A-09	422341.436	5400925.96	48.756499	-118.056610	Primary	ICS
SDU-09A-10	422362.0262	5400928.07	48.756521	-118.056330	Primary	ICS
SDU-09A-11	422443.0525	5401115.469	48.758216	-118.055263	Primary	ICS
SDU-09A-12	422348.8373	5400915.491	48.756406	-118.056507	Primary	ICS
SDU-09A-13	422337.5125	5400903.973	48.756301	-118.056659	Primary	ICS
SDU-09A-14	422344.5869	5400889.354	48.756170	-118.056560	Primary	ICS
SDU-09A-15	422465.9911	5401094.8656	48.758034	-118.054947	Primary	ICS

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**Geographic Coordinate System, Decimal degrees; Datum: WGS1984

Table 1a Actual Station Locations for Bossburg Flat Beach Refined Sediment and Soil Collection: Incremental Composite Sampling Stations for Sediment



Station ID	X UTM 11N*	Y UTM 11N*	Latitude**	Longitude**	Station Type	Collection Method
SDU-09A-16	422422.6346	5401024.468	48.757395	-118.055524	Primary	ICS
SDU-09A-17	422320.5578	5400876.041	48.756047	-118.056884	Primary	ICS
SDU-09A-19	422375.4509	5400953.3	48.756749	-118.056152	Primary	ICS
SDU-09A-20	422417.3294	5401057.801	48.757694	-118.055602	Primary	ICS
SDU-09A-22	422401.0317	5400997.911	48.757154	-118.055813	Primary	ICS
SDU-09A-23	422359.6428	5400939.418	48.756622	-118.056365	Primary	ICS
SDU-09A-24	422450.742	5401108.367	48.758153	-118.055157	Primary	ICS
SDU-09A-25	422393.6667	5401022.949	48.757378	-118.055917	Primary	ICS
SDU-09A-26	422363.4426	5400909.4894	48.756354	-118.056307	Primary	ICS
SDU-09A-27	422431.1459	5401041.067	48.757546	-118.055411	Primary	ICS
SDU-09A-28	422382.9195	5400982.825	48.757016	-118.056056	Primary	ICS
SDU-09A-29	422376.7617	5400938.2581	48.756614	-118.056131	Primary	ICS
SDU-09A-R02	422321.409	5400886.159	48.756139	-118.056875	Reserve	ICS
SDU-09A-R03	422343.1854	5400892.219	48.756196	-118.056580	Reserve	ICS
SDU-09A-R04	422354.0222	5400936.835	48.756598	-118.056441	Reserve	ICS
Sediment Decision Unit 10						
SDU-10-01	422121.3605	5400672.617	48.754193	-118.059556	Primary	ICS
SDU-10-02	422238.0001	5400804.411	48.755393	-118.057994	Primary	ICS
SDU-10-03	422100.0431	5400634.555	48.753848	-118.059838	Primary	ICS
SDU-10-06	422266.0461	5400779.234	48.755170	-118.057608	Primary	ICS
SDU-10-07	422226.713	5400755.856	48.754955	-118.058138	Primary	ICS
SDU-10-10	422104.9948	5400659.232	48.754070	-118.059776	Primary	ICS
SDU-10-11	422165.7037	5400721.005	48.754634	-118.058961	Primary	ICS
SDU-10-12	422165.5994	5400702.184	48.754464	-118.058959	Primary	ICS
SDU-10-13	422181.997	5400720.144	48.754628	-118.058740	Primary	ICS
SDU-10-14	422208.5704	5400755.721	48.754951	-118.058385	Primary	ICS
SDU-10-15	422216.0162	5400767.96	48.755062	-118.058286	Primary	ICS
SDU-10-16	422184.5798	5400743.906	48.754842	-118.058709	Primary	ICS
SDU-10-17	422090.1874	5400640.862	48.753903	-118.059974	Primary	ICS
SDU-10-18	422152.8146	5400657.008	48.754056	-118.059125	Primary	ICS
SDU-10-19	422104.3904	5400631.4264	48.753820	-118.059779	Primary	ICS
SDU-10-20	422191.3392	5400715.338	48.754586	-118.058612	Primary	ICS
SDU-10-21	422109.417	5400641.252	48.753909	-118.059712	Primary	ICS
SDU-10-22	422180.6612	5400755.084	48.754942	-118.058764	Primary	ICS
SDU-10-23	422148.2051	5400712.798	48.754558	-118.059198	Primary	ICS
SDU-10-24	422255.9786	5400794.058	48.755302	-118.057747	Primary	ICS
SDU-10-25	422180.2197	5400730.266	48.754719	-118.058766	Primary	ICS
SDU-10-26	422194.4007	5400722.1476	48.754648	-118.058571	Primary	ICS
SDU-10-27	422129.8765	5400669.2795	48.754164	-118.059439	Primary	ICS
SDU-10-28	422206.8722	5400748.1605	48.754883	-118.058407	Primary	ICS
SDU-10-29	422238.0556	5400791.042	48.755273	-118.057991	Primary	ICS
SDU-10-30	422177.3215	5400699.7658	48.754444	-118.058799	Primary	ICS

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**Geographic Coordinate System, Decimal degrees; Datum: WGS1984

Table 1a Actual Station Locations for Bossburg Flat Beach Refined Sediment and Soil Collection: Incremental Composite Sampling Stations for Sediment



Station ID	X UTM 11N*	Y UTM 11N*	Latitude**	Longitude**	Station Type	Collection Method
SDU-10-R02	422245.1857	5400815.12	48.755490	-118.057898	Reserve	ICS
SDU-10-R04	422077.6007	5400642.89	48.753920	-118.060145	Reserve	ICS
SDU-10-R05	422222.8989	5400761.886	48.755009	-118.058191	Reserve	ICS
SDU-10-R06	422163.6555	5400653.814	48.754029	-118.058977	Reserve	ICS

*Coordinate System: UTM 11 North, Units: meters; Datum: WGS1984

**Geographic Coordinate System, Decimal degrees; Datum: WGS1984

Table 1b Actual Station Locations for Bossburg Flat Beach Refined Sediment and Soil Collection: Incremental Composite Sampling Stations for Soil



Station ID	X UTM 11N*	Y UTM 11N*	Latitude**	Longitude**	Station Type	Collection Method
Soil Decision Unit 1						
UDU-01-01	422967.3406	5400915.3994	48.756482	-118.048093	Primary	ICS
UDU-01-02	422955.2648	5400946.7691	48.756763	-118.048263	Primary	ICS
UDU-01-03	422945.6207	5400955.2165	48.756837	-118.048396	Primary	ICS
UDU-01-04	422943.9644	5400925.2906	48.756568	-118.048413	Primary	ICS
UDU-01-05	422895.3529	5400941.0478	48.756704	-118.049077	Primary	ICS
UDU-01-06	423017.2933	5400912.5415	48.756462	-118.047413	Primary	ICS
UDU-01-07	422984.7273	5400905.7944	48.756398	-118.047855	Primary	ICS
UDU-01-08	422963.8413	5400902.6367	48.756367	-118.048138	Primary	ICS
UDU-01-09	422925.687	5400930.5282	48.756613	-118.048663	Primary	ICS
UDU-01-10	422927.8282	5400966.6744	48.756938	-118.048640	Primary	ICS
UDU-01-11	423035.897	5400903.5943	48.756384	-118.047158	Primary	ICS
UDU-01-12	422974.1292	5400894.2763	48.756293	-118.047997	Primary	ICS
UDU-01-13	422915.944	5400935.2882	48.756654	-118.048796	Primary	ICS
UDU-01-14	422992.4362	5400900.7137	48.756353	-118.047749	Primary	ICS
UDU-01-15	423051.2931	5400883.9896	48.756210	-118.046945	Primary	ICS
UDU-01-16	422966.3191	5400886.8228	48.756225	-118.048102	Primary	ICS
UDU-01-17	422989.1345	5400934.0534	48.756652	-118.047800	Primary	ICS
UDU-01-18	422932.7178	5400942.0224	48.756717	-118.048569	Primary	ICS
UDU-01-19	422966.5912	5400930.1338	48.756614	-118.048106	Primary	ICS
UDU-01-20	422908.9472	5400950.6985	48.756792	-118.048894	Primary	ICS
UDU-01-21	422927.9337	5400945.4797	48.756748	-118.048635	Primary	ICS
UDU-01-22	423045.3155	5400902.6685	48.756377	-118.047030	Primary	ICS
UDU-01-23	422906.9218	5400935.8862	48.756659	-118.048919	Primary	ICS
UDU-01-24	423058.0771	5400890.1882	48.756266	-118.046854	Primary	ICS
UDU-01-25	423032.9356	5400860.1169	48.755993	-118.047191	Primary	ICS
UDU-01-26	422954.6337	5400929.5093	48.756607	-118.048269	Primary	ICS
UDU-01-27	422996.2982	5400925.1606	48.756573	-118.047701	Primary	ICS
UDU-01-28	422960.3754	5400933.1349	48.756641	-118.048191	Primary	ICS
UDU-01-29	422942.2206	5400970.9707	48.756979	-118.048445	Primary	ICS
UDU-01-30	423032.7792	5400892.8996	48.756288	-118.047199	Primary	ICS
Soil Decision Unit 2						
UDU-02-01	422911.8094	5400849.3648	48.755881	-118.048836	Primary	ICS
UDU-02-02	422949.0861	5400833.2352	48.755741	-118.048326	Primary	ICS
UDU-02-03	422938.0598	5400852.221	48.755910	-118.048480	Primary	ICS
UDU-02-04	422912.1123	5400839.4083	48.755792	-118.048830	Primary	ICS
UDU-02-05	422927.7833	5400787.1333	48.755323	-118.048607	Primary	ICS
UDU-02-06	422930.3976	5400841.8655	48.755816	-118.048582	Primary	ICS
UDU-02-07	422950.3877	5400812.3298	48.755553	-118.048305	Primary	ICS
UDU-02-08	422968.0015	5400803.328	48.755474	-118.048063	Primary	ICS
UDU-02-09	422886.321	5400822.8776	48.755640	-118.049178	Primary	ICS
UDU-02-10	422939.0085	5400792.1187	48.755369	-118.048456	Primary	ICS

*Coordinate System: UTM 11 North, Units: meters; Datum: WGS1984

**Geographic Coordinate System, Decimal degrees; Datum: WGS1984

Table 1b Actual Station Locations for Bossburg Flat Beach Refined Sediment and Soil Collection: Incremental Composite Sampling Stations for Soil



Station ID	X UTM 11N*	Y UTM 11N*	Latitude**	Longitude**	Station Type	Collection Method
UDU-02-11	422969.9322	5400841.5587	48.755818	-118.048044	Primary	ICS
UDU-02-12	422939.3281	5400822.3842	48.755642	-118.048457	Primary	ICS
UDU-02-13	422921.3428	5400860.7068	48.755984	-118.048709	Primary	ICS
UDU-02-14	422963.4641	5400883.5456	48.756195	-118.048140	Primary	ICS
UDU-02-15	422968.1359	5400866.1523	48.756039	-118.048073	Primary	ICS
UDU-02-16	422964.1231	5400859.3319	48.755977	-118.048127	Primary	ICS
UDU-02-17	422947.6759	5400797.3635	48.755418	-118.048339	Primary	ICS
UDU-02-18	422945.1053	5400871.4403	48.756084	-118.048387	Primary	ICS
UDU-02-19	422925.9966	5400807.2685	48.755504	-118.048635	Primary	ICS
UDU-02-20	423004.2236	5400844.001	48.755844	-118.047578	Primary	ICS
UDU-02-21	422913.1429	5400819.7364	48.755615	-118.048813	Primary	ICS
UDU-02-22	422974.4395	5400855.2449	48.755942	-118.047985	Primary	ICS
UDU-02-23	422964.8581	5400828.3868	48.755699	-118.048111	Primary	ICS
UDU-02-24	422949.5764	5400824.7078	48.755664	-118.048318	Primary	ICS
UDU-02-25	422899.1605	5400830.0597	48.755706	-118.049005	Primary	ICS
UDU-02-26	422921.4437	5400803.6393	48.755471	-118.048697	Primary	ICS
UDU-02-27	422966.5131	5400798.0754	48.755426	-118.048083	Primary	ICS
UDU-02-28	423020.2721	5400841.385	48.755823	-118.047359	Primary	ICS
UDU-02-29	422928.0125	5400854.8539	48.755932	-118.048617	Primary	ICS
UDU-02-30	422935.4415	5400804.2641	48.755478	-118.048506	Primary	ICS
Soil Decision Unit 3						
UDU-03-01	422892.2548	5400764.1788	48.755112	-118.049086	Primary	ICS
UDU-03-02	422854.899	5400796.9402	48.755402	-118.049601	Primary	ICS
UDU-03-03	422852.3964	5400816.5004	48.755578	-118.049638	Primary	ICS
UDU-03-04	422911.5205	5400792.3698	48.755368	-118.048830	Primary	ICS
UDU-03-05	422790.7509	5400866.1934	48.756017	-118.050486	Primary	ICS
UDU-03-06	422802.5046	5400821.1634	48.755614	-118.050318	Primary	ICS
UDU-03-07	422937.2044	5400762.2352	48.755100	-118.048475	Primary	ICS
UDU-03-08	422915.2941	5400768.9773	48.755158	-118.048774	Primary	ICS
UDU-03-09	422901.2414	5400748.3267	48.754971	-118.048961	Primary	ICS
UDU-03-10	422806.344	5400858.5687	48.755951	-118.050273	Primary	ICS
UDU-03-11	422830.2799	5400806.1278	48.755482	-118.049937	Primary	ICS
UDU-03-12	422838.8685	5400807.3791	48.755494	-118.049821	Primary	ICS
UDU-03-13	422913.6852	5400738.3778	48.754883	-118.048790	Primary	ICS
UDU-03-14	422901.6594	5400784.7492	48.755299	-118.048962	Primary	ICS
UDU-03-15	422898.8829	5400795.7081	48.755397	-118.049002	Primary	ICS
UDU-03-16	422888.585	5400779.5741	48.755250	-118.049139	Primary	ICS
UDU-03-17	422788.3657	5400817.9356	48.755583	-118.050510	Primary	ICS
UDU-03-18	422894.0406	5400777.4856	48.755232	-118.049065	Primary	ICS
UDU-03-19	422818.5587	5400827.8321	48.755676	-118.050101	Primary	ICS
UDU-03-20	422761.016	5400835.0516	48.755734	-118.050885	Primary	ICS
UDU-03-21	422871.3904	5400787.094	48.755316	-118.049374	Primary	ICS

*Coordinate System: UTM 11 North, Units: meters; Datum: WGS1984

**Geographic Coordinate System, Decimal degrees; Datum: WGS1984

Table 1b Actual Station Locations for Bossburg Flat Beach Refined Sediment and Soil Collection: Incremental Composite Sampling Stations for Soil



Station ID	X UTM 11N*	Y UTM 11N*	Latitude**	Longitude**	Station Type	Collection Method
UDU-03-22	422847.3536	5400802.1999	48.755449	-118.049704	Primary	ICS
UDU-03-23	422778.8371	5400826.7082	48.755661	-118.050641	Primary	ICS
UDU-03-24	422859.202	5400779.2629	48.755244	-118.049539	Primary	ICS
UDU-03-25	422786.4337	5400823.0176	48.755629	-118.050537	Primary	ICS
UDU-03-26	422863.1524	5400800.8871	48.755439	-118.049489	Primary	ICS
UDU-03-27	422906.2723	5400778.4071	48.755242	-118.048898	Primary	ICS
UDU-03-28	422776.6748	5400848.6856	48.755858	-118.050674	Primary	ICS
UDU-03-29	422871.6127	5400801.1441	48.755442	-118.049374	Primary	ICS
UDU-03-30	422914.2269	5400756.4747	48.755046	-118.048786	Primary	ICS
Soil Decision Unit 4						
UDU-04A-01	422878.6391	5400824.2272	48.755651	-118.049283	Primary	ICS
UDU-04A-02	422898.3367	5400906.7084	48.756395	-118.049030	Primary	ICS
UDU-04A-03	422823.6935	5400875.8177	48.756108	-118.050040	Primary	ICS
UDU-04A-04	422872.1644	5400903.81	48.756366	-118.049386	Primary	ICS
UDU-04A-05	422862.7603	5400857.9046	48.755952	-118.049505	Primary	ICS
UDU-04A-06	422875.0553	5400863.0484	48.756000	-118.049339	Primary	ICS
UDU-04A-08	422838.1077	5400872.3993	48.756079	-118.049843	Primary	ICS
UDU-04A-09	422886.208	5400847.4109	48.755860	-118.049184	Primary	ICS
UDU-04A-10	422910.5282	5400904.9142	48.756381	-118.048864	Primary	ICS
UDU-04A-11	422883.049	5400833.877	48.755738	-118.049225	Primary	ICS
UDU-04A-12	422858.6192	5400846.8903	48.755852	-118.049559	Primary	ICS
UDU-04A-13	422862.401	5400879.5993	48.756147	-118.049514	Primary	ICS
UDU-04A-14	422862.7147	5400825.4145	48.755660	-118.049500	Primary	ICS
UDU-04A-15	422903.0507	5400847.049	48.755859	-118.048955	Primary	ICS
UDU-04A-16	422869.785	5400820.6498	48.755618	-118.049403	Primary	ICS
UDU-04A-18	422876.8577	5400852.1739	48.755902	-118.049312	Primary	ICS
UDU-04A-19	422872.4926	5400838.1845	48.755776	-118.049369	Primary	ICS
UDU-04A-20	422904.9232	5400900.1747	48.756337	-118.048939	Primary	ICS
UDU-04A-21	422872.1551	5400868.4357	48.756048	-118.049379	Primary	ICS
UDU-04A-22	422883.3539	5400860.2817	48.755976	-118.049225	Primary	ICS
UDU-04A-23	422864.1803	5400834.6705	48.755743	-118.049481	Primary	ICS
UDU-04A-24	422846.052	5400859.8976	48.755968	-118.049733	Primary	ICS
UDU-04A-25	422883.2464	5400931.6691	48.756618	-118.049240	Primary	ICS
UDU-04A-26	422837.1481	5400862.9965	48.755994	-118.049854	Primary	ICS
UDU-04A-27	422913.8425	5400887.5543	48.756225	-118.048816	Primary	ICS
UDU-04A-28	422902.2359	5400889.3319	48.756239	-118.048974	Primary	ICS
UDU-04A-29	422905.2253	5400855.5547	48.755936	-118.048927	Primary	ICS
UDU-04A-30	422944.696	5400893.6897	48.756284	-118.048397	Primary	ICS
UDU-04A-R01	422896.9074	5400837.347	48.755771	-118.049037	Reserve	ICS
UDU-04A-R02	422871.4315	5400813.9536	48.755558	-118.049379	Reserve	ICS
UDU-04B-01	422878.7625	5400925.2056	48.756559	-118.049300	Primary	ICS
UDU-04B-02	422874.7125	5400859.996	48.755972	-118.049343	Primary	ICS

*Coordinate System: UTM 11 North, Units: meters; Datum: WGS1984

**Geographic Coordinate System, Decimal degrees; Datum: WGS1984

Table 1b Actual Station Locations for Bossburg Flat Beach Refined Sediment and Soil Collection: Incremental Composite Sampling Stations for Soil



Station ID	X UTM 11N*	Y UTM 11N*	Latitude**	Longitude**	Station Type	Collection Method
UDU-04B-03	422837.2121	5400862.3542	48.755989	-118.049853	Primary	ICS
UDU-04B-04	422876.3574	5400840.1891	48.755794	-118.049317	Primary	ICS
UDU-04B-05	422841.7227	5400874.933	48.756102	-118.049794	Primary	ICS
UDU-04B-06	422864.0325	5400831.6356	48.755716	-118.049483	Primary	ICS
UDU-04B-07	422897.7437	5400850.6477	48.755891	-118.049028	Primary	ICS
UDU-04B-08	422895.5121	5400868.1326	48.756048	-118.049062	Primary	ICS
UDU-04B-09	422850.1307	5400835.9711	48.755753	-118.049673	Primary	ICS
UDU-04B-10	422836.47	5400849.59	48.755874	-118.049861	Primary	ICS
UDU-04B-12	422916.3484	5400897.6107	48.756316	-118.048784	Primary	ICS
UDU-04B-13	422833.901	5400891.3789	48.756249	-118.049904	Primary	ICS
UDU-04B-14	422827.6702	5400855.5312	48.755926	-118.049982	Primary	ICS
UDU-04B-15	422873.3219	5400897.4282	48.756309	-118.049369	Primary	ICS
UDU-04B-16	422825.9366	5400892.7212	48.756260	-118.050013	Primary	ICS
UDU-04B-17	422868.3815	5400851.7755	48.755897	-118.049428	Primary	ICS
UDU-04B-18	422921.2238	5400899.7002	48.756335	-118.048718	Primary	ICS
UDU-04B-20	422829.269	5400884.777	48.756189	-118.049966	Primary	ICS
UDU-04B-21	422933.2404	5400885.7123	48.756211	-118.048552	Primary	ICS
UDU-04B-22	422924.235	5400869.4528	48.756063	-118.048671	Primary	ICS
UDU-04B-23	422879.9305	5400892.9087	48.756269	-118.049278	Primary	ICS
UDU-04B-24	422852.6386	5400868.1018	48.756042	-118.049645	Primary	ICS
UDU-04B-25	422857.322	5400844.0191	48.755826	-118.049576	Primary	ICS
UDU-04B-26	422880.7012	5400931.3684	48.756615	-118.049275	Primary	ICS
UDU-04B-27	422907.4443	5400908.7664	48.756415	-118.048907	Primary	ICS
UDU-04B-28	422875.501	5400885.5621	48.756202	-118.049337	Primary	ICS
UDU-04B-29	422880.827	5400912.6351	48.756446	-118.049270	Primary	ICS
UDU-04B-30	422881.5105	5400886.7115	48.756213	-118.049255	Primary	ICS
UDU-04B-R01	422880.9972	5400896.4574	48.756301	-118.049264	Reserve	ICS
UDU-04B-R02	422847.2559	5400842.0579	48.755807	-118.049713	Reserve	ICS
UDU-04C-01	422912.4	5400905.5	48.756386	-118.048839	Primary	ICS
UDU-04C-02	422851.2179	5400876.7581	48.756120	-118.049666	Primary	ICS
UDU-04C-03	422910.5206	5400916.2813	48.756483	-118.048866	Primary	ICS
UDU-04C-04	422870.1706	5400874.8127	48.756105	-118.049407	Primary	ICS
UDU-04C-05	422889.0961	5400881.2568	48.756165	-118.049151	Primary	ICS
UDU-04C-07	422850.889	5400843.3361	48.755819	-118.049664	Primary	ICS
UDU-04C-08	422859.0075	5400826.1093	48.755665	-118.049550	Primary	ICS
UDU-04C-09	422871.6426	5400856.1628	48.755937	-118.049384	Primary	ICS
UDU-04C-10	422867.613	5400834.8312	48.755745	-118.049435	Primary	ICS
UDU-04C-11	422865.6577	5400881.9485	48.756168	-118.049470	Primary	ICS
UDU-04C-12	422860.2912	5400836.2414	48.755757	-118.049535	Primary	ICS
UDU-04C-13	422895.4652	5400925.0941	48.756560	-118.049073	Primary	ICS
UDU-04C-14	422835.2976	5400875.7295	48.756109	-118.049882	Primary	ICS
UDU-04C-15	422925.9985	5400906.8038	48.756399	-118.048654	Primary	ICS

*Coordinate System: UTM 11 North, Units: meters; Datum: WGS1984

**Geographic Coordinate System, Decimal degrees; Datum: WGS1984

Table 1b Actual Station Locations for Bossburg Flat Beach Refined Sediment and Soil Collection: Incremental Composite Sampling Stations for Soil



Station ID	X UTM 11N*	Y UTM 11N*	Latitude**	Longitude**	Station Type	Collection Method
UDU-04C-16	422904.0954	5400921.4547	48.756528	-118.048955	Primary	ICS
UDU-04C-17	422915.4201	5400881.0738	48.756167	-118.048793	Primary	ICS
UDU-04C-18	422872.1631	5400901.3562	48.756344	-118.049385	Primary	ICS
UDU-04C-19	422907.4985	5400880.4482	48.756160	-118.048901	Primary	ICS
UDU-04C-20	422840.436	5400864.8523	48.756011	-118.049810	Primary	ICS
UDU-04C-21	422880.0554	5400848.177	48.755866	-118.049268	Primary	ICS
UDU-04C-22	422924.2168	5400872.6446	48.756092	-118.048672	Primary	ICS
UDU-04C-24	422882.1277	5400867.8635	48.756044	-118.049244	Primary	ICS
UDU-04C-25	422857.4093	5400890.9569	48.756248	-118.049584	Primary	ICS
UDU-04C-27	422862.6669	5400867.1461	48.756035	-118.049508	Primary	ICS
UDU-04C-28	422902.7843	5400849.7594	48.755883	-118.048959	Primary	ICS
UDU-04C-29	422902.4267	5400900.8469	48.756343	-118.048974	Primary	ICS
UDU-04C-30	422826.9897	5400866.9675	48.756029	-118.049993	Primary	ICS
UDU-04C-R02	422883.8343	5400865.4135	48.756022	-118.049220	Reserve	ICS
UDU-04C-R04	422831.8537	5400868.6218	48.756044	-118.049928	Reserve	ICS
UDU-04C-R08	422875.2269	5400842.6858	48.755816	-118.049333	Reserve	ICS

Soil Decision Unit 5

UDU-05-01	423584.8247	5401448.3472	48.761352	-118.039792	Primary	ICS
UDU-05-02	423571.2635	5401434.5686	48.761226	-118.039974	Primary	ICS
UDU-05-03	423565.8136	5401393.2524	48.760854	-118.040041	Primary	ICS
UDU-05-04	423472.0722	5401276.7794	48.759795	-118.041294	Primary	ICS
UDU-05-05	423607.5978	5401485.9827	48.761693	-118.039489	Primary	ICS
UDU-05-06	423562.6813	5401425.5521	48.761144	-118.040089	Primary	ICS
UDU-05-07	423559.1276	5401407.047	48.760977	-118.040134	Primary	ICS
UDU-05-08	423527.3356	5401349.2252	48.760453	-118.040556	Primary	ICS
UDU-05-09	423545.97	5401365.4682	48.760601	-118.040305	Primary	ICS
UDU-05-10	423519.2567	5401363.8271	48.760583	-118.040669	Primary	ICS
UDU-05-11	423556.61	5401385.2023	48.760780	-118.040164	Primary	ICS
UDU-05-12	423529.7235	5401358.4368	48.760536	-118.040525	Primary	ICS
UDU-05-13	423553.958	5401410.7196	48.761009	-118.040205	Primary	ICS
UDU-05-14	423474.6912	5401305.8779	48.760057	-118.041264	Primary	ICS
UDU-05-15	423580.7591	5401431.7828	48.761202	-118.039844	Primary	ICS
UDU-05-16	423468.3539	5401273.1656	48.759762	-118.041344	Primary	ICS
UDU-05-17	423537.0156	5401362.3684	48.760572	-118.040427	Primary	ICS
UDU-05-18	423550.1112	5401402.2635	48.760933	-118.040256	Primary	ICS
UDU-05-19	423461.0587	5401286.2878	48.759879	-118.041446	Primary	ICS
UDU-05-20	423569.8734	5401418.9219	48.761085	-118.039990	Primary	ICS
UDU-05-21	423558.2101	5401382.483	48.760756	-118.040142	Primary	ICS
UDU-05-22	423568.4005	5401412.8241	48.761030	-118.040009	Primary	ICS
UDU-05-23	423594.7808	5401482.2224	48.761657	-118.039663	Primary	ICS
UDU-05-24	423483.1304	5401305.2838	48.760052	-118.041149	Primary	ICS
UDU-05-25	423577.1925	5401428.8143	48.761175	-118.039892	Primary	ICS

*Coordinate System: UTM 11 North, Units: meters; Datum: WGS1984

**Geographic Coordinate System, Decimal degrees; Datum: WGS1984

Table 1b Actual Station Locations for Bossburg Flat Beach Refined Sediment and Soil Collection: Incremental Composite Sampling Stations for Soil



Station ID	X UTM 11N*	Y UTM 11N*	Latitude**	Longitude**	Station Type	Collection Method
UDU-05-26	423527.6872	5401371.5683	48.760654	-118.040555	Primary	ICS
UDU-05-27	423499.2103	5401315.6836	48.760148	-118.040932	Primary	ICS
UDU-05-28	423537.6882	5401380.3638	48.760734	-118.040421	Primary	ICS
UDU-05-29	423521.74	5401346.2849	48.760426	-118.040632	Primary	ICS
UDU-05-30	423462.0694	5401293.4032	48.759943	-118.041433	Primary	ICS
Soil Decision Unit 6						
UDU-06-01	422249.2216	5400897.9873	48.756236	-118.057859	Primary	ICS
UDU-06-02	422238.218	5400883.3806	48.756103	-118.058006	Primary	ICS
UDU-06-03	422285.4215	5400922.1133	48.756457	-118.057371	Primary	ICS
UDU-06-04	422203.0266	5400792.7136	48.755283	-118.058467	Primary	ICS
UDU-06-05	422218.9053	5400841.5531	48.755725	-118.058261	Primary	ICS
UDU-06-06	422187.4631	5400789.0525	48.755248	-118.058678	Primary	ICS
UDU-06-07	422179.8854	5400786.9949	48.755229	-118.058781	Primary	ICS
UDU-06-08	422225.3524	5400829.1058	48.755613	-118.058171	Primary	ICS
UDU-06-09	422281.5722	5400911.1153	48.756358	-118.057421	Primary	ICS
UDU-06-10	422193.794	5400792.7844	48.755283	-118.058593	Primary	ICS
UDU-06-11	422269.0271	5400924.4257	48.756476	-118.057594	Primary	ICS
UDU-06-12	422276.6185	5400905.6367	48.756308	-118.057488	Primary	ICS
UDU-06-13	422224.9787	5400851.853	48.755818	-118.058180	Primary	ICS
UDU-06-14	422279.6707	5400892.8029	48.756193	-118.057444	Primary	ICS
UDU-06-15	422255.7227	5400918.2115	48.756419	-118.057774	Primary	ICS
UDU-06-16	422275.7101	5400889.6874	48.756165	-118.057497	Primary	ICS
UDU-06-17	422237.3262	5400842.9704	48.755740	-118.058010	Primary	ICS
UDU-06-18	422293.7819	5400909.3228	48.756343	-118.057255	Primary	ICS
UDU-06-19	422168.1064	5400769.1262	48.755067	-118.058938	Primary	ICS
UDU-06-20	422271.0609	5400904.6096	48.756298	-118.057563	Primary	ICS
UDU-06-21	422226.618	5400839.3954	48.755706	-118.058155	Primary	ICS
UDU-06-22	422246.5073	5400892.0612	48.756182	-118.057895	Primary	ICS
UDU-06-23	422208.7962	5400810.8602	48.755447	-118.058392	Primary	ICS
UDU-06-24	422262.007	5400875.0909	48.756032	-118.057681	Primary	ICS
UDU-06-25	422260.94	5400909.4409	48.756340	-118.057702	Primary	ICS
UDU-06-26	422284.8125	5400929.9861	48.756528	-118.057381	Primary	ICS
UDU-06-27	422214.6524	5400827.0206	48.755593	-118.058316	Primary	ICS
UDU-06-28	422250.2824	5400856.3889	48.755862	-118.057837	Primary	ICS
UDU-06-29	422213.9887	5400812.5932	48.755463	-118.058322	Primary	ICS
UDU-06-30	422192.9469	5400780.4984	48.755172	-118.058602	Primary	ICS

*Coordinate System: UTM 11 North, Units: meters; Datum: WGS1984

**Geographic Coordinate System, Decimal degrees; Datum: WGS1984

Table 1c Actual Station Locations for Bossburg Flat Beach Refined Sediment and Soil Collection: XRF Sampling Stations for Sediment



Station ID	X UTM 11N*	Y UTM 11N*	Latitude**	Longitude**	Station Type	Collection Method
Sediment Decision Unit 1						
SDU-01-XRF-01	423555.5647	5401691.3807	48.763534	-118.040235	Primary	XRF
SDU-01-XRF-02	423473.0647	5401636.3807	48.763029	-118.041348	Primary	XRF
SDU-01-XRF-03	423528.0647	5401636.3807	48.763036	-118.040599	Primary	XRF
SDU-01-XRF-04	423583.0647	5401636.3807	48.763043	-118.039851	Primary	XRF
SDU-01-XRF-05	423445.5647	5401581.3807	48.762531	-118.041712	Primary	XRF
SDU-01-XRF-06	423555.5647	5401581.3807	48.762545	-118.040215	Primary	XRF
SDU-01-XRF-07	423610.5647	5401581.3807	48.762551	-118.039467	Primary	XRF
SDU-01-XRF-08	423528.0647	5401526.3807	48.762046	-118.040579	Primary	XRF
SDU-01-XRF-09	423555.5647	5401471.3807	48.761555	-118.040195	Primary	XRF
Sediment Decision Unit 2						
SDU-02-XRF-01	423325.3027	5401483.8645	48.761639	-118.043330	Primary	XRF
SDU-02-XRF-02	423380.3027	5401483.8645	48.761646	-118.042581	Primary	XRF
SDU-02-XRF-03	423435.3027	5401483.8645	48.761653	-118.041833	Primary	XRF
SDU-02-XRF-04	423352.8027	5401428.8645	48.761148	-118.042945	Primary	XRF
SDU-02-XRF-05	423462.8027	5401428.8645	48.761161	-118.041449	Primary	XRF
SDU-02-XRF-06	423380.3027	5401373.8645	48.760656	-118.042561	Primary	XRF
SDU-02-XRF-07	423435.3027	5401373.8645	48.760663	-118.041813	Primary	XRF
SDU-02-XRF-08	423490.3027	5401373.8645	48.760670	-118.041064	Primary	XRF
Sediment Decision Unit 3						
SDU-03-XRF-01	423086.7872	5401100.4635	48.758161	-118.046503	Primary	XRF
SDU-03-XRF-02	423029.2872	5401055.4635	48.757749	-118.047277	Primary	XRF
SDU-03-XRF-03	422971.7872	5401010.4635	48.757337	-118.048051	Primary	XRF
SDU-03-XRF-04	422914.2872	5400965.4635	48.756926	-118.048824	Primary	XRF
Sediment Decision Unit 4						
SDU-04-XRF-01	422691.1355	5400781.8543	48.755246	-118.051826	Primary	XRF
SDU-04-XRF-02	422649.1355	5400721.8543	48.754702	-118.052386	Primary	XRF
SDU-04-XRF-03	422631.1355	5400685.8543	48.754376	-118.052624	Primary	XRF
SDU-04-XRF-04	422595.1355	5400613.8543	48.753723	-118.053100	Primary	XRF
Sediment Decision Unit 5						
SDU-05-XRF-01	424294.0087	5395316.5972	48.706286	-118.029018	Primary	XRF
SDU-05-XRF-02	424544	5395316.59	48.706316	-118.025620	Primary	XRF
SDU-05-XRF-03	424356.5087	5395191.5972	48.705169	-118.028145	Primary	XRF
SDU-05-XRF-04	424606.5087	5395191.5972	48.705199	-118.024748	Primary	XRF
SDU-05-XRF-05	424419.0087	5395066.5972	48.704052	-118.027273	Primary	XRF
SDU-05-XRF-06	424544.0087	5395066.5972	48.704067	-118.025574	Primary	XRF
SDU-05-XRF-08	424356.5087	5394941.5972	48.702920	-118.028100	Primary	XRF

*Coordinate System: UTM 11 North, Units: meters; Datum: WGS1984

**Geographic Coordinate System, Decimal degrees; Datum: WGS1984

As a deviation to the QAPP, in situ XRF analysis was performed at the ICS sample locations for SDU-09 and SDU-10. The coordinates for these locations can be found in Table 1a, Incremental Composite Sampling Stations for Sediment. Please note that for SDU-09, in situ XRF analysis was performed at SDU-09A-R06 (a location that was not sampled for the ICS sample) and not at SDU-09A-09 (a location that was sampled for the ICS sample). For SDU-10, two in situ XRF readings were taken for SDU-10-19 and no in situ XRF analysis was performed at SDU-10-R05.

Table 1c Actual Station Locations for Bossburg Flat Beach Refined Sediment and Soil Collection: XRF Sampling Stations for Sediment



Station ID	X UTM 11N*	Y UTM 11N*	Latitude**	Longitude**	Station Type	Collection Method
SDU-05-XRF-09	424606.5087	5394941.5972	48.702951	-118.024702	Primary	XRF
SDU-05-XRF-R03	424481.5087	5395191.5972	48.705184	-118.026447	Reserve	XRF
Sediment Decision Unit 6						
SDU-06-XRF-01	425126.2415	5394173.8951	48.696108	-118.017500	Primary	XRF
SDU-06-XRF-02	425223.7415	5394068.8951	48.695175	-118.016157	Primary	XRF
SDU-06-XRF-04	425306.2415	5393813.8951	48.692891	-118.014990	Primary	XRF
SDU-06-XRF-05	425298.7415	5393678.8951	48.691676	-118.015067	Primary	XRF
SDU-06-XRF-R02	425238.7415	5394008.8951	48.694637	-118.015942	Reserve	XRF
Sediment Decision Unit 7						
SDU-07-F-XRF-01	424961.2141	5392697.5875	48.682809	-118.019475		In Situ XRF
SDU-07-F-XRF-02	424983.9573	5392719.7703	48.683011	-118.019170		In Situ XRF
SDU-07-F-XRF-03	425014.4552	5392734.062	48.683144	-118.018758		In Situ XRF
SDU-07-F-XRF-04	425030.362	5392747.9844	48.683271	-118.018544		In Situ XRF
SDU-07-F-XRF-05	425047.1557	5392774.2568	48.683509	-118.018321		In Situ XRF
SDU-07-F-XRF-06	425060.9651	5392805.0505	48.683788	-118.018139		In Situ XRF
SDU-07-F-XRF-07	425071.5526	5392834.1906	48.684051	-118.018000		In Situ XRF
SDU-07-F-XRF-08	425076.3542	5392860.2568	48.684286	-118.017940		In Situ XRF
SDU-07-F-XRF-09	425095.4203	5392885.3813	48.684514	-118.017686		In Situ XRF
SDU-07-F-XRF-10	425111.8172	5392906.1245	48.684703	-118.017467		In Situ XRF
SDU-07-F-XRF-11	425132.5797	5392896.8677	48.684622	-118.017183		In Situ XRF
SDU-07-F-XRF-12	425142.4943	5392882.638	48.684495	-118.017046		In Situ XRF
SDU-07-F-XRF-13	425155.8911	5392907.4552	48.684720	-118.016868		In Situ XRF
SDU-07-F-XRF-14	425165.8911	5392936.0583	48.684979	-118.016737		In Situ XRF
SDU-07-F-XRF-15	425171.0469	5392964.1906	48.685232	-118.016672		In Situ XRF
SDU-07-F-XRF-16	425185.1635	5392994.1167	48.685503	-118.016486		In Situ XRF
SDU-07-F-XRF-17	425193.6422	5393021.7276	48.685753	-118.016376		In Situ XRF
SDU-07-F-XRF-18	425201.1635	5393051.463	48.686021	-118.016279		In Situ XRF
SDU-07-F-XRF-19	425205.8833	5393082.6615	48.686302	-118.016221		In Situ XRF
SDU-07-F-XRF-20	425207.6031	5393089.7432	48.686366	-118.016199		In Situ XRF
SDU-07-F-XRF-21	425280.6013	5393083.49	48.686319	-118.015206		In Situ XRF
SDU-07-F-XRF-22	425275.9504	5393061.1696	48.686117	-118.015265		In Situ XRF
SDU-07-F-XRF-23	425266	5393030	48.685836	-118.015394		In Situ XRF
SDU-07-F-XRF-24	425256	5393002	48.685583	-118.015525		In Situ XRF
SDU-07-F-XRF-25	425248	5392977	48.685357	-118.015629		In Situ XRF
SDU-07-F-XRF-26	425235	5392947	48.685085	-118.015801		In Situ XRF
SDU-07-F-XRF-27	425224.5135	5392916.4708	48.684810	-118.015938		In Situ XRF
SDU-07-F-XRF-28	425212.6138	5392887.746	48.684550	-118.016094		In Situ XRF

*Coordinate System: UTM 11 North, Units: meters; Datum: WGS1984

**Geographic Coordinate System, Decimal degrees; Datum: WGS1984

As a deviation to the QAPP, in situ XRF analysis was performed at the ICS sample locations for SDU-09 and SDU-10. The coordinates for these locations can be found in Table 1a, Incremental Composite Sampling Stations for Sediment. Please note that for SDU-09, in situ XRF analysis was performed at SDU-09A-R06 (a location that was not sampled for the ICS sample) and not at SDU-09A-09 (a location that was sampled for the ICS sample). For SDU-10, two in situ XRF readings were taken for SDU-10-19 and no in situ XRF analysis was performed at SDU-10-R05.

Table 1c Actual Station Locations for Bossburg Flat Beach Refined Sediment and Soil Collection: XRF Sampling Stations for Sediment



Station ID	X UTM 11N*	Y UTM 11N*	Latitude**	Longitude**	Station Type	Collection Method
SDU-07-F-XRF-29	425201	5392862	48.684317	-118.016247		In Situ XRF
SDU-07-F-XRF-30	425185.8599	5392833.4708	48.684058	-118.016448		In Situ XRF
SDU-07-F-XRF-31	425166.6284	5392806.2724	48.683811	-118.016704		In Situ XRF
SDU-07-F-XRF-32	425149.8773	5392790.7354	48.683670	-118.016929		In Situ XRF
SDU-07-F-XRF-33	425145	5392763	48.683420	-118.016990		In Situ XRF
SDU-07-F-XRF-34	425132.8521	5392733.9946	48.683157	-118.017150		In Situ XRF
SDU-07-F-XRF-35	425116.8046	5392711.5712	48.682954	-118.017364		In Situ XRF
SDU-07-F-XRF-36	425096.2754	5392687.8833	48.682738	-118.017638		In Situ XRF
SDU-07-F-XRF-37	425070	5392670	48.682574	-118.017992		In Situ XRF
SDU-07-F-XRF-38	425047.6615	5392651.3385	48.682404	-118.018292		In Situ XRF
SDU-07-F-XRF-39	425033.926	5392639.2724	48.682293	-118.018476		In Situ XRF
SDU-07-XRF-01	425189.3164	5393030.7354	48.685833	-118.016436	Primary	XRF
SDU-07-XRF-02	425228.7331	5392911.3126	48.684764	-118.015879	Primary	XRF
SDU-07-XRF-03	425037.5772	5392795.058	48.683695	-118.018455	Primary	XRF
SDU-07-XRF-04	425108.7331	5392671.3126	48.682591	-118.017466	Primary	XRF
Sediment Decision Unit 8						
SDU-08-XRF-01	423209.273	5401902	48.765386	-118.044986	Primary	XRF
SDU-08-XRF-02	423131.273	5401824	48.764675	-118.046033	Primary	XRF
SDU-08-XRF-04	422994.773	5401668	48.763254	-118.047861	Primary	XRF
SDU-08-XRF-R03	423032.4236	5401708.0319	48.763619	-118.047356	Reserve	XRF
Sediment Decision Unit 9						
SDU-09-XRF-01	422480.1543	5401083.337	48.757932	-118.054752	Primary	XRF
SDU-09-XRF-02	422419.134	5401027.1808	48.757419	-118.055572	Primary	XRF
SDU-09-XRF-03	422373.0456	5400950.0893	48.756720	-118.056184	Primary	XRF
SDU-09-XRF-04	422326.9572	5400872.9977	48.756021	-118.056797	Primary	XRF
Sediment Decision Unit 10						
SDU-10-XRF-01	422246.1323	5400805.5368	48.755404	-118.057883	Primary	XRF
SDU-10-XRF-02	422198.1114	5400743.7389	48.754842	-118.058525	Primary	XRF
SDU-10-XRF-03	422150.0905	5400681.9409	48.754280	-118.059166	Primary	XRF
SDU-10-XRF-04	422102.0695	5400620.1429	48.753719	-118.059808	Primary	XRF

*Coordinate System: UTM 11 North, Units: meters; Datum: WGS1984

**Geographic Coordinate System, Decimal degrees; Datum: WGS1984

As a deviation to the QAPP, in situ XRF analysis was performed at the ICS sample locations for SDU-09 and SDU-10. The coordinates for these locations can be found in Table 1a, Incremental Composite Sampling Stations for Sediment. Please note that for SDU-09, in situ XRF analysis was performed at SDU-09A-R06 (a location that was not sampled for the ICS sample) and not at SDU-09A-09 (a location that was sampled for the ICS sample). For SDU-10, two in situ XRF readings were taken for SDU-10-19 and no in situ XRF analysis was performed at SDU-10-R05.

Table 1d Actual Station Locations for Bossburg Flat Beach Refined Sediment and Soil Collection: XRF Sampling Stations for Soil



Station ID	X UTM 11N*	Y UTM 11N*	Latitude**	Longitude**	Station Type	Collection Method
Soil Decision Unit 1						
UDU-01-XRF-01	422896.7268	5400940.792	48.756701	-118.049059	Primary	XRF
UDU-01-XRF-02	422931.7268	5400940.792	48.756706	-118.048582	Primary	XRF
UDU-01-XRF-03	422966.7268	5400940.792	48.756710	-118.048106	Primary	XRF
UDU-01-XRF-04	422981.0435	5400905.2351	48.756392	-118.047905	Primary	XRF
UDU-01-XRF-05	423001.1434	5400868.5384	48.756065	-118.047625	Primary	XRF
UDU-01-XRF-06	423036.8067	5400872.3826	48.756104	-118.047140	Primary	XRF
UDU-01-XRF-07	422949.2268	5400905.792	48.756393	-118.048338	Primary	XRF
Soil Decision Unit 2						
UDU-02-XRF-01	422931.7268	5400870.792	48.756076	-118.048569	Primary	XRF
UDU-02-XRF-02	422966.7268	5400870.792	48.756081	-118.048093	Primary	XRF
UDU-02-XRF-03	422949.2268	5400835.792	48.755764	-118.048325	Primary	XRF
UDU-02-XRF-04	422984.2268	5400835.792	48.755768	-118.047849	Primary	XRF
UDU-02-XRF-05	422931.7268	5400800.792	48.755447	-118.048556	Primary	XRF
UDU-02-XRF-06	422966.7268	5400800.792	48.755451	-118.048080	Primary	XRF
Soil Decision Unit 3						
UDU-03-XRF-01	422879.2268	5400765.792	48.755125	-118.049264	Primary	XRF
UDU-03-XRF-02	422774.2268	5400835.792	48.755742	-118.050705	Primary	XRF
UDU-03-XRF-03	422809.2268	5400835.792	48.755746	-118.050229	Primary	XRF
UDU-03-XRF-04	422844.2268	5400835.792	48.755751	-118.049753	Primary	XRF
UDU-03-XRF-05	422826.7268	5400800.792	48.755434	-118.049985	Primary	XRF
UDU-03-XRF-06	422861.7268	5400800.792	48.755438	-118.049508	Primary	XRF
UDU-03-XRF-07	422896.7268	5400800.792	48.755442	-118.049032	Primary	XRF
UDU-03-XRF-08	422914.2268	5400765.792	48.755130	-118.048788	Primary	XRF
Soil Decision Unit 4						
UDU-04-XRF-02	422879.2268	5400905.792	48.756385	-118.049290	Primary	XRF
UDU-04-XRF-03	422826.7268	5400870.792	48.756063	-118.049998	Primary	XRF
UDU-04-XRF-04	422896.7268	5400870.792	48.756072	-118.049045	Primary	XRF
UDU-04-XRF-05	422879.2268	5400835.792	48.755755	-118.049277	Primary	XRF
UDU-04-XRF-R01	422861.7268	5400870.792	48.756068	-118.049522	Reserve	XRF
Soil Decision Unit 5						
UDU-05-XRF-01	423466.1196	5401293.3972	48.759943	-118.041378	Primary	XRF
UDU-05-XRF-02	423483.9396	5401293.3972	48.759945	-118.041136	Primary	XRF
UDU-05-XRF-03	423492.8496	5401311.2172	48.760107	-118.041018	Primary	XRF
UDU-05-XRF-04	423501.7596	5401329.0372	48.760268	-118.040900	Primary	XRF
UDU-05-XRF-05	423510.6696	5401346.8572	48.760430	-118.040782	Primary	XRF
UDU-05-XRF-06	423528.4896	5401346.8572	48.760432	-118.040540	Primary	XRF
UDU-05-XRF-07	423537.3996	5401364.6772	48.760593	-118.040422	Primary	XRF
UDU-05-XRF-08	423546.3096	5401382.4972	48.760755	-118.040304	Primary	XRF
UDU-05-XRF-09	423555.2196	5401400.3172	48.760916	-118.040186	Primary	XRF
UDU-05-XRF-10	423564.1296	5401418.1372	48.761077	-118.040068	Primary	XRF

*Coordinate System: UTM 11 North, Units: meters; Datum: WGS1984

**Geographic Coordinate System, Decimal degrees; Datum: WGS1984

Table 1d Actual Station Locations for Bossburg Flat Beach Refined Sediment and Soil Collection: XRF Sampling Stations for Soil



Station ID	X UTM 11N*	Y UTM 11N*	Latitude**	Longitude**	Station Type	Collection Method
UDU-05-XRF-11	423581.9496	5401418.1372	48.761079	-118.039826	Primary	XRF
UDU-05-XRF-12	423581.9496	5401453.7772	48.761400	-118.039832	Primary	XRF
UDU-05-XRF-13	423599.7696	5401489.4172	48.761723	-118.039597	Primary	XRF
Soil Decision Unit 6						
UDU-06-XRF-01	422279.68	5400932.04	48.756546	-118.057451	Primary	XRF
UDU-06-XRF-02	422256.18	5400888.83	48.756154	-118.057762	Primary	XRF
UDU-06-XRF-03	422226.9	5400850.08	48.755802	-118.058153	Primary	XRF
UDU-06-XRF-04	422203.39	5400806.87	48.755411	-118.058465	Primary	XRF
UDU-06-XRF-05	422176.34	5400765.82	48.755038	-118.058825	Primary	XRF

*Coordinate System: UTM 11 North, Units: meters; Datum: WGS1984

**Geographic Coordinate System, Decimal degrees; Datum: WGS1984

Table 1e Actual Station Locations for Bossburg Flat Beach Refined Sediment and Soil Collection: COR Sampling Stations for Sediment



Station ID	X UTM 11N*	Y UTM 11N*	Latitude**	Longitude**	Station Type	Collection Method
Sediment Decision Unit 1						
SDU-01-COR-01-001	423610.5647	5401581.3807	48.762551	-118.039467	Primary	COR
SDU-01-COR-01-002	423610.5647	5401581.3807	48.762551	-118.039467	Primary	COR
SDU-01-COR-01-003	423610.5647	5401581.3807	48.762551	-118.039467	Primary	COR
SDU-01-COR-02-001	423555.5647	5401471.3807	48.761555	-118.040195	Primary	COR
SDU-01-COR-02-002	423555.5647	5401471.3807	48.761555	-118.040195	Primary	COR
SDU-01-COR-02-003	423555.5647	5401471.3807	48.761555	-118.040195	Primary	COR
SDU-01-COR-03-001	423528.0647	5401526.3807	48.762046	-118.040579	Primary	COR
SDU-01-COR-03-002	423528.0647	5401526.3807	48.762046	-118.040579	Primary	COR
SDU-01-COR-03-003	423528.0647	5401526.3807	48.762046	-118.040579	Primary	COR
Sediment Decision Unit 2						
SDU-02-COR-01-001	423490.3027	5401373.8645	48.760670	-118.041064	Primary	COR
SDU-02-COR-01-002	423490.3027	5401373.8645	48.760670	-118.041064	Primary	COR
SDU-02-COR-01-003	423490.3027	5401373.8645	48.760670	-118.041064	Primary	COR
SDU-02-COR-02-001	423380.3027	5401373.8645	48.760656	-118.042561	Primary	COR
SDU-02-COR-02-002	423380.3027	5401373.8645	48.760656	-118.042561	Primary	COR
SDU-02-COR-02-003	423380.3027	5401373.8645	48.760656	-118.042561	Primary	COR
SDU-02-COR-03-001	423352.8027	5401428.8645	48.761148	-118.042945	Primary	COR
SDU-02-COR-03-002	423352.8027	5401428.8645	48.761148	-118.042945	Primary	COR
SDU-02-COR-03-003	423352.8027	5401428.8645	48.761148	-118.042945	Primary	COR
Sediment Decision Unit 3						
SDU-03-COR-01-001	423086.7872	5401100.4635	48.758161	-118.046503	Primary	COR
SDU-03-COR-01-002	423086.7872	5401100.4635	48.758161	-118.046503	Primary	COR
SDU-03-COR-01-003	423086.7872	5401100.4635	48.758161	-118.046503	Primary	COR
SDU-03-COR-02-001	423029.2872	5401055.4635	48.757749	-118.047277	Primary	COR
SDU-03-COR-02-002	423029.2872	5401055.4635	48.757749	-118.047277	Primary	COR
SDU-03-COR-02-003	423029.2872	5401055.4635	48.757749	-118.047277	Primary	COR
SDU-03-COR-03-001	422914.2872	5400965.4635	48.756926	-118.048824	Primary	COR
SDU-03-COR-03-002	422914.2872	5400965.4635	48.756926	-118.048824	Primary	COR
SDU-03-COR-03-003	422914.2872	5400965.4635	48.756926	-118.048824	Primary	COR
Sediment Decision Unit 4						
SDU-04-COR-01-001	422691.1355	5400781.8543	48.755246	-118.051826	Primary	COR
SDU-04-COR-01-002	422691.1355	5400781.8543	48.755246	-118.051826	Primary	COR
SDU-04-COR-01-003	422691.1355	5400781.8543	48.755246	-118.051826	Primary	COR
SDU-04-COR-02-001	422631.1355	5400685.8543	48.754376	-118.052624	Primary	COR
SDU-04-COR-02-002	422631.1355	5400685.8543	48.754376	-118.052624	Primary	COR
SDU-04-COR-02-003	422631.1355	5400685.8543	48.754376	-118.052624	Primary	COR
SDU-04-COR-03-001	422595.1355	5400613.8543	48.753723	-118.053100	Primary	COR
SDU-04-COR-03-002	422595.1355	5400613.8543	48.753723	-118.053100	Primary	COR
SDU-04-COR-03-003	422595.1355	5400613.8543	48.753723	-118.053100	Primary	COR
Sediment Decision Unit 5						

*Coordinate System: UTM 11 North, Units: meters; Datum: WGS1984

**Geographic Coordinate System, Decimal degrees; Datum: WGS1984

Table 1e Actual Station Locations for Bossburg Flat Beach Refined Sediment and Soil Collection: COR Sampling Stations for Sediment



Station ID	X UTM 11N*	Y UTM 11N*	Latitude**	Longitude**	Station Type	Collection Method
SDU-05-COR-01-001	424294.0087	5395316.5972	48.706286	-118.029018	Primary	COR
SDU-05-COR-01-002	424294.0087	5395316.5972	48.706286	-118.029018	Primary	COR
SDU-05-COR-01-003	424294.0087	5395316.5972	48.706286	-118.029018	Primary	COR
SDU-05-COR-02-001	424606.5087	5394941.5972	48.702951	-118.024702	Primary	COR
SDU-05-COR-02-002	424606.5087	5394941.5972	48.702951	-118.024702	Primary	COR
SDU-05-COR-02-003	424606.5087	5394941.5972	48.702951	-118.024702	Primary	COR
SDU-05-COR-03-001	424606.5087	5395191.5972	48.705199	-118.024748	Primary	COR
SDU-05-COR-03-002	424606.5087	5395191.5972	48.705199	-118.024748	Primary	COR
SDU-05-COR-03-003	424606.5087	5395191.5972	48.705199	-118.024748	Primary	COR
Sediment Decision Unit 6						
SDU-06-COR-01-001	425306.2415	5393813.8951	48.692891	-118.014990	Primary	COR
SDU-06-COR-01-002	425306.2415	5393813.8951	48.692891	-118.014990	Primary	COR
SDU-06-COR-01-003	425306.2415	5393813.8951	48.692891	-118.014990	Primary	COR
SDU-06-COR-02-001	425223.7415	5394068.8951	48.695175	-118.016157	Primary	COR
SDU-06-COR-02-002	425223.7415	5394068.8951	48.695175	-118.016157	Primary	COR
SDU-06-COR-02-003	425223.7415	5394068.8951	48.695175	-118.016157	Primary	COR
SDU-06-COR-03-001	425126.2415	5394173.8951	48.696108	-118.017500	Primary	COR
SDU-06-COR-03-002	425126.2415	5394173.8951	48.696108	-118.017500	Primary	COR
SDU-06-COR-03-003	425126.2415	5394173.8951	48.696108	-118.017500	Primary	COR
Sediment Decision Unit 7						
SDU-07-COR-01-001	425108.7331	5392671.3126	48.682591	-118.017466	Primary	COR
SDU-07-COR-01-002	425108.7331	5392671.3126	48.682591	-118.017466	Primary	COR
SDU-07-COR-01-003	425108.7331	5392671.3126	48.682591	-118.017466	Primary	COR
SDU-07-COR-02-001	425189.3164	5393030.7354	48.685833	-118.016436	Primary	COR
SDU-07-COR-02-002	425189.3164	5393030.7354	48.685833	-118.016436	Primary	COR
SDU-07-COR-02-003	425189.3164	5393030.7354	48.685833	-118.016436	Primary	COR
SDU-07-COR-03-001	425037.5772	5392795.058	48.683695	-118.018455	Primary	COR
SDU-07-COR-03-002	425037.5772	5392795.058	48.683695	-118.018455	Primary	COR
SDU-07-COR-03-003	425037.5772	5392795.058	48.683695	-118.018455	Primary	COR
Sediment Decision Unit 8						
SDU-08-COR-01-001	422994.773	5401668	48.763254	-118.047861	Primary	COR
SDU-08-COR-01-002	422994.773	5401668	48.763254	-118.047861	Primary	COR
SDU-08-COR-01-003	422994.773	5401668	48.763254	-118.047861	Primary	COR
SDU-08-COR-02-001	423032.4236	5401708.0319	48.763619	-118.047356	Primary	COR
SDU-08-COR-02-002	423032.4236	5401708.0319	48.763619	-118.047356	Primary	COR
SDU-08-COR-02-003	423032.4236	5401708.0319	48.763619	-118.047356	Primary	COR
SDU-08-COR-03-001	423209.273	5401902	48.765386	-118.044986	Primary	COR
SDU-08-COR-03-002	423209.273	5401902	48.765386	-118.044986	Primary	COR
SDU-08-COR-03-003	423209.273	5401902	48.765386	-118.044986	Primary	COR
East Bank Cable Ferry Landing						
F-1-COR-01-001	422826.102	5400904.0479	48.756362	-118.050012	Primary	COR

*Coordinate System: UTM 11 North, Units: meters; Datum: WGS1984

**Geographic Coordinate System, Decimal degrees; Datum: WGS1984

Table 1e Actual Station Locations for Bossburg Flat Beach Refined Sediment and Soil Collection: COR Sampling Stations for Sediment



Station ID	X UTM 11N*	Y UTM 11N*	Latitude**	Longitude**	Station Type	Collection Method
F-1-COR-01-002	422826.102	5400904.0479	48.756362	-118.050012	Primary	COR
F-1-COR-01-003	422826.102	5400904.0479	48.756362	-118.050012	Primary	COR
F-1-COR-02-001	422844.83	5400934.17	48.756636	-118.049763	Primary	COR
F-1-COR-02-002	422844.83	5400934.17	48.756636	-118.049763	Primary	COR
F-1-COR-02-003	422844.83	5400934.17	48.756636	-118.049763	Primary	COR
F-1-COR-03-001	422846.07	5400915.01	48.756463	-118.049743	Primary	COR
F-1-COR-03-002	422846.07	5400915.01	48.756463	-118.049743	Primary	COR
F-1-COR-03-003	422846.07	5400915.01	48.756463	-118.049743	Primary	COR

*Coordinate System: UTM 11 North, Units: meters; Datum: WGS1984

**Geographic Coordinate System, Decimal degrees; Datum: WGS1984

Table 1f Actual Station Locations for Bossburg Flat Beach Refined Sediment and Soil Collection: COR Sampling Stations for Soil



Station ID	X UTM 11N*	Y UTM 11N*	Latitude**	Longitude**	Station Type	Collection Method
Soil Decision Unit 1						
UDU-01-COR-01-001	422981.0435	5400905.2351	48.756392	-118.047905	Primary	COR
UDU-01-COR-01-002	422981.0435	5400905.2351	48.756392	-118.047905	Primary	COR
UDU-01-COR-01-003	422981.0435	5400905.2351	48.756392	-118.047905	Primary	COR
UDU-01-COR-02-001	423001.1434	5400868.5384	48.756065	-118.047625	Primary	COR
UDU-01-COR-02-002	423001.1434	5400868.5384	48.756065	-118.047625	Primary	COR
UDU-01-COR-02-003	423001.1434	5400868.5384	48.756065	-118.047625	Primary	COR
UDU-01-COR-03-001	422931.66	5400916.77	48.756490	-118.048579	Primary	COR
UDU-01-COR-03-002	422931.66	5400916.77	48.756490	-118.048579	Primary	COR
UDU-01-COR-03-003	422931.66	5400916.77	48.756490	-118.048579	Primary	COR
Soil Decision Unit 2						
UDU-02-COR-01-001	422931.7268	5400870.792	48.756076	-118.048569	Primary	COR
UDU-02-COR-01-002	422931.7268	5400870.792	48.756076	-118.048569	Primary	COR
UDU-02-COR-01-003	422931.7268	5400870.792	48.756076	-118.048569	Primary	COR
UDU-02-COR-02-001	422966.7268	5400870.792	48.756081	-118.048093	Primary	COR
UDU-02-COR-02-002	422966.7268	5400870.792	48.756081	-118.048093	Primary	COR
UDU-02-COR-02-003	422966.7268	5400870.792	48.756081	-118.048093	Primary	COR
UDU-02-COR-03-001	422973.6454	5400848.5776	48.755882	-118.047995	Primary	COR
UDU-02-COR-03-002	422973.6454	5400848.5776	48.755882	-118.047995	Primary	COR
UDU-02-COR-03-003	422973.6454	5400848.5776	48.755882	-118.047995	Primary	COR
Soil Decision Unit 3						
UDU-03-COR-01-001	422896.7268	5400800.792	48.755442	-118.049032	Primary	COR
UDU-03-COR-01-002	422896.7268	5400800.792	48.755442	-118.049032	Primary	COR
UDU-03-COR-01-003	422896.7268	5400800.792	48.755442	-118.049032	Primary	COR
UDU-03-COR-02-001	422879.2268	5400765.792	48.755125	-118.049264	Primary	COR
UDU-03-COR-02-002	422879.2268	5400765.792	48.755125	-118.049264	Primary	COR
UDU-03-COR-02-003	422879.2268	5400765.792	48.755125	-118.049264	Primary	COR
UDU-03-COR-03-001	422844.2268	5400835.792	48.755751	-118.049753	Primary	COR
UDU-03-COR-03-002	422844.2268	5400835.792	48.755751	-118.049753	Primary	COR
UDU-03-COR-03-003	422844.2268	5400835.792	48.755751	-118.049753	Primary	COR
Soil Decision Unit 4						
UDU-04-COR-01-001	422861.7268	5400870.792	48.756068	-118.049522	Primary	COR
UDU-04-COR-01-002	422861.7268	5400870.792	48.756068	-118.049522	Primary	COR
UDU-04-COR-01-003	422861.7268	5400870.792	48.756068	-118.049522	Primary	COR
UDU-04-COR-02-001	422879.2268	5400905.792	48.756385	-118.049290	Primary	COR
UDU-04-COR-02-002	422879.2268	5400905.792	48.756385	-118.049290	Primary	COR
UDU-04-COR-02-003	422879.2268	5400905.792	48.756385	-118.049290	Primary	COR
UDU-04-COR-03-001	422879.2268	5400835.792	48.755755	-118.049277	Primary	COR
UDU-04-COR-03-002	422879.2268	5400835.792	48.755755	-118.049277	Primary	COR
UDU-04-COR-03-003	422879.2268	5400835.792	48.755755	-118.049277	Primary	COR
Soil Decision Unit 5						

*Coordinate System: UTM 11 North, Units: meters; Datum: WGS1984

**Geographic Coordinate System, Decimal degrees; Datum: WGS1984

Table 1f Actual Station Locations for Bossburg Flat Beach Refined Sediment and Soil Collection: COR Sampling Stations for Soil



Station ID	X UTM 11N*	Y UTM 11N*	Latitude**	Longitude**	Station Type	Collection Method
UDU-05-COR-01-001	423537.3996	5401364.6772	48.760593	-118.040422	Primary	COR
UDU-05-COR-01-002	423537.3996	5401364.6772	48.760593	-118.040422	Primary	COR
UDU-05-COR-01-003	423537.3996	5401364.6772	48.760593	-118.040422	Primary	COR
UDU-05-COR-02-001	423483.9396	5401293.3972	48.759945	-118.041136	Primary	COR
UDU-05-COR-02-002	423483.9396	5401293.3972	48.759945	-118.041136	Primary	COR
UDU-05-COR-02-003	423483.9396	5401293.3972	48.759945	-118.041136	Primary	COR
UDU-05-COR-03-001	423581.9496	5401453.7772	48.761400	-118.039832	Primary	COR
UDU-05-COR-03-002	423581.9496	5401453.7772	48.761400	-118.039832	Primary	COR
UDU-05-COR-03-003	423581.9496	5401453.7772	48.761400	-118.039832	Primary	COR
Soil Decision Unit 6						
UDU-06-COR-01-001	422279.68	5400932.04	48.756546	-118.057451	Primary	COR
UDU-06-COR-01-002	422279.68	5400932.04	48.756546	-118.057451	Primary	COR
UDU-06-COR-01-003	422279.68	5400932.04	48.756546	-118.057451	Primary	COR
UDU-06-COR-02-001	422256.18	5400888.83	48.756154	-118.057762	Primary	COR
UDU-06-COR-02-002	422256.18	5400888.83	48.756154	-118.057762	Primary	COR
UDU-06-COR-02-003	422256.18	5400888.83	48.756154	-118.057762	Primary	COR
UDU-06-COR-03-001	422226.9	5400850.08	48.755802	-118.058153	Primary	COR
UDU-06-COR-03-002	422226.9	5400850.08	48.755802	-118.058153	Primary	COR
UDU-06-COR-03-003	422226.9	5400850.08	48.755802	-118.058153	Primary	COR

*Coordinate System: UTM 11 North, Units: meters; Datum: WGS1984

**Geographic Coordinate System, Decimal degrees; Datum: WGS1984

**Table 2 Summary of Confirmation XRF Samples
Bossburg Flat Beach Refined Sediment and Soil Sampling**



Station ID	Sample Split	X UTM 11N*	Y UTM 11N*	Latitude**	Longitude**
XRF					
SDU-01-XRF-03	None	423528.0647	5401636.3807	48.763036	-118.040599
SDU-01-XRF-04	None	423583.0647	5401636.3807	48.763043	-118.039851
SDU-01-XRF-07	None	423610.5647	5401581.3807	48.762551	-118.039467
SDU-02-XRF-01	EPA	423325.3027	5401483.8645	48.761639	-118.043330
SDU-05-XRF-R03	None	424481.5087	5395191.5972	48.705184	-118.026447
SDU-08-XRF-02	None	423131.273	5401824	48.764675	-118.046033
SDU-08-XRF-R03	None	423032.4236	5401708.0319	48.763619	-118.047356
SDU-09-XRF-01	None	422480.1543	5401083.337	48.757932	-118.054752
SDU-09-XRF-02	Field	422419.134	5401027.1808	48.757419	-118.055572
SDU-09-XRF-04	None	422326.9572	5400872.9977	48.756021	-118.056797
SDU-10-XRF-02	None	422198.1114	5400743.7389	48.754842	-118.058525
SDU-10-XRF-04	None	422102.0695	5400620.1429	48.753719	-118.059808
UDU-01-XRF-01	None	422896.7268	5400940.792	48.756701	-118.049059
UDU-01-XRF-04	None	422981.0435	5400905.2351	48.756392	-118.047905
UDU-01-XRF-07	EPA	422949.2268	5400905.792	48.756393	-118.048338
UDU-02-XRF-02	None	422966.7268	5400870.792	48.756081	-118.048093
UDU-02-XRF-06	None	422966.7268	5400800.792	48.755451	-118.048080
UDU-03-XRF-01	EPA	422879.2268	5400765.792	48.755125	-118.049264
UDU-03-XRF-02	None	422774.2268	5400835.792	48.755742	-118.050705
UDU-04-XRF-02	None	422879.2268	5400905.792	48.756385	-118.049290
UDU-04-XRF-05	None	422879.2268	5400835.792	48.755755	-118.049277
UDU-04-XRF-R01	None	422861.7268	5400870.792	48.756068	-118.049522
UDU-05-XRF-01	None	423466.1196	5401293.3972	48.759943	-118.041378
UDU-06-XRF-05	Field	422176.34	5400765.82	48.755038	-118.058825

*Coordinate System: UTM 11 North, Units: meters; Datum: WGS1984

**Geographic Coordinate System, Decimal degrees; Datum: WGS1984

**Table 3 Summary of EPA and Field Split Samples
Bossburg Flat Beach Refined Sediment and Soil Sampling**



Station ID	Sample Split	X UTM 11N*	Y UTM 11N*	Latitude**	Longitude**
COR					
F-1-COR-02-002	EPA	422844.83	5400934.17	48.756636	-118.049763
SDU-01-COR-03-003	Field/EPA	423528.0647	5401526.3807	48.762046	-118.040579
SDU-02-COR-01-001	Field/EPA	423490.3027	5401373.8645	48.760670	-118.041064
SDU-02-COR-01-002	Field	423490.3027	5401373.8645	48.760670	-118.041064
SDU-02-COR-03-002	EPA	423352.8027	5401428.8645	48.761148	-118.042945
SDU-03-COR-03-003	EPA	422914.2872	5400965.4635	48.756926	-118.048824
SDU-04-COR-01-003	Field	422691.1355	5400781.8543	48.755246	-118.051826
SDU-04-COR-02-002	EPA	422631.1355	5400685.8543	48.754376	-118.052624
SDU-05-COR-01-001	Field/EPA	424294.0087	5395316.5972	48.706286	-118.029018
SDU-05-COR-02-002	Field	424606.5087	5394941.5972	48.702951	-118.024702
SDU-06-COR-03-003	EPA	425126.2415	5394173.8951	48.696108	-118.017500
SDU-07-COR-01-002	EPA	425108.7331	5392671.3126	48.682591	-118.017466
SDU-07-COR-03-002	Field	425037.5772	5392795.058	48.683695	-118.018455
SDU-07-COR-03-003	EPA	425037.5772	5392795.058	48.683695	-118.018455
SDU-08-COR-02-002	EPA	423032.4236	5401708.0319	48.763619	-118.047356
SDU-08-COR-03-001	EPA	423209.273	5401902	48.765386	-118.044986
SDU-08-COR-03-003	Field	423209.273	5401902	48.765386	-118.044986
UDU-01-COR-02-002	EPA	423001.1434	5400868.5384	48.756065	-118.047625
UDU-01-COR-03-001	EPA	422931.66	5400916.77	48.756490	-118.048579
UDU-02-COR-01-001	EPA	422931.7268	5400870.792	48.756076	-118.048569
UDU-03-COR-02-001	Field	422879.2268	5400765.792	48.755125	-118.049264
UDU-03-COR-03-002	Field	422844.2268	5400835.792	48.755751	-118.049753
UDU-03-COR-03-003	EPA	422844.2268	5400835.792	48.755751	-118.049753
UDU-04-COR-01-001	EPA	422861.7268	5400870.792	48.756068	-118.049522
UDU-04-COR-02-002	EPA	422879.2268	5400905.792	48.756385	-118.049290
UDU-05-COR-01-002	Field	423537.3996	5401364.6772	48.760593	-118.040422
UDU-05-COR-03-001	EPA	423581.9496	5401453.7772	48.761400	-118.039832
UDU-06-COR-01-001	EPA	422279.68	5400932.04	48.756546	-118.057451
UDU-06-COR-02-003	Field	422256.18	5400888.83	48.756154	-118.057762
UDU-06-COR-03-001	Field	422226.9	5400850.08	48.755802	-118.058153
UDU-06-COR-03-003	Field	422226.9	5400850.08	48.755802	-118.058153
ICS					
SDU-01-01	EPA	423630.844	5401600.757	48.762728	-118.039194
SDU-01-03	EPA	423561.0935	5401621.458	48.762906	-118.040147
SDU-01-04	EPA	423487.5363	5401630.903	48.762982	-118.041150
SDU-01-05	EPA	423606.1886	5401524.367	48.762038	-118.039516
SDU-01-06	EPA	423467.7621	5401598.514	48.762688	-118.041413
SDU-01-07	EPA	423546.6295	5401564.975	48.762396	-118.040334
SDU-01-09	EPA	423483.1916	5401602.384	48.762725	-118.041204
SDU-01-10	EPA	423618.442	5401607.412	48.762786	-118.039364
SDU-01-11	EPA	423578.5737	5401478.543	48.761622	-118.039883

*Coordinate System: UTM 11 North, Units: meters; Datum: WGS1984

**Geographic Coordinate System, Decimal degrees; Datum: WGS1984

**Table 3 Summary of EPA and Field Split Samples
Bossburg Flat Beach Refined Sediment and Soil Sampling**



Station ID	Sample Split	X UTM 11N*	Y UTM 11N*	Latitude**	Longitude**
SDU-01-12	EPA	423591.3448	5401567.336	48.762423	-118.039726
SDU-01-13	EPA	423500.8344	5401536.394	48.762133	-118.040951
SDU-01-14	EPA	423446.2824	5401580.596	48.762524	-118.041702
SDU-01-15	EPA	423497.6274	5401547.318	48.762231	-118.040997
SDU-01-16	EPA	423546.6431	5401622.761	48.762916	-118.040344
SDU-01-17	EPA	423474.3746	5401652.348	48.763173	-118.041333
SDU-01-18	EPA	423554.8629	5401525.288	48.762040	-118.040214
SDU-01-19	EPA	423574.6299	5401659.348	48.763248	-118.039970
SDU-01-20	EPA	423539.3972	5401588.883	48.762610	-118.040436
SDU-01-21	EPA	423504.0921	5401608.428	48.762781	-118.040920
SDU-01-22	EPA	423556.2292	5401551.037	48.762272	-118.040200
SDU-01-23	EPA	423547.9234	5401690.131	48.763522	-118.040339
SDU-01-24	EPA	423588.6346	5401546.525	48.762235	-118.039759
SDU-01-25	EPA	423563.4261	5401574.666	48.762485	-118.040107
SDU-01-26	EPA	423483.6623	5401615.732	48.762845	-118.041200
SDU-01-27	EPA	423592.5458	5401520.848	48.762005	-118.039701
SDU-01-28	EPA	423529.443	5401541.805	48.762185	-118.040563
SDU-01-29	EPA	423577.0298	5401458.945	48.761446	-118.039900
SDU-01-R01	EPA	423544.6347	5401479.69	48.761629	-118.040345
SDU-01-R02	EPA	423608.2499	5401595.82	48.762681	-118.039501
SDU-01-R03	EPA	423620.1929	5401632.543	48.763013	-118.039345
SDU-02B-01	Field	423323.5918	5401524.359	48.762003	-118.043360
SDU-02B-02	Field	423413.0686	5401381.784	48.760732	-118.042117
SDU-02B-03	Field	423439.7313	5401460.955	48.761447	-118.041769
SDU-02B-04	Field	423413.8774	5401430.311	48.761168	-118.042115
SDU-02B-05	Field	423456.445	5401393.365	48.760841	-118.041529
SDU-02B-06	Field	423466.72	5401430.136	48.761173	-118.041396
SDU-02B-07	Field	423347.0395	5401550.689	48.762243	-118.043046
SDU-02B-08	Field	423374.4447	5401419.78	48.761069	-118.042649
SDU-02B-09	Field	423386.5705	5401403.057	48.760920	-118.042481
SDU-02B-10	Field	423353.1126	5401440.817	48.761255	-118.042943
SDU-02B-11	Field	423357.3101	5401352.975	48.760466	-118.042870
SDU-02B-12	Field	423362.7025	5401521.729	48.761984	-118.042828
SDU-02B-13	Field	423394.2109	5401419.005	48.761064	-118.042380
SDU-02B-14	Field	423396.6821	5401453.7	48.761377	-118.042353
SDU-02B-15	Field	423450.0666	5401358.938	48.760531	-118.041609
SDU-02B-16	Field	423337.3744	5401373.601	48.760649	-118.043145
SDU-02B-17	Field	423380.438	5401449.891	48.761340	-118.042573
SDU-02B-18	Field	423457.9906	5401377.574	48.760699	-118.041505
SDU-02B-19	Field	423462.2903	5401418.768	48.761070	-118.041454
SDU-02B-20	Field	423382.9218	5401364.712	48.760574	-118.042524
SDU-02B-21	Field	423413.2885	5401367.63	48.760604	-118.042111
SDU-02B-22	Field	423344.278	5401361.698	48.760543	-118.043049

*Coordinate System: UTM 11 North, Units: meters; Datum: WGS1984

**Geographic Coordinate System, Decimal degrees; Datum: WGS1984

**Table 3 Summary of EPA and Field Split Samples
Bossburg Flat Beach Refined Sediment and Soil Sampling**



Station ID	Sample Split	X UTM 11N*	Y UTM 11N*	Latitude**	Longitude**
SDU-02B-23	Field	423422.2577	5401514.362	48.761925	-118.042016
SDU-02B-24	Field	423281.0986	5401417.25	48.761034	-118.043919
SDU-02B-25	Field	423369.6065	5401562.307	48.762350	-118.042741
SDU-02B-26	Field	423331.7464	5401451.677	48.761350	-118.043236
SDU-02B-27	Field	423423.4099	5401395.224	48.760854	-118.041978
SDU-02B-28	Field	423425.9904	5401352.995	48.760474	-118.041935
SDU-02B-29	Field	423306.6169	5401407.494	48.760950	-118.043570
SDU-02B-30	Field	423497.4723	5401354.654	48.760498	-118.040963
SDU-03A-01	EPA	423074.6009	5401083.0443	48.758003	-118.046665
SDU-03A-02	EPA	423046.1164	5401075.296	48.757930	-118.047052
SDU-03A-03	EPA	422892.831	5400942.8606	48.756720	-118.049112
SDU-03A-04	EPA	422977.574	5401017.64	48.757403	-118.047973
SDU-03A-05	EPA	422953.9822	5400993.739	48.757185	-118.048290
SDU-03A-06	EPA	423083.501	5401091.5	48.758080	-118.046546
SDU-03A-07	EPA	422881.5135	5400934.8505	48.756646	-118.049264
SDU-03A-08	EPA	422965.4171	5401004.46	48.757283	-118.048136
SDU-03A-09	EPA	422930.9801	5400977.638	48.757037	-118.048600
SDU-03A-10	EPA	422948.5738	5400993.522	48.757182	-118.048363
SDU-03A-11	EPA	422960.7385	5401013.461	48.757363	-118.048201
SDU-03A-12	EPA	422938.7076	5400982.31	48.757080	-118.048495
SDU-03A-13	EPA	423025.3107	5401056.609	48.757759	-118.047331
SDU-03A-14	EPA	422886.4067	5400944.452	48.756733	-118.049200
SDU-03A-15	EPA	423025.6607	5401050.236	48.757702	-118.047325
SDU-03A-16	EPA	422910.7876	5400958.4827	48.756862	-118.048871
SDU-03A-17	EPA	422925.4217	5400985.247	48.757105	-118.048677
SDU-03A-18	EPA	422902.5555	5400957.132	48.756849	-118.048982
SDU-03A-19	EPA	422983.9342	5401015.2661	48.757382	-118.047886
SDU-03A-20	EPA	423001.1959	5401035.844	48.757569	-118.047655
SDU-03A-21	EPA	422889.9655	5400951.476	48.756797	-118.049153
SDU-03A-22	EPA	422927.4036	5400971.821	48.756984	-118.048647
SDU-03A-23	EPA	423078.1306	5401090.091	48.758067	-118.046619
SDU-03A-24	EPA	422876.6289	5400940.087	48.756693	-118.049332
SDU-03A-25	EPA	423070.7457	5401093.519	48.758097	-118.046720
SDU-03A-26	EPA	423067.3834	5401085.687	48.758026	-118.046764
SDU-03A-27	EPA	423001.7889	5401028.3262	48.757502	-118.047646
SDU-03A-28	EPA	422990.071	5401023.098	48.757453	-118.047804
SDU-03A-29	EPA	423091.2702	5401096.308	48.758124	-118.046441
SDU-03A-30	EPA	423036.8621	5401056.281	48.757758	-118.047174
SDU-06C-01	Field	425179.0807	5394130.6343	48.695725	-118.016775
SDU-06C-02	Field	425248.9	5393985.5237	48.694428	-118.015800
SDU-06C-03	Field	425222.0089	5394019.8828	48.694734	-118.016171
SDU-06C-04	Field	425298.3634	5393857.6477	48.693284	-118.015104
SDU-06C-05	Field	425305.1656	5393823.0333	48.692973	-118.015006

*Coordinate System: UTM 11 North, Units: meters; Datum: WGS1984

**Geographic Coordinate System, Decimal degrees; Datum: WGS1984

**Table 3 Summary of EPA and Field Split Samples
Bossburg Flat Beach Refined Sediment and Soil Sampling**



Station ID	Sample Split	X UTM 11N*	Y UTM 11N*	Latitude**	Longitude**
SDU-06C-06	Field	425284.2078	5393859.3723	48.693298	-118.015297
SDU-06C-07	Field	425308.0756	5393770.2752	48.692499	-118.014957
SDU-06C-08	Field	425200.4662	5394087.3161	48.695338	-118.016476
SDU-06C-09	Field	425286.9699	5393834.376	48.693073	-118.015255
SDU-06C-11	Field	425238.9674	5394048.1364	48.694990	-118.015946
SDU-06C-12	Field	425271.97	5393861.5794	48.693316	-118.015464
SDU-06C-13	Field	425257.5847	5393912.8923	48.693776	-118.015669
SDU-06C-14	Field	425300.8781	5393758.9372	48.692396	-118.015052
SDU-06C-15	Field	425245.6695	5393960.2759	48.694201	-118.015839
SDU-06C-16	Field	425226.5972	5394048.2767	48.694990	-118.016114
SDU-06C-17	Field	425296.62	5393694.123	48.691813	-118.015099
SDU-06C-18	Field	425132.3606	5394167.3868	48.696050	-118.017416
SDU-06C-19	Field	425254.8407	5393938.9106	48.694010	-118.015711
SDU-06C-20	Field	425316.1068	5393779.0007	48.692579	-118.014849
SDU-06C-21	Field	425285.5664	5393684.2054	48.691722	-118.015247
SDU-06C-22	Field	425144.9874	5394157.4047	48.695962	-118.017243
SDU-06C-23	Field	425240.1748	5393972.4378	48.694310	-118.015916
SDU-06C-24	Field	425302.5149	5393680.0321	48.691687	-118.015016
SDU-06C-25	Field	425270.6885	5393904.4058	48.693701	-118.015489
SDU-06C-26	Field	425221.7552	5394067.6016	48.695163	-118.016183
SDU-06C-27	Field	425281.6421	5393716.233	48.692010	-118.015306
SDU-06C-28	Field	425247.8149	5393907.8425	48.693729	-118.015800
SDU-06C-29	Field	425260.7395	5393901.1865	48.693671	-118.015624
SDU-06C-30	Field	425304.3776	5393669.3183	48.691591	-118.014989
SDU-06C-R05	Field	425278.3743	5393893.3149	48.693602	-118.015383
SDU-10-01	EPA	422121.3605	5400672.617	48.754193	-118.059556
SDU-10-02	EPA	422238.0001	5400804.411	48.755393	-118.057994
SDU-10-03	EPA	422100.0431	5400634.555	48.753848	-118.059838
SDU-10-06	EPA	422266.0461	5400779.234	48.755170	-118.057608
SDU-10-07	EPA	422226.713	5400755.856	48.754955	-118.058138
SDU-10-10	EPA	422104.9948	5400659.232	48.754070	-118.059776
SDU-10-11	EPA	422165.7037	5400721.005	48.754634	-118.058961
SDU-10-12	EPA	422165.5994	5400702.184	48.754464	-118.058959
SDU-10-13	EPA	422181.997	5400720.144	48.754628	-118.058740
SDU-10-14	EPA	422208.5704	5400755.721	48.754951	-118.058385
SDU-10-15	EPA	422216.0162	5400767.96	48.755062	-118.058286
SDU-10-16	EPA	422184.5798	5400743.906	48.754842	-118.058709
SDU-10-17	EPA	422090.1874	5400640.862	48.753903	-118.059974
SDU-10-18	EPA	422152.8146	5400657.008	48.754056	-118.059125
SDU-10-19	EPA	422104.3904	5400631.4264	48.753820	-118.059779
SDU-10-20	EPA	422191.3392	5400715.338	48.754586	-118.058612
SDU-10-21	EPA	422109.417	5400641.252	48.753909	-118.059712
SDU-10-22	EPA	422180.6612	5400755.084	48.754942	-118.058764

*Coordinate System: UTM 11 North, Units: meters; Datum: WGS1984

**Geographic Coordinate System, Decimal degrees; Datum: WGS1984

**Table 3 Summary of EPA and Field Split Samples
Bossburg Flat Beach Refined Sediment and Soil Sampling**



Station ID	Sample Split	X UTM 11N*	Y UTM 11N*	Latitude**	Longitude**
SDU-10-23	EPA	422148.2051	5400712.798	48.754558	-118.059198
SDU-10-24	EPA	422255.9786	5400794.058	48.755302	-118.057747
SDU-10-25	EPA	422180.2197	5400730.266	48.754719	-118.058766
SDU-10-26	EPA	422194.4007	5400722.1476	48.754648	-118.058571
SDU-10-27	EPA	422129.8765	5400669.2795	48.754164	-118.059439
SDU-10-28	EPA	422206.8722	5400748.1605	48.754883	-118.058407
SDU-10-29	EPA	422238.0556	5400791.042	48.755273	-118.057991
SDU-10-30	EPA	422177.3215	5400699.7658	48.754444	-118.058799
SDU-10-R02	EPA	422245.1857	5400815.12	48.755490	-118.057898
SDU-10-R04	EPA	422077.6007	5400642.89	48.753920	-118.060145
SDU-10-R05	EPA	422222.8989	5400761.886	48.755009	-118.058191
SDU-10-R06	EPA	422163.6555	5400653.814	48.754029	-118.058977
UDU-03-01	EPA	422892.2548	5400764.1788	48.755112	-118.049086
UDU-03-02	EPA	422854.899	5400796.9402	48.755402	-118.049601
UDU-03-03	EPA	422852.3964	5400816.5004	48.755578	-118.049638
UDU-03-04	EPA	422911.5205	5400792.3698	48.755368	-118.048830
UDU-03-05	EPA	422790.7509	5400866.1934	48.756017	-118.050486
UDU-03-06	EPA	422802.5046	5400821.1634	48.755614	-118.050318
UDU-03-07	EPA	422937.2044	5400762.2352	48.755100	-118.048475
UDU-03-08	EPA	422915.2941	5400768.9773	48.755158	-118.048774
UDU-03-09	EPA	422901.2414	5400748.3267	48.754971	-118.048961
UDU-03-10	EPA	422806.344	5400858.5687	48.755951	-118.050273
UDU-03-11	EPA	422830.2799	5400806.1278	48.755482	-118.049937
UDU-03-12	EPA	422838.8685	5400807.3791	48.755494	-118.049821
UDU-03-13	EPA	422913.6852	5400738.3778	48.754883	-118.048790
UDU-03-14	EPA	422901.6594	5400784.7492	48.755299	-118.048962
UDU-03-15	EPA	422898.8829	5400795.7081	48.755397	-118.049002
UDU-03-16	EPA	422888.585	5400779.5741	48.755250	-118.049139
UDU-03-17	EPA	422788.3657	5400817.9356	48.755583	-118.050510
UDU-03-18	EPA	422894.0406	5400777.4856	48.755232	-118.049065
UDU-03-19	EPA	422818.5587	5400827.8321	48.755676	-118.050101
UDU-03-20	EPA	422761.016	5400835.0516	48.755734	-118.050885
UDU-03-21	EPA	422871.3904	5400787.094	48.755316	-118.049374
UDU-03-22	EPA	422847.3536	5400802.1999	48.755449	-118.049704
UDU-03-23	EPA	422778.8371	5400826.7082	48.755661	-118.050641
UDU-03-24	EPA	422859.202	5400779.2629	48.755244	-118.049539
UDU-03-25	EPA	422786.4337	5400823.0176	48.755629	-118.050537
UDU-03-26	EPA	422863.1524	5400800.8871	48.755439	-118.049489
UDU-03-27	EPA	422906.2723	5400778.4071	48.755242	-118.048898
UDU-03-28	EPA	422776.6748	5400848.6856	48.755858	-118.050674
UDU-03-29	EPA	422871.6127	5400801.1441	48.755442	-118.049374
UDU-03-30	EPA	422914.2269	5400756.4747	48.755046	-118.048786
UDU-06-01	Field	422249.2216	5400897.9873	48.756236	-118.057859

*Coordinate System: UTM 11 North, Units: meters; Datum: WGS1984

**Geographic Coordinate System, Decimal degrees; Datum: WGS1984

**Table 3 Summary of EPA and Field Split Samples
Bossburg Flat Beach Refined Sediment and Soil Sampling**



Station ID	Sample Split	X UTM 11N*	Y UTM 11N*	Latitude**	Longitude**
UDU-06-02	Field	422238.218	5400883.3806	48.756103	-118.058006
UDU-06-03	Field	422285.4215	5400922.1133	48.756457	-118.057371
UDU-06-04	Field	422203.0266	5400792.7136	48.755283	-118.058467
UDU-06-05	Field	422218.9053	5400841.5531	48.755725	-118.058261
UDU-06-06	Field	422187.4631	5400789.0525	48.755248	-118.058678
UDU-06-07	Field	422179.8854	5400786.9949	48.755229	-118.058781
UDU-06-08	Field	422225.3524	5400829.1058	48.755613	-118.058171
UDU-06-09	Field	422281.5722	5400911.1153	48.756358	-118.057421
UDU-06-10	Field	422193.794	5400792.7844	48.755283	-118.058593
UDU-06-11	Field	422269.0271	5400924.4257	48.756476	-118.057594
UDU-06-12	Field	422276.6185	5400905.6367	48.756308	-118.057488
UDU-06-13	Field	422224.9787	5400851.853	48.755818	-118.058180
UDU-06-14	Field	422279.6707	5400892.8029	48.756193	-118.057444
UDU-06-15	Field	422255.7227	5400918.2115	48.756419	-118.057774
UDU-06-16	Field	422275.7101	5400889.6874	48.756165	-118.057497
UDU-06-17	Field	422237.3262	5400842.9704	48.755740	-118.058010
UDU-06-18	Field	422293.7819	5400909.3228	48.756343	-118.057255
UDU-06-19	Field	422168.1064	5400769.1262	48.755067	-118.058938
UDU-06-20	Field	422271.0609	5400904.6096	48.756298	-118.057563
UDU-06-21	Field	422226.618	5400839.3954	48.755706	-118.058155
UDU-06-22	Field	422246.5073	5400892.0612	48.756182	-118.057895
UDU-06-23	Field	422208.7962	5400810.8602	48.755447	-118.058392
UDU-06-24	Field	422262.007	5400875.0909	48.756032	-118.057681
UDU-06-25	Field	422260.94	5400909.4409	48.756340	-118.057702
UDU-06-26	Field	422284.8125	5400929.9861	48.756528	-118.057381
UDU-06-27	Field	422214.6524	5400827.0206	48.755593	-118.058316
UDU-06-28	Field	422250.2824	5400856.3889	48.755862	-118.057837
UDU-06-29	Field	422213.9887	5400812.5932	48.755463	-118.058322
UDU-06-30	Field	422192.9469	5400780.4984	48.755172	-118.058602
XRF					
SDU-02-XRF-01	EPA	423325.3027	5401483.8645	48.761639	-118.043330
SDU-09-XRF-02	Field	422419.134	5401027.1808	48.757419	-118.055572
UDU-01-XRF-07	EPA	422949.2268	5400905.792	48.756393	-118.048338
UDU-03-XRF-01	EPA	422879.2268	5400765.792	48.755125	-118.049264
UDU-06-XRF-05	Field	422176.34	5400765.82	48.755038	-118.058825

*Coordinate System: UTM 11 North, Units: meters; Datum: WGS1984

**Geographic Coordinate System, Decimal degrees; Datum: WGS1984

Table 4
Equipment Rinsate Blanks Summary
Bossburg Flat Beach Refined Sediment and Soil Study

Sample ID ^a	Date	Equipment
UDU-01-ER-A-20150414 ^b	4/14/2015	core barrel
UDU-01-ER-B-20150415 ^b	4/15/2015	sieve
UDU-01-ER-A-20150415 ^b	4/15/2015	core barrel
UDU-02-ER-A-20150416 ^b	4/16/2015	core barrel
UDU-01-ER-B	4/16/2015	sieve
UDU-02-ER-B	4/17/2015	sieve
UDU-03-ER-A	4/17/2015	core barrel
UDU-03-ER-B	4/18/2015	sieve
UDU-04A-ER-A	4/18/2015	core barrel
UDU-01-ER-C	4/18/2015	hand auger
UDU-04-ER-B	4/20/2015	sieve
UDU-02-ER-C	4/20/2015	hand auger
SDU-01-ER-A	4/20/2015	core barrel
SDU-01-ER-B-20150421	4/21/2015	sieve
SDU-02-ER-A-20150421	4/21/2015	core barrel
SDU-02B-ER-A-20150422	4/22/2015	core barrel
SDU-03-ER-B-20150422	4/22/2015	sieve
Sterileware Scoop-2 oz-20150423	4/23/2015	plastic scoop
SDU-03B-ER-A-20150423	4/23/2015	core barrel
SDU-03C-ER-A-20150424	4/24/2015	core barrel
UDU-04-ER-C-20150424	4/24/2015	hand auger
SDU-05-ER-A-20150425	4/25/2015	core barrel
UDU-04-ER-C-20150425	4/25/2015	hand auger
UDU-03-ER-D-20150425	4/25/2015	shovel
SDU-05-ER-B-20150427	4/27/2015	sieve
SDU-06A-ER-A-20150427	4/27/2015	core barrel
SDU-10-ER-B-20150428	4/28/2015	sieve
SDU-06C-ER-A-20150428	4/28/2015	core barrel
SDU-06-ER-B-20150429	4/28/2015	sieve
SDU-06-ER-D-20150429	4/29/2015	shovel
UDU-05-ER-A-20150429	4/29/2015	core barrel
SDU-06-ER-C-20150429	4/29/2015	hand auger
UDU-05-ER-B-20150430	4/30/2015	sieve
SDU-05-ER-C-20150430	4/30/2015	hand auger
UDU-05-ER-A-20150430	4/30/2015	core barrel
SDU-05-ER-C-20150501	5/1/2015	hand auger
UDU-05-ER-D-20150501	5/1/2015	shovel
SDU-10-ER-A-20150501	5/1/2015	core barrel
SDU-08-ER-B-20150502	5/2/2015	sieve
SDU-04-ER-A-20150502	5/2/2015	core barrel
SDU-07-ER-B-20150504	5/4/2015	sieve
SDU-04-ER-A-20150504	5/4/2015	core barrel
SDU-04-ER-D-20150504	5/4/2015	shovel
SDU-08-ER-A-20150505	5/5/2015	core barrel
UDU-06-ER-A-20150506	5/6/2015	core barrel
SDU-07-ER-C-20150506	5/6/2015	hand auger
SDU-08-ER-D-20150506	5/6/2015	shovel
UDU-06-ER-B-20150507	5/7/2015	sieve
UDU-06-ER-A-20150507	5/7/2015	core barrel
UDU-06-ER-C-20150507	5/7/2015	hand auger

Notes:

^a Sample ID suffix cross-reference:

- A = core barrel used for XRF and ICS samples
- B = sieve used for XRF samples
- C = hand auger used for core samples
- D = shovel used for core samples

^b Date suffix was not included on the chain-of-custody submitted with the sample but was added by the laboratory and used for the database in order to have a unique sample ID.

ICS - incremental composite sampling

XRF - X-ray fluorescence

Figures

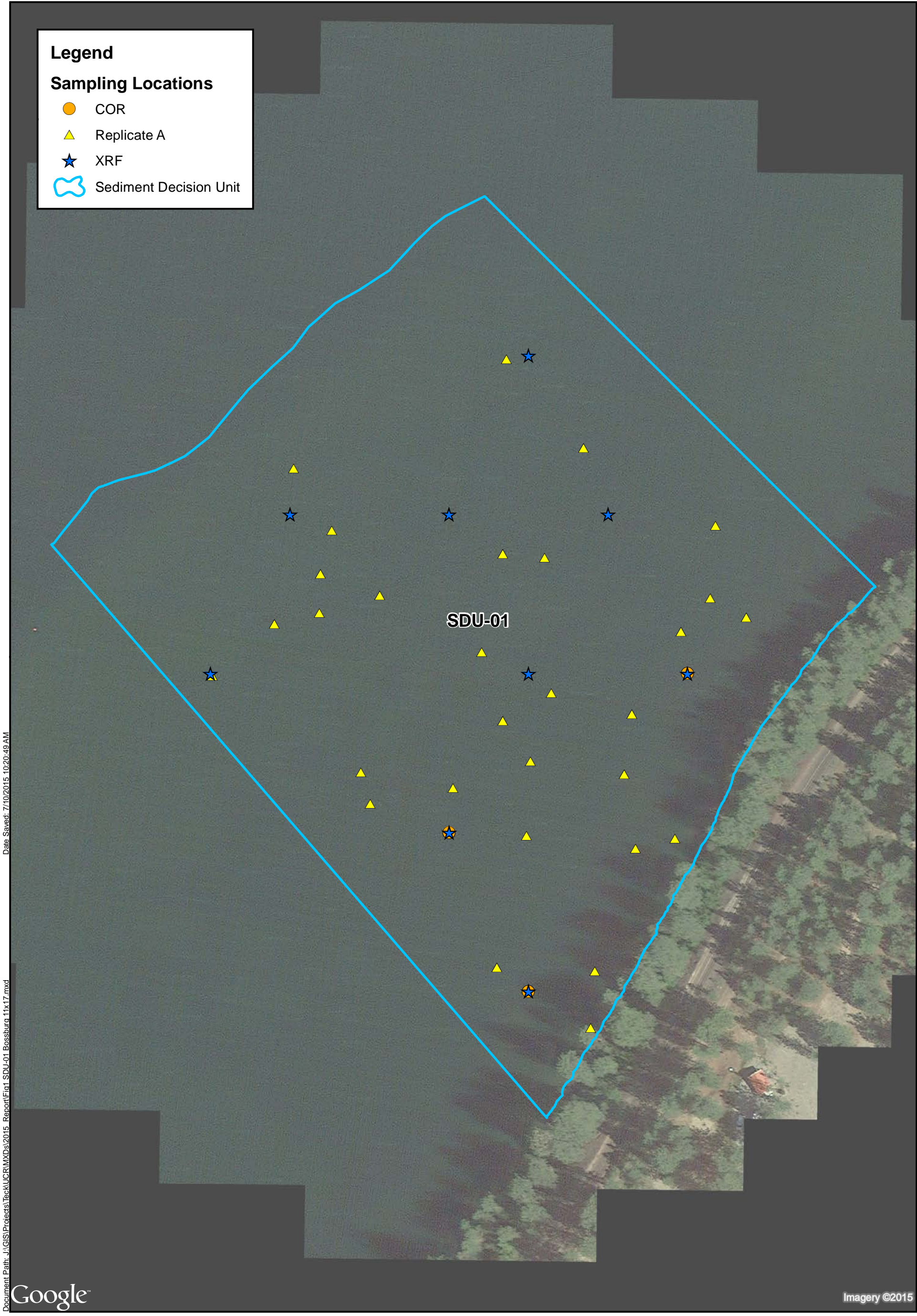


Figure 1



Decision Units shown are from the QAPP.

Sample Collection Locations
SDU-01
Bosburg Flat Beach
Refined Sediment and Soil Study

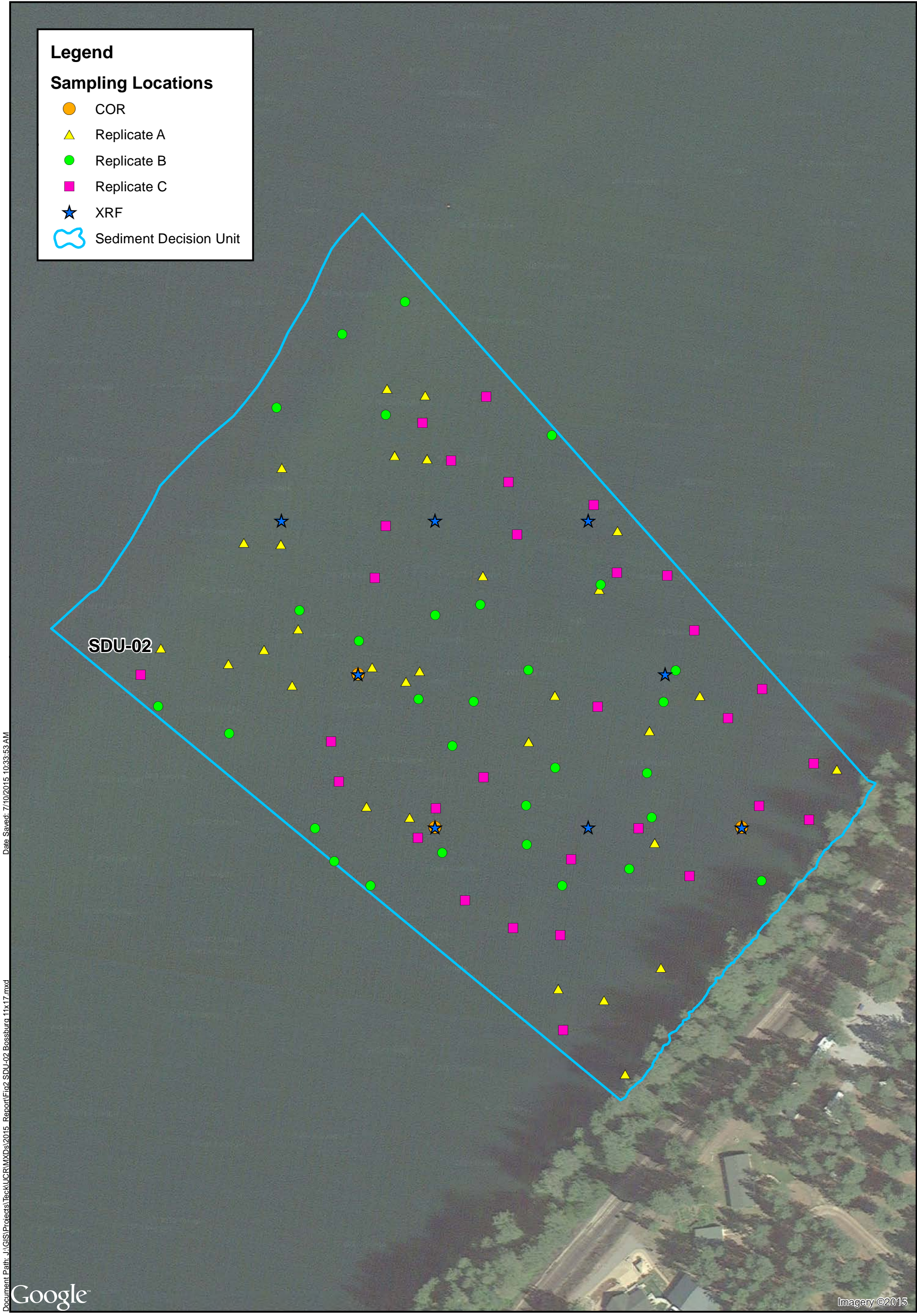


Figure 2



Decision Units shown are from the QAPP.

Sample Collection Locations
SDU-02
Bosburg Flat Beach
Refined Sediment and Soil Study

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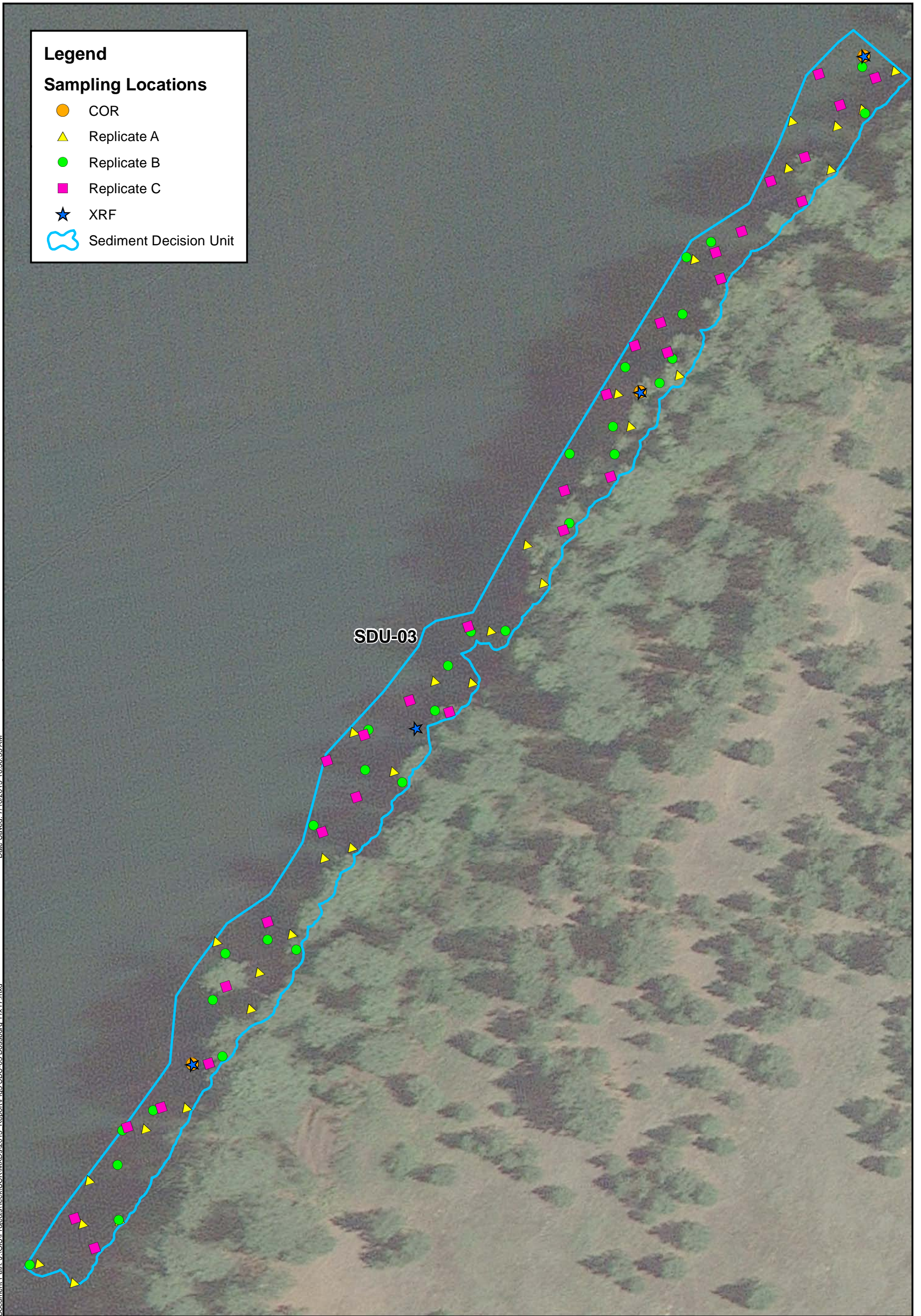
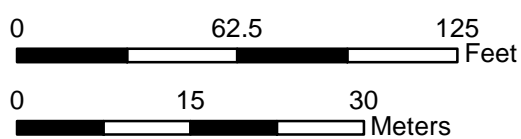


Figure 3

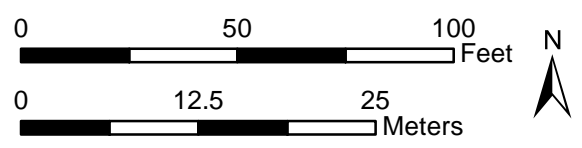


Decision Units shown are from the QAPP.

**Sample Collection Locations
SDU-03
Bosburg Flat Beach
Refined Sediment and Soil Study**



Figure 4



Decision Units shown are from the QAPP.

Sample Collection Locations
SDU-04
Bossburg Flat Beach
Refined Sediment and Soil Study

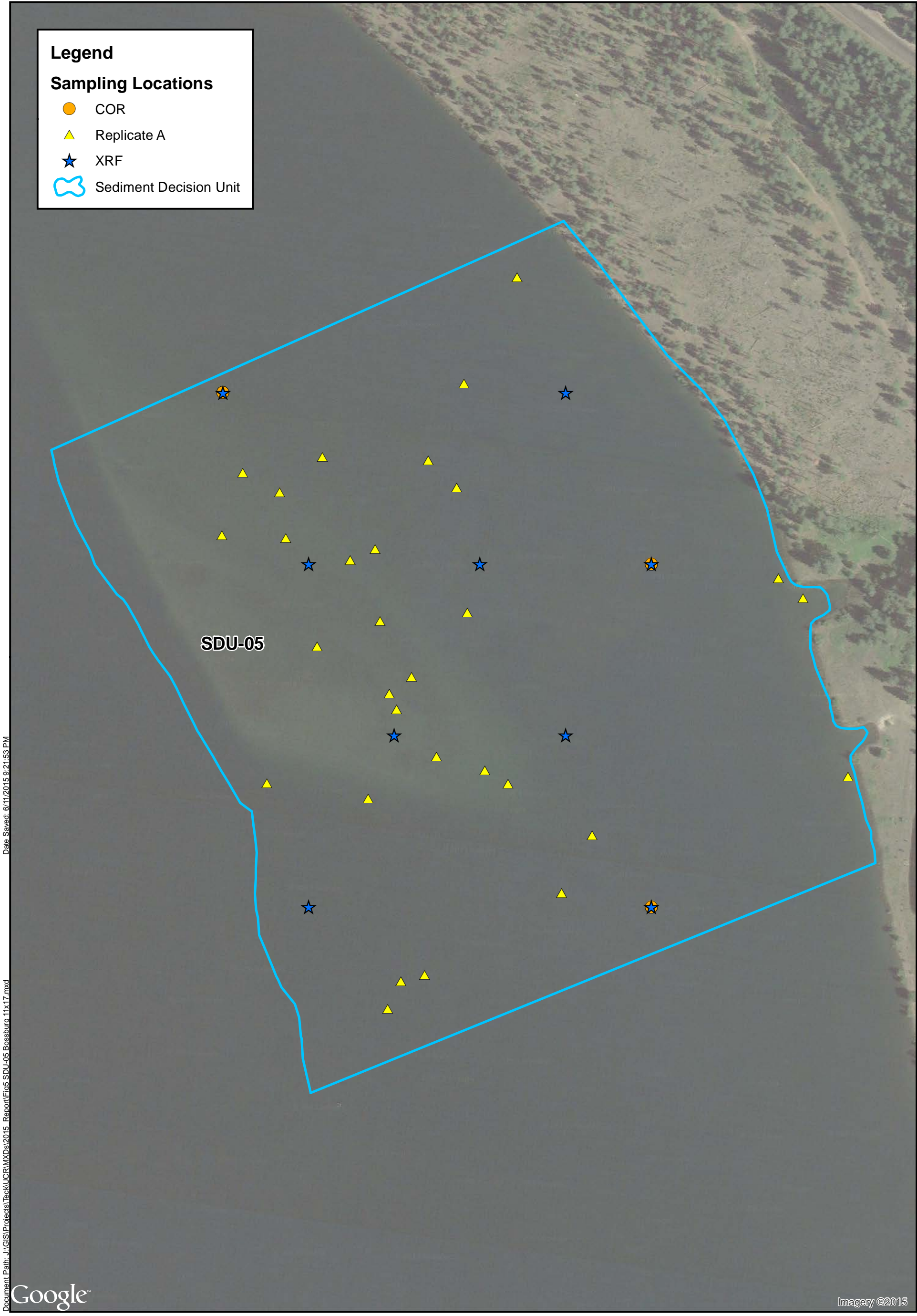
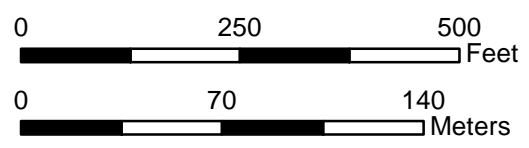
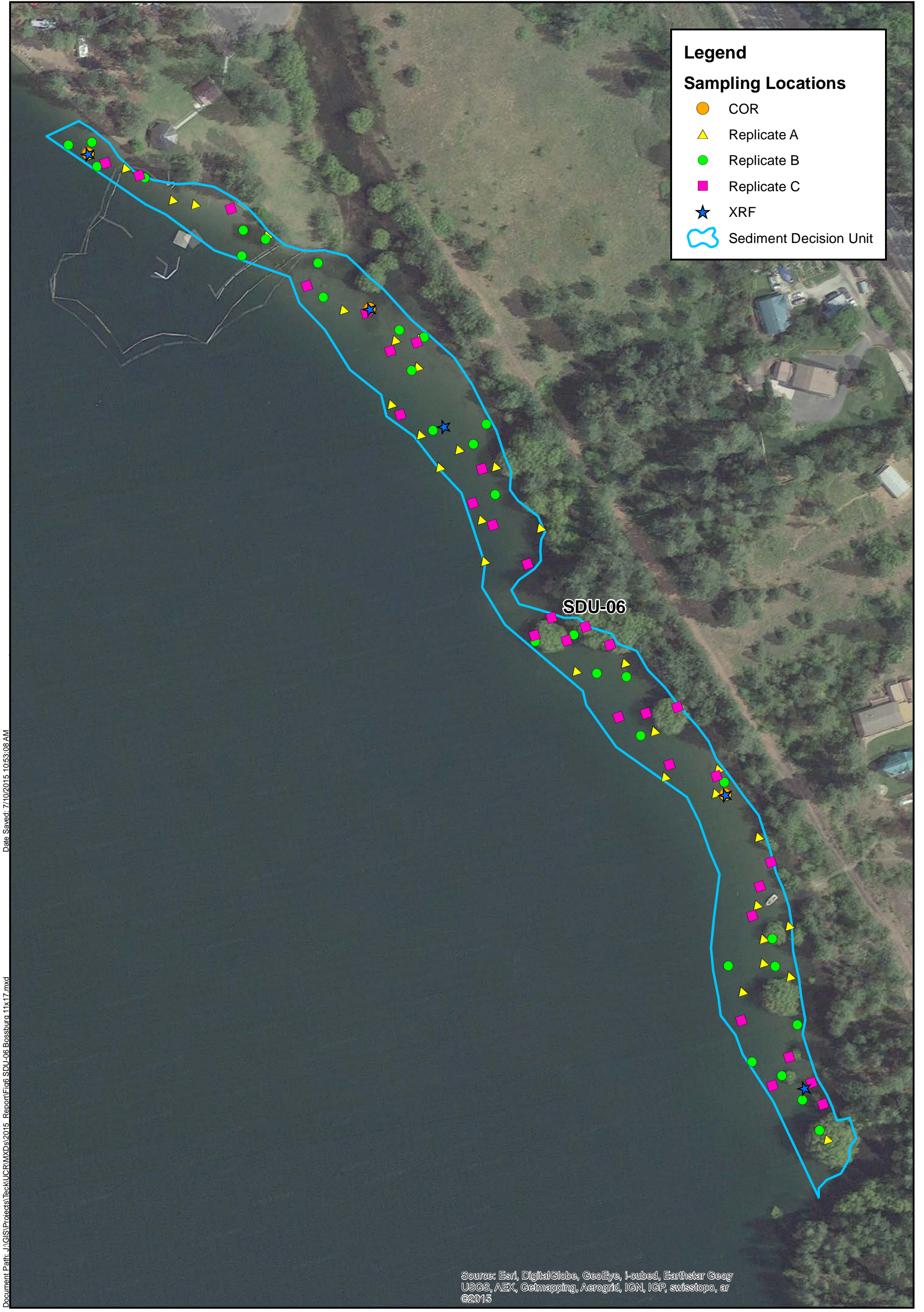


Figure 5



Decision Units shown are from the QAPP.

Sample Collection Locations
SDU-05
Bosburg Flat Beach
Refined Sediment and Soil Study



Legend

Sampling Locations

- COR
- ▲ Replicate A
- Replicate B
- Replicate C
- ★ XRF
- ⬭ Sediment Decision Unit

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Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geog
USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, ar
©2015

Figure 6



Decision Units shown are from the QAPP.

Sample Collection Locations
SDU-06
Bosburg Flat Beach
Refined Sediment and Soil Study

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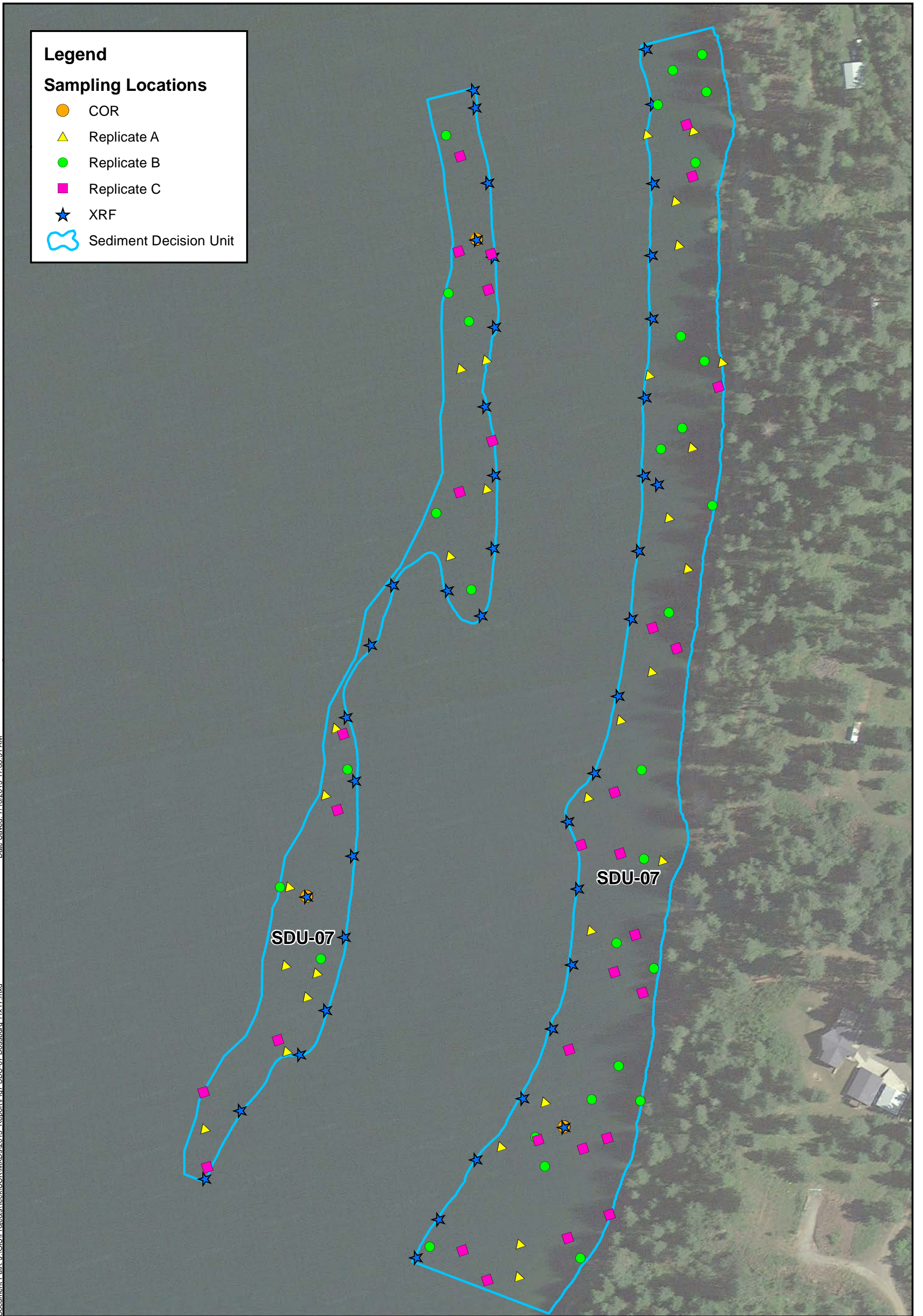


Figure 7



Decision Units shown are from the QAPP.

**Sample Collection Locations
SDU- 07
Bosburg Flat Beach
Refined Sediment and Soil Study**



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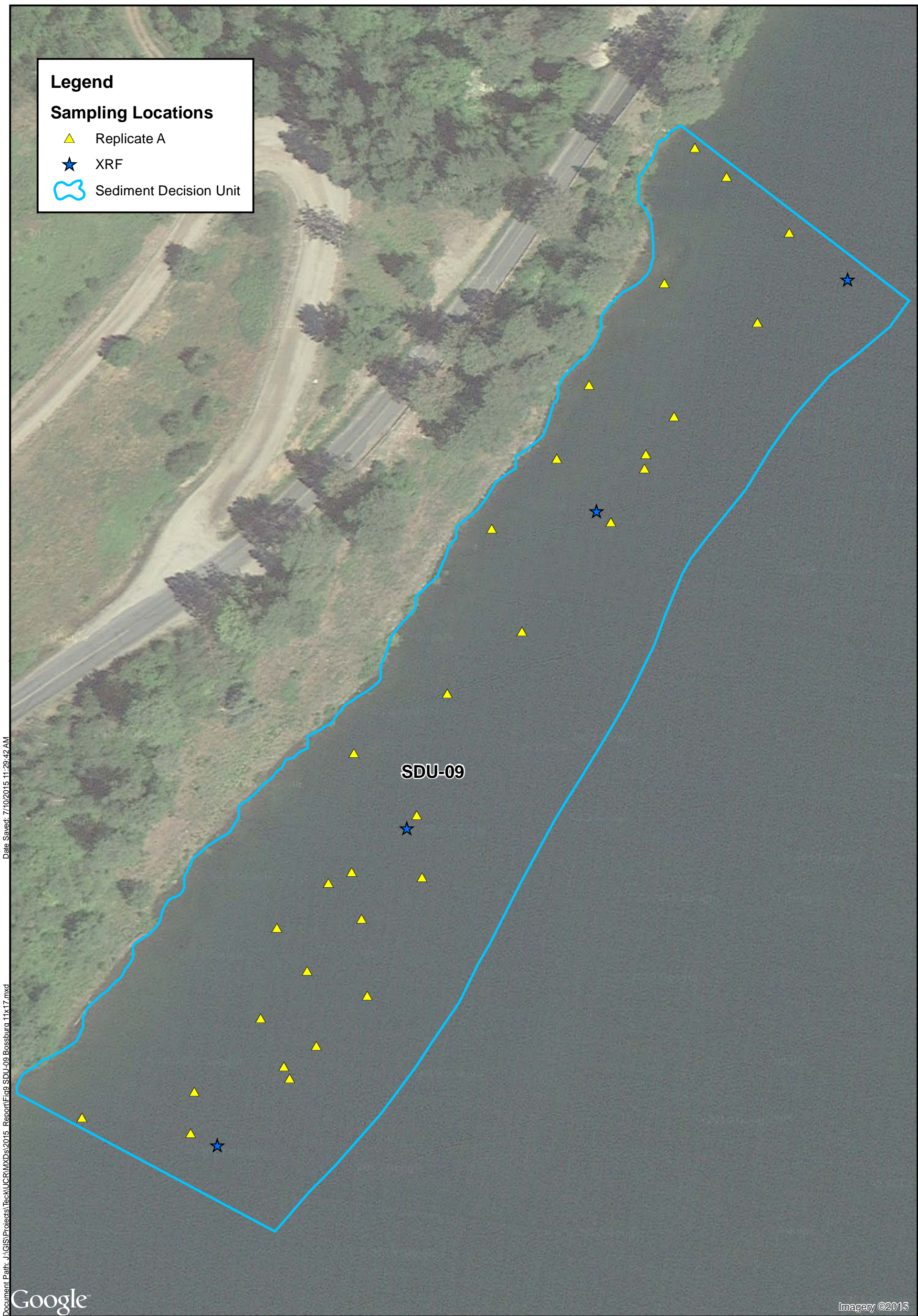
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Figure 8



Decision Units shown are from the QAPP.

**Sample Collection Locations
SDU-08
Bossburg Flat Beach
Refined Sediment and Soil Study**



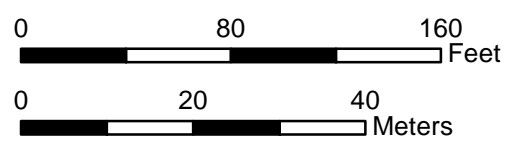
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Google

Imagery ©2015

Figure 9



Decision Units shown are from the QAPP.

**Sample Collection Locations
SDU-09
Bosburg Flat Beach
Refined Sediment and Soil Study**

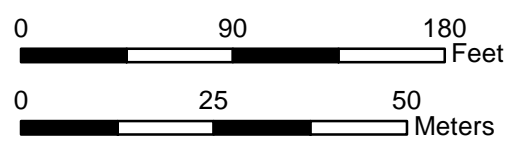


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Google

Imagery ©2015

Figure 10



Decision Units shown are from the QAPP.

**Sample Collection Locations
SDU-10
Bossburg Flat Beach
Refined Sediment and Soil Study**

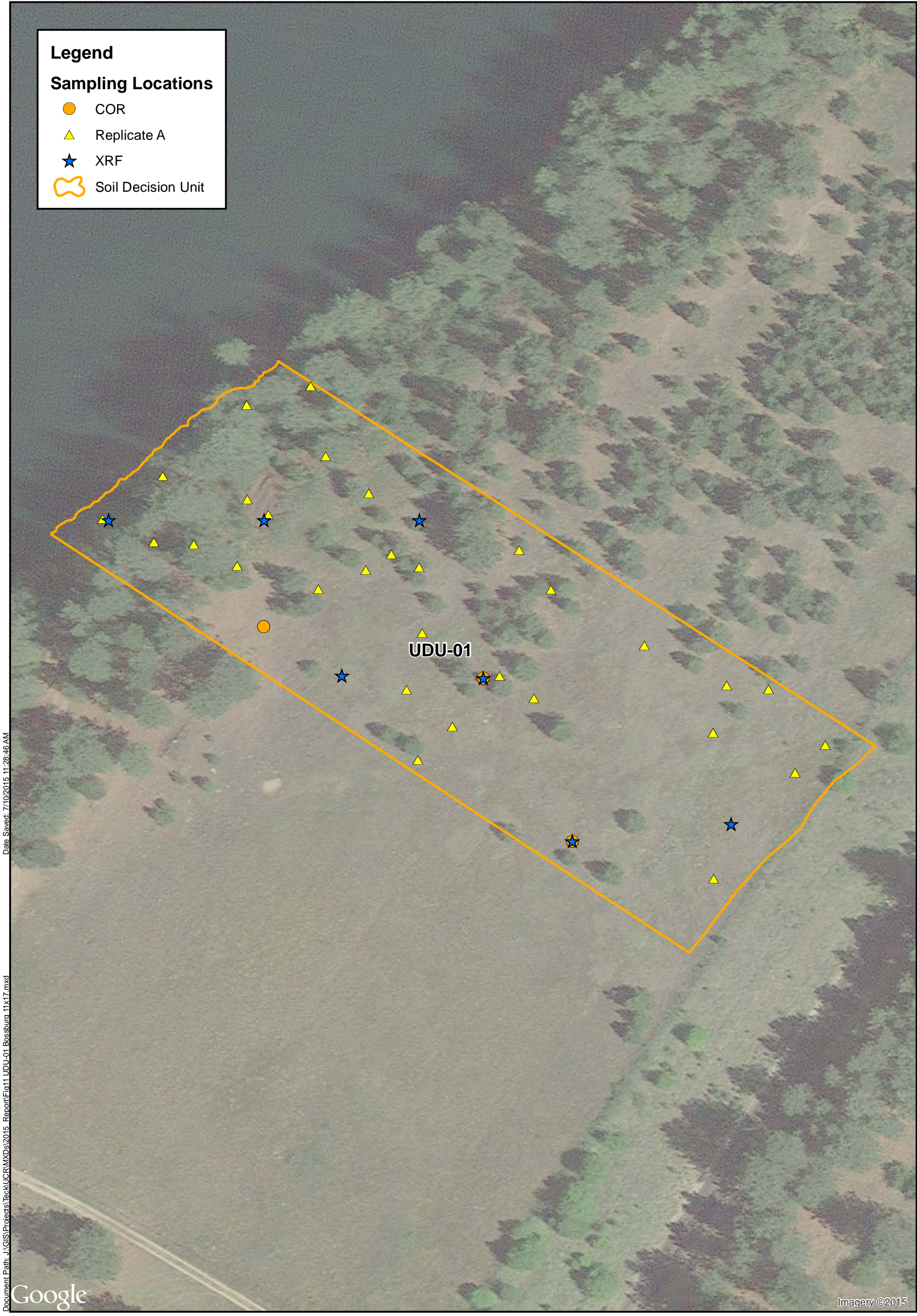
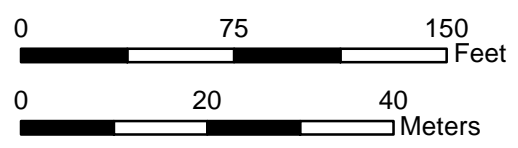


Figure 11



Decision Units shown are from the QAPP.

Sample Collection Locations
UDU-01
Bossburg Flat Beach
Refined Sediment and Soil Study



Figure 12



Decision Units shown are from the QAPP.

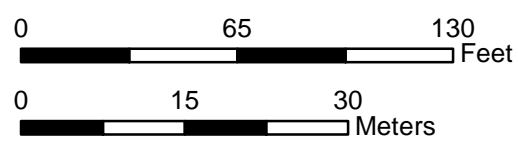
Sample Collection Locations
UDU-02
Bossburg Flat Beach
Refined Sediment and Soil Study



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Figure 13



Decision Units shown are from the QAPP.

Sample Collection Locations
UDU-03
Bosburg Flat Beach
Refined Sediment and Soil Study

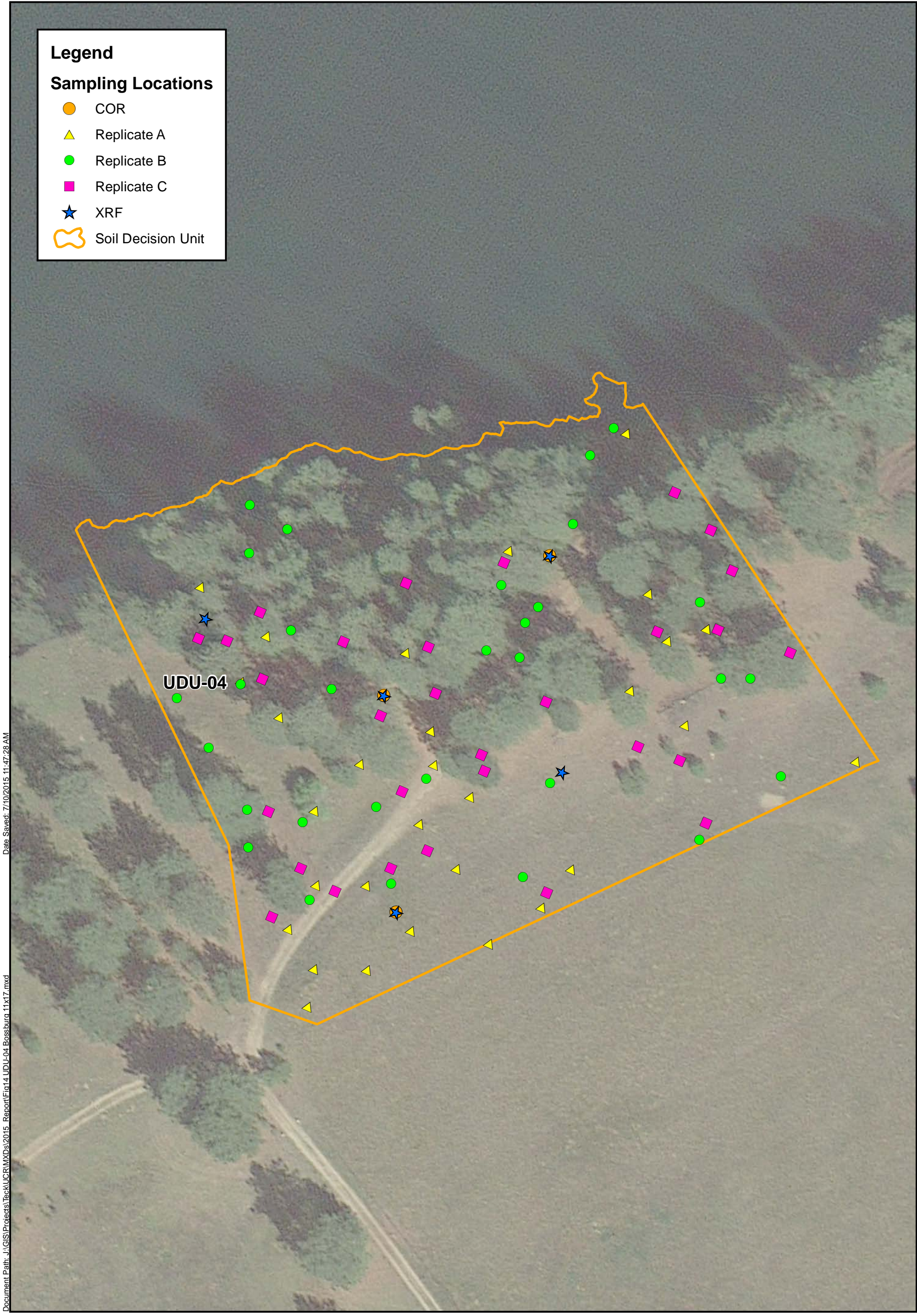
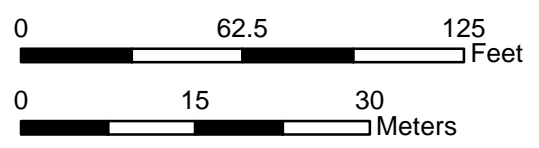


Figure 14

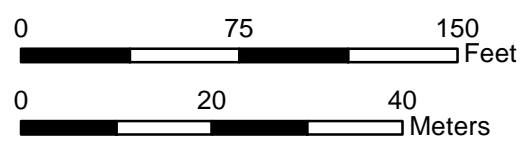


Decision Units shown are from the QAPP.

Sample Collection Locations
UDU-04
Bossburg Flat Beach
Refined Sediment and Soil Study



Figure 15

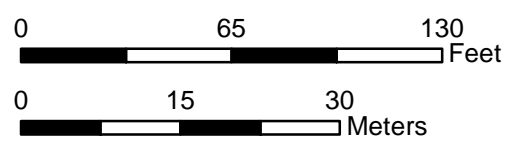


Decision Units shown are from the QAPP.

Sample Collection Locations
UDU-05
Bossburg Flat Beach
Refined Sediment and Soil Study



Figure 16

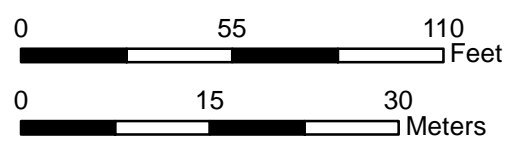


Decision Units shown are from the QAPP.

Sample Collection Locations
UDU-06
Bosburg Flat Beach
Refined Sediment and Soil Study



Figure 17



Decision Units shown are from the QAPP.

Sample Collection Locations
F-01
Bossburg Flat Beach
Refined Sediment and Soil Study

Appendices

Appendix A
Special Use Permit #PWR LARO TCAI-009



February 26, 2015

File No.: 01-773180-000

Mr. Dan Foster, Park Superintendent
U.S. Department of the Interior, National Park Service
Lake Roosevelt National Recreation Area
1008 Crest Drive
Coulee Dam, WA 99116

VIA ELECTRONIC AND CERTIFIED MAIL

Subject: Upper Columbia River Remedial Investigation Feasibility Study (UCR RI/FS)
U.S. Department of the Interior, National Park Service
Special Use Permit #PWR LARO TCAI-009

Dear Mr. Foster:

Further to your February 23, 2015 letter and as requested, please find enclosed for your records a signed copy of the above-referenced Special Use Permit.

I would like to thank you in advance for your assistance on this matter and look forward to continue working with you on this project. Should you have any questions or require any additional information at this time, please do not hesitate to contact me at (509) 623-4501.

Sincerely,
Teck American Incorporated

A handwritten signature in blue ink that reads "Kris R. McCaig". The signature is written in a cursive style.

Kris R. McCaig
Manager, Environment and Public Affairs

Attachment (1) – Executed Special Use Permit #PWR LARO TCAI-009

February 26, 2015
Page 2 of 2

cc: Dr. Laura Buelow, U.S. Environmental Protection Agency, Richland, WA
Matt Wilkening, U.S. Environmental Protection Agency, Boise, ID
Keith Holliday, U.S. Dept. of the Interior, National Park Service, Kettle Falls, WA
Paul McCullough, AECOM, Seattle, WA

UNITED STATES DEPARTMENT OF THE INTERIOR
National Park Service

Special Use Permit

Name of Use: **Sample Collection for Bossburg Flat Beach Refined Sediment and Soil Study**

Date Permit Reviewed: February 13, 2015

Expires: May 31, 2015

Permit #PWR LARO TCAI-009

Region Park Type No. #

Long Term

Short Term

Name of Area: **Lake Roosevelt National Recreation Area**

Name or Permittee: **Teck America Inc.**
Phone: **(509) 623-4501**

Service Address: **501 N Riverpoint Blvd., Suite 300**
Spokane, WA 99202

Teck America is hereby authorized during the period from (01 day 4 Month 2015), through (31 Day 5 Month 2015), to use the following described land or facilities in the permit conditions:

Those areas within Lake Roosevelt National Recreation Area described within the *Upper Columbia River - Final Quality Assurance Project Plan for the Bossburg Flat Beach Refined Sediment and Soil Study* dated January 2015 and as approved by the U.S. Environmental Protection Agency on January 20, 2015 in consultation with the Cultural Resource Coordination Group.

For the purpose(s) of: **Collecting Sediment and Soil Samples [Research (2500)]**
Contact: **Keith Holliday** Phone: **(509) 754-7858**

Authorizing legislation or other authority (RE - DO-53): **16 U.S.C. §§1a-1; 42 U.S.C. §§9601 et seq.**

NEPA Compliance: CATEGORICALLY EXCLUDED EA/FONSI EIS OTHER APPROVED PLANS
DO-12 CE 3.3 (P)

PERFORMANCE BOND: Required Not Required Amount **\$0**

LIABILITY INSURANCE: Required Not Required Amount **\$1,000,000**

ISSUANCE of this permit is subject to the conditions on the reverse hereof and appended pages and when appropriate to the payment to the U.S. Dept. of the Interior, National Park Service.

The undersigned hereby accepts this permit subject to the terms, conditions, covenants, obligations, and reservations, expressed or implied herein.

Permittee:

Kris R. McCaig
Signature

Kris McCaig, Manager, Environment + Public Affairs
Print Name and Title

2/25/2015
Date

Authorizing Official:

Don C. Fook
Signature

Park Superintendent

2-23-2015
Date

CONDITIONS OF THIS PERMIT

1. The Permittee shall exercise this privilege subject to the supervision of the Park Superintendent and shall comply with all applicable laws, regulations, codes, standards and policies, including but not limited to 29 CFR 1910 and 16 U.S.C. Section 1 *et seq.*

Based on previously cited and/or documented violations at Lake Roosevelt National Recreation Area (LARO), the following firm and/or individual is not granted access and shall not perform any field activities under this Permit.

Mr. Greg Diefenbach, Consulting Geologist

2. The Permittee shall pay the United States for any damage resulting from the activities contemplated by this Permit, which would not reasonably be inherent in the use that the Permittee is authorized to make of the Site. For purposes of this Permit, the Site is that portion of the Upper Columbia River (UCR) Site as defined within the June 2, 2006 Settlement Agreement between the U.S. Environmental Protection Agency (EPA) and Teck Cominco that lies within the boundaries of LARO.
3. No Member of or Delegate to Congress, or Resident Commissioner shall be admitted to any share or part of this Permit or to any benefit that may arise there from, but this provision shall not be construed to extend to this grant if made with a corporation for its general benefit.
4. During the performance of this Permit, the Permittee agrees that it will not discriminate against any person because of race, color, religion, sex, or national origin. The Permittee will take affirmative action to ensure that applicants are employed without regard to their race, color, religion, sex, or national origin.
5. ANTI-DEFICIENCY ACT. No provision of this Permit shall be interpreted as or constitute a commitment or requirement that the United States obligate or pay funds in contravention of the Anti-Deficiency Act, 31 U.S.C. §§1341-1344 and 1511-1519, or any other applicable provision of law.
6. This Permit may not be transferred or assigned to parties not described within the permit application without the prior written consent of the Park Superintendent.
7. The National Park Service (NPS) reserves the right to stop any work being performed on the Site pursuant to this Permit should NPS determine that such work has or will negatively impact any NPS resources, which would not reasonably be inherent in the use that the Permittee is entitled to make of the Site pursuant to this Permit.
8. The Permittee is prohibited from giving false information; to do so will be considered a breach of conditions and be grounds for revocation [Re: 36 CFR 2.32(a)(4)].

February 13, 2014

9. This Permit is granted upon the express condition that the United States, its agents and employees, shall be free from all liabilities and claims for damages and/or suits for or by any reason, arising from or related to activities conducted pursuant to this Permit, including any releases of Waste Materials (as defined in Paragraph 33 of this Permit), injury, or death to any person or property of the Permittee, its contractors, subcontractors, agents or employees, or third parties, from any cause or causes whatsoever while in or upon the Site or any part thereof during the term of this Permit or occasioned by any use of the Site or any activity carried on by the Permittee or its contractors or subcontractors in connection herewith, and the Permittee hereby covenants and agrees to indemnify, defend, save and hold harmless the United States, its agents and employees, from all liabilities, charges, expenses and costs on account of or by reason of any such injuries, deaths, liabilities, claims, suits or losses however occurring, or damages arising from any acts related to this Permit.
10. This Permit is issued only for the use of the portion of the Site within LARO identified in the EPA approved *Upper Columbia River - Final Quality Assurance Project Plan for the Bossburg Flat Beach Refined Sediment and Soil Study* dated January 2015 (QAPP), and only for the dates and times specified.
11. At no time will Permittee's activities at the Site interfere with a visitor's enjoyment of the Park, except as necessary to conduct the activities contemplated by this Permit. Visitor access to all park facilities, exhibits, resources, etc. will be maintained at all times and the Permittee will not block or obstruct any park walkway, dock, boat launch, trail, or road, except to the extent necessary to conduct the activities authorized by this Permit.
12. The Permittee will comply with any and all instructions from official representatives of the NPS (e.g., Rangers, Point(s) of Contact, and Cultural Resource Representatives), including but not limited to orders to cease and desist work.
13. This Permit does not authorize any use, activity, or purpose other than those expressly described herein.
14. NPS reserves the right to immediately rescind this Permit at any time should any of the Permit conditions be violated, or should the activity in any way interfere with any program of the Park, except as expressly authorized by this Permit, or at the discretion of the Park Superintendent.
15. If the Permittee fails to comply with the requirements of the Permit or uses the Permit for an unauthorized use, activity, or purpose, the Permittee shall pay the Department \$25,000 for each failure to comply or unauthorized use, activity or purpose, unless excused by the Park Superintendent.
16. The issuance of this Permit will grant the Permittee access to the Site to conduct only those activities necessary to perform the work in the EPA approved QAPP and described in the Permit conditions. To the extent practicable, all work performed subject to this Permit shall comply with the EPA guidance, *Green Remediation: Incorporating*

Sustainable Environmental Practices into Remediation of Contaminated Sites, EPA 542-R-08-002 (April 2008).

17. Future access to NPS property or any modifications to this Permit will require a written amendment issued by the NPS.
18. The Permittee shall coordinate the performance of work with the appropriate representative of the NPS. The primary local NPS point of contact for all aspects of this Permit will be Keith Holliday (Office: 509/754-7858, Cell: 509/631-0306, and Email: keith_holliday@nps.gov). The alternate point of contact is Jon Edwards (Office: 509/754-7876, Cell: 509-631-0103, and Email: jon_edwards@nps.gov). In the event of emergency, accident, injury or death, call 911. For any other environmental accidents, spill or release, NPS law enforcement must be contacted via the local county Sherriff's office, Stevens County (509/684-2555) or Lincoln County (509/725-3501). Additionally, Keith Holliday must be contacted within one-hour of any incident.
19. REGULATORY REQUIREMENTS: All Site work will be conducted and implemented in accordance with all federal, state, and local laws, regulations and requirements as directed by the NPS, and will be consistent with the NPS mission (*see, e.g.*, 16 U.S.C. Section 1 *et seq.*) and Permit conditions.
20. The Permittee is responsible for complying with any federal, state, or local requirement(s) to obtain any licenses and/or permits for the activities conducted pursuant to this Permit, and for obtaining any utility clearances required before the permitted work is commenced.
21. All work and investigations on NPS property requires a minimum 48-hour advance notice (business days, Monday-Friday except federal holidays) to the NPS points of contact identified above. The Permittee will provide before activities commence the NPS a written list of names with email addresses, phone and fax numbers of its points of contact, including the Permittee's contractors and subcontractors for activities conducted on the Site pursuant to this Permit.
22. The Permittee and its representatives, agents, contractors, and subcontractors must be apprised of, be familiar with, and comply with the contents of this Permit. A copy of this Permit will be available and producible upon request by any NPS representative to the Permittee and/or its contractors and subcontractors during all phases of the permitted work.
23. Any and/or all sample collection activities on NPS or Bureau of Reclamation (BOR) property, or those activities that are or may be impacting NPS or BOR property and resources shall be monitored by a NPS cultural resource representative or designated agent. The daily work hours for NPS cultural resource representatives are 7:00 am to 5:00 pm PDT. Travel and meetings (e.g., safety) necessary for the activities allowed by this Permit will occur during work hours. Also, included in work hours are at least two 15-minute breaks and an hour lunch. NPS cultural resource representatives weekly work

days are Monday through Saturday, but not Sunday.

24. This Permit does not grant any property rights, easements, right-of-ways, or any other interest in real property, including ownership of samples collected.
25. Permittee shall dispose of soil samples collected but not selected for analysis or soil collected in excess of the volume required in the EPA approved QAPP as Investigation Derived Waste (IDW) prior to expiration of the Permit, unless amended. Permittee shall submit to the NPS point of contact a copy of the complete chain of custody form, manifest, and receipt of disposal for each sample collected within 30-days of permit expiration.
26. The Permittee and its contractors and subcontractors are responsible for the proper handling and off-Site disposal of all generated wastes, including but not limited to samples, in accordance with state and federal regulations. This includes all IDW, which will be handled in accordance with all legal requirements and will be containerized, characterized for disposal purposes only, and properly disposed of at an off-Site facility at the Permittee's expense. All IDW shall be placed in appropriate containers and removed from NPS property at the end of each work day. IDW shall not be staged or stored for more than 24 hours on NPS property. IDW shall not be disposed on NPS property. IDW shall not be used for any other purposes and/or characterized/analyzed, except as needed for disposal.
27. Appropriate Occupational Safety and Health Administration personal protective equipment must be used by field crews and other on-Site personnel.
28. A copy of all data (*e.g.*, sample results, laboratory results, coordinates, wildlife inventories), documentation (*e.g.*, manifests, field notes, maps, photographs, monitoring results), and reports prepared relating to work performed pursuant to this Permit will be made available to the NPS points of contact when submitted to the EPA.
29. The Permittee assumes liability for all activities, releases, incidents and events caused by or associated with any permitted activity, including any and all releases of Waste Materials into the environment resulting from permitted activities. The Permittee assumes responsibility for costs, repairs, and/or restoration to any areas damaged by such releases and/or discharges, whether those areas are within the permitted area or not.
30. In the event of a spill or other release or threatened release of a Waste Material into the environment that constitutes an emergency situation or may present an immediate threat to public health or welfare or the environment, the Permittee shall immediately take all appropriate action to prevent, abate, or minimize such release or threat of release, and shall immediately make proper notification in accordance with all applicable legal and regulatory requirements. Notification of any release of a Waste Material shall be made to the Washington Emergency Management Division at 1-800-258-5990 and NPS law enforcement at (509) 754-7813. Notice also shall be made to the NPS points of contact identified in Paragraph 19 above. Contingency measures will be implemented as noted in

the following paragraph, and the Permittee shall be responsible for cleanup of all spills or other releases.

31. Contingency measures:
 - a. Permittee and its contractors will immediately stop operations;
 - b. All crew members will don appropriate personal protective equipment and take appropriate steps to abate and remediate the release; and
 - c. Authorized activities will be suspended until conditions are determined to be stable according to NPS determination.

32. Nothing in the preceding paragraphs shall be deemed to limit any authority of the United States, (a) to take all appropriate action to protect human health and the environment or to prevent, abate, respond to, or minimize an actual or threatened release of Waste Materials on, at, or from the Site, or (b) to direct or order such action, or seek an order from the requisite Court, to protect human health and the environment or to prevent, abate, respond to, or minimize an actual or threatened release of Waste Materials on, at, or from the Site.

33. "Waste Material" shall mean, for purposes of this Permit, (a) any "hazardous substance" under CERCLA Section 101(14), 42 U.S.C. § 9601(14); (b) any "pollutant or contaminant" under CERCLA Section 101(33), 42 U.S.C. § 9601(33); (c) any "solid waste" under RCRA Section 1004(27); (d) any hazardous waste under RCRA Section 1004(5), 42 U.S.C. § 6903(5); (e) any petroleum product or waste, including crude oil or any fraction thereof or waste; and (f) natural gas, liquefied natural gas, or synthetic gas or any mixtures thereof.

34. The Permittee shall ensure its liability insurance remains in full force during the entirety of the period covered by this Permit. The Permittee agrees to be fully responsible for the management, performance, use and safety of the Site under this Permit and hereby accepts responsibility and assumes liability for any and all claims arising from the intentional, reckless or negligent actions or omissions of its representatives, employees, agents, contractors or subcontractors directly or indirectly connected with the work performed, or the maintenance or use of the Site, to the extent permitted by law. The Permittee shall, and shall require all of its contractors and subcontractors to:
 - a. Procure a general liability insurance policy from responsible companies for \$1,000,000 (one million dollars), or the minimum required by law, if any, whichever amount is greater. The United States of America shall be named as an additional insured on all policies. The Permit number will be included on said policy. All such policies shall specify that the insured shall have no right of subrogation against the United States for payments of any premiums or deductibles thereunder, and such insurance policies shall be obtained by, be for the account of, and be at the insured's sole risk. A copy of the Certificate of Insurance evidencing proper insurance coverage and referencing the Permit number shall be returned to NPS with the executed Permit to the Park

Superintendent. No work shall be allowed to proceed under this Permit until the copy of said Certificate of Insurance is provided to the Park Superintendent.

- b. Pay the United States the full value for all damages to the lands or other property of the United States caused by the Permittee or by the Permittee's employees, agents, contractors, subcontractors, or employees of the contractors or subcontractors.
 - c. Indemnify, save and hold harmless and defend the United States against all fines, claims, damages, losses, judgments, and expenses to the extent permitted by law arising out of, or from any omission or activity in connection with activities conducted under this Permit.
35. The Permittee and its contractors and subcontractors shall take adequate measures as directed and approved by NPS to prevent, minimize, and mitigate damage to Park resources during all activities conducted pursuant to this Permit. The Permittee shall restore any injury to NPS property resulting from activities conducted pursuant to this Permit in accordance with NPS, other federal and state requirements, and at the direction of NPS.
 36. No IDW or waste materials shall be allowed to enter natural or manmade water or sewer systems in or on NPS property by either direct or indirect action of the Permittee. Any waste material entering onto NPS property shall be removed and the affected property cleaned, stabilized, or restored the day that this condition is discovered, at the direction, and to the satisfaction, of NPS. The Permittee shall take all necessary measures to prevent air, noise, and water pollution by any material and/or equipment used during this permitted activity.
 37. Construction equipment, materials, and all other supplies shall be staged in such a way as to allow for the safe use of the area by park visitors, to the extent possible.
 38. The Permittee is responsible for the safety of all Site visitors and shall provide the necessary direction, barricades, detours, and other safety measures to ensure visitor safety. All access restrictions to the work area will be coordinated with the NPS points of contact listed above.
 39. Other than the immediate work area and the clearly defined safety zone, all sidewalks, walkways, roadways, docks, boat launches, and trails must remain unobstructed to allow for the reasonable use of these areas by pedestrians, vehicles, and other park users.
 40. Any injuries to any persons from the activities authorized under this Permit shall be reported immediately to the NPS points of contact. At least one operable cell phone is required to be with each field crew at all times.
 41. The United States shall have no liability for any claims or causes of action in any forum regarding any activities conducted pursuant to this Permit, including but not limited to

liability for claims or causes of action for property damage, bodily injury, or death caused by Permittee's use of NPS property in connection with this Permit.

42. The Permittee agrees to comply with and be bound by the terms of this Permit and to undertake all actions set forth in this Permit. In any action by the NPS to enforce the terms of this Permit, the Permittee consents to and agrees not to contest the authority or jurisdiction of NPS to issue or enforce this Permit, and agrees not to contest the validity of the Permit or its terms.
43. All promotional and informational material related to Site activities, including signage, relating to activities undertaken pursuant to this Permit shall be reviewed and approved by the Park Superintendent prior to its release or use.
44. Good order and proper decorum shall be maintained by those persons conducting and participating in Site activities and public safety and general welfare will not be endangered.

UPON THE ACCEPTANCE OF THE CONDITIONS CONTAINED IN THIS PERMIT, INDICATED BY THE APPROVAL OF THE PERMITTEE IN THE SPACE PROVIDED ON THIS PERMIT, AND THE RETURN OF A PROPERLY EXECUTED ORIGINAL TO THIS OFFICE WITHIN NOT MORE THAN 30 DAYS OF ISSUANCE, THIS PERMIT BECOMES VALID FOR THE ACTIVITIES DESCRIBED.

RETURN ONE SIGNED ORIGINAL TO:

Attention: Superintendent
Dan A. Foster
1008 Crest Drive
Coulee Dam, WA
99116

February 13, 2014

Appendix B
AECOM Daily Reports

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study		DFR NO.: 1	
Project No.: 33765144		Date: 4/13/2015	
Client/Project Manager: Teck American, Inc; Kris McCaig		Weather: Ptly Cloudy	
AECOM Project Manager: Paul McCullough		Temperature: 65F	
AECOM Field Supervisor: Mark Vetter		Precipitation: None	
Start Time: 0715			
End Time: 1700			
AECOM TEAM A			
Name		Name	
Tony Palmieri		Eric Lillywhite	
Demetrio Cabanillas		Dave Lewis	
Sarah McDaniel		Michelle Stegner	
AECOM XRF TEAM			
Name			
Amy Dahl			
Ken Yang			
Sarah McDaniel (archaeologist)			
Cary Kindberg (GPS)			
Columbia Navigation		EPA/EPA Contractor	
Name		Name	
Not present		Not present	
Visitors		Purpose	
None			
Health and Safety			
<p>The field team less Oliver Patsch met at TAI's office for kickoff meeting. Kris McCaig, Dave Enos and Becky Henselen were present for TAI. Discussed everyone's role in safety. TAI's number one core value is safety. Everyone is a leader when it comes to safety. Everyone has stop work authority. All safety issues and observations to be shared with other teams each day. Dave Enos reviewed safety issues related to deer and driving, electrical safety and shared observations from the Upland soil sampling project.</p>			
Summary of Daily Activities (continued on Page 2)			
<p>Mark Vetter, Tony Palmieri and Amy Dahl met Becky Henselen at the TAI storage locker where we loaded the necessary gear into the box truck. We took a short lunch break and then the team gathered at TAI's office. After team introductions Kris McCaig provided a down load of the project over the last 9 years. Kris mentioned that residents of Northport will be attending and EPA public meeting tomorrow evening (Tuesday 4/14) to be briefed on the residential sampling program. Kris discussed that we may get some feedback from local residents after this meeting. She addressed how to handle contact - tell them we understand their concerns and direct them to Kris. We discussed safety. Then we discussed the EPA, CCT and Columbia Navigation roles on the project. TAI also discussed their expectations of the field team and that quality is very important. We then discussed safety (see above). TAI also discussed that we are representatives of TAI and that we should remember that we will be under some scrutiny and to be careful what we discuss in public. The team departed TAI's office at 3:00 PM. We arrived at the Comfort Inn at 4:45. Tony and Amy picked up generator and team got settled in. I asked the team to review the QAPP.</p>			

Signed: Mark Vetter
Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study		DFR NO.: 1		
Project No.: 33765144		Date: 4/13/2015		
Summary Of Daily Activities (continued from Page 1)				
<p>again tonight and let me know if they have any questions. Team will meet at the Hub in Colville at 08:30. Paul McCullough AECOM PM requested that I touch base with Monica Tonel in regards to the mornings meeting time and place. Mark Vetter left her a voice mail. No sampling work was conducted today. Distributed field notebooks to field leads Tony Palmieri and Eric Lillywhite.</p>				
Sampling Activities				
Decision Unit	Team	Number of Increments	DU Complete	Comments
		No field work 4/13/15		
XRF Field Screening				
Decision Unit	Team	Number of XRF Samples Collected	DU Complete	Comments
		No field work 4/13/15		
Core Samples				
Decision Unit	Team	Number of Core Samples Collected	DU Complete	Comments
		No field work 4/13/15.		

Signed: Mark Vetter
Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study	DFR NO.: 1
Project No.: 33765144	Date: 4/13/2015
Additional Information	
<p>Kris McCaig and Becky Henselen will be at the site on Friday. Becky will make additional trips over the following two weeks. Cary Kindberg will be sharing a room with Dave Lewis for 4/13 and 4/14.</p>	

Signed: Mark Vetter
Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study		DFR NO.: 2	
Project No.: 33765144		Date: 4/14/2015	
Client/Project Manager: Teck American, Inc; Kris McCaig		Weather: Mostly Cloudy Windy	
AECOM Project Manager: Paul McCullough		Temperature: 54F	
AECOM Field Supervisor: Mark Vetter		Precipitation: Rain overnight. By the time we got to Bossburg weather had cleared but was very windy.	
Start Time: 0830			
End Time: 1800			
AECOM TEAM A		AECOM TEAM B	
Name		Name	
Anthony Palmieri		Eric Lillywhite	
Demetrio Cabanillas		Dave Lewis	
Ollie Patsch		Michelle Stegner	
		Sarah McDaniel (archaeologist)	
Columbia Navigation		EPA/EPA Contractor	
Name		Name	
Eric Weatherman		Monica Tonel	
Josh Weatherman		Cameron Irvine - CH2MHill	
Visitors		Purpose	
		Arrive	
		Leave	
		Hrs	
None			
Health and Safety			
<p>At Kickoff meeting Mark Vetter reviewed the key elements of the Health and Safety Plan (HASP) with all team members, EPA and NPS. Eric Weatherman gave a brief presentation of local safety - animals, truck traffic on Route 25, hunting season, livestock and Columbia Navigation's safety expectations when on one of their vessels.</p>			
Summary of Daily Activities (continued on Page 2)			
<p>The full team (less CCT observer) met at "The Hub" in Colville to review the site scope of work, safety plan, the importance of cultural resources. This meeting lasted from 0830 to 1100. After Q&A the team reconvened at Columbia Navigation's shop at 1230 and began preparing for the first day of field work. The team signed the HASP and cultural resources confidentiality agreement. Equipment prep, decon and data collection process review lasted until 1500 when we departed and went to Bossburg. Both teams worked as one for the initial sample collections to be sure everyone understood the data collection process and equipment being used. 2 increment samples were collected at UDU-1. The field team departed from Bossburg at 1700 and returned to Columbia Navigation's shop, collected rinsate sample from a deconned core barrel and debriefed and returned to hotel.</p> <p>NPS cultural observer (Meghan Lyons) did not come to field today due to another commitment. NPS was represented today by John Edwards.</p>			

Signed: Mark Vetter
Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study		DFR NO.: 2		
Project No.: 33765144		Date: 4/14/2015		
Summary Of Daily Activities (continued from Page 1)				
No notes on this page.				
Sampling Activities				
Decision Unit UDU-1	Team A/B	Number of Increments 2 (UDU-1 increments 15 and 24)	DU Complete No	Comments See additional info below
XRF Field Screening				
Decision Unit	Team	Number of XRF Samples Collected No XRF collected	DU Complete	Comments
Core Samples				
Decision Unit	Team	Number of Core Samples Collected No Core Samples collected	DU Complete	Comments
Collected one rinsate sample from deconned core barrel. Core barrel used today was wrapped and secured for use again at UDU-1 on 4/15/15.				

Signed: Mark Vetter
Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study	DFR NO.: 2
Project No.: 33765144	Date: 4/14/2015
Additional Information	
<p>After discussions with NPS it was recommended that we not leave the box truck at Bossburg. A decision was made to stage the truck at Columbia Navigation to lock equipment and samples and conduct sieving and XRF analysis in box truck at this location. XRF team set up lab and deconned remaining equipment for use on 4/15/15. The following additional items are reported: CH2MHill questioned how database files will be secured from after the fact editing. Field Supervisor to follow up with data collection package developer. CH2MHill informed Field Supervisor that sediment samples will be collected from locations below water. CH2MHill was told that AECOM team was informed on 4/13/15 by TAI that no samples will be collected under water at this time as we will follow QAPP as directed by TAI until field recon of samples below water is conducted, a change request has been approved and methodology developed. CH2MHill and EPA also relayed their core sample decision criteria - 1) collect the core samples at the three highest XRF locations over 400 mg/kg or 2) collect core samples from locations where only one or two XRF samples exceed 400 mg/kg and select a core sample location based on visual observations or 3) collect core sample from randomly selected locations (using a random number generator) if no XRF samples screen over 400 mg/kg and no location chosen due to lack of visual evidence. EPA will provide the decision tree for reference by field teams. This information was relayed to the AECOM PM and TAI PM. Clarified number of rinsate samples - 1 per type of equipment used per day and not per team. Team requested 55 gallon drums for decon water collection instead of buckets. Field Supervisor to discuss with PM. AECOM identified issue with software crashing when taking photos. After further review the photos were taken and added to sample form by software but team needs to address why this happens and how to resolve. Field recon scheduled for first thing 4/15/15 is planned to begin approximately 1000. This will provide Cary Kindberg an opportunity to continue to work with the team in the morning to be sure the teams are comfortable with the use of the GPS and data acquisition software. Field Supervisor contacted Joe Wichmann and informed him of schedule change that XRF screening will start on Thursday 4/16/15. Field teams to continue working at UDU-1 on Wednesday and move onto UDU-02 and UDU-03. Field Supervisor and PM to conduct call with TAI at 4:00 PM on 4/15/15. TAI will come to site on 4/16 instead of 4/17. AECOM H&S representatives Sally Miller and Bill Tadlock coming to conduct a safety audit on 4/23.</p>	

Signed: Mark Vetter
Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study		DFR NO.: 3		
Project No.: 33765144		Date: 4/15/2015		
Client/Project Manager: Teck American, Inc; Kris McCaig		Weather: Clear and Sunny		
AECOM Project Manager: Paul McCullough		Temperature: 30F AM; 65F PM		
AECOM Field Supervisor: Mark Vetter		Precipitation: None		
Start Time: 700				
End Time: 530				
AECOM TEAM A				
Name		AECOM TEAM B		AECOM XRF TEAM
Name		Name		Name
Anthony Palmieri		Eric Lillywhite		Amy Dahl
Demetrio Cabanillas		Dave Lewis		Ken Yang
Oliver Patsch		Michelle Stegner		
Cary Kindberg (GPS)		Sarah McDaniel (archaeologist)		
Columbia Navigation		EPA/EPA Contractor		NPS/CCT
Name		Name		Name
Eric Weatherman		Monica Tonel		Susan Ellis (CCT)
Josh Weatherman		Cameron Irvine (CH2MHill)		Jon Edwards (NPS)
				Meghan Lyons (NPS)
Visitors		Purpose		Arrive
Leave		Hrs		
Bill White NPS	Safety meeting and to inform of his schedule	700	720	0.33
Keith Holliday NPS	Talked with John and Meghan only.	1230	1250	0.33
Health and Safety				
<p>Conducted daily safety meeting. Reviewed start of turkey hunting season, Slips trips and Falls (STF) due to ground surface and frost, driving in regards to animals and possible ice on roads, and keep safe distance from car in front in case they have an animal encounter. Wind in regards to car doors and dehydration. For 4/16 we will discuss STF again and importance of good housekeeping. Blowing dust when windy. Pine needles. Mosquitos hornets and bees as they were out and about today.</p>				
Summary of Daily Activities (continued on Page 2)				
<p>Team met at 0700 at Columbia Navigation. Bill White NPS was present and the CCT Monitor Susan Ellis was on the project. After meeting team loaded gear and headed to Bossburg to complete sampling at UDU-01 and start UDU-02. Cary Kindberg and Mark Vetter met with Eric Weatherman at 10:30 and conducted the field recon. SDU-07 is under water except for one sample location. SDU-05 had samples in water and on cobbled steep slope. SDU-04 is all on steep slopes and some samples to the SW and NW that are in the water. SDU-03 appears to be good for sampling in regards to water and slopes. SDU-02 and SDU-01 have steep slopes and cobbles so samples at waters edge and on slopes will require us to consider reserve stations. SDU-08 is a steep rocky talus like slope with large sharp rocks. Many samples underwater and access is by boat only. SDU-09 and SDU-10 appear to be OK for sampling. Samples in water can be addressed by reserve stations. Field supervisor was informed by Team A leader, Anthony Palmieri, that three XRF stations were well outside the UDU-01 boundary. This issue was resolved in consultation with EPA and CH2MHill and a change request will be issued to document the</p>				

Signed: Mark Vetter
Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study			DFR NO.: 3	
Project No.: 33765144			Date: 4/15/2015	
Summary Of Daily Activities (continued from Page 1)				
<p>alternate locations selected. Field teams collected all XRF samples at UDU-01 and now have completed 24 of the 30 ICS samples. The field team departed Bossburg at 1715 and returned to field office at Columbia Navigation to deliver ICS and XRF samples to field lab and decon equipment used today. Lab team collected rinsate sample from sieve screen. Team left field office by 1830. Activities for 4/16 will include expected completion of UDU-01 by collecting last 6 ICS samples and start UDU-02 ICS and XRF samples and move onto UDU-03 as time permits. Field lab team will process XRF samples and pack up UDU-01 confirmation samples for lab (ALS).</p>				
Sampling Activities				
Decision Unit	Team	Number of Increments	DU Complete	Comments
UDU-01	A	18	No	6 ICS remain
UDU-01	B	4	No	6 ICS remain
XRF Field Screening				
Decision Unit	Team	Number of XRF Samples Collected	DU Complete	Comments
UDU-01	B	7	Yes	At field lab
Core Samples				
Decision Unit	Team	Number of Core Samples Collected	DU Complete	Comments
		None collected		

Signed: Mark Vetter
Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study	DFR NO.: 3
Project No.: 33765144	Date: 4/15/2015
Additional Information	
<p>Tony Palmieri will check ICS samples at UDUs 02-05 for locations to insure they are within DU boundary. And check remaining DUs as time permits before going out to site. Field teams will be at field office at 0630 to be sure all equipment is ready to go immediately after safety meeting. AECOM will conduct a debrief at the end of the day when samples are delivered to the field lab. Mark Vetter will accompany Becky Henselen from TAI on a boat tour and accompany her in the field. Becky to be at Bossburg at approximately 0800. Joe Wichmann of the Citizens for the Clean Columbia will be on-site on 4/16 as well. Tony Palmieri and Mark Vetter will talk with field teams to solicit ideas on how to improve productivity going forward without compromising safety and quality. Teams will default to reserve stations when ICS samples or XRF samples are underwater or on steep cobbled slopes. Teams will bring portable 110V chargers to field sites for use when batteries are low. These chargers are to be provided by Eric Weatherman.</p>	

Signed: Mark Vetter
Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study		DFR NO.: 4		
Project No.: 33765144		Date: 4/16/2015		
Client/Project Manager: Teck American, Inc; Kris McCaig		Weather: Clear, Sunny		
AECOM Project Manager: Paul McCullough		Temperature: 35F AM, 70F PM		
AECOM Field Supervisor: Mark Vetter		Precipitation: None		
Start Time: 0700				
End Time: 0600				
AECOM TEAM A		AECOM TEAM B		AECOM XRF TEAM
Name		Name		Name
Anthony Palmieri		Eric Lillywhite		Amy Dahl
Demetrio Cabanillas		Dave Lewis		Ken Yang
Oliver Patsch		Michelle Stegner		
Columbia Navigation		EPA/EPA Contractor		NPS/CCT
Name		Name		Name
Eric Weatherman		Monica Tonel (EPA)		Jon Edwards - NPS
Josh Weatherman		Cameron Irvine (CH2MHill)		Meghan Lyons - NPS
				Susan Ellis - CCT
Visitors		Purpose		Arrive
				Leave
				Hrs
Joe Wichmann (CCC)		Observe sampling and XRF process		0730
Becky Henselen (TAI)		Observe sampling, SDU, and XRF process		1600
				9.5
				855
				1640
				7.75
Health and Safety				
<p>Conducted daily tailgate meeting. Reviewed Slips trips and falls - pine needles slick; Housekeeping - keep work area neat and tools out of the teams' way; Wildlife - turkeys and deer; Dust safety glasses are a must and drive slow to keep dust down in work area and residential area.</p>				
Summary of Daily Activities (continued on Page 2)				
<p>Team met at 0700 for safety briefing and left for field at 0720. Met Joe Wichmann at site. Team A completed remaining ICS samples at UDU-01, collected XRF samples at UDU-02, collected 7 of 8 XRF samples at UDU-03 and 5 ICS samples at UDU-03. One ICS sample (UDU-03-19) was changed to reserve station UDU-03-R03 due to approximate 46° slope and unstable soil. Team B started and completed UDU-02 ICS samples. Sampling at UDU-02 observed by Joe Wichmann. Mark Vetter and Beck Henselen met Columbia Navigation at shore below SDU-03 and toured the following SDUs: SDU-07, SDU-05, SDU-04, SDU-02, SDU-01, SDU-08, SDU-09 and SDU-10 to observe water levels (1252.2 at Noon 4/16) and slopes. The field lab prepared and analyzed the seven UDU-01 XRF samples which was observed by Joe Wichmann (CCC) and Cameron Irvine (CH2MHill). Both teams completed sampling by 1650. Returned to field office to deliver samples, decon and prepare for 4/17 field work.</p>				

Signed: Mark Vetter

Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study		DFR NO.: 4	
Project No.: 33765144		Date: 4/16/2015	
Summary Of Daily Activities (continued from Page 1)			
No additional summary notes.			
Sampling Activities			
Decision Unit	Team	Number of Increments	ICS Complete?
UDU-01	A	6	Yes
UDU-02	B	30	Yes
UDU-03	A	5	No
Comments			
25 remaining			
XRF Field Screening			
Decision Unit	Team	Number of XRF Samples Collected	XRF Complete?
UDU-02	A	6	Yes
UDU-03	A	7	No
Comments			
one XRF remaining			
Core Samples			
Decision Unit	Team	Number of Core Samples Collected	Cores Complete?
		None	
Comments			

Signed: Mark Vetter
Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study	DFR NO.: 4
Project No.: 33765144	Date: 4/16/2015
Additional Information	
<p>AECOM Field Supervisor (Mark Vetter) conducted a recon of SDU-04 from the Bossburg Flat at high water mark. SDU is steep and cobbled with thin layers of sediment. Slopes and cobbles present challenges to collecting samples. Will evaluate further with AECOM Field Team Leaders. Minor issues related to equipment performance. Surface Pro battery life is still a concern and team will obtain 110V invertors to charge batteries during lunch and take portable jump starts to field locations where possible. Obtained drums for IDW and decon water will be transferred from buckets to drums. UDU-01-ICS sample and 3 UDU-01 XRF confirmation samples sent to lab. XRF samples predetermined using a random numbers program to pick 20% of samples from the 99 XRF randomly. XRF worked well. Mark Vetter will provide an updated field schedule by Saturday end of work and will prepare an estimate of samples located below water at SDUs.</p>	

Signed: Mark Vetter
Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study		DFR NO.: 5	
Project No.: 33765144		Date: 4/17/2015	
Client/Project Manager: Teck American, Inc; Kris McCaig		Weather: Clear	
AECOM Project Manager: Paul McCullough		Temperature: 35F AM, 70F PM	
AECOM Field Supervisor: Mark Vetter		Precipitation: None	
Start Time: 0645			
End Time: 1800			
AECOM TEAM A			
Name		Name	
Anthony Palmieri		Eric Lillywhite	
Demetrio Cabanillas		Dave Lewis	
Oliver Patsch		Michelle Stegner	
AECOM XRF TEAM			
Name		Name	
		Amy Dahl	
		Ken Yang	
AECOM TEAM B			
Name		Name	
		Eric Lillywhite	
		Dave Lewis	
		Michelle Stegner	
AECOM XRF TEAM			
Name		Name	
		Amy Dahl	
		Ken Yang	
Columbia Navigation			
Name		Name	
		Eric Lillywhite	
		Dave Lewis	
		Michelle Stegner	
EPA/EPA Contractor			
Name		Name	
		Eric Lillywhite	
		Dave Lewis	
		Michelle Stegner	
NPS/CCT			
Name		Name	
		Eric Lillywhite	
		Dave Lewis	
		Michelle Stegner	
Visitors			
None		Purpose	
Health and Safety			
<p>At the site safety meeting the team reviewed working around bluffs of unconsolidated material, barbed wire in grass along bluff and road for slips, trips, and falls. The importance of wearing the prescribed PPE (safety glasses). Weather - cool mornings, warms days, low humidity can affect them. Driving as other drivers may be distracted. Rearrange box truck set up to improve house keeping and to secure lift gate daily.</p>			
Summary of Daily Activities (continued on Page 2)			
<p>AECOM team met at 0645 at Kettle Falls Field Office (Columbia Navigation Shop). Prepared for the day. Conducted daily tailgate meeting. Full field team at meeting. Team departed field office at 0715 for Bossburg. Team A completed UDU-03 ICS and XRF. Team B completed 23 of 30 ICS for UDU-04 replicate A. Both teams experienced sample locations shifts due to cultural resource issues. Teams wrapped up at 1700 and returned to Field Office by 1730.</p>			

Signed: Mark Vetter
Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study		DFR NO.: 5		
Project No.: 33765144		Date: 4/17/2015		
Summary Of Daily Activities (continued from Page 1)				
No additional field notes.				
Sampling Activities				
Decision Unit	Team	Number of Increments	ICS Complete?	Comments
UDU-03	A	25	Yes	
UDU-04A	B	23	No	7 remaining
XRF Field Screening				
Decision Unit	Team	Number of XRF Samples Collected	XRF Complete?	Comments
UDU-03	A	1	Yes	
UDU-02	A	1 (UDU-02-XRF-04)	Yes	Resample
Core Samples				
Decision Unit	Team	Number of Core Samples Collected	Cores Complete?	Comments
		None Collected		

Signed: Mark Vetter
Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study	DFR NO.: 5
Project No.: 33765144	Date: 4/17/2015
Additional Information	
<p>EPA identified core sample locations at UDU-01. Will be collected on 4/18/15. Field lab team dropped sample UDU-02-XRF-04 into oven when removing as pie tin collapsed due to weight of soil. Team A notified and they collected a replacement sample. Key learning is to use two hands when handling XRF samples in pie tins. Oven bottom plate was removed by lab team and oven cleaned of soil. Teams experienced issues with Bluetooth losing connection between GPS and tablet but the field team believes they can address if it happens again. Key learning is to not separate the tablet and GPS by more than 20 feet. Sampling proposed for 4/18 is as follows: Team A: UDU-01 core samples and UDU-04 XRF samples. Start UDU replicate C if time permits. Team B: complete UDU-04 Replicate A samples and start UDU-04 Replicate B. Field lab team will continue to prepare and analyze XRF samples. No samples to be shipped on Saturday. UDU-02-ICS sample shipped to lab along with two XRF samples from UDU-02. The AECOM Field Supervisor worked on a summary of samples that are likely under water at current pool of 1252. Also prepared general summary of completed work to date and worked on updating master schedule.</p>	

Signed: Mark Vetter
Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study		DFR NO.: 6	
Project No.: 33765144		Date: 4/18/2015	
Client/Project Manager: Teck American, Inc; Kris McCaig		Weather: Clear	
AECOM Project Manager: Paul McCullough		Temperature: 38F AM, 73 PM	
AECOM Field Supervisor: Mark Vetter		Precipitation: None	
Start Time: 0645			
End Time: 1730			
AECOM TEAM A			
Name		Name	
Tony Palmieri		Eric Lillywhite	
Demetrio Cabanillas		Dave Lewis	
Oliver Patsch		Michelle Stegner	
AECOM XRF TEAM			
Name		Name	
Amy Dahl		Ken Yan	
Columbia Navigation			
Name		Name	
None		Monica Tonel - EPA	
		Cameron Irvine - CH2MHill	
EPA/EPA Contractor			
Name		Name	
		Bill White - NPS	
		Meghan Lyons - NPS	
		Susan Ellis - CCT	
NPS/CCT			
Visitors		Purpose	
None			
Health and Safety			
<p>Conducted daily Tailgate Meeting at 0700. Reviewed hospital location, incident reporting, PPE, STF, Safe Lifting, biological hazards (ticks and snakes), contamination, bluffs and slopes. Discussed box truck lift gate safety. Lift gate is heavy and need two people when opening and closing. Will evaluate a better access to lab area in truck; consider using portable steps.</p>			
Summary of Daily Activities (continued on Page 2)			
<p>Team arrived at Columbia Navigation at 0645 and loaded up equipment. Conducted tail safety meeting and team departed for Bossburg at 0730. Team A collected samples as follows: UDU-01 core samples, UDU-04 XRF samples and 10 samples from UDU-04C. Team B completed UDU-04A (7 samples) and 17 samples from UDU-04B. EPA flagged core sample locations at UDU-02. Core 1 is at UDU-02-XRF-01, Core 2 is at UDU-02-XRF-02 and Core 3 is located at a depression in the ground within UDU-02. The field lab processed and screened the UDU-03 XRF samples and UDU-02-XRF-04 sample that was recollected. The lab also prepared the composite sample (ICS) for UDU-04A. The field teams returned from Bossburg at 1730 with the samples, conducted decon and collected 3 rinsate samples from the field equipment. Team debriefed at 1800 and departed Columbia Navigation at 1820.</p>			

Signed: Mark Vetter
Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study		DFR NO.: 6		
Project No.: 33765144		Date: 4/18/2015		
Summary Of Daily Activities (continued from Page 1)				
No notes on this page.				
Sampling Activities				
Decision Unit	Team	Number of Increments	ICS Complete?	Comments
UDU-04A	B	7	Yes	
UDU-04B	B	17	No	13 remaining
UDU-04C	A	10	No	20 remaining
XRF Field Screening				
Decision Unit	Team	Number of XRF Samples Collected	XRF Complete?	Comments
UDU-04	A	5	Yes	
Core Samples				
Decision Unit	Team	Number of Core Samples Collected	Cores Complete?	Comments
UDU-01	A	3	Yes	

Signed: Mark Vetter
Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study	DFR NO.: 6
Project No.: 33765144	Date: 4/18/2015
Additional Information	
<p>Discussed cultural resource process with Bill White in the morning to see how to speed it up. Core samples from UDU-01 went well. Took approximately 2 hours 10 minutes. Cores 2 and 3 required multiple borings (3) to get required volumes for EPA splits at Cores UDU-01-COR-002 and 003. During XRF sampling Team A had to resort to a reserve station UDU-04-XRF-R01 after 7 failed attempts to get sample at UDU-04-XRF-01 due to the presence of cobbles in the 2 meter radius circles. When collecting ICS samples in UDU-04C the following samples were noted as inaccessible due to the steep unstable bluff: UDU-04C-06, UDU-04C-23 and UDU-04C-26. These will be replaced by reserve stations for UDU-04C that are safer to access. During ICS sampling at UDU-04A Team B had to use reserve stations for two samples due to the very steep slope: UDU-04A-17 was replaced by UDU-04A-R01 and sample UDU-04A-07 was replaced by UDU-04-R02. Both teams experience issue with batteries on Surface Pros with them not lasting as long as thought. Portable charges were used but the overall problem will need to be resolved especially when DU are far from vehicles (UDU-05 and 6 and SDUs 1, 2, 5, 8, 9 and 10). On Sunday Mark Vetter and Tony Palmieri will recon UDU-05, and SDUs-01, 02 and 05 to determine best overland access and potential slope issues that may present safety hazards when accessing samples.</p>	

Signed: Mark Vetter
Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study		DFR NO.: 7	
Project No.: 33765144		Date: 4/20/2015	
Client/Project Manager: Teck American, Inc; Kris McCaig		Weather: Clear	
AECOM Project Manager: Paul McCullough		Temperature: 34F AM, 74F PM	
AECOM Field Supervisor: Mark Vetter		Precipitation: None	
Start Time: 0645			
End Time: 1820			
AECOM TEAM A			
Name		Name	
Tony Palmieri		Eric Lillywhite	
Demetrio Cabanillas		Dave Lewis	
Oliver Patsch		Michelle Stegner	
AECOM XRF TEAM			
Name		Name	
		Amy Dahl	
		Ken Yang	
Columbia Navigation			
Name		Name	
		Matt Wilkening - EPA	
		Mark Endo - CH2MHill	
EPA/EPA Contractor			
Name		Name	
		Bill White - NPS	
		Meghan Lyons - NPS	
		Susan Ellis - CCT	
NPS/CCT			
Visitors		Purpose	
None			
Health and Safety			
<p>Discussed the following topics: PPE, metals in soil at UDU-04, rally spots for field office and field teams, location of safety equipment, incident reporting, biological hazards, slip trips and falls, and the importance of staying hydrated in the field. Some team members reporting getting calf cramps at night. Two new observers were individually briefed on site safety concerns. One XRF team member reported at the end of the day that he might have splashed some dilute HNO₃ on his cheek as he felt a slight tingling on his cheek while deconning the sieve. Discussed matter with him and the importance of PPE and reporting this type of safety issue immediately to the field supervisor. Addressed safety concerns at box truck by installing steps.</p>			
Summary of Daily Activities (continued on Page 2)			
<p>The field teams met at 0700 for the tailgate meeting. They departed the field office at 0715 for Bossburg. Team A collected UDU-02 core samples (3 cores) and completed UDU-04C ICS samples (20 samples). Team B completed UDU-04B ICS samples (13) and collected XRF samples (9) from SDU-01. Both teams completed the XRF samples at SDU-03 (4 samples, 2 per team). All work went smoothly today with no new issues identified. The field supervisor met with Matt Wilkening and Mark Endo at the end of the day and marked the UDU-03 core samples in the field at locations UDU-04-01, UDU-04-04 and UDU-04-07. The team will return to UDU-04 according to the revised schedule. Portable battery packs to recharge the tablets have been ordered and are expected to arrive by 4/22. Teams will utilize these instead of the heavier jump start.</p>			

Signed: Mark Vetter
Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study		DFR NO.: 7	
Project No.: 33765144		Date: 4/20/2015	
Summary Of Daily Activities (continued from Page 1)			
No notes on this page.			
Sampling Activities			
Decision Unit	Team	Number of Increments	ICS Complete?
UDU-04B	B	13	Yes
UDU-04C	A	20	Yes
XRF Field Screening			
Decision Unit	Team	Number of XRF Samples Collected	XRF Complete?
SDU-01	B	9	Yes
SDU-03	A/B	4	Yes
Core Samples			
Decision Unit	Team	Number of Core Samples Collected	Cores Complete?
UDU-02	A	3	Yes

Signed: Mark Vetter
Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study	DFR NO.: 7
Project No.: 33765144	Date: 4/20/2015
Additional Information	
<p>Team B: UDU-04B-11 replaced by UDU-04B-R01 primary station being below high water mark; UDU-04B-19 replaced by UDU-04B-R02 due to steep terrain. Team A: UDU-04C-06 replaced by UDU-04C-R08, UDU-04C-26 replaced by UDU-04C-R02, and UDU-04C-23 replaced by UDU-04C-R04 due to steep terrain. Completed safety improvements at field office by installing stairs to box truck and running extension cord overhead to avoid the water from the outdoor faucet. The field lab packed up and shipped samples UDU-03-ICS, UDU-04-ICS-A, core samples for UDU-01, and XRF confirmation samples from UDU-03. The field lab processed the XRF samples from UDU-04 and screened them with the XRF. The field lab processed the UDU-02 core samples. These will ship on 4/21/15. The field supervisor confirmed with TAI that all core sample volume is to be sent to the laboratory even if it means filling more than one container. Team will provide DU maps with coordinates to EPA to make it easier to locate the XRF samples in the field. The field supervisor discussed the safety issues associated with UDU-05 and briefly brainstormed some ideas. No path forward was developed at this time. The field supervisor also offered to take Matt Wilkening to the SDUs impacted by lake levels via boat. No decision was made on this offer yet. For 4/21 Teams A and B will work at SDUs -01 and -02. SDU-01 has 30 ICS for collection and SDU-02 has 90 ICS and 8 XRF samples for collection. Core locations will be decided after the XRF data has been reviewed.</p>	

Signed: Mark Vetter
Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study		DFR NO.: 8	
Project No.: 33765144		Date: 4/21/2015	
Client/Project Manager: Teck American, Inc; Kris McCaig		Weather: Clear/Breezy	
AECOM Project Manager: Paul McCullough		Temperature: 38F AM; 82F PM	
AECOM Field Supervisor: Mark Vetter		Precipitation: None	
Start Time: 0645			
End Time: 1730			
AECOM TEAM A			
Name		Name	
Tony Palmieri		Eric Lillywhite	
Demetrio Cabanillas		Dave Lewis	
Oliver Patsch		Michelle Stegner	
AECOM XRF TEAM			
Name		Name	
Amy Dahl		Ken Yang	
Columbia Navigation			
Name		Name	
Eric Weatherman		Matt Wilkening - EPA	
Josh Weatherman		Mark Endo - CH2MHill	
EPA/EPA Contractor			
Name		Name	
Bill White - NPS		Meghan Lyons - NPS	
Susan Ellis - CCT			
NPS/CCT			
Name		Name	
Bill White - NPS		Meghan Lyons - NPS	
Susan Ellis - CCT			
Visitors			
Visitors		Purpose	
		Arrive	
		Leave	
		Hrs	
Health and Safety			
<p>All team members except Susan Ellis (CCT) at Daily Tailgate Meeting. Discussed the following topics: Field Site Safety Officer is Tony and each team's lead, PPE, driving safety, animals, truck traffic, housekeeping for field equipment at DUs, STF, dehydration on hot windy mud flats, safe lifting, pinch points and biological hazards - (spiders on flats). Hospital is Mt. Carmel and first aid kits and eye washes in vehicles should be taken to remote sites, fire extinguishers stay with vehicles. Tony brought up barbed wire as this was a hazard at SDU-03 the previous day. Report all incidents ASAP. Everyone has stop work authority. Matt Wilkening from EPA supports not working on steep cobble slopes and teams should utilize reserve stations.</p>			
Summary of Daily Activities (continued on Page 2)			
<p>Team at field office by 0645. Loaded days equipment. Conducted tailgate meeting at 0700 and left for field at 0720. Team A went to SDU-02 to collect XRF and SDU-02A for ICS samples. Team B went to SDU-01 to collect ICS samples. Mark Vetter joined teams in field and collected XRF flags from UDU-01 and UDU-02. Matt Wilkening (EPA) and Mark Vetter toured SDUs-07 and -08 from water courtesy of Columbia Navigation. Team A completed the XRF samples in SDU-02 and started ICS sampling in SDU-02A. Team B completed ICS sampling in SDU-01. Teams returned to trucks at 1630. Mark Vetter and Matt Wilkening flagged the UDU-04 core sample locations as follows: UDU-04-XRF-R01 will be COR 1, UDU-04-XRF-02 will be COR 2 and UDU-04-XRF-05 will be COR 3. The XRF field lab processed XRF samples from SDU-01 and SDU-03 and conducted XRF analysis on 7 of the nine SDU-01 samples. The XRF team also packed the UDU-02 core samples and UDU-04B and UDU-04C ICS samples and shipped them to the lab. The field teams returned to field office to decon and collect rinsate samples. Departed Field Office by 1740.</p>			

Signed: Mark Vetter
Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study		DFR NO.: 8		
Project No.: 33765144		Date: 4/21/2015		
Summary Of Daily Activities (continued from Page 1)				
No notes on this page.				
Sampling Activities				
Decision Unit	Team	Number of Increments	ICS Complete?	Comments
SDU-01	B	30	Yes	See next page
SDU-02A	A	23	No	See next page
XRF Field Screening				
Decision Unit	Team	Number of XRF Samples Collected	XRF Complete?	Comments
SDU-02	A	8	Yes	
Core Samples				
Decision Unit	Team	Number of Core Samples Collected	Cores Complete?	Comments
		None collected.		

Signed: Mark Vetter
Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study	DFR NO.: 8
Project No.: 33765144	Date: 4/21/2015
Additional Information	
<p>The following primary ICS locations were not sampled due to cobbles and or steep cobble slopes and reserve stations were utilized: SDU-01: SDU-01-08 replaced with SDU-01-R01; SDU-01-30 replaced with SDU-01-R02; SDU-01-02 replaced with SDU-01-R03. SDU-02A: SDU-02A-14 replaced by SDU-02A-R01; SDU-02A-30 replaced with SDU-02A-R06; SDU-02A-25 replaced with SDU-02A-R05. The field lab reported that the XRF samples from SDU-01 took up to 6 hours to dry and not all samples were screened today. This situation is likely to recur for the following SDUs-02, 05, 07, 08, 09 and 10 due to the moist silty soil below the surface. Mark Vetter and Matt Wilkening discussed SDUs 04, 07 and 08 during boat recon. Matt Wilkening will contact Kris McCaig about the challenges presented by these SDUs. The field lab shipped UDU-04-ICS-B and UDU-04-ICS-C samples and UDU-02 core samples to the lab. External battery packs for Surface Pro 3's arrived and team tested one before leaving field office. It appears that these devices will work and they will be taken to the field on 4/22/15. The jump start will go to field in case new external battery packs are not adequate.</p>	

Signed: Mark Vetter
Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study		DFR NO.: 9	
Project No.: 33765144		Date: 4/22/2015	
Client/Project Manager: Teck American, Inc; Kris McCaig		Weather: Partly Cloudy	
AECOM Project Manager: Paul McCullough		Temperature: 51F AM 66F PM	
AECOM Field Supervisor: Mark Vetter		Precipitation: None	
Start Time: 0630		Morning started off cool and overcast. Cleared by mid afternoon and warmed	
End Time: 1730			
AECOM TEAM A			
Name		Name	
Tony Palmieri		Eric Lillywhite	
Demetrio Cabanillas		Dave Lewis	
Oliver Patsch		Michelle Stegner	
AECOM XRF TEAM			
Name		Name	
Amy Dahl		Ken Yang	
Columbia Navigation			
Name		Name	
Josh Weatherman		Matt Wilkening - EPA	
		Mark Endo - CH2MHill	
EPA/EPA Contractor			
NPS/CCT			
Name		Name	
		Bill White - NPS	
		Jon Edwards - NPS	
		Susan Ellis - CCT	
Visitors			
None		Purpose	
		Arrive	
		Leave	
		Hrs	
Health and Safety			
<p>The following topics were addressed today: Stop work authority is applicable to all team members, PPE, Incident reporting is immediate to field supervisor once situation is stabilized, PPE, metals in sediment, housekeeping, lifting - share the load as there is a lot of gear to carry, biological hazards - wasps yellow jackets, ticks, pinch points - slide hammer is a pinch point as are drum rings - be sure to wear leather gloves when handling equipment. One team member reported a muscle strain that he noticed when he awoke. First aid kits and eye wash stations to be carried to field along with wash water. At end of day during debrief it was suggested to conduct a 360° walk around vehicles to check for equipment.</p>			
Summary of Daily Activities (continued on Page 2)			
<p>Today the field teams went back to SDU-02. Team A completed SDU-02A and Team B completed SDU-2B. Team A started SDU-02C and Team B assisted in completed this DU at the end of the day when they were finished with SDU-02B. This completes ICS sampling at SDU-02. The field lab completed SDU-01 XRF samples and shipped ICS samples from SDU-01 and SDU-02A and XRF samples from SDU-01 and SDU-02 to lab. XRF results for SDU-01 and SDU-03 were shared with EPA and the core locations for these DUs were marked in the field and recorded. Teams returned to field office by 1635, deconned equipment, collected field rinsate and prepared field equipment for Thursday's work. Debrief conducted at 1710.</p>			

Signed: Mark Vetter

Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study		DFR NO.: 9		
Project No.: 33765144		Date: 4/22/2015		
Summary Of Daily Activities (continued from Page 1)				
No notes on this page.				
Sampling Activities				
Decision Unit	Team	Number of Increments	ICS Complete?	Comments
SDU-02A	A	7	Yes	
SDU-02C	A	27	Yes	see below
SDU-02C	B	3	Yes	
SDU-02B	B	30	Yes	
XRF Field Screening				
Decision Unit	Team	Number of XRF Samples Collected	XRF Complete?	Comments
		None		
Core Samples				
Decision Unit	Team	Number of Core Samples Collected	Cores Complete?	Comments
		None		

Signed: Mark Vetter
Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study	DFR NO.: 9
Project No.: 33765144	Date: 4/22/2015
Additional Information	
<p>The following samples in SDU-02C had to be changed to reserve stations due to being under water or on the steep cobble slope above water: SDU-02C-06 was replaced with SDU-02C-R04, SDU-02C-23 replaced with SDU-02C-R02, SDU-02C-24 replaced with SDU-02C-R01. All primary ICS stations were collected at SDU-02B. XRF field lab screening was completed for samples SDU-01-XRF-08, -09, SDU-03-XRF-01, -02, -03, -04. The results were shared with EPA and EPA flagged the core samples in the field as follows: SDU-01 core samples were selected by EPA based on the three highest XRF results which were seen in samples SDU-01-XRF-07 (COR-01), -08 (COR-02) and -09 (COR-03). EPA flagged the following XRF samples at SDU-03: SDU-03-XRF-01 (COR-01), -02 (COR-02) and -04 (COR-03). The XRF field lab analyzed a partial set of SDU-02 samples as they are taking long to dry even with the oven. Results should be available by early morning (4/23). Discussed SDUs-04, -07 and -08 today with AECOM PM. The field supervisor will visit these SDUs on Friday and make track logs of the areas within the DU that are above water. Friday was chosen for this recon as rock work by Stevens County above SDU-08 will not be going on. Stevens County is working Monday through Thursday. The track logs will be collected using a Trimble GPS and downloaded to arc pad. These maps will facilitate the selection of SDU samples on the dry portions of the DUs. The Field Supervisor will work with Columbia Navigation to collect this data. Team informed of safety audit tomorrow and they should not be concerned as they are doing a great job. In addition, Becky Henselen of TAI will be at the site and will participate in the safety audit. Field personnel Eric Lillywhite and Amy Dahl will participate in the safety audit to be conducted by Sally Miller (AECOM Regional H&S Officer) and Bill Tadlock (AECOM Seattle Area H&S resource). Michelle Stegner will lead Team B for Thursday. Dean Kinney will join Team B on Thursday. Ken Yang will replace Demetrio Cabanillas on Team A for Thursday as Demetrio departs until Sunday. Debrief: Discussed fitness for duty due to recent minor muscle strain. If anyone is fatigued and does feel up to the job they need to let the field supervisor know and other arrangements will be made. Mentioned safety audit to be conducted. Finally two safety observations were shared by team members: one involved conducting a 360° walk around of vehicles before driving off to look for equipment, persons and samples. The second was a positive safety observation where a lab resource utilized a rolling dolly to move heavy sample coolers minimizing the amount of distance they had to be carried by two people.</p>	

Signed: Mark Vetter
Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study		DFR NO.: 10			
Project No.: 33765144		Date: 4/23/2015			
Client/Project Manager: Teck American, Inc; Kris McCaig		Weather: Overcast			
AECOM Project Manager: Paul McCullough		Temperature: 35F AM, 57F PM			
AECOM Field Supervisor: Mark Vetter		Precipitation: None Morning started off cool and overcast. Breezy.			
AECOM Start Time: 0645					
AECOM End Time: 1623					
AECOM TEAM A		AECOM TEAM B		AECOM XRF TEAM	
Name		Name		Name	
Tony Palmieri		Michelle Stegner		Amy Dahl	
Ken Yang		Dave Lewis			
Oliver Patsch		Dean Kinney			
Columbia Navigation		EPA/EPA Contractor		NPS/CCT	
Name		Name		Name	
Josh Weatherman		Matt Wilkening - EPA		Jon Edwards - NPS	
		Mark Endo - CH2MHill		Meghan Lyons - NPS	
				Susan Ellis - CCT	
Visitors		Purpose		Arrive	Leave
Sally Miller (AECOM)		Safety Audit		0645	1345
Bill Tadlock (AECOM)		Safety Audit		0645	1345
Eric Lillywhite (AECOM)		Safety Audit		0645	1345
Becky Henselen (TAI)		Site Visit for TAI		0830	1640
Health and Safety					
<p>Discussed the field safety officer (Tony Palmieri) and who the overall site safety officer (Mark Vetter) are for the benefit of the new AECOM team member and AECOM safety auditors. Reviewed rally spots, Mt. Carmel Hospital location, driving safety including use of front seat spotters, conducting 360° vehicle inspection before driving, slips trips and falls and weather as today is supposed to be much cooler than previous days. Also discussed line of fire (led by Bill Tadlock), sharing the load of field gear, fit for duty and biological hazards - snakes, hornets, wasps; finally discussed pinch points. Had one new team member today, one reassigned from lab to field and one reassigned from field to safety audit.</p>					
Summary of Daily Activities (continued on Page 2)					
<p>Team A and Team B went to SDU-03 today to collect core samples. The AECOM Field supervisor and AECOM employees Amy Dahl and Eric Lillywhite participated in the safety audit at the field lab and office. The AECOM field supervisor and Eric Lillywhite participated in the field portion of the audit. During the audit the team visited UDU-05 to discuss steep slopes and SDU-04 to visit a steep cobble slope prior to any work at these areas. Team B completed SDU-03B and assisted Team A in completing SDU-03A. The field lab shipped the ICS samples collected from SDU-02B and -02C. SDU-02 core samples locations were selected by EPA based on XRF results. Ferry landing site core sample locations were selected in the field by EPA. Teams returned to field office at 1735 to decon and collect rinsate sample for the day. A debrief was conducted of the safety audit and items of note from the days work. The field teams departed the field office at 1623.</p>					

Signed: Mark Vetter
Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study		DFR NO.: 10		
Project No.: 33765144		Date: 4/23/2015		
Summary Of Daily Activities (continued from Page 1)				
No notes on this page.				
Sampling Activities				
Decision Unit	Team	Number of Increments	ICS Complete?	Comments
SDU-03A	A	27	Yes	
SDU-03A	B	3	Yes	
SDU-03B	B	30	Yes	
XRF Field Screening				
Decision Unit	Team	Number of XRF Samples Collected	XRF Complete?	Comments
		None		
Core Samples				
Decision Unit	Team	Number of Core Samples Collected	Cores Complete?	Comments
		None		

Signed: Mark Vetter
Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study	DFR NO.: 10
Project No.: 33765144	Date: 4/23/2015
Additional Information	
<p>Safety Audit - the following observations were made by the AECOM audit team. Becky Henselen from TAI participated in field audit as well. Field lab: 1) Sieve shaker should be shielded at flywheel (completed 4/23/15 by Eric Weatherman). 2) XRF standards should be labelled accordingly (completed 4/23/15 by Amy Dahl). 3) Fire extinguisher in field lab should be located in a more accessible area (completed 4/23/15 by Amy Dahl). 4) Re-label flammable cabinet as containing corrosive (completed 4/23/15 by Amy Dahl). 5) Label waste dilute acid container as only lid labelled (completed 4/23/15 by Amy Dahl). 6) It was suggested to use a buddy system when mixing the dilute acid solution in order to have someone nearby in case of a splash to the eyes (already in use by lab team). Field sampling: 1) Make sure to wear leather gloves not nitrile if using hand to remove remaining sample from core barrel due to potential sharp objects (team decided to use plastic disposable trowel for this instead to avoid sample contact with leather work gloves. 2) Consider rotating field jobs to different team members to avoid repetitive motion issues (field teams to evaluate roles on a daily basis and change up as needed). 3) Do not walk down slopes or on cobbles with hands in pockets in order to keep hands free in case of a STF (communicated to team at debrief and will readdress at daily tailgate meeting). When sampling at UDU-05 team will consider the following: send field sampler up slope with GPS and directed to sample from tablet user. Select the persons most fit for the job, establish solid foot before sampling. Once sample is retrieved process on flat ground. During field sampling four samples were not collected to the full volume of the core barrel due to rocky conditions. After discussion with EPA, CH2MHill and AECOM project manager it was decided that the team will collect the full volume during coring. Team to either sample using the prescribed approach in the QAPP or use the EPA recommendation applied during the Upland Soil Sampling Program to use a trowel to collect the needed material from the core hole after the core was driven the full 6 inches. The trowel technique was implemented on only a few samples. EPA request the team to return to the four samples where the core samples were not taken to full depth and complete them using the trowel method. Field sampling was challenging due to cobbles and 2 core devices had to be removed from service due to imminent failure of core barrel from pounding through coarse material. A field observation was communicated at the debrief to warn cultural observers of potential for metal fragments and sharp rocks possible in samples. This includes the possibility of broken glass within the sample. This will be discussed at the morning tailgate meeting. XRF samples were selected by EPA at SDU-02 based on XRF results. SDU-02-COR-01 to be located at XRF location SDU-02-XRF-08; COR-02 to be located at SDU-02-XRF-06 and COR-03 to be located at SDU-02-XRF-04. EPA selected 3 core locations at F-1 based on a field review of the area.</p>	

Signed: Mark Vetter
Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study		DFR NO.: 11	
Project No.: 33765144		Date: 4/24/2015	
Client/Project Manager: Teck American, Inc; Kris McCaig		Weather: Overcast	
AECOM Project Manager: Paul McCullough		Temperature: 40F AM/56F PM	
AECOM Field Supervisor: Mark Vetter		Precipitation: Trace	
AECOM Start Time: 0645		Rain overnight.	
AECOM End Time: 1827			
AECOM TEAM A		AECOM TEAM B	
Name		Name	
Tony Palmieri		Michelle Stegner	
Ken Yang		Dave Lewis	
Oliver Patsch		Dean Kinney	
Columbia Navigation		EPA/EPA Contractor	
Name		Name	
Josh Weatherman		Matt Wilkening - EPA	
Eric Weatherman		Mark Endo - CH2MHill	
		NPS/CCT	
		Name	
		Bill White - NPS	
		Jon Edwards - NPS	
		Susan Ellis - CCT	
Visitors		Purpose	
		Arrive	Leave
Health and Safety			
<p>Reviewed: Stop work authority, PPE, rally spots, hospital location, safety equipment locations, weather (chance of rain), metals in sediment, driving safety, slips, trips and falls due to rain overnight, share the load, pinch points (drum rings and slide hammer), line of fire (stand back from sampling efforts when in cobbles due to possible rock fragments and metal shards from sample core barrel), sharps (pieces of rock, metal and glass in samples). Biological hazards (NPS person found tick crawling on them yesterday after lunch break; be sure to check frequently). Eric Lillywhite departed the field project today. Ken Yang will work with Team A until Demetrio Cabanillas returns to the project on Monday, April 27.</p>			
Summary of Daily Activities (continued on Page 2)			
<p>Team A started SDU-05 but had to demobilize due to severe dust created by high winds. Team A returned to Bossburg to start core samples at UDU-03. Team B started and completed SDU-03C. Team B started UDU-04 core samples. The field lab shipped SDU-03A and 03B ICS samples to lab and worked on change requests for the use of the oven to dry XRF samples and for field use of portable XRF (EPA observers have been aware of the use of the oven and there has been no identified issues with using the oven). The AECOM field supervisor completed the field mapping of the water line at SDU-07, SDU-04 and SDU-08. Track logs were created, downloaded and sent to AECOM PM. After returning to the field office the field teams deconned core barrels and collect rinsate samples from an ICS core barrel and hand auger.</p>			

Signed: Mark Vetter
Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study		DFR NO.: 11		
Project No.: 33765144		Date: 4/24/2015		
Summary Of Daily Activities (continued from Page 1)				
No notes on this page.				
Sampling Activities				
Decision Unit	Team	Number of Increments	ICS Complete?	Comments
SDU-05	A	17	No	See below
SDU-03C	B	30	Yes	
XRF Field Screening				
Decision Unit	Team	Number of XRF Samples Collected	XRF Complete?	Comments
SDU-05	A	5	No	See below
Core Samples				
Decision Unit	Team	Number of Core Samples Collected	Cores Complete?	Comments
UDU-03	A	2	No	See below
UDU-04	B	1	No	

Signed: Mark Vetter
Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study	DFR NO.: 11
Project No.: 33765144	Date: 4/24/2015
Additional Information	
<p>The following primary sample stations were replaced by reserve stations: SDU-05-30 replaced by SDU-05-R01 and SDU-05-XRF-07 was replaced by SDU-05-XRF-R03 as both primary stations under water. The core sample collected at UDU-04-COR-01-003 met refusal at 14.5". Six attempts were made within two meters of the sample. After 6th attempt EPA (Matt Wilkening) and CH2MHill (Mark Endo) determined it was ok to collect the depth sample from 12 - 14.5" as only cobbles were present below this depth. The AECOM field supervisor relayed this information to the AECOM PM. Team A was working at SDU-05 today when it became very windy. This created severe dust and the team was relocated to Bossburg to start the cores at UDU-03. The dust was a safety hazard as it was getting into everything. Goggles ("spoggles") have been requested for future instances so teams can safely demobilize in these conditions. Dust was visible all along the river from Kettle Falls to Bossburg due to the high winds and dry conditions. The AECOM field supervisor completed the GPS tracks of the water lines at SDUs-07, 04 and 08 with support from Columbia Navigation. The track logs have been forwarded onto the AECOM PM for processing. While mapping SDU-08 the AECOM field supervisor encountered CCT representative (George Bishop) within the DU. Mr. Bishop asked several questions: what was being done, were we collecting samples today and if we had monitors. The AECOM field supervisor responded to the questions (mapping the water elevation within a previously cleared area, no sampling today, and we had NPS (Bill White and Jon Edwards) and CCT (Susan Ellis) as monitors). Both then went about their business. CH2MHill observer requested that the field teams use care when coring to prevent upper core material from sloughing into the deeper sample intervals (straight in and straight out with hand augers). Teams have noted this observation. Both EPA and CH2MHill agreed to collect the UDU-04-COR-01-003 sample from 12-14.5" after 6 refusals to get to 18" at EPA selected location. AECOM field teams will bag any IDW soil from cores to make cultural inspection easier for CCT observer. The AECOM field supervisor to update working schedule with samples collected to date.</p>	

Signed: Mark Vetter
Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study		DFR NO.: 12			
Project No.: 33765144		Date: 4/25/2015			
Client/Project Manager: Teck American, Inc; Kris McCaig		Weather: Cloudy			
AECOM Project Manager: Paul McCullough		Temperature: 38F AM, 48F PM			
AECOM Field Supervisor: Mark Vetter		Precipitation: Showers Rained on and off thru morning and afternoon.			
AECOM Start Time: 0645					
AECOM End Time: 1645					
AECOM TEAM A		AECOM TEAM B		AECOM XRF TEAM	
Name		Name		Name	
Tony Palmieri		Mark Vetter			
Ken Yang		Dave Lewis			
Oliver Patsch		Dean Kinney			
Columbia Navigation		EPA/EPA Contractor		NPS/CCT	
Name		Name		Name	
		Matt Wilkening - EPA		Jon Edwards - NPS	
		Mark Endo - CH2MHill		Meghan Lyons - NPS	
				Susan Ellis - CCT	
Visitors		Purpose		Arrive	Leave
Health and Safety					
<p>Discussed PPE - Spoggles have been requested and shipped. Slips, trips, falls - rain overnight and rain forecast for the day. Clothing - layers and rain gear. Take First Aid Kits and eyewash stations with you. Sharing the load when walking to SDU-05. Watch for barbed wire - good idea to flag it as soon as found. Fit for duty - please advise if you are not up to your assigned tasks for the day.</p>					
Summary of Daily Activities (continued on Page 2)					
<p>Field Supervisor received 15 minute training on tablets data acquisition and recording software. Team A mobilized to SDU-05. Team B mobilized to Bossburg to collect core samples at UDU-03, UDU-04, SDU-03 and F-1. Teams worked in light to medium rain showers accompanied by cold wind through the day. Due to the rain and potential impact to the tablets from getting wet, the location photos and collection times were noted in the field and entered into the tablets at the Kettle Falls Field office. Team A completed SDU-05 ICS and XRF. Team B completed cores at UDU-03 (1), UDU-04 (2), F-1 (3). Teams A and B completed the cores at SDU-03. At 1500 the field teams departed Bossburg and returned to Field Office to log samples collected in the rain, decon equipment and collect rinsates.</p>					

Signed: Mark Vetter
Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study		DFR NO.: 12		
Project No.: 33765144		Date: 4/25/2015		
Summary Of Daily Activities (continued from Page 1)				
No notes on this page.				
Sampling Activities				
Decision Unit SDU-05	Team A	Number of Increments 13	ICS Complete? Yes	Comments see below
XRF Field Screening				
Decision Unit SDU-05	Team A	Number of XRF Samples Collected 4	XRF Complete? Yes	Comments see below
Core Samples				
Decision Unit	Team	Number of Core Samples Collected	Cores Complete?	Comments
SDU-03	A	2	Yes	
SDU-03	B	1	Yes	
UDU-03	B	1	Yes	
UDU-04	B	2	Yes	
F-1	B	3	Yes	

Signed: Mark Vetter
Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study	DFR NO.: 12
Project No.: 33765144	Date: 4/25/2015
Additional Information	
<p>Michelle Stegner was out sick today. Field supervisor filled in as the Team B Lead and was responsible for data recording using the tablet. Battery packs for tablets are working well and teams have not experienced power issues since these were added. Field supervisor received call from Joe Wichmann - Citizens for Clean Columbia. Mr. Wichmann wanted to confirm schedule for sampling at SDU-06 on Tuesday. Field Supervisor informed him that was still the plan but he would notify him if that changed. Mr. Wichmann also wanted to discuss use of portable XRF in field. Informed him we were awaiting instruction on his request. Rain hindered data entry into the tablets in the field so the teams collected the basic information at the sample locations (using field books and stand-alone cameras at several locations (SDU-05-15, -09, -R06, - XRF-05, - XRF-04, -R03, -19, and R04). Team A logged these samples further at field office. Susan Ellis (CCT) returned with field teams to finish her screening of samples at field office. EPA and CH2MHill representatives returned as well as EPA wanted some additional data information for their field forms and CH2MHill wanted to observe rinsate sample collection. CH2MHill had the following observations and recommendations on the rinsates blanks - when collecting rinsate samples need to identify what SDU/UDU the core barrel, hand auger and shovel (used to assist with core locations with numerous cobbles) where used in. CH2MHill also requested that the field team not composite one SDU-05 ICS sample at this time due to it being muddy and much moister than the other ICS samples (this sample was not in standing water, it was collected in mud near the fringe of water) until he could discuss with EPA. He also wanted the one SDU-05 XRF sample not to be processed for the same reason. Field supervisor to follow up with AECOM PM on this issue. The following SDU-05 ICS samples were relocated to reserve stations due to cobble on steep slope or under water: SDU-05-18 was replaced by SDU-05-R06, SDU-05-24 was replaced by SDU-05-R03, SDU-05-15 was replaced by SDU-05-R04, SDU-05-08 was replaced by SDU-05-R05. One other item to note: Core location at SDU-03-COR-01 was mislabeled in field by EPA/CH2MHill as SDU-03-COR-03. The location was supposed to be SDU-03-COR-01. This will have to be corrected in the field tablets. On Monday April 27 both field teams will mobilize to SDUs -09 and -10. XRF samples will be collected first at these locations. Per EPA no written permission has been received for access to UDU-06.</p>	

Signed: Mark Vetter
Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study		DFR NO.: 13	
Project No.: 33765144		Date: 4/27/2015	
Client/Project Manager: Teck American, Inc; Kris McCaig		Weather: Clear to Ptly Cloudy	
AECOM Project Manager: Paul McCullough		Temperature: 32F AM, 70F PM	
AECOM Field Supervisor: Mark Vetter		Precipitation: None	
AECOM Start Time: 0645			
AECOM End Time: 1800			
AECOM TEAM A			
Name		Name	
Tony Palmieri		Michelle Stegner	
Demetrio Cabanillas		Dave Lewis	
Oliver Patsch		Dean Kinney	
AECOM XRF TEAM			
Name		Name	
Amy Dahl		Ken Yang	
Columbia Navigation			
Name		Name	
Eric Weatherman		Bill White - NPS	
Josh Weatherman		Meghan Lyons - NPS	
		Susan Ellis - CCT	
EPA/EPA Contractor			
Name		Name	
Andrea LaTier - EPA		Nicole Badon - CH2MHill	
NPS/CCT			
Visitors		Purpose	
Brent Martinez - CCT		Concerned about work at SDUs 9 and 10	
Health and Safety			
<p>Andrea LaTier (EPA) and Nicole Badon (CH2MHill) joined the field teams today. Reviewed the following at the tailgate meeting: Safety and Health Plan - located in office and each team vehicle if review needed. JSAs - review for new tasks, Stop Work Authority, Site Safety Officer (Team A field lead (field) and field supervisor (Overall), PPE, lead in sediment (shared XRF results), incident reporting, fit for duty, slip/trips/falls, safe lifting, pinch points (slide hammer, car doors, boats and dock), PFDs, communications to Columbia Navigation (via marine band radio and emergency channel), ticks, driving safety (wildlife, 360 inspection), hospital route is currently detoured. Josh Weatherman gave a boating safety discussion for trip to SDUs-09 and 10.</p>			
Summary of Daily Activities (continued on Page 2)			
<p>After daily tailgate meeting which included boating safety the teams traveled to SDUs 09 and 10. Team A collected XRF samples at SDU-09 and Team B collected XRF samples at SDU-10. These were retrieved by field supervisor. Teams then began to collect ICS samples at SDU-10. Prior to completing the sampling at SDU-10 the teams were relocated to SDU-06 (Evans Campground). At 14:30 the teams started collecting samples at SDU-06. See additional notes for further information. The field lab team processed samples collected Friday and Saturday (ICS samples SDU-05, SDU-03C; COR samples SDU-03, F-1 and 8 rinsate samples). The field lab also processed and ran XRF samples from SDU-05. COR samples from UDU-03 and 04 will ship Tuesday. A proposed XRF sample which was identified for lab confirmation (SDU-05-XRF-07) will be replaced by the reserve station (SDU-05-R03) due to the primary sample being underwater. Teams returned to field office to deliver samples and collect daily rinsate samples. A debrief was conducted and the teams departed the field office at 1800.</p>			

Signed: Mark Vetter
Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study		DFR NO.: 13		
Project No.: 33765144		Date: 4/27/2015		
Summary Of Daily Activities (continued from Page 1)				
No notes on this page.				
Sampling Activities				
Decision Unit	Team	Number of Increments	ICS Complete?	Comments
SDU-10	A	5	No	see below
SDU-10	B	8	No	see below
SDU-06A	A	14	No	
SDU-06B	B	13	No	
XRF Field Screening				
Decision Unit	Team	Number of XRF Samples Collected	XRF Complete?	Comments
SDU-09	A	4	Yes	
SDU-10	B	4	Yes	
Core Samples				
Decision Unit	Team	Number of Core Samples Collected	Cores Complete?	Comments
		None		

Signed: Mark Vetter
Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study	DFR NO.: 13
Project No.: 33765144	Date: 4/27/2015
Additional Information	
<p>Teams started the morning at SDUs-09 and -10 and accessed these SDUs via a Columbia Navigation boat. XRF samples were collected. One sample SDU-09-XRF-04 was within three feet of water and there was 3" of water in borehole after sampling. After XRF samples collected both teams began ICS sampling at SDU-10. Sample SDU-10-28 was underwater and a reserve station (SDU-10-R05) was collected instead. SDU-10-26 is a wet sample (location near water). The following other samples were identified as being under water: SDU-10-08, SDU-10-05, SDU-10-R01, SDU-10-04 and SDU-10-09. Prior to completing SDU-10 the field teams were met by Brent Martinez of CCT. He identified issues at SDU-09 and -10 that required the field teams to demobilize from those DUs. All samples collected had been cleared by NPS (Bill White and Meghan Lyons) and CCT (Susan Ellis) and were delivered to the field lab. The teams headed to SDUs-01 and-02 when similar issues were raised about SDU-02. At this point the teams moved to Evans campground to start on SDU-06A and -06B until Mr. Martinez's concerns are addressed and clearance to return is obtained. The teams partially completed these SDUs and will resume sampling on Tuesday 4/28/15. The field supervisor notified the AECOM PM of the issues. Field supervisor called Joe Wichmann of Citizens for a Clean Columbia to confirm the schedule for SDU-06. Mr. Wichmann will join the field teams at Evans Campground on 4/28/15 to observe SDU-06 sampling activities. Mr. Wichmann asked if we had been informed of conducting a beach XRF evaluation to which the field supervisor replied that the field teams had not received direction to do this work at this time. The field supervisor will discuss with Mr. Wichmann when he is at SDU-06. Mr. Wichmann also inquired about the SDU-09 and -10 XRF samples. He was informed these should be available by mid afternoon on Tuesday (4/28) and would be shared verbally. Work for Tuesday 4/28 will focus on completing SDU-06.</p>	

Signed: Mark Vetter
Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study		DFR NO.: 14				
Project No.: 33765144		Date: 4/28/2015				
Client/Project Manager: Teck American, Inc; Kris McCaig		Weather: Clear to Ptly Cloudy				
AECOM Project Manager Paul McCullough		Temperature: 37F AM, 77F PM				
AECOM Field Supervisor Mark Vetter		Precipitation: None				
AECOM Start Time: 0645						
AECOM End Time: 1740						
AECOM TEAM A AECOM TEAM B AECOM XRF TEAM						
Name		Name				
Tony Palmieri		Michelle Stegner				
Demetrio Cabanillas		Dave Lewis				
Oliver Patsch		Dean Kinney				
Columbia Navigation EPA/EPA Contractor NPS/CCT						
Name		Name				
		Andrea LaTier - EPA				
		Nicole Badon - CH2MHill				
		Bill White - NPS				
		Jon Edwards - NPS				
		Susan Ellis - CCT				
Visitors Purpose Arrive Leave Hrs						
Joe Wichmann		Observe SDU-06 sampling and lab XRF		800	1515	7.25
Health and Safety						
<p>Reviewed: Stop Work Authority, Site Safety Officer (Team A field lead (field) and field supervisor (Overall)), PPE, lead in sediment (shared XRF results), incident reporting, fit for duty, slips/trips/falls, safe lifting, pinch points (slide hammer, car doors), communications to Columbia Navigation via marine band radio channel 5 and emergency channel, ticks, driving safety (no cell phone use when driving, wildlife, 360 inspection), hospital route is currently detoured. Discussed WISHA lead standard - Appendices A and B. Sally Miller (AECOM CIH) provided an analysis of airborne exposure based on lead soil concentration if dust were to be an issue. Using the highest XRF sample lead in dust is below applicable action level of 0.025 mg/m³. However, if wind creates dusty conditions, the teams will leave the affected work area until the wind subsides. Spoggle safety eyewear has been ordered and is expected any day now.</p>						
Summary of Daily Activities (continued on Page 2)						
<p>Teams A and B left field office by 0720 and headed for Evans Campground to resume work on SDU-06. Field supervisor visited work site to deliver a replacement slide hammer as one broke today. Joe Wichmann (CCC) was on-site to observe beach sampling. Informed teams they needed to break for lunch at 1100 - 1300 in order for the cultural observers and EPA to attend a cultural resource working group conference call. The field lab completed XRF analysis of samples collected from SDU-05, -09, and -10. The field lab prepared and shipped cores from UDU-03 and UDU-04.</p>						

Signed: Mark Vetter
Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study		DFR NO.: 14		
Project No.: 33765144		Date: 4/28/2015		
Summary Of Daily Activities (continued from Page 1)				
No notes on this page.				
Sampling Activities				
Decision Unit	Team	Number of Increments	ICS Complete?	Comments
SDU-06A	A	16	Yes	see below
SDU-06B	B	17	Yes	
SDU-06C	A	7	Yes	see below
SDU-06C	B	23	Yes	see below
XRF Field Screening				
Decision Unit	Team	Number of XRF Samples Collected	XRF Complete?	Comments
SDU-06	A	5	Yes	see below
Core Samples				
Decision Unit	Team	Number of Core Samples Collected	Cores Complete?	Comments
		None		

Signed: Mark Vetter
Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study	DFR NO.: 14
Project No.: 33765144	Date: 4/28/2015
Additional Information	
<p>Teams completed SDU-06 A, B and C ICS samples and SDU-06 XRF samples. The following primary sample locations were relocated to reserve stations: SDU-06-XRF-03 was relocated to SDU-06-XRF-R02 due to the primary location being situated on what appeared to be an old railroad bed. SDU-06A-02 was relocated to SDU-06A-R03 as the primary location was situated on a large rock pile. Sample SDU-06C-10 was relocated to SDU-06C-R02 (unsuccessful) and then to location SDU-06C-R05 as both the primary and reserve stations were located on a large rock pile (described as a rock berm). The following samples required additional material to be hand dug to fill the core barrel (as approved by EPA observer): SDU-06A-18, SDU-06A-11, and SDU-06C-18 all due to the presence of a cobble layer at the location. Field teams took two hour lunch break from 1100 to 1300 while EPA, NPS, CCT participated in a cultural resource working group conference call and no observers were available to observe sample collection. The field lab shipped core samples to the analytical laboratory from UDU-03 and UDU-04 and analyzed XRF samples from SDUs-06, -09 and -10 that were previously collected prior to the stoppage of work yesterday. These samples had all been cleared by on-site cultural observers and no issues were identified. The following information was communicated to the AECOM field teams today regarding cultural issues: SDU-02 was cleared for sampling; UDU-06 was cleared for sampling but is still on-hold due to written permission from landowner for access not yet obtained; SDUs-09 and -10 will require the following assessment prior to obtaining approval to sample: An AECOM Team member, Michelle Stegner, will accompany Bill White (NPS) and Susan Ellis (CCT) to the DUs and conduct and evaluation of potential cultural areas. As part of this effort, AECOM will GPS the areas where it is not advisable to collect samples; identify the affected samples as rejected to understand how many samples will have to be re-located and map the current water elevation at the DUs to determine which samples are under water. This information will be used to potentially modify the QAPP approved sampling plan for SDU-09 and SDU-10. Additional communication regarding samples that contain elevated moisture (as determined by EPA observer) when compared to the drier ICS samples in a DU was received verbally from EPA today as follows: samples that are moist (near water's edge or in mud) will be kept separate from the dry ICS samples when the samples are transferred to the bulk sample container. They will be separated by keeping in the sealable baggie they were placed in and shipped with the dry increments. The lab will dry these and then homogenize with the larger portion of the ICS sample. AECOM will prepare a field change request to document this process. The analytical lab will be contacted to discuss this process.</p>	

Signed: Mark Vetter
Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study		DFR NO.: 15	
Project No.: 33765144		Date: 4/29/2015	
Client/Project Manager: Teck American, Inc; Kris McCaig		Weather: Clear to Ptly Cloudy	
AECOM Project Manager: Paul McCullough		Temperature: 55F AM/70F PM	
AECOM Field Supervisor: Mark Vetter		Precipitation: None	
AECOM Start Time: 0645			
AECOM End Time: 1740			
AECOM TEAM A		AECOM TEAM B	
AECOM XRF TEAM			
Name	Name	Name	
Tony Palmieri	Michelle Stegner	Amy Dahl	
Demetrio Cabanillas	Dave Lewis	Ken Yang	
Oliver Patsch	Dean Kinney		
Columbia Navigation		EPA/EPA Contractor	
NPS/CCT			
Name	Name	Name	
Eric Weatherman	Andrea LaTier - EPA	Bill White - NPS	
Josh Weatherman	Nicole Badon - CH2MHill	Jon Edwards - NPS	
		Susan Ellis - CCT	
Visitors	Purpose	Arrive	Leave
Health and Safety			
<p>Reviewed: Locations of HASPs, review JSAs for new tasks, driving safety - front seat spotter, cell phone usage, 360 review. Slips, trips, falls on cobbles and slopes; housekeeping in work areas; lead in sediment and soils; communications - marine band radios to communicate with boat (Channel 5). Work on slopes - have sturdy boots, carry minimum gear, limit team members on slopes, watch each other and rotate personnel in and out as needed. Share the load carrying gear to and from work sites. Watch for ticks at UDU-05 due to brush. Stay off the railroad tracks.</p>			
Summary of Daily Activities (continued on Page 2)			
<p>Team A mobilized to UDU-05 to work on ICS and XRF sample collection. Team A spent the entire day at this DU and collected 13 of 30 ICS increments and 6 of 13 XRF samples. Team B (Dave Lewis and Dean Kinney only) collected core samples from SDUs-01 and -02 and these DUs have been completed. Michelle Stegner (accompanied by Bill White - NPS and Susan Ellis - CCT) went to SDUs-09 and-10 to complete cultural resource recon for pending sample collection. When the recon team returned they went to SDU-06 and completed the core samples at this DU which completed the remaining work at this location. All samples were delivered to the field lab after final cultural review by Susan Ellis and the field teams completed the decon and rinsate sample collection procedure. Today the field lab completed the XRF analysis of the SDU-06 samples and shipped the following samples to the lab: SDU-06A ICS, SDU-06B ICS, SDU-06C ICS; XRF samples SDU-05-XRF-R03 (reserve collected in lieu of SDU-05-XRF-07), SDU-09-XRF-02, SDU-09-XRF-04, SDU-10-XRF-02, SDU-10-XRF-04 and 5 equipment rinsate blanks.</p>			

Signed: Mark Vetter
Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study		DFR NO.: 15		
Project No.: 33765144		Date: 4/29/2015		
Summary Of Daily Activities (continued from Page 1)				
No notes on this page.				
Sampling Activities				
Decision Unit UDU-05	Team A	Number of Increments 13	ICS Complete? No	Comments
XRF Field Screening				
Decision Unit UDU-05	Team A	Number of XRF Samples Collected 6	XRF Complete? No	Comments see below
Core Samples				
Decision Unit	Team	Number of Core Samples Collected	Cores Complete?	Comments
SDU-01	B	3	Yes	DU Complete
SDU-02	B	3	Yes	DU Complete
SDU-06	B	3	Yes	DU Complete

Signed: Mark Vetter
Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study	DFR NO.: 15
Project No.: 33765144	Date: 4/29/2015
Additional Information	
<p>Michelle Stegner along with Bill White - NPS and Susan Ellis of CCT were transported by Columbia Navigation to SDUs -09 and -10 to complete reconnaissance of potential cultural features in this area in order to identify sample locations that may not be acceptable. Michelle was also tasked with mapping the current water line. During this work they received a visit from Brent Martinez who questioned them as to what they were doing here as this was a known culturally significant area. After discussion, the recon team left SDUs-09 and -10 without completing the scope of work. Further discussion occurred between the cultural oversight and cultural working group and the field supervisor was notified that AECOM field teams will have permission to go back to SDU-09 and SDU-10 to collect samples on 4/30/15 with two cultural monitors to clear the sample locations and to identify the routes the field teams can use to access the sample locations. A 5 meter buffer from the water line will be required at SDU-10. When SDU-10 is completed the team will mobilize to SDU-09 and collect only the A replicates. An email from EPA authorizing this work has been communicated to the team by TAI. The rest of Team B went out to SDUs -01 and -02 to collect the cores and support Team A working on the slopes of UDU-05. Since the sample teams were short one NPS monitor and had no CCT monitor Jon Edwards - NPS supported both groups due to the closeness of the DUs to each other. All samples were kept with the field teams to ensure that Susan Ellis of CCT had an opportunity to review the samples prior to delivery to the field lab for processing and or shipping to the analytical lab. Bill White advised that he will not be on-site tomorrow as a monitor and NPS will send a new archeologist to the field in his place. Columbia Navigation will provide transportation to the site and will work with the monitors to identify an acceptable off-loading and loading spot for field personnel. The field supervisor will revise the April 28, 2015 field report to correct the number of samples collected at SDU-06B reported in the original report. Field supervisor received a call from Joe Wichmann at 0834. Mr. Wichmann asked if there were any XRF results available for the UDU-06 XRF samples. Mr. Wichmann was informed that no samples had been collected yet as written permission for access has not been received from the landowner. As of today no permission was received. Andrea LaTier (EPA) will follow up on this issue. For Thursday 4/30 Team A will return to UDU-05 and Team B will work at SDU-10 following the procedures previously described. If Team B completes SDU-10 they will move on to SDU-09. Based on similar XRF results measured from each XRF sample location by the field lab the SDU-06 core locations were randomly selected by EPA. The random locations were previously identified by EPA. This resulted in COR-01 being at SDU-06-XRF-04, COR-02 being at SDU-06-XRF-02 and COR-03 being at SDU-XRF-01. One ICS sample (UDU-05-23) collected at UDU-05 had to be completed by scooping material from the borehole into the core barrel to obtain the necessary volume for the increment. Team A experience battery issues today as the charging cable malfunctioned. This cable has been replaced.</p>	

Signed: Mark Vetter
Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study		DFR NO.: 16	
Project No.: 33765144		Date: 4/30/2015	
Client/Project Manager: Teck American, Inc; Kris McCaig		Weather: Clear to Ptly Cloudy	
AECOM Project Manager: Paul McCullough		Temperature: 35F AM/ 68F PM	
AECOM Field Supervisor: Mark Vetter		Precipitation: None	
AECOM Start Time: 0645			
AECOM End Time: 1740			
AECOM TEAM A		AECOM TEAM B	
Name		Name	
Tony Palmieri		Michelle Stegner	
Demetrio Cabanillas		Dave Lewis	
Oliver Patsch		Dean Kinney	
Columbia Navigation		EPA/EPA Contractor	
Name		Name	
Eric Weatherman		Andrea LaTier - EPA	
Josh Weatherman		Nicole Badon - CH2MHill	
		Reuben Greer - CH2MHill	
Visitors		Purpose	
Health and Safety			
<p>Reviewed: Locations of HASPs, JSAs for new tasks, driving safety - front seat spotter, cell phone usage, 360 review. Slips/trips/falls on cobbles and slopes; housekeeping in work areas; lead in sediment and soils; communications - marine band radios to communicate with boat (Channel 5). Work on slopes - have sturdy boots, carry minimum gear, limit team members on slopes, watch each other and rotate personnel in and out as needed. Share the load carrying gear to and from work sites. Watch for ticks at UDU-05 due to brush. Stay off the railroad tracks. Distributed spoggle safety glasses to AECOM team members. Dean Kinney relayed a safety issue he encountered in the field regarding STF. Provided safety glasses to Susan Ellis due to high winds and potential dust.</p>			
Summary of Daily Activities (continued on Page 2)			
<p>Two new monitors joined the team today - Danica Romeyn (NPS Archeologist) and Reuben Greer (CH2MHill). Two CH2MHill people are here today. After safety briefing Team A mobilized to UDU-05 to continue ICS and XRF sampling. Team B went to SDU-10 to resume sampling at this location. Team B was accompanied by Susan Ellis, Danica Romeyn, Reuben Greer and Nicole Badon and were transported by Columbia Navigation to the DU. Team A was accompanied by Andrea LaTier. Team A completed XRF sampling at UDU-05 by 0945. Samples were retrieved by the field supervisor and brought to Susan Ellis at SDU-10 for her to review and then transported the samples to field lab. While team B was working on SDU-10 Brent Martinez arrived on-site with his team to conduct CR survey work for BPA. No issues were identified by Mr. Martinez when he spoke with Michelle Stegner (AECOM). Team B completed 10 samples in SDU-10 by noon. Two of the ICS increments (24 and 29) collected by Team B at SDU-10 were previously collected by Team A on 4/27/15. The increments more recently collected by Team B were used for the ICS sample and the increments collected by Team A were held on ice until a decision could be made about what to do with them. Due to several samples being underwater in the prescribed 5 meter buffer or at a cultural feature, Team B was 10 samples short when the previously identified primary</p>			

Signed: Mark Vetter
Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study	DFR NO.: 16			
Project No.: 33765144	Date: 4/30/2015			
Summary Of Daily Activities (continued from Page 1)				
<p>and reserve stations were exhausted. Team B then proceeded to SDU-09 to begin ICS sample collection until makeup sample locations could be selected in coordination with EPA. Team A completed UDU-05 ICS and XRF today and then mobilized to SDU-05 and collected one of the 3 cores (SDU-05-COR-03). The field lab processed the UDU-05 XRF samples and shipped the following samples to the analytical lab: SDU-06 Core Samples (9), SDU-01 Core samples (9) and SDU-02 Core samples (9), and 3 rinsate blanks. At 1700 the field teams returned to the field office and deconned the equipment and then collected the daily rinsate samples. An AECOM debrief was conducted after decon to cover the following: Collection of the final 10 samples at SDU-10. To make up the 10 samples, Team B will identify those locations that are not accessible (e.g., underwater, within the cultural resource buffer or rejected due to cultural concerns) and move the location inland perpendicular to the river until an acceptable location is found. The new sample location will be recorded and identified as the previously rejected location. The teams were also briefed that revised sample points will be forth coming for SDUs-04, -07 and -08. SDU-09 replicates B and C will not be collected and these will be shifted to SDU-07, as agreed to with EPA. SDU-09 cores will also not be collected per EPA direction. Team A will mobilize to SDU-05 on 5/1/15 to finish the cores, then to UDU-05 to start cores. Team B will mobilize to SDU-09 and SDU-10 to continue with the ICS sampling. The following ICS increments at UDU-05 had to be collected or augmented for proper volume with a scoop: UDU-05-27, -24, -04,-16,-13 due to rocky soil. This is identified as a deviation from the QAPP.</p>				
Sampling Activities				
Decision Unit	Team	Number of Increments	ICS Complete?	Comments
UDU-05	A	17	Yes	See below
SDU-10	B	8 (10 were collected but 2 were duplicates)	No	See below
SDU-09A	B	15	No	
XRF Field Screening				
Decision Unit	Team	Number of XRF Samples Collected	XRF Complete?	Comments
UDU-05	A	7	Yes	
Core Samples				
Decision Unit	Team	Number of Core Samples Collected	Cores Complete?	Comments
SDU-05	A	1	No	

Signed: Mark Vetter
Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study	DFR NO.: 16
Project No.: 33765144	Date: 4/30/2015

Additional Information

The field team was briefed on the following issues today: Sampling at SDU-09 and 10: Change decon final rinse water more frequently to keep pH closer to 7; record the use of trowels at ICS locations where used and record the time when sample locations were determined to be incapable of providing the required sample. The team was also briefed on the procedures for sampling in culturally sensitive areas within SDUs-09 and 10 and were given a copy of the e-mail from EPA authorizing sampling at those DUs and that they needed to work closely with the cultural monitors who would identify where is was ok to walk and collect samples. The following discussions were conducted between the AECOM field supervisor (Mark Vetter) and EPA (Andrea LaTier): 1) SDU-10 where all 30 increments could not be collected due to exhausting the sample reserve locations prior to completing all 30 samples and how the QAPP addressed this issue (page A-11); 2) Field XRF study; 3) Core locations at F-2; 4) Has permission from landowner at UDU-06 been received. The following information was obtained from EPA: 1) For DUs where all 30 increment and reserve stations were exhausted before collecting the 30 samples- return to those stations that were either underwater, within the cultural buffer or at a cultural feature and follow a line perpendicular from the river on-shore until the cultural monitor approved a location to collect the sample. Conduct same procedure in same direction at each location until the 30 increments are obtained. There is no set distance associated with these new samples in relation to the original sample point. 2) A field in situ XRF study will be conducted within SDUs-09 and 10 using the portable XRF. The study will start in SDU-09 and end in SDU-10 after all ICS sample locations have had a field XRF reading taken. The study will be overseen by a cultural monitor. 3) Follow-up will be conducted with Matt Wilkening and Monica Tonel of EPA to determine if cores will be collected within F-2. 4) Permission of land owner at UDU-06 not yet received. Andrea LaTier also mentioned that she would like to see a summary of the work conducted to date on the project. She also mentioned that The Washington Department of Ecology was interested in the XRF data. The field supervisor discussed these requests with TAI and it was decided AECOM would share the sample summary information. No decision was conveyed to Field Supervisor on the Dept. of Ecology XRF data request. AECOM expects to have revised sample location maps and coordinates for SDUs-04,-07 and -08 and may begin sampling when these are received from HDR. At SDU-09 only replicate A will be collected. SDU-07 will have three replicate ICS samples collected to replace those not collected at SDU-09. EPA will provide to TAI written instructions regarding sampling within SDU-08 with similar conditions for sampling SDU-09 and -10.

Signed: Mark Vetter
Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study		DFR NO.: 17	
Project No.: 33765144		Date: 5/1/2015	
Client/Project Manager: Teck American, Inc; Kris McCaig		Weather: Clear to Ptly Cloudy	
AECOM Project Manager Paul McCullough		Temperature: 55F AM/ 70F PM	
AECOM Field Supervisor Mark Vetter		Precipitation: None	
AECOM Start Time: 0645			
AECOM End Time: 1800			
AECOM TEAM A AECOM TEAM B AECOM XRF TEAM			
Name		Name	
Tony Palmieri		Michelle Stegner	
Demetrio Cabanillas		Dave Lewis	
Oliver Patsch		Dean Kinney	
Columbia Navigation EPA/EPA Contractor NPS/CCT			
Name		Name	
Eric Weatherman		Andrea LaTier - EPA	
Josh Weatherman		Reuben Greer - CH2MHill	
		Danica Romeyn - NPS	
		Jon Edwards - NPS	
		Susan Ellis - CCT	
Visitors		Purpose	
Kris McCaig - TAI		Site Visit	
Becky Henselen - TAI		Site Visit	
Dave Enos - TAI		Site Visit	
Health and Safety			
<p>Reviewed: Locations of Health and Safety Plans, review Job Safety Analyses for new tasks, driving safety - front seat spotter, cell phone usage, 360 review. Slips/trips/falls on cobbles and slopes; housekeeping in work areas; lead in sediment and soils; communications - marine band radios to communicate with boat. Work on slopes - have sturdy boots, carry minimum gear, limit team members on slopes, watch each other and rotate personnel in and out as needed. Do not stand directly below team members working on slopes as rocks may fall down the slope. Share the load carrying gear to and from work sites.</p>			
Summary of Daily Activities (continued on Page 2)			
<p>After safety meeting Team A with Jon Edwards (NPS) and Andrea LaTier (EPA) went to SDU-05 to complete the 2 remaining core locations (9 core samples) at this SDU. Columbia Navigation transported Team A to the DU. When the team completed SDU-05 core samples they were transported by Columbia Navigation to Bossburg to complete the three core locations (9 samples) at UDU-05. The stainless steel shovel was used to collect these samples due to very rocky locations on the slope. Team A completed the core samples today. Team B with Danica Romeyn (NPS), Reuben Greer (CH2MHill), and Susan Ellis (CCT) mobilized to SDU-10 from Bossburg with transportation provided by Columbia Navigation. The team collected 5 ICS incremental samples at SDU-10 (note: ICS sample [-26] was previously collected by Team A on 4/27 and recollected again on 5/1). The ICS sample [-26] collected on 4/27 will be rejected and the ICS sample [-26] collected on 5/1 will be composited with the other ICS increments and sent to the lab. Team B then worked at SDU-09 and completed the ICS incremental samples at this location. The field lab processed and shipped the following samples to the analytical laboratory today: UDU-05 ICS, SDU-05-COR-03 core samples (3), UDU-05-XRF-01, and 3 equipment rinsate samples. Personnel from the field lab and Team A and B were released early today, however the Team A and B leads, the XRF lab team lead, and the field supervisor remained to upload the revised coordinates and maps for SDUs-04, -07 and -08 to make sure the teams would be ready to go first thing in the morning. The field supervisor spent the day with the TAI project personnel today.</p>			

Signed: Mark Vetter

Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study		DFR NO.: 17		
Project No.: 33765144		Date: 5/1/2015		
Summary Of Daily Activities (continued from Page 1)				
<p>A site boat tour of the active DUs (SDU-09, 10 and UDU-05) and remaining DUs (SDU-04, -07, -08 and UDU-06) was given to TAI visitors by the field supervisor with support from Columbia Navigation.</p>				
Sampling Activities				
Decision Unit	Team	Number of Increments	ICS Complete?	Comments
SDU-09A	B	15	Yes	See below
SDU-10	B	4 (5 collected but ICS sample No. 26 was duplicated)	No	See above
XRF Field Screening				
Decision Unit	Team	Number of XRF Samples Collected	XRF Complete?	Comments
		None		
Core Samples				
Decision Unit	Team	Number of Core Samples Collected	Cores Complete?	Comments
SDU-05	A	2	Yes	see below
UDU-05	A	3	Yes	see below

Signed: Mark Vetter
Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study	DFR NO.: 17
Project No.: 33765144	Date: 5/1/2015

Additional Information

Five ICS sample increments remain to be collected at SDU-10. The following samples at this DU are known to be underwater: SDU-10-04, -05, -08, -09, and R01. The following sample was rejected by the CCT Monitor SDU-10-R03 and not relocated. The following samples were relocated using the EPA/TAI agreed upon procedure discussed in the 4/30 daily report: SDU-10-21 (21m at 300° heading from original location; SDU-10-26 (previously collected on 4/27 by Team A at 7.68 m at 301° heading from original location in now established buffer zone), SDU-10-27 (37.4m at 300° heading from original location), SDU-10-28 (14.85m at 298° heading from original location; SDU-10-30 (17.66m at 297° heading from original location); SDU-09A-01 (9.51 m at 297° heading from original location); SDU-09A-03 (11m at 295° heading from original location); SDU-09A-04 (24.41m at 294° from original location); SDU-09A -15 (27.66m at 305° heading from original location); SDU-09A-16 (22.21m at 308° degree heading from original location); SDU-09A-17 (25m at 300° heading from original location); SDU-09A-26 (15.4m at 295° heading from original location); and SDU-09A (15.3m at 298° heading from original location). Samples (SDU-10-24,-26 and -29) that were duplicated by Team B and Team A will be addressed by sending the more recent samples collected by Team B on 4/30 (SDU-10-24 and -29) and 5/1 (SDU-10-26). The following sample locations were rejected by the CCT cultural monitor (SDU-09A-30, -R01 and -R06). Team A will attempt to collect the following ICS locations on 5/2 - SDU-10-06, -07, -18, -19 and R06 to complete the ICS sampling effort for SDU-10. If these samples cannot be collected at the QAPP established location they will be relocated via the previously established procedure. Team A will go to SDU-08 on 5/2 to collect XRF samples (4) and then back to SDU-10 to collect remaining ICS samples. Information received from TAI courtesy of the Bureau of Reclamation indicates that the lake level will be lowered to around 1248 feet MSL starting Sunday 5/3. On 5/2 Team B will collect XRF samples from SDUs-04 and -07. All core samples at UDU-05 required the use of a stainless steel shovel to be collected due to steep rocky terrain that precluded the use of a hand auger. This will be noted as a deviation to the QAPP.

Signed: Mark Vetter
Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study		DFR NO.: 18	
Project No.: 33765144		Date: 5/2/2015	
Client/Project Manager: Teck American, Inc; Kris McCaig		Weather: Clear to Ptly Cloudy	
AECOM Project Manager: Paul McCullough		Temperature: 55F AM/ 70F PM	
AECOM Field Supervisor: Mark Vetter		Precipitation: None	
AECOM Start Time: 0645			
AECOM End Time: 1800			
AECOM TEAM A			
Name		Name	
Tony Palmieri		Michelle Stegner	
Al Thatcher		Dave Lewis	
Oliver Patsch		Dean Kinney	
AECOM XRF TEAM			
Name		Name	
Amy Dahl		Ken Yang	
Columbia Navigation			
Name		Name	
Eric Weatherman		Danica Romeyn - NPS	
Josh Weatherman		Meghan Lyons - NPS	
		Susan Ellis - CCT	
EPA/EPA Contractor			
Name		Name	
Andrea LaTier - EPA		Reuben Greer - CH2MHill	
NPS/CCT			
Name		Name	
Danica Romeyn - NPS		Meghan Lyons - NPS	
		Susan Ellis - CCT	
Visitors			
Visitors		Purpose	
		Arrive	
		Leave	
		Hrs	
Health and Safety			
<p>New AECOM employee on-site today - Al Thatcher is replacing Demetrio Cabanillas. Reviewed: Locations of HASPs, review JSAs for new tasks, driving safety - front seat spotter, cell phone usage, 360 review. STF - on cobbles and slopes; housekeeping in work areas; lead in sediment and soils; communications - marine band radios to communicate with boat. Work on slopes - have sturdy boots, carry minimum gear, limit team members on slopes, watch each other and rotate personnel in and out as needed. Do not stand directly below team members working on slopes as rocks may fall off the slope. Share the load carrying gear to and from work sites.</p>			
Summary of Daily Activities (continued on Page 2)			
<p>After safety meeting Team B with Meghan Lyons (NPS) and Reuben Greer (CH2MHill) accessed SDU-04 from Bossburg to collect SDU-04 XRF samples (4). Team A with Danica Romeyn (NPS), Andrea LaTier (EPA) and Susan Ellis (CCT) went to SDU-08 to collect the XRF samples (4). Team A completed the XRF samples at SDU-08 by late morning. Mark Vetter took the SDU-04 samples to Susan Ellis for cultural review and then delivered the SDU-04 and SDU-08 XRF samples to the field lab. Team B then mobilized to SDU-07 to collect the XRF samples (4) at this SDU. Transportation was provided by Columbia Navigation due to distance from Evans and SDU-07 was divided in two parts separated by water. Team A requested replacement tablet and Mark Vetter delivered the XRF tablet to Team A. Team B completed XRF sample collection at SDU-07 by 1230 and returned to Bossburg to start SDU-04 ICS. Mark Vetter took the XRF samples for SDU-07 back to XRF field lab. Team A mobilized to SDU-10 with new tablet to collect the 5 remaining ICS increment samples. All transportation of Team A was provided by Columbia Navigation. SDU-10 was completed by 1440. Team A then mobilized first to SDU-04 to help with ICS samples at 1530. The field lab began processing XRF samples from SDUs-04,-07 and -08 for screening</p>			

Signed: Mark Vetter
Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study		DFR NO.: 18		
Project No.: 33765144		Date: 5/2/2015		
<p>Summary Of Daily Activities (continued from Page 1) and completed the XRF analysis for SDU-04 and SDU-08. Field teams returned at 1710. They then completed decon and collected the daily rinsate sample from one core barrel. A debrief was conducted and the teams departed the field office at 1800.</p>				
Sampling Activities				
Decision Unit	Team	Number of Increments	ICS Complete?	Comments
SDU-10	A	5	Yes	
SDU-04	B	10	No	See below
XRF Field Screening				
Decision Unit	Team	Number of XRF Samples Collected	XRF Complete?	Comments
SDU-04	B	4	Yes	See below
SDU-07	B	4	Yes	
SDU-08	A	4	Yes	
Core Samples				
Decision Unit	Team	Number of Core Samples Collected	Cores Complete?	Comments
		None		

Signed: Mark Vetter
Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study	DFR NO.: 18
Project No.: 33765144	Date: 5/2/2015
Additional Information	
<p>The field teams completed the following tasks today: XRF samples at SDUs-04, -07 and -08 and ICS samples at SDU-10. Team A and B worked on ICS samples at SDU-04 and completed 10 ICS samples. Columbia Navigation provided safety support by parking a boat at the base of the slope in case of a slip, trip, or fall into water. This morning one ICS sample collected from SDU-10 was identified as being wet (SDU-10-R05). This sample will be managed in accordance with the agreed upon procedure by keeping separate from the rest of the ICS sample when each increment is transferred to the 2.5 gallon bucket prior to shipment to the analytical lab and will be shipped in a separate container. Team A reported at noon that their tablet had malfunctioned and was not working. It was apparently dropped on Friday at UDU-05 on the rocky area at the high water mark. The field supervisor brought them the field lab tablet which worked fine to finish up SDU-10. Amy Dahl and Mark Vetter worked to resolve some minor database issues related to previously collected samples by cross referencing field notes to the database. The Team A tablet underwent a hard reboot and appeared to be functioning and was in use by the field lab. Field lab reported that tablet stopped working. Recording XRF data in Amy Dahl's AECOM laptop. The following samples required the use of a scoop to obtain a full core volume during sampling: SDU-04-R04, SDU-04-30, SDU-04-04, SDU-04-27, SDU-04-22 and SDU-04-01. The following reserve stations were used today: SDU-04-R04 for sample SDU-04-10 (slope too steep), SDU-08-XRF-R03 for sample SDU-08-XRF-03 (sample was 3 meters into water). The following samples at SDU-10 were relocated due to water and all reserves had been exhausted: SDU-10-19 (relocated 18m west of original location), SDU-10-18 (relocated 18m west of original location), SDU-10-R06 (relocated 30m west of original location), SDU-10-07 (relocated 14 meters west of original location), SDU-10-06 (relocated 32m west of original location). These samples completed SDU-10. Team A then went to SDU-04 to assist with ICS and collected three samples. However, these sample points were located using the old sample location map. These samples will be recollected on Monday 5/4 from the proper revised locations. The samples collected from the incorrect locations will be kept separately from the ICS samples collected to date to ensure they are not mixed into the increment prior to shipping to the analytical lab. EPA and CH2MHill selected core locations for SDUs-04 and SDU-08 based on XRF results in these DUs: SDU-04: COR-01 is SDU-04-XRF-04 (Avg Pb Conc = 112.9), COR-02 is SDU-04-XRF-01 (Avg Pb Conc = 29.5) and, COR-03 is SDU-XRF-03 (Avg Pb Conc = 29.3). SDU-08: COR-01 is SDU-08-XRF-04 (Avg Pb Conc = 583), COR-02 is SDU-08-XRF-02 (Avg Pb Conc = 159) and COR-03 is XRF-01 (Avg Pb conc = 340).</p>	

Signed: Mark Vetter
Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study		DFR NO.: 19	
Project No.: 33765144		Date: 5/4/2015	
Client/Project Manager: Teck American, Inc; Kris McCaig		Weather: Clear	
AECOM Project Manager: Paul McCullough		Temperature: 55F AM/ 80F PM	
AECOM Field Supervisor: Mark Vetter		Precipitation: None	
AECOM Start Time: 0645			
AECOM End Time: 1815			
AECOM TEAM A			
AECOM TEAM B		AECOM XRF TEAM	
Name	Name	Name	
Tony Palmieri	Michelle Stegner	Amy Dahl	
Al Thatcher	Dave Lewis	Ken Yang	
Oliver Patsch	Dean Kinney		
Columbia Navigation			
EPA/EPA Contractor		NPS/CCT	
Name	Name	Name	
Eric Weatherman	Monica Tonel - EPA	Danica Romeyn - NPS	
Josh Weatherman	John Kelly - CH2MHill	Jon Edwards - NPS	
		Susan Ellis - CCT	
Visitors	Purpose	Arrive	Leave
Health and Safety			
<p>New CH2MHill employee on-site today - John Kelly and Monica Tonel - EPA returned. Reviewed: Locations of HASPs, review JSAs for new tasks, driving safety - front seat spotter, cell phone usage, 360 review. STF - on cobbles and slopes; housekeeping in work areas; lead in sediment and soils; communications - marine band radios to communicate with boat. Work on slopes - have sturdy boots, carry minimum gear, limit team members on slopes, watch each other and rotate personnel in and out as needed. Do not stand directly below team members working on slopes as rocks may fall off the slope. Those personnel working at SDU-04 will be required to wear life jackets when working on slopes. Columbia Navigation to provide safety backup at waters edge in case of a fall into water. Share the load carrying gear to and from work sites.</p>			
Summary of Daily Activities (continued on Page 2)			
<p>After morning tailgate meeting the teams were deployed as follows: Team A accompanied by Danica Romeyn - NPS and John Kelly - CH2MHill went to SDU-04 to collect remaining ICS and core samples. Team B accompanied by Jon Edwards - NPS, Monica Tonel - EPA and Susan Ellis - CCT went to SDU-07 to start on ICS samples located along east shore and beach. Transportation to this DU was provided by Columbia Navigation as the DU is close to 1 mile from the Evans campground parking lot. Both teams spent the entire day at these locations. The field supervisor with transportation provided by Columbia Navigation visited SDU-04, SDU-07 and SDU-08 to inspect and photograph the current shoreline in order to determine the amount of new shoreline exposed due to dropping water levels which at noon today was 1249.1' MSL (the lake level on 4/24 was 1251' MSL). The field supervisor reported this information back to the AECOM project manager. The field lab completed the XRF screening for the XRF samples collected from SDU-07 on 5/2/15. The field lab also prepared, packed and shipped the following samples to the analytical laboratory: SDU-09A-ICS (no samples to be collected from SDU-09B and -09C as directed by EPA due to cultural concerns); SDU-10-ICS; SDU-05 cores samples from COR-01 and COR-02; and UDU-05 core samples (COR-01, COR-02 and COR-03).</p>			

Signed: Mark Vetter
Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study		DFR NO.: 19		
Project No.: 33765144		Date: 5/4/2015		
Summary Of Daily Activities (continued from Page 1)				
<p>The field teams returned to the field office by 1720 where they deconned the field equipment and collected the daily rinsate samples. The field supervisor presented EPA and CH2MHill with the XRF data from SDU-07. The following XRF samples will be the COR locations - SDU-07-XRF-04 will be SDU-07-COR-01, SDU-07-XRF-01 will be SDU-07-COR-02 and SDU-07-XRF-03 will be COR-03.</p>				
Sampling Activities				
Decision Unit	Team	Number of Increments	ICS Complete?	Comments
SDU-04	A	20	Yes	See below
SDU-07A	B	18	No	See below
SDU-07B	B	22	No	See below
XRF Field Screening				
Decision Unit	Team	Number of XRF Samples Collected	XRF Complete?	Comments
		None		See below
Core Samples				
Decision Unit	Team	Number of Core Samples Collected	Cores Complete?	Comments
SDU-04	A	3	Yes	See below

Signed: Mark Vetter
Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study	DFR NO.: 19
Project No.: 33765144	Date: 5/4/2015
Additional Information	
<p>Due to H&S concerns Team A working at SDU-04 donned life jackets today for working on the slope and Columbia Navigation provided water based safety support. The following samples required the use of a scoop to obtain the necessary ICS core volume: SDU-04-02,-03, -05, -06, -07, -09, -11, -12, -13, -15, -16, -17, -23, -24, -25 and -29; SDU-07A-06, -23, -24, and -27; and SDU-07B-01, -04, -05, -06, -08, -09, -12, -15, -19 and -26 all due to the extremely rocky nature of the matrix at these sample locations. The 3 core locations at SDU-04 required the use of the stainless steel shovel to obtain the necessary depth and volume for the core samples. These are all noted as deviations to the QAPP as a full core barrel could not be obtained without using these sampling methods. Shoreline reconnaissance conducted by the field supervisor at SDUs-04, -07 and -08 indicated the following - SDU-04 - the recent drop in water level did not expose any new sediment along the shoreline. The shoreline still consisted of gravel and cobble; SDU-07 - the recent drop in water level did expose new sediment along each bank (up to 10 feet of new shoreline) of the DU but did not sufficiently lower the water levels to grab the samples in the deeper portion of the DU. The recent drop in water level exposed up to 15 feet of new sediment in the northern portion of the DU with slightly less sediment in the middle and southern areas of the DU. It was reported back to the AECOM field supervisor by the TAI PM that the following actions would be taken to address water level drops. SDU-04 - no action and this DU is considered complete. SDU-07 - sampling will be conducted according to the revised DU boundaries based on the 4/24 water level. A field in situ XRF study will be completed of the newly exposed sediments as follows: Field XRF readings will be taken at 100 foot intervals around the perimeter of this DU in the newly exposed sediment. At every 10th location a second field XRF reading will be taken for comparison. It is estimated that approximately 40 locations will be field screened. Field XRF location coordinates will be recorded using a Trimble GPS. This work will occur during the afternoon of 5/5/15. No additional ICS samples will be collected. SDU-08 - The work will proceed according to the revised DU boundaries based on the 4/24/15 water levels. Should an ICS sample be rejected during sampling and is located within 25 feet of the shoreline the sample will be relocated toward the waterline at a location approved by the cultural monitors. Should a sample be rejected outside of 25 feet from the current water line a reserve station will be utilized. No additional ICS samples will be collected; no field XRF will be conducted. On 5/5/15 the following work will be performed: Team B will work at SDU-07A to complete remaining 12 ICS increment samples, at SDU-07B complete remaining 8 ICS and start SDU-07C ICS. Team A will start ICS at SDU-08. A field in situ XRF study will be conducted at SDU-07 by Amy Dahl and field supervisor.</p>	

Signed: Mark Vetter
Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study		DFR NO.: 20	
Project No.: 33765144		Date: 5/5/2015	
Client/Project Manager: Teck American, Inc; Kris McCaig		Weather: Clear AM Showers PM	
AECOM Project Manager Paul McCullough		Temperature: 45F AM/65F PM	
AECOM Field Supervisor Mark Vetter		Precipitation: <0.02"	
AECOM Start Time: 0645			
AECOM End Time: 1810			
AECOM TEAM A AECOM TEAM B AECOM XRF TEAM			
Name		Name	
Tony Palmieri		Michelle Stegner	
Al Thatcher		Dave Lewis	
Oliver Patsch		Dean Kinney	
		Gary Panther (PM only)	
Columbia Navigation		EPA/EPA Contractor	
Name		Name	
Eric Weatherman		Monica Tonel - EPA	
Josh Weatherman		John Kelly - CH2MHill	
		Susan Ellis - CCT	
Visitors		Purpose	
		Arrive	
		Leave	
		Hrs	
Health and Safety			
<p>Reviewed: Locations of HASPs, review JSAs for new tasks, driving safety - front seat spotter, cell phone usage, 360 review. STF - on rocks at SDU-08 and mud at SDU-07; housekeeping in work areas; lead in sediment and soils; communications - marine band radios to communicate with boat. Work on slopes - have sturdy boots, carry minimum gear, limit team members on slopes, watch each other and rotate personnel in and out as needed. Do not stand directly below team members working on slopes as rocks may fall off the slope. Complacency as project end nears, fit for duty, incident reporting and line of fire, pinch points. Noted Al Thatcher had sharp edge on repaired slide hammer removed by Columbia Navigation. Team B also brought canopy for sun shade with them.</p>			
Summary of Daily Activities (continued on Page 2)			
<p>Prior to morning tailgate meeting the Field Supervisor reviewed the field XRF plan including proposed location spacing at SDU-07 and the approach to relocating samples at SDU-08 for those rejected locations near water with Monica Tonel - EPA and John Kelly - CH2MHill. Both were in agreement with these approaches. After morning tailgate meeting the teams were deployed as follows: Team A accompanied by Danica Romeyn - NPS, Monica Tonel - EPA and Susan Ellis - CCT departed for SDU-08 via Bossburg to await transportation by to the DU by Columbia Navigation. Team A will work on SDU-08 ICS increment samples today. Team B accompanied by Jon Edwards - NPS and John Kelly - CH2MHill departed to Marcus Island Campground to meet Columbia Navigation for transport to SDU-07. Team B will work on completing SDU-07A and SDU-07B ICS and start SDU-07C ICS. Teams left by 0720. Field lab processed and packed the following samples for analytical lab: SDU-04 ICS and SDU-04 Cores (-01, -02 and -03) and 3 equipment rinsates. The field supervisor and Amy Dahl went to SDU-07 transported by Columbia Navigation and arrived at 1220 and set up to conduct the field XRF study. After XRF calibration was complete field readings were collected at approximately 100 foot intervals along the east shore of the western portion of the DU. Twenty XRF stations</p>			

Signed: Mark Vetter
Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study		DFR NO.: 20		
Project No.: 33765144		Date: 5/5/2015		
Summary Of Daily Activities (continued from Page 1)				
<p>were measured. The study resumed on the west shore of the eastern portion of the DU in a similar manner with 19 more locations were screened with the XRF for a total of 39 field readings. Information regarding each location was recorded in the XRF lab field notebook and photographs were taken at each location and at various points on the shoreline. The field teams returned to the field office by 1710 where they deconned the field equipment and collected the daily rinsate samples.</p>				
Sampling Activities				
Decision Unit	Team	Number of Increments	ICS Complete?	Comments
SDU-08	A	21	No	See below
SDU-07A	B	12	Yes	See below
SDU-07B	B	8	Yes	See below
SDU-07C	B	25	No	See below
XRF Field Screening				
Decision Unit	Team	Number of XRF Samples Collected	XRF Complete?	Comments
SDU-07	XRF	39 (Field XRF readings only)	Yes	See below
Core Samples				
Decision Unit	Team	Number of Core Samples Collected	Cores Complete?	Comments
		None		

Signed: Mark Vetter
Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study	DFR NO.: 20
Project No.: 33765144	Date: 5/5/2015
Additional Information	
<p>Gary Panther arrived at 1024. He will go to field to spend the day with Team B to get up to speed on ICS sampling. The field supervisor discussed the XRF study with EPA and CH2MHill representatives prior to them departing for the field. This included reviewing the email received from TAI which came from EPA (Matt Wilkening). Monica Tonel - EPA was aware of the study and both parties agreed to the 100 foot spacing. Monica Tonel called the field supervisor from the field and informed him that Brent Martinez of CCT will meet us tomorrow at SDU-09 to point out the location of the western Ferry Landing (F-2) site. Michelle Stegner of Team B will meet him and record the location Mr. Martinez identifies. Team B completed SDU-07A ICS (12 ICS increments), SDU-07B ICS (8 ICS increments) and collected 25 of the 30 ICS increments at SDU-07C. No reserve stations were required at SDU-07A, B or C. Team A completed 21 of 30 ICS samples at SDU-08 until they had to shut down because of heavy rain. Team A will plan to complete SDU-08 ICS increments and SDU-08 Cores on 5/6/15 and Team B will plan to complete SDU-07C ICS increments and SDU-07 cores on 5/6/15. Field supervisor was informed that UDU-06 boundaries will be reconfigured since no access to the private land at this DU has been received. Field supervisor expects revised maps and sample coordinates by 1300 on 5/6/15. At that time both field teams (depending on status at DUs they are completing, will mobilize to UDU-06 to collect the 5 XRF samples and start the 30 ICS increments. All SDU-07 A, B and C ICS samples (except SDU-07B-28) on the east side of the western portion of the DU required the use of a scoop to remove from material the core barrel due to the sticky mud. This included SDU-07A-01, -04, -05, -07, -08, -10, -15, -16, -17, -21, -29 and -30; SDU-07B-02, -03, -16, -18, -21, -25, and -29; SDU-07C-02, -04, -08, -10, -17, -21, -22, -23, -27, -28, and -30. The following samples required the use of a scoop today to obtain the necessary volume for ICS increment samples: SDU-07C-06, -07, -09, -14, -15, -19, -20, -24 and SDU-08-05, -09, -11, -15, -16, -27. These will ne noted as deviations from the QAPP. For Wednesday 5/6/15 Team A plans to complete SDU-08 ICS increments and cores and Team B plans to complete SDU-07C and cores</p>	

Signed: Mark Vetter
Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study		DFR NO.: 21	
Project No.: 33765144		Date: 5/6/2015	
Client/Project Manager: Teck American, Inc; Kris McCaig		Weather: Clear AM Ptly Cldy PM	
AECOM Project Manager: Paul McCullough		Temperature: 45F AM/65F PM	
AECOM Field Supervisor: Mark Vetter		Precipitation:	
AECOM Start Time: 0645			
AECOM End Time: 1805			
AECOM TEAM A		AECOM TEAM B	
Name		Name	
Tony Palmieri		Michelle Stegner	
Al Thatcher		Dave Lewis	
Oliver Patsch		Gary Panther	
AECOM XRF TEAM		Name	
		Amy Dahl	
		Ken Yang	
		Mark Vetter (SDU-09 Field)	
Columbia Navigation		EPA/EPA Contractor	
Name		Name	
Eric Weatherman		Monica Tonel - EPA	
Josh Weatherman		John Kelly - CH2MHill	
		NPS/CCT	
		Name	
		Danica Romeyn - NPS	
		Bill White - NPS	
		Susan Ellis - CCT	
Visitors		Purpose	
		Arrive	
		Leave	
		Hrs	
Beck Henselen (TAI)		weekly site visit	
		845	
		1745	
		9	
Health and Safety			
<p>Reviewed: Locations of HASPs, review JSAs for new tasks, driving safety - front seat spotter, cell phone usage, 360 review. Slips, trips and falls on rocks at SDU-08; housekeeping in work areas; lead in sediment and soils; communications - marine band radios to communicate with boat (Channel 5). Work on slopes - have sturdy boots, carry minimum gear, limit team members on slopes, watch each other and rotate personnel in and out as needed. Do not stand directly below team members working on slopes as rocks may fall of the slope. Complacency as project end nears, fit for duty, incident reporting and line of fire, pinch points, poison ivy and ticks. Ken Yang and Dean Kinney (both AECOM) departed the field project today. Susan Ellis was not present for the safety meeting and met the team at Bossburg. A near miss was reported by Team B today. When grabbing the dilute HNO3 rinse bottle the spray nozzle separated from the bottle and spilled HNO3 on the ground at SDU-07. No dilute HNO3 contacted the field staff and the impacted soil was scooped up and placed in a waste bucket to be managed as IDW. A new spray bottle was brought to the team and the other bottle taken out of service.</p>			
Summary of Daily Activities (continued on Page 2)			
<p>Prior to morning tailgate meeting the Field Supervisor reviewed the days plan with Columbia Navigation then EPA and CH2MHill. The daily tailgate meeting specifically covered poison plants and the teams reviewed HASP information on that topic including looking at photos of the common plants. After morning tailgate meeting the teams were deployed as follows: Team A accompanied by Danica Romeyn (NPS), Monica Tonel (EPA) and Susan Ellis (CCT) departed for SDU-08 via Bossburg to await transportation to the DU by Columbia Navigation. Team A worked on remaining nine SDU-08 ICS and three cores today. Team B accompanied by Bill White (NPS) and John Kelly (CH2MHill) departed to Marcus Island Campground to meet Columbia Navigation for transport to SDU-07. Team B worked on completing SDU-07C ICS and SDU-07 cores. Teams left by 0725. With Ken Yang's departure the field lab worked on reporting issues and processed SDU-07A and SDU-07B ICS samples for shipment to the lab. The AECOM field supervisor and Amy Dahl (AECOM) were transported by Columbia Navigation to SDU-09 and arrived at 1220. AECOM set up to conduct the field XRF study at SDU-09A ICS sample locations. After XRF calibration was complete field readings were collected at 30 previously collected ICS increment stations. Team A completed the remaining nine SDU-08 ICS and three cores today. Team B completed the remaining five</p>			

Signed: Mark Vetter

Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study		DFR NO.: 21		
Project No.: 33765144		Date: 5/6/2015		
Summary Of Daily Activities (continued from Page 1)				
<p>SDU-07C ICS, three SDU-07 cores and five UDU-06 XRF samples. The field supervisor and Amy Dahl, accompanied by Bill White (NPS) and Becky Henselen (TAI), completed the XRF field study for SDU-09 but did not get to SDU-10 ICS locations. Due to not having the revised UDU-06 ICS maps the teams began demobilizing from SDU-09 area at 1345. All field teams were back at the field office by 1705. Equipment decon was conducted, samples were inventoried and iced for the night and equipment rinsate samples were collected. Conducted a debrief of the days work and Thursday schedule and the teams departed the field office by 1800.</p>				
Sampling Activities				
Decision Unit	Team	Number of Increments	ICS Complete?	Comments
SDU-08	A	9	Yes	See below
SDU-07C	B	5	Yes	See below
XRF Field Screening				
Decision Unit	Team	Number of XRF Samples Collected	XRF Complete?	Comments
SDU-09A	XRF	30 (Field XRF readings only)	Yes	See below
UDU-06	B	5	Yes	
Core Samples				
Decision Unit	Team	Number of Core Samples Collected	Cores Complete?	Comments
SDU-08	A	3	Yes	See below
SDU-07	B	3	Yes	See below

Signed: Mark Vetter
Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study	DFR NO.: 21
Project No.: 33765144	Date: 5/6/2015
Additional Information	
<p>The AECOM field supervisor discussed the days proposed sampling and the planned SDU-09 and SDU-10 XRF study with EPA and CH2MHill representatives prior to them departing for the field. Brent Martinez (CCT) texted coordinates to Michelle Stegner today for the F-2 ferry location in UTM 11N NAD 83 coordinates: N 5401070; E 422492. The coordinates were plotted on ARC Explorer and the location was determined to be at the very north end of SDU-09 approximately 300 feet north of the northern edge of the identified location in the QAPP. In addition, a ~1.75 inch rusted steel cable (UTM 11N NAD 83 coordinates are: N 5401094.98; E 422461.18) was seen on the northern end of SDU-09 today. That cable is located in line with the F-2 coordinates given to AECOM by Brent Martinez. Mr. Martinez collected the F-2 coordinates during low water in 2011 while standing at the location. Mr. Martinez did not come to the field today as scheduled. Team B completed SDU-07C ICS (5 ICS) and SDU-07 cores as well as the five XRF locations at UDU-05. Coordinates were provided to Team A and B in the field. No reserve stations were required at SDU-07C. Team A completed the nine remaining ICS samples at SDU-08 and the three cores. No reserve stations were required at SDU-08. The field XRF survey for SDU-09 and -10 was started today. Prior to starting Susan Ellis (CCT) was contacted to ask if she was going to participate in the field XRF survey. Since this survey was non-intrusive she told us to proceed without her. Bill White (NPS) accompanied the field team to guide the way. The SDU-09A portion was completed as proposed. The SDU-10 portion if conducted will likely be completed on Friday 5/8. Team A and Team B will work at UDU-06 ICS and cores (as soon as XRF data is available) on Thursday. The field supervisor, Team A and B field team leads, and the AECOM PM reviewed the two scenarios to redistribute the ICS samples to only the public land at UDU-06. Based on observations made by Team B today it was decided that Scenario 2 (scenario which uses the entire reconfigured DU) would be best for sampling based on the field conditions. No permission was ever obtained from the land owner for the western portion of UDU-06. The following QAPP deviations were noted today: The following SDU-08 ICS samples required the use of a plastic scoop to complete the necessary volume: SDU-08-07, -10, -17 and SDU-07C-29. All SDU-08 core samples were obtained with the use of a stainless steel shovel due to numerous rocks. SDU-08-COR-02 (SDU-08-XRF-02) was relocated to SDU-08-XRF-R03 due the presence of a cultural feature identified in the core at depth. This decision was made by Monica Tonel (EPA). Revised UDU-06 ICS maps were received by the field supervisor after returning to the field office at the end of the day. This information was given to the field teams and uploaded to the tablets. After review of the two scenarios scenario 2 was chosen as the preferred option. The teams will await approval from TAI prior to implementing Scenario 2.</p>	

Signed: Mark Vetter
Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study		DFR NO.: 22	
Project No.: 33765144		Date: 5/7/2015	
Client/Project Manager: Teck American, Inc; Kris McCaig		Weather: Clear	
AECOM Project Manager: Paul McCullough		Temperature: 35F AM/75F PM	
AECOM Field Supervisor: Mark Vetter		Precipitation: None	
AECOM Start Time: 0645			
AECOM End Time: 1815			
AECOM TEAM A		AECOM TEAM B	
Name		Name	
Tony Palmieri		Michelle Stegner	
Gary Panther (AM only)		Dave Lewis	
Oliver Patsch		Gary Panther (PM only)	
Columbia Navigation		EPA/EPA Contractor	
Name		Name	
Eric Weatherman		Monica Tonel - EPA	
Josh Weatherman		John Kelly - CH2MHill (departed at 1348)	
		NPS/CCT	
		Name	
		Bill White - NPS	
		Danica Romeyn (tailgate only)	
		Jon Edwards (tailgate only)	
		Susan Ellis (CCT)	
Visitors		Purpose	
		Arrive	
		Leave	
		Hrs	
Health and Safety			
<p>Reviewed: Locations of HASPs, JSAs for new tasks, driving safety - front seat spotter, cell phone usage, 360 review. STF - on slopes at UDU-06; housekeeping in work areas; lead in sediment and soils; communications - marine band radios to communicate with boat. Work on slopes - have sturdy boots, carry minimum gear, limit team members on slopes, watch each other and rotate personnel in and out as needed. Complacency as project end nears, fit for duty, incident reporting and line of fire, pinch points, poison ivy, ticks and bees within the dense canopy cover at UDU-06. In order to avoid poison ivy exposure Tyvek coveralls and Tecnu soap was made available to field personnel. Today, one employee reported a scratch to the forearm from thorn. He was unaware of when this happened, but went to the rally spot and wiped the scratch with antiseptic and did not require any further assistance.</p>			
Summary of Daily Activities (continued on Page 2)			
<p>The field supervisor conducted daily tailgate meeting and talked specifically about poisonous plants, reviewed HASP information on that topic and showed photos of the common plants again. Weather was also discussed as it was forecasted to be in the mid to upper 70's today. Experience from past days like this have shown the afternoons to be even warmer on the beaches. The teams reviewed heat stress, the importance of hydration and avoiding sunburn. After morning tailgate meeting the teams were deployed as follows: Teams A and B accompanied by Bill White (NPS), Monica Tonel (EPA) and Susan Ellis (CCT) departed for UDU-06 via Bossburg to await transportation to the DU by Columbia Navigation to start UDU-06 ICS locations based on the revised locations provided by HDR. Teams left the field office by 0725. Al Thatcher, who is highly sensitive to poison ivy remained behind to assist the field lab with XRF samples and analytical lab sample preparation and packing. Gary Panther supported both field teams as they worked in close proximity today. At 1400 Team B had completed their portion of UDU-06 ICS samples and assisted with flagging the field XRF locations at SDU-10-ICS locations in preparation for possibly completing this work on Friday 5/8. By 1430 Team A completed the final UDU-06 ICS locations.</p>			

Signed: Mark Vetter
Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study		DFR NO.: 22		
Project No.: 33765144		Date: 5/7/2015		
Summary Of Daily Activities (continued from Page 1)				
<p>A decision was made by the teams to pursue the core samples at the following locations as determined by EPA: UDU-06-XRF-01 (COR-01), -02 (COR-02) and -03 (COR-03). At 1545 Team A reported that they were on the last core and by 1630 had completed the cores and the decision unit. All teams returned to the field office in Kettle Falls to deliver the samples to the field lab, decon field equipment and collect rinsate blanks. Once this was done the team held a debrief and departed the site at 1820. Samples from the CORs were logged at the field office as they were not completed in detail in the field in order to complete the field scope of work today. Field teams separated field equipment based on AECOM or TAI ownership and emptied the archived XRF samples into the IDW drum.</p>				
Sampling Activities				
Decision Unit	Team	Number of Increments	ICS Complete?	Comments
UDU-06	A	12	Yes	See below
UDU-06	B	18	Yes	See below
XRF Field Screening				
Decision Unit	Team	Number of XRF Samples Collected	XRF Complete?	Comments
		None		
Core Samples				
Decision Unit	Team	Number of Core Samples Collected	Cores Complete?	Comments
UDU-06	A	3	Yes	See below

Signed: Mark Vetter
Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study	DFR NO.: 22
Project No.: 33765144	Date: 5/7/2015
Additional Information	
<p>The field teams had a very challenging day today dealing with steep heavily overgrown slopes with abundant poison ivy. Access was difficult at most locations and the teams had to work slowly and methodically to get to ICS increment locations. The upsides to the challenges faced during ICS sampling were that the soil was soft, plentiful and very easy to sample. The soft soil conditions at the majority of the ICS increment locations made sampling easy and expeditious and offset the difficult access conditions. No reserve locations were used at any ICS locations and only two samples required the use of a scoop to obtain the proper volumes. These were samples UDU-06-18 and -30 and were located in the rocky areas at the toe of the slope at the high water mark. Four samples were identified by the field teams as being wet that will require keeping them separate from the other 26 samples due to the presence of several springs/seeps along the slope and slope toe across the DU. These are samples UDU-06-04, -16, -17 and 28. All proposed ICS increment, XRF and COR samples have been completed based on the reconfigured sample locations at SDU-07 (replicates B and C added), SDU-09 (cores and replicates B and C eliminated), reconfigured DU boundaries and sample locations at SDUs-04, -07 and -08, relocated samples due to cultural concerns at SDUs-09 and SDU-10. and eliminated cores at the F-2 west ferry landing site. Field XRF studies were completed at SDU-07 shoreline and SDU-09. The XRF team processed the UDU-06 XRF data and had results to the field supervisor by 1348 just as Team B completed the ICS increment locations. The following samples were shipped to the lab today: SDU-07A-ICS, SDU-07B-ICS, SDU-07C-ICS, SDU-08-ICS, 9 cores samples from SDU-07 and 9 core samples from SDU-08. For Friday 5/8, the lab team will process, pack and ship the following samples to the analytical lab: UDU-06-ICS, 9 core samples from UDU-06, IDW samples from decon water and soil generated during the study. Soil will be analyzed for RCRA metals only and the decon water will be analyzed for RCRA metals (total) and pH. One field team will remain on stand-by until the decision is made whether to collect field in situ XRF readings at SDU-10. The remaining team members will pack up the field office, return the appropriate equipment and supplies to the TAI storage locker, inventory this equipment as it is placed back into the storage locker, and return home. If the field in situ XRF study is to be done, the remaining team will demobilize on Saturday morning. The following personnel are scheduled to depart on Friday 5/8 - Tony Palmieri, Michelle Stegner and Al Thatcher. That will leave Mark Vetter, Amy Dahl, Gary Panther Dave Lewis and Oliver Patsch to complete the demobilize and field XRF study. If no XRF study is to be conducted all team members will depart Friday 5/8 once the field office is packed up. Sample flags placed at the SDU-10 ICS locations in preparation for the field XRF study will be retrieved by Columbia Navigation should the field work not be conducted.</p>	

Signed: Mark Vetter
Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study		DFR NO.: 23	
Project No.: 33765144		Date: 5/8/2015	
Client/Project Manager: Teck American, Inc; Kris McCaig		Weather: Clear	
AECOM Project Manager Paul McCullough		Temperature: 38F AM/75F PM	
AECOM Field Supervisor Mark Vetter		Precipitation: None	
AECOM Start Time: 0645			
AECOM End Time: 1615			
AECOM TEAM A AECOM TEAM B AECOM XRF TEAM			
Name		Name	
Oliver Patsch		Dave Lewis (AM)	
Al Thatcher		Gary Panther	
		Dave Lewis (PM)	
Columbia Navigation EPA/EPA Contractor NPS/CCT			
Name		Name	
Eric Weatherman		Monica Tonel - EPA	
Josh Weatherman			
Visitors		Purpose	
		Arrive Leave Hrs	
Health and Safety			
<p>Reviewed: Locations of HASPs, JSAs for new tasks, driving safety - front seat spotter, cell phone usage, 360 review. Driving home. STF on beach and high watermark; housekeeping in work areas; lead in sediment and soils; complacency as project ends, pinch points, poison ivy. Lifting - loading box truck. Pinch points - drums rings during IDW sampling.</p>			
Summary of Daily Activities (continued on Page 2)			
<p>After morning tailgate meeting the remaining team members demobilized the office equipment, processed the samples from UDU-06, transferred archived XRF samples to the IDW container and collected IDW samples for the decon water (total RCRA metals and pH) and soil (total RCRA metals). Personnel leaving the site today (Al Thatcher, Oliver Patsch and Gary Panther) delivered all remaining samples to Fed Ex in Spokane as no one would be at the field office in the afternoon to deliver to the local FEDEX drop-off location. At 1025 Mark Vetter and Amy Dahl departed for Bossburg to conduct the field XRF study at SDU-10. They were met at Bossburg by Monica Tonel (EPA) and Bill White (NPS). Columbia Navigation provided transportation to the DU. The field XRF study was completed at the 30 locations of the ICS increment samples and the team departed Bossburg at 1454. The field team returned to field office where the remaining equipment was packed up and the teams departed the field office by 1615. This completes the field portion of the Bossburg Flat Beach Refined Sediment and Soil Study.</p>			

Signed: Mark Vetter
Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study		DFR NO.: 23		
Project No.: 33765144		Date: 5/8/2015		
Summary Of Daily Activities (continued from Page 1)				
No notes on this page				
Sampling Activities				
Decision Unit	Team	Number of Increments None	ICS Complete?	Comments
XRF Field Screening				
Decision Unit SDU-10	Team XRF	Number of XRF Samples Collected 30 (XRF Field Study samples)	XRF Complete? Yes	Comments See below
Core Samples				
Decision Unit	Team	Number of Core Samples Collected None	Cores Complete?	Comments

Signed: Mark Vetter
Title: AECOM Field Supervisor

AECOM DAILY FIELD REPORT

Project: Bossburg Sediment and Soil Study	DFR NO.: 23
Project No.: 33765144	Date: 5/8/2015
Additional Information	
<p>AECOM team members Michelle Stegner and Tony Palmieri departed from the project by 0730, immediately following the safety meeting. Al Thatcher and Amy Dahl prepared and packed the last samples for shipment to the lab. Gary Panther collected IDW samples and the team then assisted in breaking down and packing the field office. Al Thatcher, Oliver Patsch and Gary Panther departed for Spokane by 1000 and delivered the UDU-06 and IDW samples to FedEx in Spokane. Mark Vetter, Amy Dahl and Dave Lewis completed the field XRF study at SDU-10, returned to the field office, loaded the remaining equipment into the box truck and departed from the site with the box truck by 1615. This concludes the field project.</p>	

Signed: Mark Vetter
Title: AECOM Field Supervisor

Appendix C

QAPP Modifications and Deviations

Table C-1
Summary of Approved Change Requests
Bossburg Flat Beach Refined Sediment and Soil Study

Change Request	Dated	Description ^a
1	3/27/2015	Revise western boundary of Upland Decision Unit (UDU) #5 and proposed ICS and XRF sampling locations
2	4/24/2015	Reposition three XRF sample locations within Upland Decision Unit 1 (UDU-01-XRF-04, UDU-01-XRF-05, and UDU-01-XRF-06)
3	4/24/2015	Use of a Jeio Tech oven Model ON-11E to dry XRF soil and sediment samples
4	4/29/2015	New procedure for processing "wet" increment samples independently from "dry" increment samples
5	4/30/2015	Resize decision unit and relocate XRF and ICS increment coordinates within SDU-04, SDU-07, and SDU-08 and collect triplicate ICS samples from SDU-07 because triplicate ICS samples cannot be collected for SDU-09
6	4/24/2015	Additional In-situ analysis of lead using handheld XRF analyzer to attempt to identify the location of the former west bank cable ferry landing
7	4/30/2015	Field procedure for identifying alternative ICS increment locations when reserved are exhausted
8	5/11/2015	Resize decision unit and relocate XRF and ICS increment coordinates within boundaries of Bureau of Reclamation land within UDU-06

a - All change requests have been approved and signed by TAI and EPA and are presented following this table.

EPA - Environmental Protection Agency

ICS - incremental composite sample

SDU - sediment decision unit

TAI - Teck American, Inc.

UDU - upland soil decision unit

XRF - X-ray fluorescence

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Change No: 1

CHANGE REQUEST

Revise western boundary of Upland Decision Unit (UDU) #5 and proposed ICS and XRF sampling locations.

Applicable Reference:

QAPP Tables A7-1b, A7-1d, Appendix A Tables A1b and A1d, and Appendix B Tables B3-1b and B3-1d

Description of Change:

The western boundary of UDU #5 and proposed locations for ICS and XRF soil sampling locations were revised to remove them from the railroad right of way (ROW). See Tables 1 and 2 below.

Reason for Change:

As part of initial QAPP development, the western boundary of UDU #5 was based on a 1:100k resolution data source depicting the location of the railroad ROW. Compared to aerial photographs and other 1:24k resolution data, the railroad ROW is located further west than was implied by 1:100k data. The western boundary of UDU #5 was revised so that it does not overlap the railroad ROW. Proposed ICS and XRF soil sampling locations were also revised to fall within the revised boundaries for UDU #5.

Impact on Present and Completed Work:

None

Requested By: *Dante McCullough*
(AECOM Project Manager)

Date: 3/27/15

Acknowledged By: *Kris McCaig*
(Teck Project Manager)

Date: 4/2/15

APPROVAL

Senior Technical Advisor: *Mark Volleux*

Date: 4/2/15

Teck Project Manager: *Kris McCaig*

Date: 4/2/15

EPA Project Manager: *R. Matthew Wilby*

Date: 4/2/15

Table 1. **Revised** Proposed Station Locations for Bossburg Flat Beach Refined Soil Collection: Incremental Composite Sampling Sites for Soil Decision Unit 5

Station ID	X UTM 11N	Y UTM 11N	Latitude	Longitude	Sample Type
Soil Decision Unit 5					
UDU-05-01	423584.82	5401448.35	48.7614	-118.0398	Primary
UDU-05-02	423571.26	5401434.57	48.7612	-118.0400	Primary
UDU-05-03	423566.72	5401392.77	48.7608	-118.0400	Primary
UDU-05-04	423472.07	5401276.78	48.7598	-118.0413	Primary
UDU-05-05	423607.60	5401485.98	48.7617	-118.0395	Primary
UDU-05-06	423562.68	5401425.55	48.7611	-118.0401	Primary
UDU-05-07	423559.13	5401407.05	48.7610	-118.0401	Primary
UDU-05-08	423527.34	5401349.23	48.7605	-118.0406	Primary
UDU-05-09	423545.97	5401365.47	48.7606	-118.0403	Primary
UDU-05-10	423519.26	5401363.83	48.7606	-118.0407	Primary
UDU-05-11	423556.61	5401385.20	48.7608	-118.0402	Primary
UDU-05-12	423529.72	5401358.44	48.7605	-118.0405	Primary
UDU-05-13	423553.96	5401410.72	48.7610	-118.0402	Primary
UDU-05-14	423474.69	5401305.88	48.7601	-118.0413	Primary
UDU-05-15	423580.76	5401431.78	48.7612	-118.0398	Primary
UDU-05-16	423468.35	5401273.17	48.7598	-118.0413	Primary
UDU-05-17	423537.02	5401362.37	48.7606	-118.0404	Primary
UDU-05-18	423550.11	5401402.26	48.7609	-118.0403	Primary
UDU-05-19	423461.06	5401286.29	48.7599	-118.0414	Primary
UDU-05-20	423569.87	5401418.92	48.7611	-118.0400	Primary
UDU-05-21	423559.38	5401381.72	48.7607	-118.0401	Primary
UDU-05-22	423568.40	5401412.82	48.7610	-118.0400	Primary
UDU-05-23	423594.78	5401482.22	48.7617	-118.0397	Primary
UDU-05-24	423483.13	5401305.28	48.7601	-118.0411	Primary
UDU-05-25	423577.19	5401428.81	48.7612	-118.0399	Primary
UDU-05-26	423527.69	5401371.57	48.7607	-118.0406	Primary
UDU-05-27	423499.21	5401315.68	48.7601	-118.0409	Primary
UDU-05-28	423537.69	5401380.36	48.7607	-118.0404	Primary
UDU-05-29	423521.74	5401346.28	48.7604	-118.0406	Primary
UDU-05-30	423462.07	5401293.40	48.7599	-118.0414	Primary
UDU-05R-01	423583.40	5401424.37	48.7611	-118.0398	Reserve
UDU-05R-02	423578.81	5401452.89	48.7614	-118.0399	Reserve
UDU-05R-03	423465.63	5401280.82	48.7598	-118.0414	Reserve
UDU-05R-04	423588.67	5401470.59	48.7616	-118.0397	Reserve
UDU-05R-05	423525.83	5401340.64	48.7604	-118.0406	Reserve
UDU-05R-06	423498.44	5401322.60	48.7602	-118.0409	Reserve
UDU-05R-07	423470.82	5401281.11	48.7598	-118.0413	Reserve
UDU-05R-08	423586.85	5401460.70	48.7615	-118.0398	Reserve
UDU-05R-09	423532.95	5401378.72	48.7607	-118.0405	Reserve
UDU-05R-10	423545.79	5401389.26	48.7608	-118.0403	Reserve
UDU-05R-11	423468.63	5401298.10	48.7600	-118.0413	Reserve
UDU-05R-12	423512.89	5401347.03	48.7604	-118.0408	Reserve
UDU-05R-13	423508.74	5401344.29	48.7604	-118.0408	Reserve
UDU-05R-14	423599.49	5401467.17	48.7615	-118.0396	Reserve
UDU-05R-15	423590.04	5401444.39	48.7613	-118.0397	Reserve
UDU-05R-16	423579.95	5401420.53	48.7611	-118.0399	Reserve
UDU-05R-17	423534.57	5401373.40	48.7607	-118.0405	Reserve
UDU-05R-18	423519.94	5401333.25	48.7603	-118.0407	Reserve

Table 1. **Revised** Proposed Station Locations for Bossburg Flat Beach Refined Soil Collection: Incremental Composite Sampling Sites for Soil Decision Unit 5

Station ID	X UTM 11N	Y UTM 11N	Latitude	Longitude	Sample Type
Soil Decision Unit 5 (continued)					
UDU-05R-19	423561.07	5401420.87	48.7611	-118.0401	Reserve
UDU-05R-20	423577.26	5401414.73	48.7610	-118.0399	Reserve
UDU-05R-21	423506.07	5401320.19	48.7602	-118.0408	Reserve
UDU-05R-22	423557.36	5401398.96	48.7609	-118.0402	Reserve
UDU-05R-23	423562.42	5401394.16	48.7609	-118.0401	Reserve

Table 2. **Revised** Proposed Station Locations for Bossburg Flat Beach Refined Soil Collection: XRF Sampling Sites for Soil Decision Unit 5

Station ID	X UTM 11N	Y UTM 11N	Latitude	Longitude	Sample Type
Soil Decision Unit 5					
UDU-05-XRF-01	423466.12	5401293.40	48.7599	-118.0414	Primary
UDU-05-XRF-02	423483.94	5401293.40	48.7599	-118.0411	Primary
UDU-05-XRF-03	423492.85	5401311.22	48.7601	-118.0410	Primary
UDU-05-XRF-04	423501.76	5401329.04	48.7603	-118.0409	Primary
UDU-05-XRF-05	423510.67	5401346.86	48.7604	-118.0408	Primary
UDU-05-XRF-06	423528.49	5401346.86	48.7604	-118.0405	Primary
UDU-05-XRF-07	423537.40	5401364.68	48.7606	-118.0404	Primary
UDU-05-XRF-08	423546.31	5401382.50	48.7608	-118.0403	Primary
UDU-05-XRF-09	423555.22	5401400.32	48.7609	-118.0402	Primary
UDU-05-XRF-10	423564.13	5401418.14	48.7611	-118.0401	Primary
UDU-05-XRF-11	423581.95	5401418.14	48.7611	-118.0398	Primary
UDU-05-XRF-12	423581.95	5401453.78	48.7614	-118.0398	Primary
UDU-05-XRF-13	423599.77	5401489.42	48.7617	-118.0396	Primary
UDU-05-XRF-R01	423519.58	5401364.68	48.7606	-118.0407	Reserve
UDU-05-XRF-R02	423573.04	5401400.32	48.7609	-118.0399	Reserve
UDU-05-XRF-R03	423573.04	5401435.96	48.7612	-118.0400	Reserve
UDU-05-XRF-R04	423590.86	5401471.60	48.7616	-118.0397	Reserve

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Change No: 2

CHANGE REQUEST

Reposition three XRF sample locations within Upland Decision Unit 1 (UDU-01-XRF-04, UDU-01-XRF-05, and UDU-01-XRF-06)

Applicable Reference:

1. QAPP, Table A7-1d, Proposed Station Locations for Bossburg Flat Beach Refined Sediment Study and Soil Collection: XRF Sampling Sites for Soil
2. QAPP (Appendix A), Figure A7.

Description of Change:

Repositioned XRF locations per agreement with EPA observers (Monica Tanel and Cameron Irvine), as follows:

Sample Station Location	QAPP Coordinates		Actual Coordinates	
	X UTM 11 N	Y UTM 11 N	X UTM 11	Y UTM 11N
UDU-01-XRF-04	422844.23	5400905.79	422981.04	5400905.23
UDU-01-XRF-05	422879.23	5400905.79	423001.68	5400876.32
UDU-01-XRF-06	422914.23	5400905.79	423038.33	5400872.49

Reason for Change:

The above-referenced XRF sample locations were found to be located outside of UDU-01, based on the coordinates provide in the QAPP (Reference 1). Locations were repositioned based on locations depicted on Figure A7, of QAPP (Appendix A). Relocations were performed with the consent of the EPA observers and in coordination with AECOM Field Supervisor.

Impact on Present and Completed Work:

None

Requested By: Paul T. McCullough
(AECOM Project Manager)

Date: 4/24/2015

Acknowledged By: Kris McCaig
(Teck Project Manager)

Date: 4/28/2015

APPROVAL

AECOM Project Manager: *Paul T. McCullough*

Date: 4/29/15

Teck Project Manager: *Kris R. McCaig*

Date: 4/30/15

EPA Project Manager: *Matthew Wilby*

Date: 5/4/15

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Change No: 3

CHANGE REQUEST

Use of a Jeio Tech oven Model ON-11E to dry XRF soil and sediment samples

Applicable Reference:

- 1 QAPP, SOP-7 X-Ray Fluorescence (XRF) Surface Sample Collection
- 2 QAPP B4.1 Field Measurements and Observations
- 3 EPA Method 6200 - Field Portable X-Ray Fluorescence Spectrometry for the Determination of Elemental Concentrations in Soil and Sediment

Description of Change:

The QAPP (Reference 2) states that soils will be air dried and sieved prior to XRF measurements. In place of air drying, an oven may be used based on the judgment of the Field Supervisor to accelerate the drying of XRF field samples. Oven drying is an acceptable means to dry samples per EPA Method 6200. The AECOM Field Supervisor discussed this change with the EPA observers, and no issues were identified with this change request.

Reason for Change:

Air drying of the samples to a constant weight may take one or more days to achieve constant weight at the ambient air temperatures and sample moisture conditions. The time required for air drying would impact the ability to get timely XRF results for EPA to inform the selection of the core sample locations. The maximum temperature of the oven will be limited to 150°C, per EPA Method 6200. The anticipated time to oven dry the samples to constant weight is estimated to be roughly 2 to 8 hours.

Impact on Present and Completed Work:

None

Requested By: Paul T. McCullough
(AECOM Project Manager)

Date: 4/24/2015

Acknowledged By: Kris McCalg
(Teck Project Manager)

Date: 4/28/2015

APPROVAL

AECOM Project Manager: 

Date: 4/29/15

Teck Project Manager: 

Date: 4/30/15

EPA Project Manager: 

Date: 5/4/15

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Page 1 of 2 Change No. 4

CHANGE REQUEST

New procedure for processing "wet" increment samples independently from "dry" increment samples

Applicable Reference:

1. QAPP, Standard Operating Procedure SOP-2 - Incremental/ Composite Sample (ICS) Surface Sample Collection

Description of Change:

Per the request of EPA approved observer, increment samples that are visually determined to be "wet" compared to other increment samples will not be composited with the other "dryer" samples and will be shipped to the laboratory separately following established chain of custody protocol. The laboratory will then air dry the composite samples and the individual wet samples. The air dried composite samples will be weighed and the average weight of each increment within the composite sample will be calculated. A similar weight of material from the "wet" sample(s) will be composited with the previous composite samples, such the composite samples contain the desired 30 increment samples. The laboratory composite sample (30 increments) will then be analyzed per QAPP requirements (see flow chart attached). Determination of "wet" versus "dry" samples will be based on the direction of the EPA observer and documented by the AECOM field team for reporting purposes.

Reason for Change:

This procedure was requested by EPA-approved observers due to concerns about compositing wet samples with dry samples.

Impact on Present and Completed Work:

None.

Requested By Paul McCullough Date 4/29/2015
(AECOM Project Manager)

Acknowledged By Kris McCaig Date 4/29/2015
(Teck Project Manager)

APPROVAL

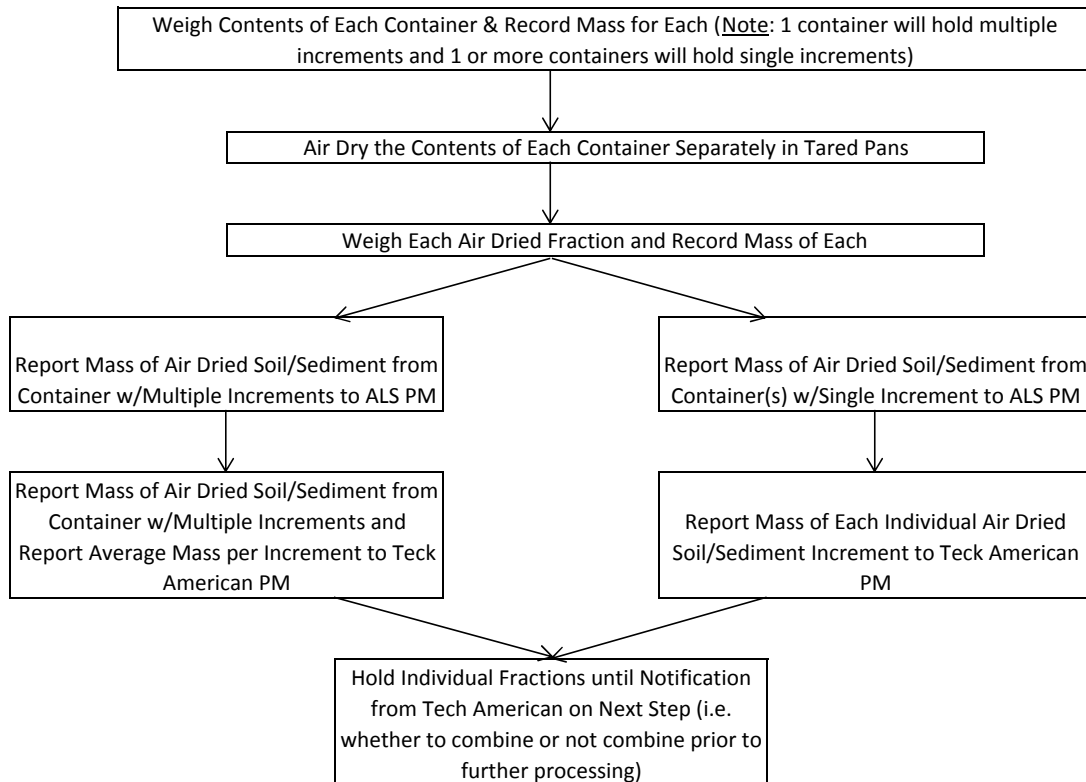
AECOM Project Manager *Paul McCullough* Date 5/4/15

Teck Project Manager *Kris R. McCaig* Date 5/4/15

EPA Project Manager *R. Matthew Welch* Date 5/15/15

Teck Bossburg Project (Sampled by AECOM for Teck American, Inc.)

Flow Chart for Initial Handling of Sediment & Soil ISC Samples when Individual High Moisture Increments are Received



Note: pH will be performed on a split of the air-dried "whole" sample when this scenario occurs rather than the normal approach of analyzing pH on a split of the "as received" bulk sample.

Example (25 Increments Combined in Field & 5 Increments Isolated from Composite)¹:

Air Dry Mass of Multiple Increments (25) = 3100 g
Avg. Air Dry Mass of Increments = $(3100/25) = \underline{124}$ g

Air Dry Mass of Single Increment #1 = 110 g
Air Dry Mass of Single Increment #2 = 95.0 g
Air Dry Mass of Single Increment #3 = 85.0 g
Air Dry Mass of Single Increment #4 = 75.0 g
Air Dry Mass of Single Increment #5 = 62.0 g

¹Data is fictitious and intended for use as an example only.

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Change No: 5

CHANGE REQUEST

Resize decision unit and relocate XRF and ICS increment coordinates within SDU 04, SDU-07 and SDU-08

Applicable Reference:

1. QAPP, Table A7-1a Proposed Station Locations for Bossburg Refined Sediment and Soil Study: Incremental Composite Samples for Sediment
2. QAPP, Table A7-1c Proposed Station Locations for Bossburg Refined Sediment and Soil Study: XRF Sampling Sites for Sediment
3. QAPP, Figures.

Description of Change:

Based on field reconnaissance, it was determined that a number of ICS incremental sample locations and XRF sample locations could not be sampled due to excessively steep slopes or because of inundation by Lake Roosevelt, thus making it not possible to collect the QAPP-specified number of ICS and XRF increment samples. The AECOM Field Supervisor used a GPS to establish where it was possible to collect samples within the boundaries of the QAPP-established DU boundaries. Based on the resized DUs, new ICS increment and XRF sample locations were randomly selected by HDR using similar methods used to identify the original sample locations. New coordinates for sample locations and new maps identifying the boundaries of the original DU and resized DUs are appended to the change order request. Additionally, since triplicate ICS incremental samples could not be collected from SDU-09, triplicate ICS samples will be collected from SDU-07 based on mutual agreement between TAI and EPA.

Reason for Change:

Original locations specified in the QAPP could not be accessed due to excessively steep slopes or inundation.

Impact on Present and Completed Work:

None.

Requested By: Paul McCullough
(AECOM Project Manager)

Date: 4/30/2015

Acknowledged By: Kris McCaig
(Teck Project Manager)

Date: 4/30/2015

APPROVAL

AECOM Project Manager: 

Date: 5/4/15

Teck Project Manager: 

Date: 5/4/15

EPA Project Manager: 

Date: 5/14/15

Bossburg Flat Beach Refined Sediment and Soil Study**Change Request No. 5 - Revised ICS Increment Sample Locations for SDU Nos. 04, 07 and 08****April 30, 2015**

Station_ID	X_UTM_11N (NAD 83)	Y_UTM_11N (NAD83)	Latitude (NAD83)	Longitude (NAD83)	Sample_Typ	Replicate	Decision_U	PNTID
SDU-04-01	422643.505927	5400685.531310	48.754374	-118.052455	Primary	A	SDU-04	1
SDU-04-02	422687.901785	5400779.491640	48.755225	-118.051869	Primary	A	SDU-04	2
SDU-04-03	422636.969667	5400708.222620	48.754577	-118.052548	Primary	A	SDU-04	3
SDU-04-04	422658.567035	5400727.762450	48.754756	-118.052258	Primary	A	SDU-04	4
SDU-04-05	422610.248816	5400642.791860	48.753986	-118.052900	Primary	A	SDU-04	5
SDU-04-06	422622.359038	5400672.532100	48.754255	-118.052741	Primary	A	SDU-04	6
SDU-04-07	422634.982380	5400698.102780	48.754486	-118.052574	Primary	A	SDU-04	7
SDU-04-08	422598.302393	5400617.222190	48.753754	-118.053057	Primary	A	SDU-04	8
SDU-04-09	422611.451970	5400664.123280	48.754178	-118.052887	Primary	A	SDU-04	9
SDU-04-10	422689.970745	5400761.388540	48.755062	-118.051838	Primary	A	SDU-04	10
SDU-04-11	422623.552375	5400662.074100	48.754161	-118.052722	Primary	A	SDU-04	11
SDU-04-12	422601.509256	5400635.719700	48.753921	-118.053017	Primary	A	SDU-04	12
SDU-04-13	422673.215736	5400765.838360	48.755100	-118.052066	Primary	A	SDU-04	13
SDU-04-14	422618.275021	5400628.276620	48.753856	-118.052788	Primary	A	SDU-04	14
SDU-04-15	422656.123286	5400740.786850	48.754873	-118.052294	Primary	A	SDU-04	15
SDU-04-16	422615.991420	5400617.201290	48.753756	-118.052817	Primary	A	SDU-04	16
SDU-04-17	422625.828718	5400690.005280	48.754412	-118.052697	Primary	A	SDU-04	17
SDU-04-18	422683.589527	5400769.412070	48.755134	-118.051926	Primary	A	SDU-04	18
SDU-04-19	422657.240291	5400713.462080	48.754627	-118.052274	Primary	A	SDU-04	19
SDU-04-20	422646.470149	5400698.611210	48.754492	-118.052417	Primary	A	SDU-04	20
SDU-04-21	422606.681832	5400605.360800	48.753648	-118.052941	Primary	A	SDU-04	21
SDU-04-22	422678.302400	5400746.561530	48.754927	-118.051993	Primary	A	SDU-04	22
SDU-04-23	422620.473189	5400650.359330	48.754055	-118.052762	Primary	A	SDU-04	23
SDU-04-24	422665.796866	5400756.248770	48.755013	-118.052165	Primary	A	SDU-04	24
SDU-04-25	422641.588713	5400720.222640	48.754686	-118.052488	Primary	A	SDU-04	25
SDU-04-26	422698.776669	5400774.698210	48.755183	-118.051720	Primary	A	SDU-04	26
SDU-04-27	422669.546935	5400731.695430	48.754793	-118.052110	Primary	A	SDU-04	27
SDU-04-28	422606.459499	5400624.038550	48.753816	-118.052948	Primary	A	SDU-04	28
SDU-04-29	422647.055614	5400730.280940	48.754777	-118.052415	Primary	A	SDU-04	29

Bossburg Flat Beach Refined Sediment and Soil Study

Change Request No. 5 - Revised ICS Increment Sample Locations for SDU Nos. 04, 07 and 08

April 30, 2015

Station_ID	X_UTM_11N (NAD 83)	Y_UTM_11N (NAD83)	Latitude (NAD83)	Longitude (NAD83)	Sample_Typ	Replicate	Decision_U	PNTID
SDU-04-30	422666.899785	5400744.993400	48.754912	-118.052148	Primary	A	SDU-04	30
SDU-04-R01	422632.487439	5400673.804660	48.754267	-118.052603	Reserve	R	SDU-04	31
SDU-04-R02	422610.635184	5400653.349050	48.754081	-118.052896	Reserve	R	SDU-04	32
SDU-04-R03	422621.197977	5400639.048210	48.753953	-118.052750	Reserve	R	SDU-04	33
SDU-04-R04	422678.399316	5400756.819840	48.755020	-118.051994	Reserve	R	SDU-04	34
SDU-04-R05	422646.705455	5400711.053440	48.754604	-118.052417	Reserve	R	SDU-04	35
SDU-04-R06	422618.326171	5400682.059330	48.754340	-118.052797	Reserve	R	SDU-04	36
SDU-07A-01	425021.364050	5392770.424890	48.683472	-118.018671	Primary	A	SDU-07	1
SDU-07A-02	425182.753878	5392762.683130	48.683421	-118.016477	Primary	A	SDU-07	2
SDU-07A-03	425270.833211	5393049.494280	48.686012	-118.015332	Primary	A	SDU-07	3
SDU-07A-04	425178.457547	5392981.806720	48.685392	-118.016575	Primary	A	SDU-07	4
SDU-07A-05	425033.023986	5392800.727200	48.683746	-118.018518	Primary	A	SDU-07	5
SDU-07A-06	425230.361224	5392874.000690	48.684428	-118.015850	Primary	A	SDU-07	6
SDU-07A-07	425025.691354	5392755.274360	48.683336	-118.018609	Primary	A	SDU-07	7
SDU-07A-08	425167.337989	5392981.753020	48.685390	-118.016726	Primary	A	SDU-07	8
SDU-07A-09	425184.521231	5392823.293540	48.683967	-118.016464	Primary	A	SDU-07	9
SDU-07A-10	425138.929200	5392909.635980	48.684738	-118.017099	Primary	A	SDU-07	10
SDU-07A-11	425273.356461	5393019.573300	48.685743	-118.015293	Primary	A	SDU-07	11
SDU-07A-12	425229.658961	5392896.322460	48.684629	-118.015864	Primary	A	SDU-07	12
SDU-07A-13	425240.459344	5392954.786510	48.685156	-118.015728	Primary	A	SDU-07	13
SDU-07A-14	425072.542688	5392618.034960	48.682107	-118.017948	Primary	A	SDU-07	14
SDU-07A-15	424968.523278	5392716.886530	48.682984	-118.019379	Primary	A	SDU-07	15
SDU-07A-16	425032.597287	5392763.326790	48.683409	-118.018517	Primary	A	SDU-07	16
SDU-07A-17	425059.078035	5392832.059700	48.684030	-118.018170	Primary	A	SDU-07	17
SDU-07A-18	425082.390859	5392671.427580	48.682588	-118.017824	Primary	A	SDU-07	18
SDU-07A-19	425077.224994	5392630.764130	48.682222	-118.017887	Primary	A	SDU-07	19
SDU-07A-20	425145.655110	5392744.657850	48.683255	-118.016978	Primary	A	SDU-07	20
SDU-07A-21	425010.720682	5392736.675970	48.683167	-118.018809	Primary	A	SDU-07	21
SDU-07A-22	425247.825209	5392920.794490	48.684851	-118.015622	Primary	A	SDU-07	22

Bossburg Flat Beach Refined Sediment and Soil Study

Change Request No. 5 - Revised ICS Increment Sample Locations for SDU Nos. 04, 07 and 08

April 30, 2015

Station_ID	X_UTM_11N (NAD 83)	Y_UTM_11N (NAD83)	Latitude (NAD83)	Longitude (NAD83)	Sample_Typ	Replicate	Decision_U	PNTID
SDU-07A-23	425289.422701	5393044.897580	48.685973	-118.015079	Primary	A	SDU-07	23
SDU-07A-24	425270.708408	5392950.391160	48.685120	-118.015316	Primary	A	SDU-07	24
SDU-07A-25	425105.345004	5392683.169150	48.682697	-118.017514	Primary	A	SDU-07	25
SDU-07A-26	425268.821017	5393001.933120	48.685584	-118.015351	Primary	A	SDU-07	26
SDU-07A-27	425203.086875	5392838.224270	48.684103	-118.016214	Primary	A	SDU-07	27
SDU-07A-28	425161.790209	5392797.062690	48.683728	-118.016768	Primary	A	SDU-07	28
SDU-07A-29	425071.737515	5392856.902900	48.684255	-118.018002	Primary	A	SDU-07	29
SDU-07A-30	425162.028494	5392931.242280	48.684935	-118.016789	Primary	A	SDU-07	30
SDU-07A-R01	425153.578345	5392916.102240	48.684798	-118.016901	Reserve	R	SDU-07	31
SDU-07A-R02	425208.027161	5392848.518720	48.684196	-118.016149	Reserve	R	SDU-07	32
SDU-07A-R03	425065.096722	5392633.565080	48.682246	-118.018052	Reserve	R	SDU-07	33
SDU-07A-R04	425286.222586	5393006.595740	48.685628	-118.015116	Reserve	R	SDU-07	34
SDU-07A-R05	425190.471366	5392780.559250	48.683583	-118.016375	Reserve	R	SDU-07	35
SDU-07A-R06	425181.804892	5392750.010650	48.683307	-118.016488	Reserve	R	SDU-07	36
SDU-07B-01	425289.274358	5393070.768400	48.686205	-118.015086	Primary	B	SDU-07	1
SDU-07B-02	425036.132150	5392767.952570	48.683451	-118.018470	Primary	B	SDU-07	2
SDU-07B-03	425191.889361	5393074.719800	48.686229	-118.016409	Primary	B	SDU-07	3
SDU-07B-04	425124.163788	5392677.648940	48.682649	-118.017257	Primary	B	SDU-07	4
SDU-07B-05	425263.991511	5392952.597260	48.685139	-118.015408	Primary	B	SDU-07	5
SDU-07B-06	425286.265783	5393031.754330	48.685854	-118.015120	Primary	B	SDU-07	6
SDU-07B-07	425175.902928	5392765.330210	48.683444	-118.016571	Primary	B	SDU-07	7
SDU-07B-08	425257.970658	5392965.540160	48.685255	-118.015492	Primary	B	SDU-07	8
SDU-07B-09	425299.701891	5393058.044820	48.686092	-118.014942	Primary	B	SDU-07	9
SDU-07B-10	425139.030294	5392687.326930	48.682738	-118.017057	Primary	B	SDU-07	10
SDU-07B-11	425186.377539	5392800.369840	48.683761	-118.016435	Primary	B	SDU-07	11
SDU-07B-12	425246.693625	5392929.354580	48.684928	-118.015639	Primary	B	SDU-07	12
SDU-07B-13	425097.213108	5392657.536730	48.682465	-118.017620	Primary	B	SDU-07	13
SDU-07B-14	425099.129066	5392616.964160	48.682101	-118.017587	Primary	B	SDU-07	14
SDU-07B-15	425165.463903	5392721.033380	48.683045	-118.016704	Primary	B	SDU-07	15

Bossburg Flat Beach Refined Sediment and Soil Study

Change Request No. 5 - Revised ICS Increment Sample Locations for SDU Nos. 04, 07 and 08

April 30, 2015

Station_ID	X_UTM_11N (NAD 83)	Y_UTM_11N (NAD83)	Latitude (NAD83)	Longitude (NAD83)	Sample_Typ	Replicate	Decision_U	PNTID
SDU-07B-16	425139.102876	5392927.799780	48.684901	-118.017100	Primary	B	SDU-07	16
SDU-07B-17	425154.152880	5392735.822190	48.683176	-118.016861	Primary	B	SDU-07	17
SDU-07B-18	425143.039529	5392893.226260	48.684591	-118.017040	Primary	B	SDU-07	18
SDU-07B-19	425248.415666	5392895.146340	48.684621	-118.015609	Primary	B	SDU-07	19
SDU-07B-20	425041.609025	5392640.959590	48.682309	-118.018372	Primary	B	SDU-07	20
SDU-07B-21	425071.145963	5392838.797630	48.684093	-118.018007	Primary	B	SDU-07	21
SDU-07B-22	425302.905249	5393073.247950	48.686229	-118.014901	Primary	B	SDU-07	22
SDU-07B-23	425279.037342	5393059.295820	48.686101	-118.015223	Primary	B	SDU-07	23
SDU-07B-24	425143.082220	5392670.949270	48.682591	-118.016999	Primary	B	SDU-07	24
SDU-07B-25	425172.468937	5393012.381480	48.685666	-118.016662	Primary	B	SDU-07	25
SDU-07B-26	425217.474520	5392858.655700	48.684289	-118.016023	Primary	B	SDU-07	26
SDU-07B-27	425097.210206	5392670.092350	48.682578	-118.017622	Primary	B	SDU-07	27
SDU-07B-28	425029.493121	5392801.343200	48.683751	-118.018566	Primary	B	SDU-07	28
SDU-07B-29	425176.920995	5392998.903550	48.685545	-118.016599	Primary	B	SDU-07	29
SDU-07B-30	425235.595507	5392923.884220	48.684878	-118.015788	Primary	B	SDU-07	30
SDU-07B-R01	425068.153881	5392644.273670	48.682342	-118.018012	Reserve	R	SDU-07	31
SDU-07B-R02	425220.154565	5392845.062790	48.684167	-118.015984	Reserve	R	SDU-07	32
SDU-07B-R03	425068.424968	5392659.334570	48.682478	-118.018011	Reserve	R	SDU-07	33
SDU-07B-R04	425242.030279	5392952.881120	48.685139	-118.015706	Reserve	R	SDU-07	34
SDU-07B-R05	425006.725490	5392744.268200	48.683235	-118.018865	Reserve	R	SDU-07	35
SDU-07B-R06	425208.320076	5392825.184030	48.683987	-118.016141	Reserve	R	SDU-07	36
SDU-07C-R01	425151.286878	5392898.334550	48.684638	-118.016929	Reserve	R	SDU-07	31
SDU-07C-R02	425160.791484	5392786.586010	48.683634	-118.016780	Reserve	R	SDU-07	32
SDU-07C-R03	425244.284606	5392921.484570	48.684857	-118.015670	Reserve	R	SDU-07	33
SDU-07C-R04	425177.297730	5393011.711610	48.685661	-118.016596	Reserve	R	SDU-07	34
SDU-07C-R05	425035.022498	5392766.529690	48.683438	-118.018484	Reserve	R	SDU-07	35
SDU-07C-R06	425122.525946	5392715.813070	48.682992	-118.017287	Reserve	R	SDU-07	36
SDU-07C-01	425120.673149	5392700.783900	48.682857	-118.017309	Primary	C	SDU-07	1
SDU-07C-02	425061.917154	5392824.175430	48.683960	-118.018130	Primary	C	SDU-07	2

Bossburg Flat Beach Refined Sediment and Soil Study

Change Request No. 5 - Revised ICS Increment Sample Locations for SDU Nos. 04, 07 and 08

April 30, 2015

Station_ID	X_UTM_11N (NAD 83)	Y_UTM_11N (NAD83)	Latitude (NAD83)	Longitude (NAD83)	Sample_Typ	Replicate	Decision_U	PNTID
SDU-07C-03	425058.769594	5392620.937270	48.682131	-118.018135	Primary	C	SDU-07	3
SDU-07C-04	425194.756820	5393064.783180	48.686140	-118.016369	Primary	C	SDU-07	4
SDU-07C-05	425167.268584	5392770.517900	48.683490	-118.016689	Primary	C	SDU-07	5
SDU-07C-06	425215.836499	5392843.490190	48.684152	-118.016042	Primary	C	SDU-07	6
SDU-07C-07	425125.331455	5392660.449610	48.682495	-118.017238	Primary	C	SDU-07	7
SDU-07C-08	425074.071740	5392853.169920	48.684222	-118.017970	Primary	C	SDU-07	8
SDU-07C-09	425149.548845	5392724.591600	48.683075	-118.016921	Primary	C	SDU-07	9
SDU-07C-10	424972.868533	5392730.871740	48.683110	-118.019322	Primary	C	SDU-07	10
SDU-07C-11	425287.697034	5393047.760570	48.685998	-118.015103	Primary	C	SDU-07	11
SDU-07C-12	425095.745754	5392627.073150	48.682191	-118.017634	Primary	C	SDU-07	12
SDU-07C-13	425153.027528	5392779.008890	48.683565	-118.016884	Primary	C	SDU-07	13
SDU-07C-14	425162.559335	5392736.685950	48.683185	-118.016747	Primary	C	SDU-07	14
SDU-07C-15	425209.202351	5392854.775620	48.684253	-118.016134	Primary	C	SDU-07	15
SDU-07C-16	425114.407292	5392659.558580	48.682486	-118.017387	Primary	C	SDU-07	16
SDU-07C-17	425170.396171	5392948.829760	48.685094	-118.016679	Primary	C	SDU-07	17
SDU-07C-18	425052.951398	5392635.988590	48.682266	-118.018217	Primary	C	SDU-07	18
SDU-07C-19	425282.194934	5393027.237200	48.685813	-118.015174	Primary	C	SDU-07	19
SDU-07C-20	425157.919826	5392713.062680	48.682972	-118.016805	Primary	C	SDU-07	20
SDU-07C-21	425181.842040	5393027.610460	48.685804	-118.016537	Primary	C	SDU-07	21
SDU-07C-22	425150.991529	5392932.967500	48.684949	-118.016939	Primary	C	SDU-07	22
SDU-07C-23	424964.668845	5392700.878110	48.682839	-118.019428	Primary	C	SDU-07	23
SDU-07C-24	425266.174414	5392940.737480	48.685033	-118.015376	Primary	C	SDU-07	24
SDU-07C-25	425097.902136	5392668.675990	48.682566	-118.017613	Primary	C	SDU-07	25
SDU-07C-26	425173.006346	5392795.307060	48.683714	-118.016615	Primary	C	SDU-07	26
SDU-07C-27	425194.385562	5393022.399280	48.685759	-118.016366	Primary	C	SDU-07	27
SDU-07C-28	425188.506396	5393008.609510	48.685634	-118.016443	Primary	C	SDU-07	28
SDU-07C-29	425115.170453	5392630.896470	48.682228	-118.017371	Primary	C	SDU-07	29
SDU-07C-30	425008.863462	5392741.623620	48.683211	-118.018835	Primary	C	SDU-07	30
SDU-08-01	423148.672069	5401854.081420	48.764947	-118.045802	Primary	A	SDU-08	1

Bossburg Flat Beach Refined Sediment and Soil Study

Change Request No. 5 - Revised ICS Increment Sample Locations for SDU Nos. 04, 07 and 08

April 30, 2015

Station_ID	X_UTM_11N (NAD 83)	Y_UTM_11N (NAD83)	Latitude (NAD83)	Longitude (NAD83)	Sample_Typ	Replicate	Decision_U	PNTID
SDU-08-02	423125.449751	5401815.339240	48.764596	-118.046111	Primary	A	SDU-08	2
SDU-08-03	423036.925932	5401716.840450	48.763699	-118.047297	Primary	A	SDU-08	3
SDU-08-04	423210.852919	5401908.042610	48.765440	-118.044966	Primary	A	SDU-08	4
SDU-08-05	422975.385291	5401636.575090	48.762969	-118.048119	Primary	A	SDU-08	5
SDU-08-06	423027.429802	5401698.457710	48.763532	-118.047422	Primary	A	SDU-08	6
SDU-08-07	423224.117482	5401942.864950	48.765755	-118.044792	Primary	A	SDU-08	7
SDU-08-08	423116.655787	5401798.485400	48.764443	-118.046227	Primary	A	SDU-08	8
SDU-08-09	423011.893561	5401681.753250	48.763380	-118.047631	Primary	A	SDU-08	9
SDU-08-10	423178.266614	5401873.641420	48.765127	-118.045403	Primary	A	SDU-08	10
SDU-08-11	423116.007682	5401818.919780	48.764627	-118.046240	Primary	A	SDU-08	11
SDU-08-12	423053.272397	5401735.225610	48.763866	-118.047078	Primary	A	SDU-08	12
SDU-08-13	423084.950359	5401771.730830	48.764199	-118.046653	Primary	A	SDU-08	13
SDU-08-14	423214.094771	5401933.233820	48.765667	-118.044926	Primary	A	SDU-08	14
SDU-08-15	422994.332358	5401665.363690	48.763231	-118.047866	Primary	A	SDU-08	15
SDU-08-16	423152.156326	5401843.911020	48.764856	-118.045752	Primary	A	SDU-08	16
SDU-08-17	423164.351012	5401874.900970	48.765136	-118.045592	Primary	A	SDU-08	17
SDU-08-18	423133.155737	5401833.972090	48.764764	-118.046009	Primary	A	SDU-08	18
SDU-08-19	423198.441703	5401907.209540	48.765431	-118.045135	Primary	A	SDU-08	19
SDU-08-20	423071.625444	5401753.226000	48.764031	-118.046831	Primary	A	SDU-08	20
SDU-08-21	423220.144388	5401918.905520	48.765539	-118.044841	Primary	A	SDU-08	21
SDU-08-22	423154.316804	5401862.484010	48.765023	-118.045727	Primary	A	SDU-08	22
SDU-08-23	423170.694813	5401864.736920	48.765046	-118.045504	Primary	A	SDU-08	23
SDU-08-24	423005.905798	5401672.500220	48.763296	-118.047710	Primary	A	SDU-08	24
SDU-08-25	423140.602600	5401848.135700	48.764893	-118.045910	Primary	A	SDU-08	25
SDU-08-26	423093.353387	5401790.507340	48.764369	-118.046543	Primary	A	SDU-08	26
SDU-08-27	422967.348231	5401621.177850	48.762830	-118.048225	Primary	A	SDU-08	27
SDU-08-28	423233.168323	5401931.655890	48.765655	-118.044667	Primary	A	SDU-08	28
SDU-08-29	423013.925835	5401695.668690	48.763506	-118.047605	Primary	A	SDU-08	29
SDU-08-30	422945.038663	5401612.756950	48.762751	-118.048527	Primary	A	SDU-08	30

Bossburg Flat Beach Refined Sediment and Soil Study

Change Request No. 5 - Revised ICS Increment Sample Locations for SDU Nos. 04, 07 and 08

April 30, 2015

Station_ID	X_UTM_11N (NAD 83)	Y_UTM_11N (NAD83)	Latitude (NAD83)	Longitude (NAD83)	Sample_Typ	Replicate	Decision_U	PNTID
SDU-08-R01	423192.941045	5401895.353720	48.765324	-118.045207	Reserve	R	SDU-08	31
SDU-08-R02	423185.704940	5401882.021140	48.765203	-118.045303	Reserve	R	SDU-08	32
SDU-08-R03	422986.372601	5401651.041940	48.763101	-118.047972	Reserve	R	SDU-08	33
SDU-08-R04	423160.180862	5401854.073600	48.764949	-118.045645	Reserve	R	SDU-08	34
SDU-08-R05	423238.683675	5401940.906590	48.765739	-118.044593	Reserve	R	SDU-08	35
SDU-08-R06	422957.094693	5401615.454950	48.762777	-118.048364	Reserve	R	SDU-08	36

SDU-04

SDU ICS Samples - Adjusted for Lake Level - 4/30/15

- Primary
- Reserve
- ▭ Adjusted for Lake Level
- ▭ Pre Lake Level Adjustment



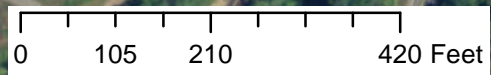
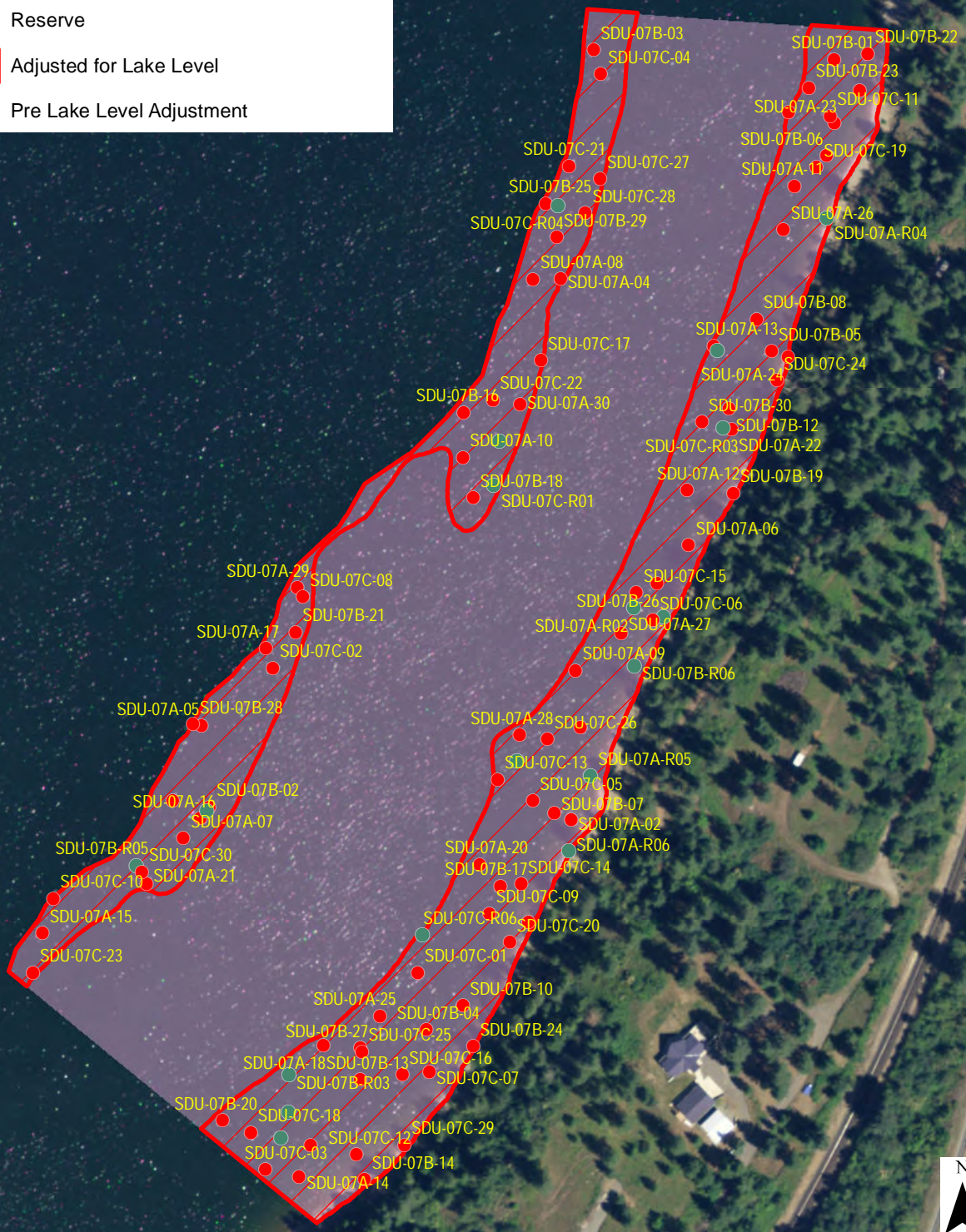
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Acknowledgment of the U.S. Geological Survey would be appreciated in products derived from this data.

SDU-07

SDU ICS Samples - Adjusted for Lake Level - 4/30/15

- Primary
- Reserve
- ▭ Adjusted for Lake Level
- ▭ Pre Lake Level Adjustment



Acknowledgment of the U.S. Geological Survey would be appreciated in products derived from this data.

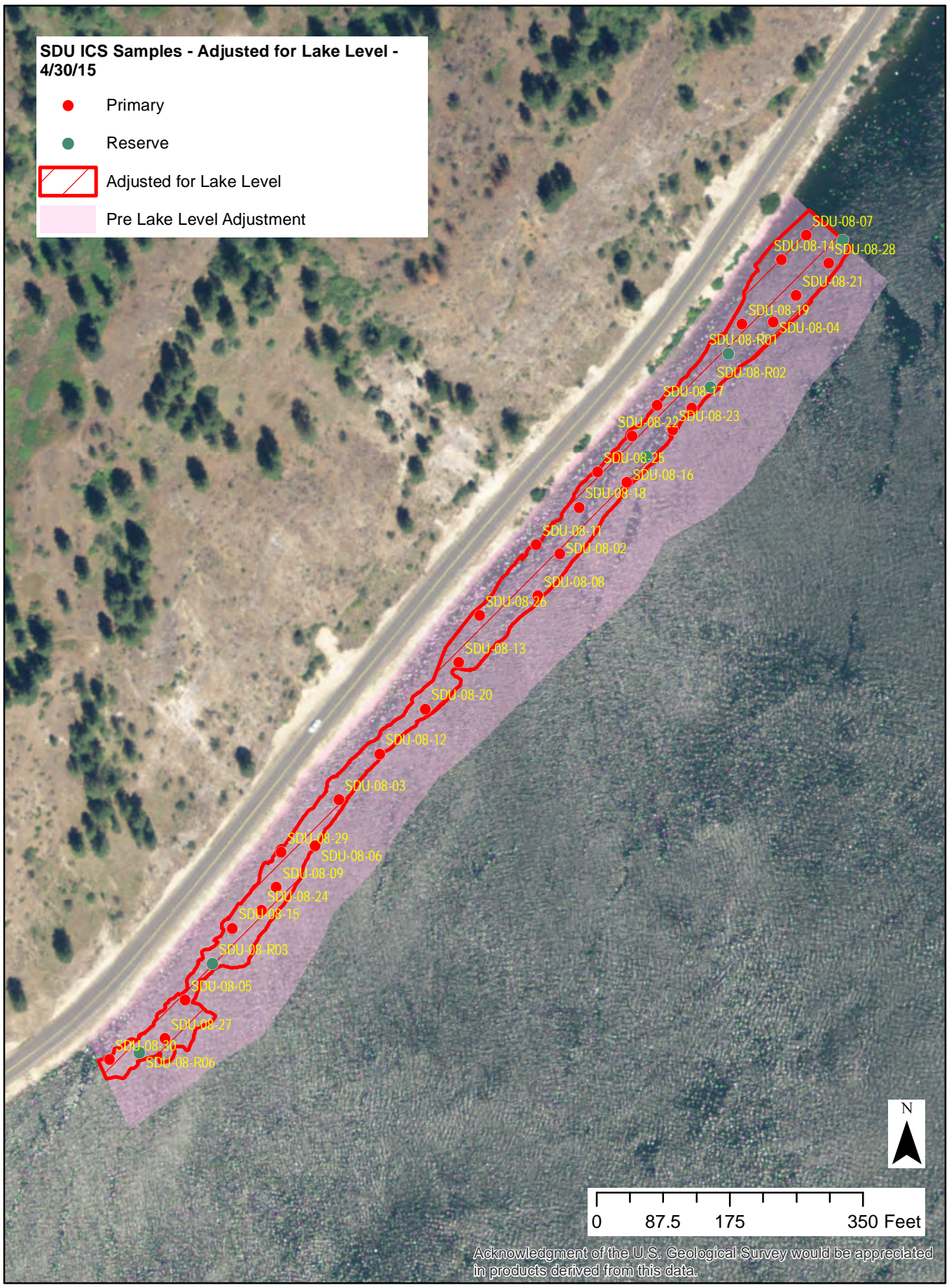
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SDU-08

SDU ICS Samples - Adjusted for Lake Level - 4/30/15

- Primary
- Reserve
- ▭ Adjusted for Lake Level
- ▭ Pre Lake Level Adjustment

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Acknowledgment of the U.S. Geological Survey would be appreciated in products derived from this data.

Bossburg Flat Beach Refined Sediment and Soil Study
COR-05 Revised XRF Sample Locations for SDU Nos. 04, 07, and 08
April 30, 2015

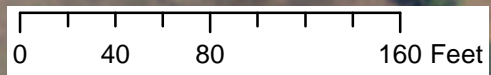
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SDU-04-XRF-01	422692.187000	5400781.155600	48.755240	-118.051811	Primary	SDU-04
SDU-04-XRF-02	422650.187000	5400721.155600	48.754695	-118.052371	Primary	SDU-04
SDU-04-XRF-03	422632.187000	5400685.155600	48.754369	-118.052609	Primary	SDU-04
SDU-04-XRF-04	422596.187000	5400613.155600	48.753717	-118.053085	Primary	SDU-04
SDU-04-XRF-R01	422674.187000	5400745.155600	48.754914	-118.052049	Reserve	SDU-04
SDU-04-XRF-R02	422614.187000	5400649.155600	48.754043	-118.052847	Reserve	SDU-04
SDU-07-XRF-01	425190.367908	5393030.037250	48.685827	-118.016422	Primary	SDU-07
SDU-07-XRF-02	425229.784645	5392910.614470	48.684758	-118.015865	Primary	SDU-07
SDU-07-XRF-03	425038.628768	5392794.359810	48.683689	-118.018440	Primary	SDU-07
SDU-07-XRF-04	425109.784645	5392670.614470	48.682584	-118.017451	Primary	SDU-07
SDU-07-XRF-R01	425259.784645	5392970.614470	48.685301	-118.015468	Reserve	SDU-07
SDU-07-XRF-R02	425073.395736	5392850.828270	48.684201	-118.017978	Reserve	SDU-07
SDU-07-XRF-R03	425139.784645	5392730.614470	48.683128	-118.017055	Reserve	SDU-07
SDU-08-XRF-01	423199.117736	5401902.000000	48.765384	-118.045124	Primary	SDU-08
SDU-08-XRF-02	423132.085421	5401824.000000	48.764675	-118.046022	Primary	SDU-08
SDU-08-XRF-03	423062.617736	5401746.000000	48.763964	-118.046952	Primary	SDU-08
SDU-08-XRF-04	422995.585421	5401668.000000	48.763255	-118.047850	Primary	SDU-08
SDU-08-XRF-R01	423160.117736	5401863.000000	48.765029	-118.045648	Reserve	SDU-08
SDU-08-XRF-R02	423101.617736	5401785.000000	48.764320	-118.046429	Reserve	SDU-08
SDU-08-XRF-R03	423023.617736	5401707.000000	48.763609	-118.047476	Reserve	SDU-08

SDU-04

SDU XRF Samples - Adjusted for Lake Level - 4/30/15

- Primary
- Reserve
- ▨ Adjusted for Lake Level
- Pre Lake Level Adjustment

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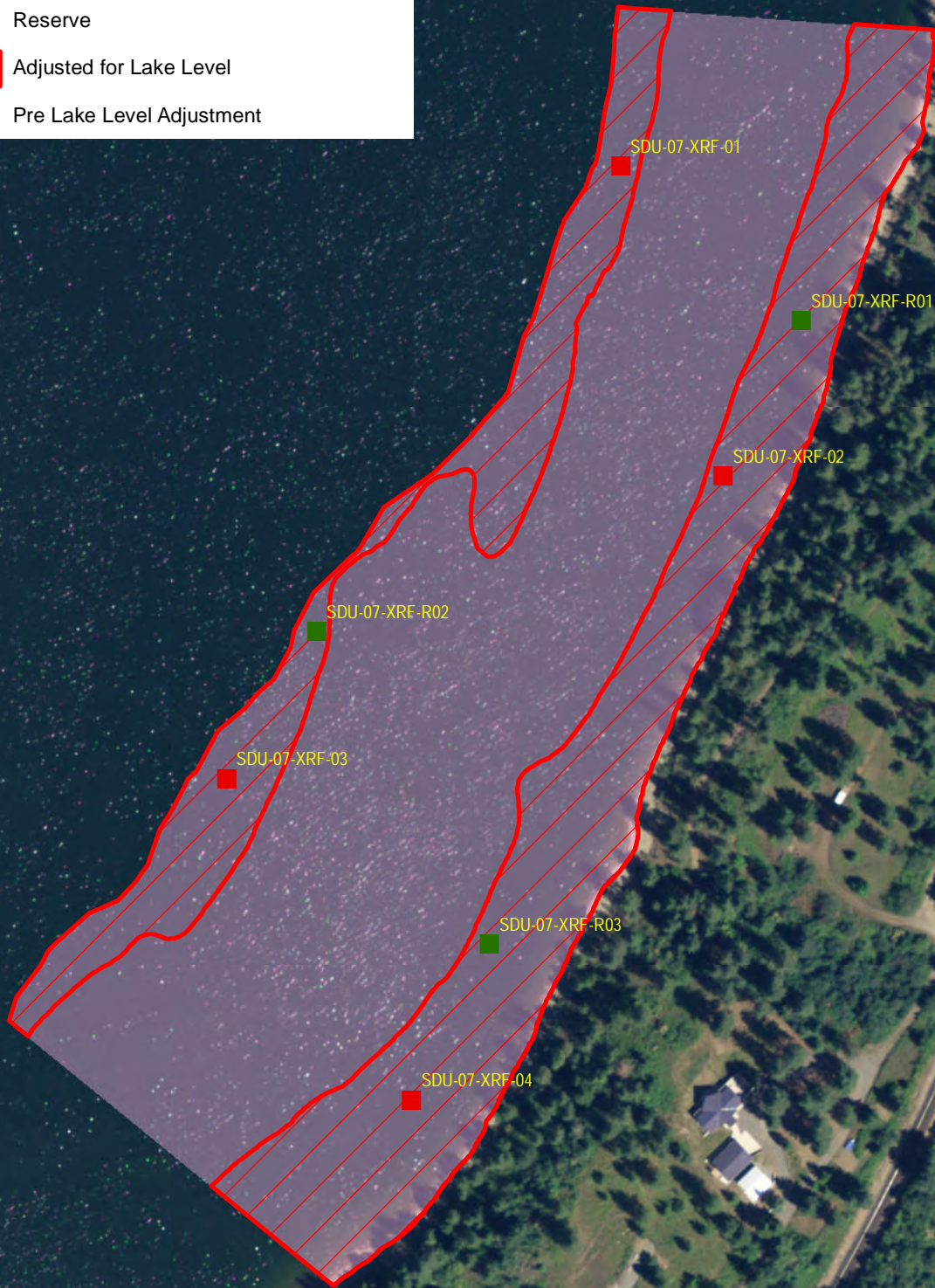


Acknowledgment of the U.S. Geological Survey would be appreciated in products derived from this data.

SDU-07

SDU XRF Samples - Adjusted for Lake Level - 4/30/15

- Primary
- Reserve
- ▨ Adjusted for Lake Level
- Pre Lake Level Adjustment



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0 105 210 420 Feet

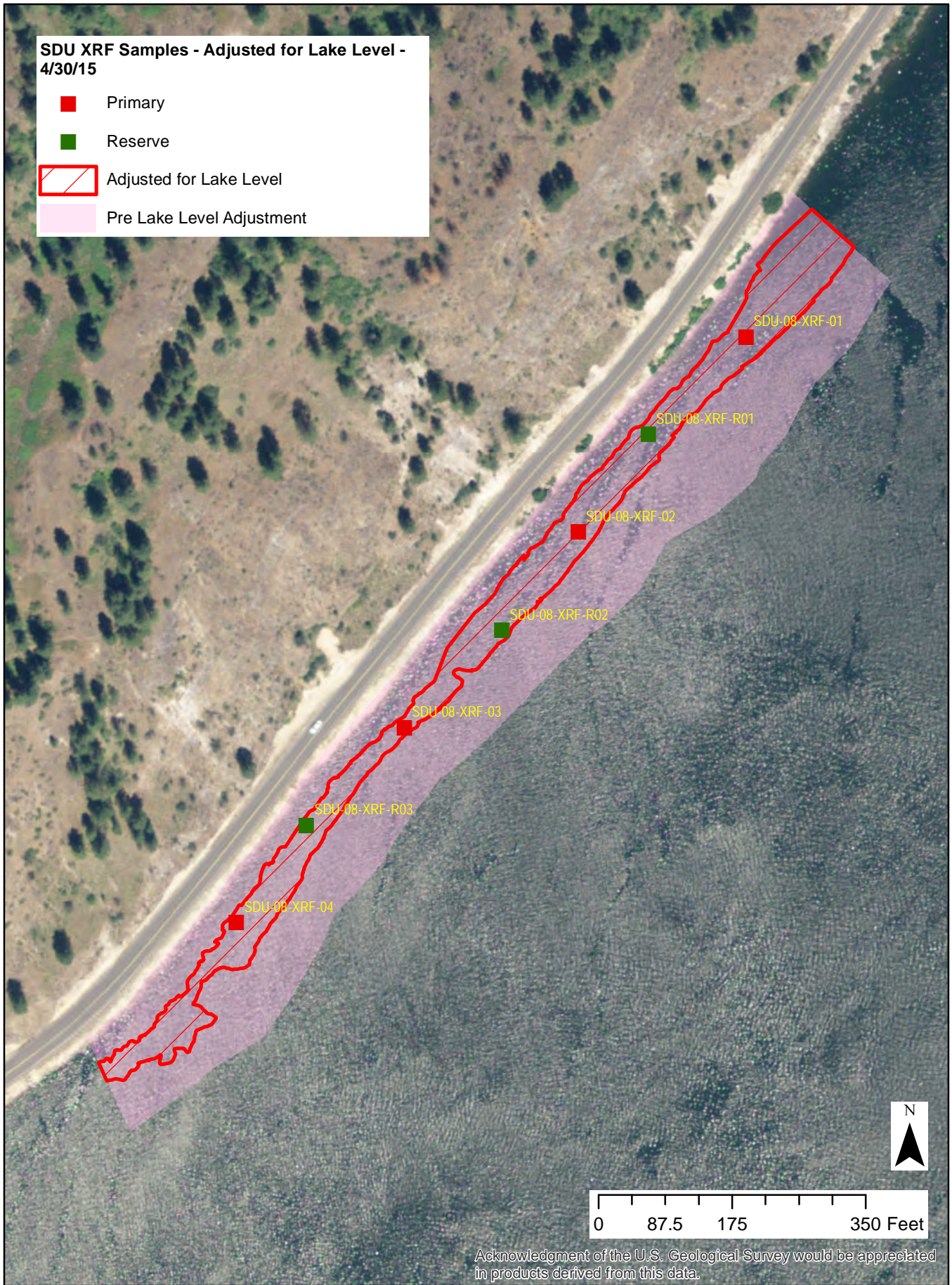
Acknowledgment of the U.S. Geological Survey would be appreciated in products derived from this data.

SDU-08

SDU XRF Samples - Adjusted for Lake Level - 4/30/15

- Primary
- Reserve
- ▭ Adjusted for Lake Level
- ▭ Pre Lake Level Adjustment

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Acknowledgment of the U.S. Geological Survey would be appreciated in products derived from this data.

Change Request Form
Upper Columbia River Bossburg Study

Page: 1 of 1

Change No: 6

CHANGE REQUEST

Additional In-situ Analysis of Lead using a Handheld XRF Analyzer to Attempt to Identify the Location of the Former West Bank Cable Ferry Landing

Applicable Reference:

1. QAPP, Standard Operating Procedure SOP-4 - Field Documentation
2. QAPP, Standard Operating Procedure SOP-8 - Handling and Reporting of Cultural Resources
3. QAPP, Appendix B - Cultural Resources Coordination Plan

Description of Change:

SDUs 9 and 10 are in very culturally sensitive areas. Sampling in this area will require the presence of both NPS and CCT cultural monitors to clear the area, including the walking paths to the ICS sample locations. If none of the XRF field lab samples from SDU-09 and SDU-10, or UDU-06 show lead concentrations over 500 ppm, the hand held XRF at the site will be taken to the field and in situ lead determinations will be obtained to attempt to locate the west ferry landing. The field portable XRF unit will be used to "shoot" only locations adjacent to the incremental sample locations that have been cleared by cultural monitors.

In situ XRF analysis will be performed by AECOM Field Team under direction of EPA approved observer and EPA-approved cultural resource monitor(s). Field documentation will follow the procedures as described in SOP-4, as applicable.

Reason for Change:

The intent of this Change Request is to roughly locate the potential west bank ferry landing. No definitive data would be obtained.

Impact on Present and Completed Work:

None

Requested By: Paul McCullough
(AECOM Project Manager)

Date: 4/24/2015

Acknowledged By: Kris McCaig
(Teck Project Manager)

Date: 4/24/2015

APPROVAL

AECOM Project Manager

Paul T. McCullough

Date: 4/30/15

Teck Project Manager:

Kris R. McCaig

Date: 4/30/15

EPA Project Manager:

R. Matthew Wilby

Date: 5/14/15

Change Request Form
Upper Columbia River Bossburg Study

Page: 1 of 1

Change No: 7

CHANGE REQUEST

Field procedure for Identifying alternative ICS Increment locations when reserves are exhausted.

Applicable Reference:

1. QAPP, Section A7.6.1 Sampling Completeness (page A-11).

Description of Change:

In the event that the full amount of ICS increment samples specified in the QAPP are unable to be collected due to inundation or cultural resource considerations (as determined by cultural monitor), sampling will be attempted at the designated reserve locations. If there are insufficient reserve locations, the field team leader will consult with the EPA-approved observer. A new sample location will be selected by moving in an upland direction perpendicular to the water's edge from the inundated/rejected sample, until a new location is accessible on dry land that is acceptable to the cultural resource monitor. The new location will be documented in the field records.

Reason for Change:

This procedure is necessary to obtain the full amount of ICS Increment samples as specified in the QAPP in the event that the sample locations in the QAPP are rejected because of inundation or cultural resource considerations and the reserve stations are exhausted.

Impact on Present and Completed Work:

This procedure was used with permission from EPA approved observers on SDUs 09 and 10. For situations of this nature.

Requested By: Paul McCullough
(AECOM Project Manager)

Date: 4/30/2015

Acknowledged By: Kris McCaig
(Teck Project Manager)

Date: 4/30/2015

APPROVAL

AECOM Project Manager: *Paul McCullough*

Date: 5/2/15

Teck Project Manager: *Kris R. McCaig*

Date: 5/4/15

EPA Project Manager: *R. Matthew Wilkins*

Date: 5/14/15

Change Request Form
Upper Columbia River Bossburg Study

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Change No: 8

CHANGE REQUEST

Resize decision unit and relocate XRF and ICS increment coordinates within boundaries of Bureau of Reclamation land within UDU-06.

Applicable Reference:

1. QAPP, Table A7-1b Proposed Station Locations for Bossburg Flat Beach Refined Sediment and Soil Collection: Incremental Composite Sampling Sites for Soil.

2. QAPP, Table A7-1d. Proposed Station Locations for Bossburg Flat Beach Refined Sediment and Soil Collection: XRF Sampling Sites for Soil

3. QAPP Figures

Description of Change:

ICS and XRF sample coordinates were randomly selected within the boundaries of the Bureau of Reclamation land in UDU-06. All sampling (XRF, ICS, and cores) will be within the subset of UDU-05 that is within the Bureau of Reclamation land. The coordinates for the revised XRF and incremental composite sampling sites are included in the attached two tables. Sample locations for XRF and incremental composite samples are shown in attached figures.

Reason for Change:

An access agreement for sampling on portions of UDU-06 owned by Dr. Boone was not obtained and therefore samples could not be collected on this privately owned property.

Impact on Present and Completed Work:

XRF samples were collected on 5/6/15 and ICS increment and core samples were collected on 5/7/15 from UDU-06, as discussed and approved by EPA.

Requested By: Paul McCullough
(AECOM Project Manager)

Date: 5/11/2015

Acknowledged By: Kris McCaig
(Teck Project Manager)

Date: 5/11/15

APPROVAL

AECOM Project Manager: *Paul T. McCullough*

Date: 5/11/15

Teck Project Manager: *Kris R. McCaig*

Date: 5/11/15

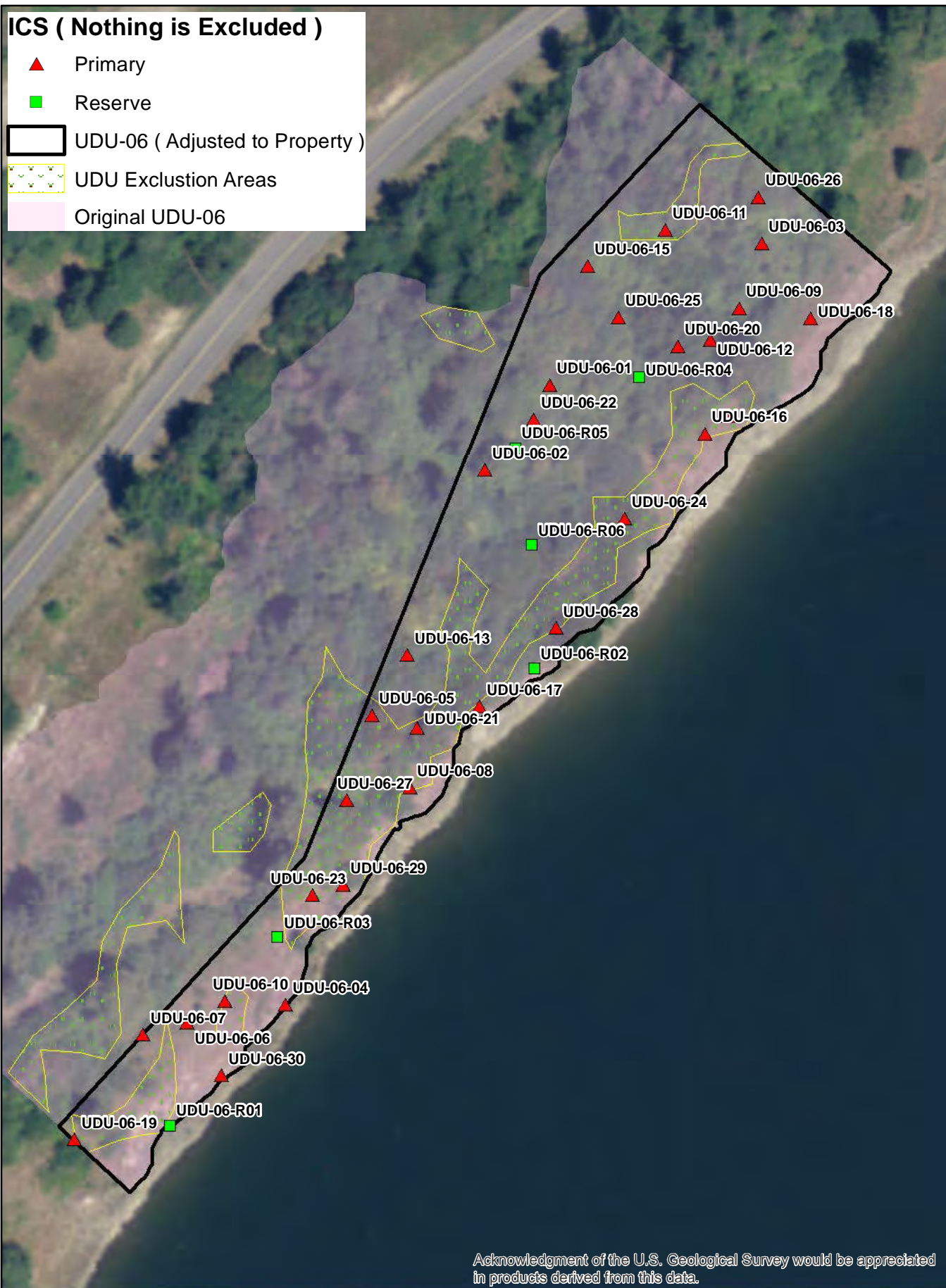
EPA Project Manager: *Matthew Wilkerson*

Date: 5/12/15

UDU-06 ICS

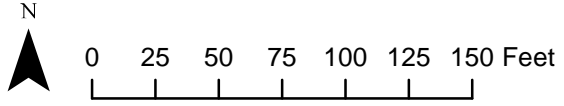
ICS (Nothing is Excluded)

- ▲ Primary
- Reserve
- ▭ UDU-06 (Adjusted to Property)
- ▨ UDU Exclusion Areas
- ▭ Original UDU-06



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Acknowledgment of the U.S. Geological Survey would be appreciated in products derived from this data.



Bossburg Flat Beach Refined Sediment and Soil Study
Revised UDU-06 Incremental Composite Sampling Sites for Soil

Station_ID	X_UTM_11N	Y_UTM_11N	Latitude	Longitude	Sample_Typ	PNTID
UDU-06-01	422249.221579	5400897.987280	48.756236	-118.057859	Primary	1
UDU-06-02	422238.217989	5400883.380580	48.756103	-118.058006	Primary	2
UDU-06-03	422285.421514	5400922.113270	48.756457	-118.057371	Primary	3
UDU-06-04	422204.119490	5400792.154230	48.755278	-118.058452	Primary	4
UDU-06-05	422218.905255	5400841.553060	48.755725	-118.058261	Primary	5
UDU-06-06	422187.463149	5400789.052490	48.755248	-118.058678	Primary	6
UDU-06-07	422179.885450	5400786.994930	48.755229	-118.058781	Primary	7
UDU-06-08	422225.352392	5400829.105790	48.755613	-118.058171	Primary	8
UDU-06-09	422281.572194	5400911.115270	48.756358	-118.057421	Primary	9
UDU-06-10	422193.794016	5400792.784340	48.755283	-118.058593	Primary	10
UDU-06-11	422269.027126	5400924.425670	48.756476	-118.057594	Primary	11
UDU-06-12	422276.618485	5400905.636730	48.756308	-118.057488	Primary	12
UDU-06-13	422224.978695	5400851.853020	48.755818	-118.058180	Primary	13
UDU-06-14	422279.670662	5400892.802890	48.756193	-118.057444	Primary	14
UDU-06-15	422255.722680	5400918.211530	48.756419	-118.057774	Primary	15
UDU-06-16	422275.710115	5400889.687360	48.756165	-118.057497	Primary	16
UDU-06-17	422237.326157	5400842.970430	48.755740	-118.058010	Primary	17
UDU-06-18	422293.781879	5400909.322780	48.756343	-118.057255	Primary	18
UDU-06-19	422168.106380	5400769.126160	48.755067	-118.058938	Primary	19
UDU-06-20	422271.060901	5400904.609560	48.756298	-118.057563	Primary	20
UDU-06-21	422226.618046	5400839.395400	48.755706	-118.058155	Primary	21
UDU-06-22	422246.507276	5400892.061170	48.756182	-118.057895	Primary	22
UDU-06-23	422208.796229	5400810.860170	48.755447	-118.058392	Primary	23
UDU-06-24	422262.006983	5400875.090910	48.756032	-118.057681	Primary	24
UDU-06-25	422260.940009	5400909.440930	48.756340	-118.057702	Primary	25
UDU-06-26	422284.812494	5400929.986120	48.756528	-118.057381	Primary	26
UDU-06-27	422214.652422	5400827.020630	48.755593	-118.058316	Primary	27
UDU-06-28	422250.282352	5400856.388920	48.755862	-118.057837	Primary	28
UDU-06-29	422213.988738	5400812.593170	48.755463	-118.058322	Primary	29
UDU-06-30	422193.241736	5400780.113390	48.755169	-118.058598	Primary	30
UDU-06-R01	422184.407709	5400771.533580	48.755090	-118.058717	Reserve	31
UDU-06-R02	422246.594635	5400849.443340	48.755799	-118.057885	Reserve	32
UDU-06-R03	422202.826397	5400803.568410	48.755381	-118.058472	Reserve	33
UDU-06-R04	422264.473244	5400899.397740	48.756251	-118.057652	Reserve	34
UDU-06-R05	422243.370260	5400887.223590	48.756138	-118.057936	Reserve	35
UDU-06-R06	422246.162320	5400870.546090	48.755989	-118.057895	Reserve	36

UDU-06 XRF

XRF Sample Type

■ Primary

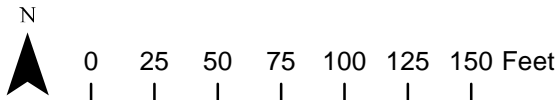
■ Reserve

▭ UDU-06 (Adjusted to Property)

▭ UDU Exclusion Areas

▭ Original UDU-06

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Bossburg Flat Beach Refined Sediment and Soil Study
Revised UDU-06 XRF Sampling Sites for Soil

Station_ID	X_UTM_11N NAD 83	Y_UTM_11N NAD83	Latitude NAD 83	Longitude NAD 83	Sample_Typ
UDU-06-XRF-01	422279.689104	5400932.047920	48.756546	-118.057451	Primary
UDU-06-XRF-02	422256.180367	5400888.835200	48.756155	-118.057762	Primary
UDU-06-XRF-03	422226.905653	5400850.084730	48.755802	-118.058153	Primary
UDU-06-XRF-04	422203.396916	5400806.872010	48.755411	-118.058465	Primary
UDU-06-XRF-05	422176.343125	5400765.823800	48.755038	-118.058825	Primary
UDU-06-XRF-R01	422262.168759	5400914.903810	48.756390	-118.057686	Reserve
UDU-06-XRF-R02	422238.660022	5400871.691090	48.755998	-118.057998	Reserve
UDU-06-XRF-R03	422215.151285	5400828.478370	48.755607	-118.058309	Reserve
UDU-06-XRF-R04	422191.642548	5400785.265650	48.755215	-118.058621	Reserve

Table C-1.1
Incremental Samples Submitted Separately based on Change Request #4
Bossburg Flat Beach Refined Sediment and Soil Study

Decision Unit	Sample ID	ICS Sample Date
SDU-05	SDU-05-19	4/27/2015
SDU-10	SDU-10-R05	5/4/2015
UDU-06	UDU-06-17	5/8/2015
	UDU-06-04	
	UDU-06-16	
	UDU-06-28	

ICS - incremental composite sampling

SDU - sediment decision unit

UDU - upland soil decision unit

Table C-1.2
Samples Relocated based on Change Request #7
Bossburg Flat Beach Refined Sediment and Soil Study

Decision Unit	Sample ID	Sample Date
SDU-09	SDU-09A-01	5/1/2015
	SDU-09A-03	5/1/2015
	SDU-09A-04	5/1/2015
	SDU-09A-15	5/1/2015
	SDU-09A-16	5/1/2015
	SDU-09A-17	5/1/2015
	SDU-09A-26	5/1/2015
	SDU-09A-29	5/1/2015
SDU-10	SDU-10-06	5/2/2015
	SDU-10-07	5/2/2015
	SDU-10-18	5/2/2015
	SDU-10-19	5/2/2015
	SDU-10-21	5/1/2015
	SDU-10-26	5/1/2015
	SDU-10-27	5/1/2015
	SDU-10-28	5/1/2015
	SDU-10-30	5/1/2015
	SDU-10-R06	5/2/2015

SDU - sediment decision unit
UDU - upland soil decision unit

Table C-2
Summary of Deviations from QAPP
Bosburg Flat Beach Refined Sediment and Soil Study

Date Implemented	Reference Source	Deviation	Table Reference
4/23/2015	Daily Field Report dated 4/23/15	A plastic scoop was used to provide sufficient volume when the full core barrel could not be filled due to sample conditions.	Deviations - Sample Collection
4/24/2015	Daily Field Report dated 4/24/15	Due to refusal, the 30-45 cm interval for UDU-04-COR-01-003 was collected from 30-36 cm.	Deviations - Sample Collection
4/25/2015	Daily Field Report dated 4/25/15	A stainless steel shovel was used when conditions prohibited the use of a coring device.	Deviations - Sample Collection
4/30/2015	Daily Field Report dated 4/30/15	No core samples were collected in SDU-09 or F-2 due to cultural concerns with sampling at depth.	None
5/1/2015	Daily Field Report dated 4/30/15	Relocated several samples in SDU-09 and SDU-10 for cultural reasons.	Deviations - Sample Collection
5/5/2015	Email from Matt Wilkening dated 5/4/15	In situ XRF was performed at SDU-07 along the recently exposed shoreline resulting from a drop in the water level rather than re-drawing the ICS and XRF sample locations.	XRF In Situ Report
5/8/2015	Emails from Kris McCaig dated 4/20/15 and 5/5/15	Additional confirmation XRF samples were sent to lab to represent a complete range of lead concentrations.	Deviations - XRF Confirmation Samples
NA	Database/Sample collection reports	No photos were taken of several core samples as they were co-located with XRF samples.	Deviations - Sample Collection

cm - centimeter
COR - core sample
ICS - incremental composite sampling
SDU - Sediment Decision Unit
UDU - Upland Soil Decision Unit
XRF - X-ray fluorescence

Table C-2.1
Deviations from QAPP Procedures - Sample Collection
Bosburg Flat Beach Refined Sediment and Soil Study

Date	Affected Sample ID	Sample Type	Field Team	Deviation ^a	Comments
4/23/2015	SDU-03A-01	ICS	A	Plastic scoop to provide sufficient volume	Used scoop to collect 30%
4/23/2015	SDU-03A-06	ICS	A	Plastic scoop to provide sufficient volume	Used scoop to collect 30%
4/23/2015	SDU-03A-23	ICS	A	Plastic scoop to provide sufficient volume	Used scoop to collect 30%
4/23/2015	SDU-03A-26	ICS	A	Plastic scoop to provide sufficient volume	Used scoop to collect 30%
4/23/2015	SDU-03A-29	ICS	A	Plastic scoop to provide sufficient volume	Used scoop to collect 30%
4/23/2015	SDU-03B-29	ICS	B	Plastic scoop to provide sufficient volume	Used scoop
5/2/2015	SDU-04-01	ICS	B	Plastic scoop to provide sufficient volume	Used scoop to collect 25%
5/4/2015	SDU-04-02	ICS	A	Plastic scoop to provide sufficient volume	Used scoop to collect 20%
5/4/2015	SDU-04-03	ICS	A	Plastic scoop to provide sufficient volume	Used scoop to collect entire sample
5/2/2015	SDU-04-04	ICS	B	Plastic scoop to provide sufficient volume	Used scoop to collect 10%
5/4/2015	SDU-04-05	ICS	A	Plastic scoop to provide sufficient volume	Used scoop to collect entire sample
5/4/2015	SDU-04-06	ICS	A	Plastic scoop to provide sufficient volume	Used scoop to collect entire sample
5/4/2015	SDU-04-07	ICS	A	Plastic scoop to provide sufficient volume	Used scoop to collect entire sample
5/4/2015	SDU-04-09	ICS	A	Plastic scoop to provide sufficient volume	Used scoop to collect entire sample
5/4/2015	SDU-04-11	ICS	A	Plastic scoop to provide sufficient volume	Used scoop to collect entire sample
5/4/2015	SDU-04-12	ICS	A	Plastic scoop to provide sufficient volume	Used scoop to collect entire sample
5/4/2015	SDU-04-13	ICS	A	Plastic scoop to provide sufficient volume	Used scoop to collect 20%
5/4/2015	SDU-04-15	ICS	A	Plastic scoop to provide sufficient volume	Used scoop to collect entire sample
5/4/2015	SDU-04-16	ICS	A	Plastic scoop to provide sufficient volume	Used scoop to collect entire sample
5/4/2015	SDU-04-17	ICS	A	Plastic scoop to provide sufficient volume	Used scoop to collect entire sample
5/2/2015	SDU-04-22	ICS	B	Plastic scoop to provide sufficient volume	Used scoop to collect 20%
5/4/2015	SDU-04-23	ICS	A	Plastic scoop to provide sufficient volume	Used scoop to collect entire sample
5/4/2015	SDU-04-24	ICS	A	Plastic scoop to provide sufficient volume	Used scoop to collect entire sample
5/4/2015	SDU-04-25	ICS	A	Plastic scoop to provide sufficient volume	Used scoop to collect entire sample
5/2/2015	SDU-04-27	ICS	B	Plastic scoop to provide sufficient volume	Used scoop to collect 10%
5/4/2015	SDU-04-29	ICS	A	Plastic scoop to provide sufficient volume	Used scoop to collect entire sample
5/2/2015	SDU-04-30	ICS	B	Plastic scoop to provide sufficient volume	Used scoop to collect 20%
5/2/2015	SDU-04-R04	ICS	B	Plastic scoop to provide sufficient volume	Used scoop to collect 70%
5/2/2015	SDU-04-XRF-02	XRF	B	Plastic scoop to provide sufficient volume	Used scoop to collect 20%
5/2/2015	SDU-04-XRF-03	XRF	B	Plastic scoop to provide sufficient volume	Used scoop to collect 30%
4/25/2015	SDU-05-07	ICS	A	Plastic scoop to provide sufficient volume	Used scoop to collect entire sample
4/25/2015	SDU-05-R04	ICS	A	Plastic scoop to provide sufficient volume	Used scoop to collect 40%
4/28/2015	SDU-06A-06	ICS	A	Plastic scoop to provide sufficient volume	Used scoop to collect entire sample
4/28/2015	SDU-06A-11	ICS	A	Plastic scoop to provide sufficient volume	Used scoop to collect entire sample
4/28/2015	SDU-06C-18	ICS	A	Plastic scoop to provide sufficient volume	Used scoop to collect entire sample
5/4/2015	SDU-07A-04	ICS	B	Plastic scoop to provide sufficient volume	Used scoop to collect 10%
5/4/2015	SDU-07A-06	ICS	B	Plastic scoop to provide sufficient volume	Used scoop to collect 70%
5/4/2015	SDU-07A-23	ICS	B	Plastic scoop to provide sufficient volume	Used scoop to collect 60%
5/4/2015	SDU-07A-24	ICS	B	Plastic scoop to provide sufficient volume	Used scoop to collect 25%
5/4/2015	SDU-07A-27	ICS	B	Plastic scoop to provide sufficient volume	Used scoop to collect 20%
5/4/2015	SDU-07B-01	ICS	B	Plastic scoop to provide sufficient volume	Used scoop to collect 25%
5/4/2015	SDU-07B-05	ICS	B	Plastic scoop to provide sufficient volume	Used scoop to collect 20%
5/4/2015	SDU-07B-06	ICS	B	Plastic scoop to provide sufficient volume	Used scoop to collect 20%
5/4/2015	SDU-07B-08	ICS	B	Plastic scoop to provide sufficient volume	Used scoop to collect 20%
5/4/2015	SDU-07B-09	ICS	B	Plastic scoop to provide sufficient volume	Used scoop to collect 20%
5/4/2015	SDU-07B-12	ICS	B	Plastic scoop to provide sufficient volume	Used scoop to collect 90%
5/4/2015	SDU-07B-15	ICS	B	Plastic scoop to provide sufficient volume	Used scoop to collect 10%
5/4/2015	SDU-07B-19	ICS	B	Plastic scoop to provide sufficient volume	Used scoop to collect 70%
5/4/2015	SDU-07B-26	ICS	B	Plastic scoop to provide sufficient volume	Used scoop to collect 20%
5/5/2015	SDU-07C-06	ICS	B	Plastic scoop to provide sufficient volume	Used scoop to collect 70%
5/5/2015	SDU-07C-07	ICS	B	Plastic scoop to provide sufficient volume	Used scoop to collect 15%
5/5/2015	SDU-07C-09	ICS	B	Plastic scoop to provide sufficient volume	Used scoop to collect 70%
5/5/2015	SDU-07C-14	ICS	B	Plastic scoop to provide sufficient volume	Used scoop to collect 40%

Table C-2.1
Deviations from QAPP Procedures - Sample Collection
Bosburg Flat Beach Refined Sediment and Soil Study

Date	Affected Sample ID	Sample Type	Field Team	Deviation ^a	Comments
5/5/2015	SDU-07C-15	ICS	B	Plastic scoop to provide sufficient volume	Used scoop to collect 60%
5/5/2015	SDU-07C-19	ICS	B	Plastic scoop to provide sufficient volume	Used scoop to collect 60%
5/5/2015	SDU-07C-20	ICS	B	Plastic scoop to provide sufficient volume	Used scoop to collect 30%
5/5/2015	SDU-07C-24	ICS	B	Plastic scoop to provide sufficient volume	Used scoop to collect 15%
5/6/2015	SDU-07C-29	ICS	B	Plastic scoop to provide sufficient volume	Used scoop to collect 50%
5/5/2015	SDU-08-015	ICS	A	Plastic scoop to provide sufficient volume	Used scoop to collect 40%
5/5/2015	SDU-08-05	ICS	A	Plastic scoop to provide sufficient volume	Used scoop to collect 20%
5/6/2015	SDU-08-07	ICS	A	Plastic scoop to provide sufficient volume	Used scoop to collect 25%
5/5/2015	SDU-08-09	ICS	A	Plastic scoop to provide sufficient volume	Used scoop to collect 30%
5/6/2015	SDU-08-10	ICS	A	Plastic scoop to provide sufficient volume	Used scoop to collect 20%
5/5/2015	SDU-08-11	ICS	A	Plastic scoop to provide sufficient volume	Used scoop to collect 30%
5/5/2015	SDU-08-16	ICS	A	Plastic scoop to provide sufficient volume	Used scoop to collect 10%
5/6/2015	SDU-08-17	ICS	A	Plastic scoop to provide sufficient volume	Used scoop to collect 30%
5/5/2015	SDU-08-27	ICS	A	Plastic scoop to provide sufficient volume	Used scoop to collect 30%
4/30/2015	SDU-09A-20	ICS	B	Plastic scoop to provide sufficient volume	Used scoop to collect 50%
4/30/2015	SDU-10-17	ICS	B	Plastic scoop to provide sufficient volume	scoop used for approx. 20%
5/1/2015	SDU-10-27	ICS	B	Plastic scoop to provide sufficient volume	Used scoop
4/30/2015	UDU-05-04	ICS	A	Plastic scoop to provide sufficient volume	Used scoop to collect entire sample
4/29/2015	UDU-05-05	ICS	A	Plastic scoop to provide sufficient volume	Used scoop to collect entire sample
4/30/2015	UDU-05-13	ICS	A	Plastic scoop to provide sufficient volume	Used scoop to collect entire sample
4/30/2015	UDU-05-16	ICS	A	Plastic scoop to provide sufficient volume	Used scoop to collect entire sample
4/29/2015	UDU-05-23	ICS	A	Plastic scoop to provide sufficient volume	Used scoop to collect entire sample
4/30/2015	UDU-05-24	ICS	A	Plastic scoop to provide sufficient volume	Used scoop to collect entire sample
4/30/2015	UDU-05-27	ICS	A	Plastic scoop to provide sufficient volume	Used scoop to collect entire sample
5/7/2015	UDU-06-04	ICS	B	Plastic scoop to provide sufficient volume	Used scoop to collect 60%
5/7/2015	UDU-06-18	ICS	B	Plastic scoop to provide sufficient volume	Used scoop to collect 10%
5/7/2015	UDU-06-20	ICS	B	Plastic scoop to provide sufficient volume	Used scoop to collect 10%
5/7/2015	UDU-06-30	ICS	B	Plastic scoop to provide sufficient volume	Used scoop to collect 60%
5/6/2015	UDU-06-XRF-05	XRF	B	Plastic scoop to provide sufficient volume	Used scoop to collect sample
5/1/2015	SDU-09A-01	ICS	B	Relocated sample for cultural reasons	Relocated 9.51m at 297° heading from original location.
5/1/2015	SDU-09A-03	ICS	B	Relocated sample for cultural reasons	Relocated 11m at 295° heading from original location.
5/1/2015	SDU-09A-04	ICS	B	Relocated sample for cultural reasons	Relocated 24.41m at 294° heading from original location.
5/1/2015	SDU-09A-15	ICS	B	Relocated sample for cultural reasons	Relocated 27.66m at 305° heading from original location.
5/1/2015	SDU-09A-16	ICS	B	Relocated sample for cultural reasons	Relocated 22.21m at 308° heading from original location.
5/1/2015	SDU-09A-17	ICS	B	Relocated sample for cultural reasons	Relocated 25m at 300° heading from original location.
5/1/2015	SDU-09A-26	ICS	B	Relocated sample for cultural reasons	Relocated 15.4m at 295° heading from original location.
5/1/2015	SDU-09A-29	ICS	B	Relocated sample for cultural reasons	Relocated 15.3m at 298° heading from original location.
5/2/2015	SDU-10-06	ICS	A	Relocated sample for cultural reasons	Relocated ~32m west of original location
5/2/2015	SDU-10-07	ICS	A	Relocated sample for cultural reasons	Relocated ~14m west of original location
5/2/2015	SDU-10-18	ICS	A	Relocated sample for cultural reasons	Relocated ~28m west of original location
5/2/2015	SDU-10-19	ICS	A	Relocated sample for cultural reasons	Relocated ~18m west of original location
5/1/2015	SDU-10-21	ICS	B	Relocated sample for cultural reasons	Relocated 27m at 300° heading from original location.
5/1/2015	SDU-10-26	ICS	B	Relocated sample for cultural reasons	Relocated 7.68m at 297° heading from original location.
5/1/2015	SDU-10-27	ICS	B	Relocated sample for cultural reasons	Relocated 37.4m at 300° heading from original location.
5/1/2015	SDU-10-28	ICS	B	Relocated sample for cultural reasons	Relocated 14.85m at 299° heading from original location.
5/1/2015	SDU-10-30	ICS	B	Relocated sample for cultural reasons	Relocated 17.66m at 300° heading from original location.
5/2/2015	SDU-10-R06	ICS	A	Relocated sample for cultural reasons	Relocated ~30m west and 2m North of original location
4/24/2015	UDU-04-COR-01-003	COR	B	sample from 30-45 cm interval only collected from 30-36cm	Agreed to in field with EPA and CH2MHill representative.
4/29/2015	SDU-06-03	ICS	B	Stainless Steel Shovel	Entire sample
4/29/2015	SDU-06-COR-03 at SDU-06-XRF-01	COR	B	Stainless Steel Shovel	Upper 30cm only. COR-03-001 and COR-03-002

Table C-2.1
Deviations from QAPP Procedures - Sample Collection
Bosburg Flat Beach Refined Sediment and Soil Study

Date	Affected Sample ID	Sample Type	Field Team	Deviation ^a	Comments
5/6/2015	SDU-08-COR-01 at SDU-08-XRF-04	COR	A	Stainless Steel Shovel	Used scoop to collect entire sample
5/6/2015	SDU-08-COR-03 at SDU-08-XRF-01	COR	A	Stainless Steel Shovel	Used scoop to collect entire sample
4/25/2015	UDU-04-COR-03 at UDU-04-XRF-02	COR	B	Stainless Steel Shovel	15-30cm and 30-45 cm Intervals
5/1/2015	UDU-05-COR-01 at UDU-05-XRF-02	COR	A	Stainless Steel Shovel	Used scoop to collect entire sample
5/1/2015	UDU-05-COR-03 at UDU-05-XRF-12	COR	A	Stainless Steel Shovel	Used scoop to collect entire sample
5/1/2015	UDU-05-COR-03 at UDU-05-XRF-12	COR	A	Stainless Steel Shovel	Used scoop to collect entire sample
4/29/2015	SDU-01-COR-01-001	COR	B	No sample photo taken	Photo of sample area available from associated XRF sample SDU-01-XRF-07.
4/29/2015	SDU-01-COR-01-002	COR	B	No sample photo taken	Photo of sample area available from associated XRF sample SDU-01-XRF-07.
4/29/2015	SDU-01-COR-01-003	COR	B	No sample photo taken	Photo of sample area available from associated XRF sample SDU-01-XRF-07.
4/29/2015	SDU-01-COR-02-001	COR	B	No sample photo taken	Photo of sample area available from associated XRF sample SDU-01-XRF-09.
4/29/2015	SDU-01-COR-02-002	COR	B	No sample photo taken	Photo of sample area available from associated XRF sample SDU-01-XRF-09.
4/29/2015	SDU-01-COR-02-003	COR	B	No sample photo taken	Photo of sample area available from associated XRF sample SDU-01-XRF-09.
4/29/2015	SDU-01-COR-03-001	COR	B	No sample photo taken	Photo of sample area available from associated XRF sample SDU-01-XRF-08.
4/29/2015	SDU-01-COR-03-002	COR	B	No sample photo taken	Photo of sample area available from associated XRF sample SDU-01-XRF-08.
4/29/2015	SDU-01-COR-03-003	COR	B	No sample photo taken	Photo of sample area available from associated XRF sample SDU-01-XRF-08.
4/29/2015	SDU-02-COR-01-001	COR	B	No sample photo taken	Photo of sample area available from associated XRF sample SDU-02-XRF-08.
4/29/2015	SDU-02-COR-01-002	COR	B	No sample photo taken	Photo of sample area available from associated XRF sample SDU-02-XRF-08.
4/29/2015	SDU-02-COR-01-003	COR	B	No sample photo taken	Photo of sample area available from associated XRF sample SDU-02-XRF-08.
4/29/2015	SDU-02-COR-02-001	COR	B	No sample photo taken	Photo of sample area available from associated XRF sample SDU-02-XRF-06.
4/29/2015	SDU-02-COR-02-002	COR	B	No sample photo taken	Photo of sample area available from associated XRF sample SDU-02-XRF-06.
4/29/2015	SDU-02-COR-02-003	COR	B	No sample photo taken	Photo of sample area available from associated XRF sample SDU-02-XRF-06.
4/29/2015	SDU-02-COR-03-001	COR	B	No sample photo taken	Photo of sample area available from associated XRF sample SDU-02-XRF-04.
4/29/2015	SDU-02-COR-03-002	COR	B	No sample photo taken	Photo of sample area available from associated XRF sample SDU-02-XRF-04.
4/29/2015	SDU-02-COR-03-003	COR	B	No sample photo taken	Photo of sample area available from associated XRF sample SDU-02-XRF-04.
4/25/2015	SDU-03-COR-03-001	COR	A	No sample photo taken	Photo of sample area available from associated XRF sample SDU-03-XRF-04.
4/25/2015	SDU-03-COR-03-002	COR	A	No sample photo taken	Photo of sample area available from associated XRF sample SDU-03-XRF-04.
4/25/2015	SDU-03-COR-03-003	COR	A	No sample photo taken	Photo of sample area available from associated XRF sample SDU-03-XRF-04.
5/4/2015	SDU-04-COR-01-001	COR	A	No sample photo taken	Photo of sample area available from associated XRF sample SDU-04-XRF-01.
5/4/2015	SDU-04-COR-01-002	COR	A	No sample photo taken	Photo of sample area available from associated XRF sample SDU-04-XRF-01.
5/4/2015	SDU-04-COR-01-003	COR	A	No sample photo taken	Photo of sample area available from associated XRF sample SDU-04-XRF-01.

a- All deviations were agreed upon based on field conversations with CH2MHill, EPA, Teck, and AECOM. Site conditions (gravel, cobbles, or boulders in sediment/soil matrix) required the use of alternative sampling methods to collect adequate volume for the ICS/XRF/core samples listed above. When using plastic scoops or the stainless steel shovel, care was taken to minimize sloughing and to ensure that representative sediment/soil was collected at each location/depth.

ICS - incremental composite sample

XRF - X-ray fluorescence

COR - core sample

Table C-2.2
Deviation from QAPP Procedure for XRF Confirmation Samples
Bosburg Flat Beach Refined Sediment and Soil Study

Sample	Lead (ppm)	Range represented by sample	Deviation	Note
SDU-09-XRF-01	12.3	minimum ^a	yes	additional sample sent to laboratory for confirmation
UDU-04-XRF-R01	1384	maximum ^a	yes	additional sample sent to laboratory for confirmation
SDU-09-XRF-02	80.7	50-100 ppm	no	1 of 20 initial confirmation samples
SDU-01-XRF-03	268	100-300 ppm	no	1 of 20 initial confirmation samples
SDU-01-XRF-07	449	300-500 ppm	no	1 of 20 initial confirmation samples
UDU-04-XRF-05	651	500-750 ppm ^a	yes	additional sample sent to laboratory for confirmation
UDU-04-XRF-02	975	750-1000 ppm ^a	yes	additional sample sent to laboratory for confirmation
		1000-1500 ppm		max fulfills this range
		> 1500 ppm		no concentrations over 1500 ppm

a - Additional confirmation samples covering the ranges specified above were sent to the laboratory per TAI instruction.

ppm - parts per million

SDU - Sediment Decision Unit

UDU - Upland Soil Decision Unit

XRF - X-ray fluorescence

Table C-3
Reserve Locations Utilized
Bosburg Flat Beach Refined Sediment and Soil Study

Date	Field Team	Sample Type	Primary Sample ID	Reserve Station ID	Reason for Abandonment
4/21/2015	B	ICS	SDU-01-02	SDU-01-R03	Refusal due to cobbles
4/21/2015	B	ICS	SDU-01-08	SDU-01-R01	Steep cobble slope
4/21/2015	B	ICS	SDU-01-30	SDU-01-R02	Steep cobble slope
4/21/2015	A	ICS	SDU-02A-14	SDU-02A-R01	Inundated with water
4/21/2015	A	ICS	SDU-02A-25	SDU-02A-R05	Refusal due to cobbles
4/21/2015	A	ICS	SDU-02A-30	SDU-02A-R06	Inundated with water
4/22/2015	A	ICS	SDU-02C-06	SDU-02C-R04	Inundated with water
4/22/2015	A	ICS	SDU-02C-23	SDU-02C-R02	Inundated with water
4/22/2015	A	ICS	SDU-02C-24	SDU-02C-R01	Inundated with water
5/2/2015	B	ICS	SDU-04-10	SDU-04-R04	Steep cobble slope
4/25/2015	A	ICS	SDU-05-08	SDU-05-R05	Inundated with water
4/25/2015	A	ICS	SDU-05-15	SDU-05-R04	Inundated with water
4/25/2015	A	ICS	SDU-05-18	SDU-05-R06	Inundated with water
4/25/2015	A	ICS	SDU-05-24	SDU-05-R03	Inundated with water
4/24/2015	A	ICS	SDU-05-30	SDU-05-R01	Inundated with water
4/24/2015	A	XRF	SDU-05-XRF-07	SDU-05-XRF-R03	Inundated with water
4/28/2015	A	ICS	SDU-06A-02	SDU-06A-R03	Refusal due to rock pile
4/28/2015	B	ICS	SDU-06C-10	SDU-06C-R05	Refusal due to rock berm
4/28/2015	A	XRF	SDU-06-XRF-03	SDU-06-XRF-R02	Refusal due to rock pile
5/2/2015	A	XRF	SDU-08-XRF-03	SDU-08-XRF-R03	Inundated with water
5/1/2015	B	ICS	SDU-09A-18	SDU-09A-R02, SDU-09A-R03, SDU-09A-R04	Cultural
5/1/2015	B	ICS	SDU-09A-21		Cultural
5/1/2015	B	ICS	SDU-09A-30		Cultural
4/27/2015	B	ICS	SDU-10-04	SDU-10-R02, SDU-10-R04, SDU-10-R05, SDU-10-R06	Inundated with water
5/1/2015	B	ICS	SDU-10-05		Inundated with water
4/27/2015	B	ICS	SDU-10-08		Inundated with water
4/27/2015	B	ICS	SDU-10-09		Inundated with water
4/18/2015	B	ICS	UDU-04A-07	UDU-04A-R02	Steep slope
4/18/2015	B	ICS	UDU-04A-17	UDU-04A-R01	Steep slope
4/20/2015	B	ICS	UDU-04B-11	UDU-04B-R01	Located in SDU-03 sediment DU
4/20/2015	B	ICS	UDU-04B-19	UDU-04B-R02	Steep slope
4/20/2015	A	ICS	UDU-04C-06	UDU-04-R08	Steep slope
4/20/2015	A	ICS	UDU-04C-23	UDU-04-R04	Steep slope
4/20/2015	A	ICS	UDU-04C-26	UDU-04-R02	Steep slope
4/18/2015	A	XRF	UDU-04-XRF-01	UDU-04-XRF-R01	Refusal due to cobbles

Appendix D

Chain of Custody Forms

11503981

RINSATE BLANKS
CHAIN-OF-CUSTODY RECORD

DATE: 4/16/15
PAGE: 1 OF 2



Environmental

1317 South 13th Ave.
Kelso, WA 98626
TEL: (360) 577-7222 / (800) 695-7222 / FAX: (360) 636-1068
www.alsglobal.com

SR # / LAB USE ONLY

LABORATORY CLIENT Teck American Incorporated						CLIENT PROJECT NAME / NUMBER Bosburg Soil/Sediment						P.O. NO. UCR-CAS-D21-14											
ADDRESS 501 N. Riverpoint Blvd Ste 300, Spokane, WA 99202												PROJECT CONTACT Dave Enos, Teck American Incorporated						Bill To Dave Enos, Teck American Incorporated					
TEL 509-623-4505				Cell 509-795-9599				E-MAIL dave.enos@teck.com				SAMPLER(S) (PRINT and SIGNATURE)						TEMPERATURE UPON RECEIPT _____ °C					
AECOM CONTACT Christine Gebel												REQUESTED ANALYSES						HOLDING TIME REQUIREMENTS					
ADDRESS 1501 4th Avenue, Suite 1400, Seattle, WA 98101																							
TEL 206-438-2103				Fax 866-495-5288				E-MAIL christine.gebel@aecom.com															
TURNAROUND TIME <input type="radio"/> SAME DAY <input type="radio"/> 24 HR <input type="radio"/> 48 HR <input type="radio"/> 72 HR <input checked="" type="radio"/> Standard																							
SPECIAL INSTRUCTIONS *TAL Metals: Metals by EPA 6020A: Al, Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Mn, Ni, Se, Ag, Ti, V, Zn Metals by EPA 6010C: Ca, Fe, Mg, K, Na Mercury by EPA 7470A																		EPA 6020A / Metals - 180 Days EPA 6010C / Metals - 180 Days EPA 7470A / Mercury - 28 Days					
CLIENT SAMPLE ID		ALS LAB ID (Lab Use Only)		SAMPLING		MATRIX* TYPE		NO. OF CONTAINERS		TAL Metals*		Comments											
				DATE	TIME																		
1	UDU-01-ER-A			4/14/15	1815	FB		1		<input checked="" type="checkbox"/>													
2	UDU-01-ER-B			4/15/15	1130	FB		1		<input checked="" type="checkbox"/>													
3	UDU-01-ER-A			4/15/15	1755	FB		1		<input checked="" type="checkbox"/>													
4	UDU-01-ER-B			4/16/15	1305	FB		1		<input checked="" type="checkbox"/>													
5										<input type="checkbox"/>													
6										<input type="checkbox"/>													
7										<input type="checkbox"/>													
8										<input type="checkbox"/>													
9										<input type="checkbox"/>													
10										<input type="checkbox"/>													
*Matrix Type: FB (Field Blank), PW (Porewater), R (Rinsate), SE (Sediment)												REPORT REQUIREMENTS:											
Additional Comments: FedEx tracking # 8738 8171 7604 8738 8171 7795												<input type="checkbox"/> I. Routine Report. Method Blank. Surrogate, as required <input type="checkbox"/> II. Report Dup., MS, MSD as required <input type="checkbox"/> III. CLP Like Summary (no raw data) <input checked="" type="checkbox"/> IV. Data Validation Report <input checked="" type="checkbox"/> V. EDD											
Relinquished by: (Print/Signature/Affiliation) <i>Amy Dabe / Amy Dabe / Aecom / URS</i>				Date 4/16/15		Time 1430		Received by: (Print/Signature/Affiliation) <i>SWOLF / ALS</i>				Date 4/17/15		Time 0900									
Relinquished by: (Print/Signature/Affiliation)				Date		Time		Received by: (Print/Signature/Affiliation)				Date		Time									
Relinquished by: (Print/Signature/Affiliation)				Date		Time		Received by: (Print/Signature/Affiliation)				Date		Time									



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RINSATE BLANKS
CHAIN-OF-CUSTODY RECORD

DATE: 4/17/15
PAGE: 2 OF 2

SR # / LAB USE ONLY
K1503981

LABORATORY CLIENT Teck American Incorporated						CLIENT PROJECT NAME / NUMBER Bossburg Soil/Sediment						P.O. NO. UCR-CAS-D21-14																	
ADDRESS 501 N. Riverpoint Blvd Ste 300, Spokane, WA 99202												PROJECT CONTACT Dave Enos, Teck American Incorporated						BILL TO Dave Enos, Teck American Incorporated											
TEL 509-623-4505				Cell 509-795-9599				E-MAIL dave.enos@teck.com				TEMPERATURE UPON RECEIPT _____ °C																	
AECOM CONTACT Christine Gebel												REQUESTED ANALYSES						HOLDING TIME REQUIREMENTS											
ADDRESS 1501 4th Avenue, Suite 1400, Seattle, WA 98101																													
TEL 206-438-2103				Fax 866-495-5288				E-MAIL christine.gebel@aecom.com				EPA 6020A / Metals - 180 Days EPA 6010C / Metals - 180 Days EPA 7470A / Mercury - 28 Days																	
TURNAROUND TIME <input type="radio"/> SAME DAY <input type="radio"/> 24 HR <input type="radio"/> 48 HR <input type="radio"/> 72 HR <input checked="" type="radio"/> Standard																													
SPECIAL INSTRUCTIONS *TAL Metals: Metals by EPA 6020A: Al, Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Mn, Ni, Se, Ag, Tl, V, Zn Metals by EPA 6010C: Ca, Fe, Mg, K, Na Mercury by EPA 7470A												TAL Metals*						Comments											
CLIENT SAMPLE ID		ALS LAB ID (Lab Use Only)		SAMPLING		MATRIX* TYPE		NO. OF CONTAINERS																					
				DATE		TIME																							
1		UDU-02-ER-A		4/16/15		1725		FB		1														<input checked="" type="checkbox"/>					
2		UDU-02-ER-B		4/17/15		1210		FB		1														<input checked="" type="checkbox"/>					
3																								<input type="checkbox"/>					
4																								<input type="checkbox"/>					
5																								<input type="checkbox"/>					
6																								<input type="checkbox"/>					
7																								<input type="checkbox"/>					
8												<input type="checkbox"/>																	
9												<input type="checkbox"/>																	
10												<input type="checkbox"/>																	
*Matrix Type: FB (Field Blank), PW (Porewater), R (Rinsate), SE (Sediment)												REPORT REQUIREMENTS:																	
Additional Comments: <u>FedEx tracking 9738 9171 7773</u>												<input type="checkbox"/> I. Routine Report. Method Blank. Surrogate, as required <input type="checkbox"/> II. Report Dup., MS, MSD as required <input type="checkbox"/> III. CLP Like Summary (no raw data) <input checked="" type="checkbox"/> IV. Data Validation Report <input checked="" type="checkbox"/> V. EDD																	
												Relinquished by: (Print/Signature/Affiliation) <u>Amy Dahl / Amy Dahl / AECOM / URS</u>				Date <u>4/17/15</u>				Time <u>1430</u>				Received by: (Print/Signature/Affiliation) <u>[Signature] ALS</u>				Date <u>4/18/15</u>	
Relinquished by: (Print/Signature/Affiliation)				Date				Time				Received by: (Print/Signature/Affiliation)				Date				Time									
Relinquished by: (Print/Signature/Affiliation)				Date				Time				Received by: (Print/Signature/Affiliation)				Date				Time									



Cooler Receipt and Preservation Form

Client / Project: Treck Ann Service Request K15 03981
Received: 4/7/15 Opened: 4/7/15 By: [Signature] Unloaded: 4/7/15 By: [Signature]

1. Samples were received via? Mail Fed Ex UPS DHL PDX Courier Hand Delivered

2. Samples were received in: (circle) Cooler Envelope Other NA

3. Were custody seals on coolers? NA Y N
If present, were custody seals intact? Y N
If yes, how many and where? one front two sides
If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	NA	Filed
-0.3	-0.4	1.0	0.9	-0.1	349	<u>NA</u>	<u>8738 8171 7795</u>		

4. Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves

5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N

6. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* NA Y N

7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N

8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA Y N

9. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N

10. Were the pH-preserved bottles (see SMO-GEN-SOP) received at the appropriate pH? *Indicate in the table below* NA Y N

11. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N

12. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions:



Cooler Receipt and Preservation Form

Client / Project: TRK Service Request K15 03981
 Received: 4/18/15 Opened: 4/18/15 By: A Unloaded: 4/18/15 By: A

1. Samples were received via? **Mail** **Fed Ex** **UPS** **DHL** **PDX** **Courier** **Hand Delivered** **NA**
2. Samples were received in: (circle) **Cooler** **Box** **Envelope** **Other** **NA**
3. Were custody seals on coolers? **NA** **N** **N** **NA** **FRONT**
- If present, were custody seals intact? **Y** **N** **N** **NA** **FRONT**
- If present, were they signed and dated? **Y** **N** **NA** **FRONT**

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	NA	Filed
0.5	0.4	1.8	1.7	-0.1	325	NA	873881717784	NA	
1.7	1.7	2.6	2.6	0	348		873881717773		

4. Packing material: **Inserts** **Baggies** **Bubble Wrap** **Gel Packs** **Wet Ice** **Dry Ice** **Sleeves** **NA** **N** **N**
5. Were custody papers properly filled out (ink, signed, etc.)? **NA** **Y** **N** **NA** **Y** **N** **N**
6. Did all bottles arrive in good condition (unbroken)? **Indicate in the table below.**
7. Were all sample labels complete (i.e analysis, preservation, etc.)? **NA** **Y** **N** **NA** **Y** **N** **N**
8. Did all sample labels and tags agree with custody papers? **Indicate major discrepancies in the table on page 2.**
9. Were appropriate bottles/containers and volumes received for the tests indicated? **NA** **Y** **N** **NA** **Y** **N** **N**
10. Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? **Indicate in the table below**
11. Were VOA vials received without headspace? **Indicate in the table below.**
12. Was C12/Res negative? **NA** **Y** **N** **NA** **Y** **N** **N**

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Out of Head- Temp space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions:



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**RINSATE BLANKS
 CHAIN-OF-CUSTODY RECORD**

DATE: 4/20/15
 PAGE: 3 OF 3

SR # / LAB USE ONLY
 11503981

LABORATORY CLIENT Teck American Incorporated						CLIENT PROJECT NAME / NUMBER Bossburg Soil/Sediment						P.O. NO. UCR-CAS-D21-14																																																										
ADDRESS 501 N. Riverpoint Blvd Ste 300, Spokane, WA 99202						PROJECT CONTACT Dave Enos, Teck American Incorporated						Bill To Dave Enos, Teck American Incorporated																																																										
TEL 509-623-4505		Cell 509-795-9599		E-MAIL dave_enos@teck.com		SAMPLER(S) (PRINT and SIGNATURE) <i>Amy Dahl / Dave Lewis / Demetric Caballero</i>						TEMPERATURE UPON RECEIPT _____ °C																																																										
AECOM CONTACT Christine Gebel						REQUESTED ANALYSES						HOLDING TIME REQUIREMENTS																																																										
ADDRESS 1501 4th Avenue, Suite 1400, Seattle, WA 98101																																																																						
TEL 206-438-2103		Fax 866-495-5288		E-MAIL christine.gebel@aecom.com		<table border="1"> <tr> <th rowspan="2">TAL Metals*</th> <th colspan="2">SAMPLING</th> <th rowspan="2">MATRIX* TYPE</th> <th rowspan="2">NO. OF CONTAINERS</th> </tr> <tr> <th>DATE</th> <th>TIME</th> </tr> <tr><td>1</td><td>4/18/15</td><td>1330</td><td>FB</td><td>1</td></tr> <tr><td>2</td><td>4/17/15</td><td>1815</td><td>FB</td><td>1</td></tr> <tr><td>3</td><td>4/18/15</td><td>1750</td><td>FB</td><td>1</td></tr> <tr><td>4</td><td>4/18/15</td><td>1735</td><td>FB</td><td>1</td></tr> <tr><td>5</td><td></td><td></td><td></td><td></td></tr> <tr><td>6</td><td></td><td></td><td></td><td></td></tr> <tr><td>7</td><td></td><td></td><td></td><td></td></tr> <tr><td>8</td><td></td><td></td><td></td><td></td></tr> <tr><td>9</td><td></td><td></td><td></td><td></td></tr> <tr><td>10</td><td></td><td></td><td></td><td></td></tr> </table>						TAL Metals*	SAMPLING		MATRIX* TYPE	NO. OF CONTAINERS	DATE	TIME	1	4/18/15	1330	FB	1	2	4/17/15	1815	FB	1	3	4/18/15	1750	FB	1	4	4/18/15	1735	FB	1	5					6					7					8					9					10					EPA 6020A / Metals - 180 Days EPA 6010C / Metals - 180 Days EPA 7470A / Mercury - 28 Days	
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		DATE	TIME																																																																			
1	VDU-03-ER-B	4/18/15	1330	FB	1	<input checked="" type="checkbox"/>																																																																
2	VDU-03-ER-A	4/17/15	1815	FB	1	<input checked="" type="checkbox"/>																																																																
3	VDU-04A-ER-A	4/18/15	1750	FB	1	<input checked="" type="checkbox"/>																																																																
4	VDU-01-ER-C	4/18/15	1735	FB	1	<input checked="" type="checkbox"/>																																																																
5						<input type="checkbox"/>																																																																
6						<input type="checkbox"/>																																																																
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9						<input type="checkbox"/>																																																																
10						<input type="checkbox"/>																																																																

*Matrix Type: FB (Field Blank), PW (Porewater), R (Rinsate), SE (Sediment)

Additional Comments: **FedEx tracking 3738 3171 7376**

REPORT REQUIREMENTS:

- I. Routine Report. Method Blank, Surrogate, as required
- II. Report Dup., MS, MSD as required
- III. CLP Like Summary (no raw data)
- IV. Data Validation Report
- V. EDD

Relinquished by: (Print/Signature/Affiliation)
Amy Dahl / Amy Dahl / AECOM
 Date: 4/20/15 Time: 1415

Relinquished by: (Print/Signature/Affiliation)
 Date: _____ Time: _____

Relinquished by: (Print/Signature/Affiliation)
 Date: _____ Time: _____

Received by: (Print/Signature/Affiliation)
Smith / ALS
 Date: 4/21/15 Time: 0900

Received by: (Print/Signature/Affiliation)
 Date: _____ Time: _____

Received by: (Print/Signature/Affiliation)
 Date: _____ Time: _____

K1503981 @ 4/23/15

RINSATE BLANKS
CHAIN-OF-CUSTODY RECORD

DATE 4/16/15
PAGE 1 OF 2



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SR # / LAB USE ONLY

LABORATORY CLIENT Teck American Incorporated		CLIENT PROJECT NAME / NUMBER Boasburg Soil/Sediment		P.O. NO. UCR-CAS-D21-14																																																																																											
ADDRESS 501 N. Riverpoint Blvd Ste 300, Spokane, WA 99202		PROJECT CONTACT Dave Enos, Teck American Incorporated		SPT# Dave Enos, Teck American Incorporated																																																																																											
TEL 509-623-4606	FAX 509-795-9599	E-MAIL dave.enos@teck.com		TEMPERATURE UPON RECEIPT _____ °C																																																																																											
RECOM CONTACT Christine Gebel		REQUESTED ANALYSES		HOLDING TIME REQUIREMENTS																																																																																											
ADDRESS 1601 4th Avenue, Suite 1400, Seattle, WA 98101		<table border="1"> <tr> <th rowspan="2">CLIENT SAMPLE ID</th> <th rowspan="2">ALS LAB ID (Lab Use Only)</th> <th colspan="2">SAMPLING</th> <th rowspan="2">MATRIX TYPE</th> <th rowspan="2">NO. OF CONTAINERS</th> <th rowspan="2">TAL Metals*</th> <th rowspan="2">Comments</th> </tr> <tr> <th>DATE</th> <th>TIME</th> </tr> <tr> <td>1</td> <td>UDU-01-ER-A-20150414</td> <td>4/14/15</td> <td>1915</td> <td>FB</td> <td>1</td> <td><input checked="" type="checkbox"/></td> <td></td> </tr> <tr> <td>2</td> <td>UDU-01-ER-B-20150415</td> <td>4/15/15</td> <td>1130</td> <td>FB</td> <td>1</td> <td><input checked="" type="checkbox"/></td> <td></td> </tr> <tr> <td>3</td> <td>UDU-01-ER-A-20150415</td> <td>4/15/15</td> <td>1755</td> <td>FB</td> <td>1</td> <td><input checked="" type="checkbox"/></td> <td></td> </tr> <tr> <td>4</td> <td>UDU-01-ER-B-20150416</td> <td>4/16/15</td> <td>1305</td> <td>FB</td> <td>1</td> <td><input checked="" type="checkbox"/></td> <td></td> </tr> <tr> <td>5</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td><input type="checkbox"/></td> <td></td> </tr> <tr> <td>6</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td><input type="checkbox"/></td> <td></td> </tr> <tr> <td>7</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td><input type="checkbox"/></td> <td></td> </tr> <tr> <td>8</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td><input type="checkbox"/></td> <td></td> </tr> <tr> <td>9</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td><input type="checkbox"/></td> <td></td> </tr> <tr> <td>10</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td><input type="checkbox"/></td> <td></td> </tr> </table>		CLIENT SAMPLE ID	ALS LAB ID (Lab Use Only)	SAMPLING		MATRIX TYPE	NO. OF CONTAINERS	TAL Metals*	Comments	DATE	TIME	1	UDU-01-ER-A-20150414	4/14/15	1915	FB	1	<input checked="" type="checkbox"/>		2	UDU-01-ER-B-20150415	4/15/15	1130	FB	1	<input checked="" type="checkbox"/>		3	UDU-01-ER-A-20150415	4/15/15	1755	FB	1	<input checked="" type="checkbox"/>		4	UDU-01-ER-B-20150416	4/16/15	1305	FB	1	<input checked="" type="checkbox"/>		5						<input type="checkbox"/>		6						<input type="checkbox"/>		7						<input type="checkbox"/>		8						<input type="checkbox"/>		9						<input type="checkbox"/>		10						<input type="checkbox"/>		EPA 6020A / Metals - 180 Days EPA 6010C / Metals - 180 Days EPA 7470A / Mercury - 28 Days	
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Relinquished by: (Print/Signature/Title) Jmy Dake / amy dake / recom / URS	Date 4/16/15	Time 1430	Received by: (Print/Signature/Title)	Date	Time																																																																																										
Relinquished by: (Print/Signature/Title)	Date	Time	Received by: (Print/Signature/Title)	Date	Time																																																																																										
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4/23/15



Cooler Receipt and Preservation Form

Client / Project: TECK AMERICAN Service Request K15 03981
Received: 4/21/15 Opened: 4/21/15 By: AD Unloaded: 4/21/15 By: AD

- 1. Samples were received via? Mail Fed Ex UPS DHL PDX Courier Hand Delivered
- 2. Samples were received in: (circle) Cooler Box Envelope Other NA
- 3. Were custody seals on coolers? NA If yes, how many and where? 2 Side (front)
If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	NA	Filed
0.0	0.0	0.7	0.7	0.0	337	NA	8138 8171 7876		

- 4. Packing material: Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves
- 5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
- 6. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* NA Y N
- 7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
- 8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA Y N
- 9. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
- 10. Were the pH-preserved bottles (see SMO-GEN SOP) received at the appropriate pH? *Indicate in the table below* NA Y N
- 11. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
- 12. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions:



Environmental

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RINSATE BLANKS
CHAIN-OF-CUSTODY RECORD

DATE 4/21/15
PAGE 2 OF 2

SR # / LAB USE ONLY
V1503981

LABORATORY CLIENT Teck American Incorporated						CLIENT PROJECT NAME / NUMBER Bossburg Soil/Sediment						P.O. NO. UCR-CAS-D21-14																																																																
ADDRESS 501 N. Riverpoint Blvd Ste 300, Spokane, WA 99202						PROJECT CONTACT Dave Enos, Teck American Incorporated						B# To Dave Enos, Teck American Incorporated																																																																
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1	V0U-04-ER-B			4/20/15	1231	FB		1		<input checked="" type="checkbox"/>																																																																		
2	V0U-02-ER-C			4/20/15	1800	FB		1		<input checked="" type="checkbox"/>																																																																		
3	SDU-01-ER-A			4/20/15	1755	FB		1		<input checked="" type="checkbox"/>																																																																		
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Additional Comments: <u>FedEx Tracking 8738 8171 7740</u>						<input type="checkbox"/> I. Routine Report. Method Blank, Surrogate, as required <input type="checkbox"/> II. Report Dup., MS, MSD as required <input type="checkbox"/> III. CLP Like Summary (no raw data) <input checked="" type="checkbox"/> IV. Data Validation Report <input checked="" type="checkbox"/> V. EDD																																																																						
Relinquished by (Print/Signature/Affiliation) <u>Amy Dahl / AECOM</u>		Date <u>4/21/15</u>		Time <u>1415</u>		Received by (Print/Signature/Affiliation) <u>Dave Enos ALS</u>		Date <u>4-22-15</u>		Time <u>1010</u>																																																																		
Relinquished by (Print/Signature/Affiliation)		Date		Time		Received by (Print/Signature/Affiliation)		Date		Time																																																																		
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Cooler Receipt and Preservation Form

Client / Project: Teck America (AECOM) Service Request K15 0981
Received: 4 22 15 Opened: 4 22 15 By: DW Unloaded: 4 22 15 By: BW

- 1. Samples were received via? Mail (Fed Ex) UPS DHL PDX Courier Hand Delivered
2. Samples were received in: (circle) Cooler Envelope Other
3. Were custody seals on coolers? NA Y N If yes, how many and where? 3 2 Sides / 1 Front
If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Table with 7 columns: Raw Cooler Temp, Corrected Cooler Temp, Raw Temp Blank, Corrected Temp Blank, Corr. Factor, Thermometer ID, Cooler/COC ID, Tracking Number, NA, Filed. Row 1: -06 -06, 1.3, 1.2, -01, 316, NA, 8738-8171-7740, NA, NA.

- 4. Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves
5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
6. Did all bottles arrive in good condition (unbroken)? Indicate in the table below. NA Y N
7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
8. Did all sample labels and tags agree with custody papers? Indicate major discrepancies in the table on page 2. NA Y N
9. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
10. Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? Indicate in the table below. NA Y N
11. Were VOA vials received without headspace? Indicate in the table below. NA Y N
12. Was C12/Res negative? NA Y N

Table with 2 columns: Sample ID on Bottle, Sample ID on COC, Identified by.

Table with 7 columns: Sample ID, Bottle Count Bottle Type, Out of Head-space, Broke, pH, Reagent, Volume added, Reagent Lot Number, Initials, Time.

Notes, Discrepancies, & Resolutions:

W1503981

RINSATE BLANKS
CHAIN-OF-CUSTODY RECORD

DATE: 4/22/15
PAGE: 2 OF 2



Environmental

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SR # / LAB USE ONLY

LABORATORY CLIENT: Teck American Incorporated						CLIENT PROJECT NAME / NUMBER: Bossburg Soil/Sediment			P.O. NO.: UCR-CAS-D21-14		
ADDRESS: 501 N. Riverpoint Blvd Ste 300, Spokane, WA 99202						PROJECT CONTACT: Dave Enos, Teck American Incorporated			By To: Dave Enos, Teck American Incorporated		
TEL: 509-623-4505		Call: 509-795-9599		E-MAIL: dave.enos@teck.com		SAMPLER(S): (PRINT and SIGNATURE) ALD / DC / DL			TEMPERATURE UPON RECEIPT: _____ °C		
AECOM CONTACT: Christine Gebel						REQUESTED ANALYSES					
ADDRESS: 1501 4th Avenue, Suite 1400, Seattle, WA 98101						HOLDING TIME REQUIREMENTS					
TEL: 206-438-2103		Fax: 866-495-5288		E-MAIL: christine.gebel@aecom.com		EPA 6020A / Metals - 180 Days EPA 6010C / Metals - 180 Days EPA 7470A / Mercury - 28 Days					
TURNAROUND TIME: <input type="radio"/> SAME DAY <input type="radio"/> 24 HR <input type="radio"/> 48 HR <input type="radio"/> 72 HR <input checked="" type="radio"/> Standard						TAL Metals*					
SPECIAL INSTRUCTIONS: *TAL Metals: Metals by EPA 6020A: Al, Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Mn, Ni, Se, Ag, Ti, V, Zn Metals by EPA 6010C: Ca, Fe, Mg, K, Na Mercury by EPA 7470A						Comments					
CLIENT SAMPLE ID		ALS LAB ID (Lab Use Only)		SAMPLING		MATRIX* TYPE	NO. OF CONTAINERS	TAL Metals*			
				DATE	TIME						
1	SDU-01-ER-B-20150421			4/21/15	1500	FB	1	<input checked="" type="checkbox"/>			
2	SDU-02-ER-A-20150421			4/21/15	1720	FB	1	<input checked="" type="checkbox"/>			
3	SDU-03-ER-B-20150422			4/22/15	1012	FB	1	<input checked="" type="checkbox"/>			
4								<input type="checkbox"/>			
5								<input type="checkbox"/>			
6								<input type="checkbox"/>			
7								<input type="checkbox"/>			
8								<input type="checkbox"/>			
9								<input type="checkbox"/>			
10								<input type="checkbox"/>			

*Matrix Type: FB (Field Blank), PW (Porewater), R (Rinsate), SE (Sediment)

Additional Comments: *Fedex tracking 8738 8171 7730*

REPORT REQUIREMENTS:

- I. Routine Report: Method Blank, Surrogate, as required
- II. Report Dup., MS, MSD as required
- III. CLP Like Summary (no raw data)
- IV. Data Validation Report
- V. EDD

Relinquished by: (Print/Signature/Affiliation) <i>Amy Dahl / Amy Dahl / Aecom</i>	Date	<i>4/22/15</i>	Time	<i>1415</i>	Received by: (Print/Signature/Affiliation) <i>Les Kennedy ALS</i>	Date	<i>4/24/15</i>	Time	<i>1000</i>
Relinquished by: (Print/Signature/Affiliation)	Date		Time		Received by: (Print/Signature/Affiliation)	Date		Time	
Relinquished by: (Print/Signature/Affiliation)	Date		Time		Received by: (Print/Signature/Affiliation)	Date		Time	



PC Christian

Cooler Receipt and Preservation Form

Client / Project: TACK Service Request K15 03981

Received: 4/24/15 Opened: 4/24/15 By: UC Unloaded: 4/24/15 By: UC

- 1. Samples were received via? Mail Fed Ex UPS DHL PDX Courier Hand Delivered
- 2. Samples were received in: (circle) Cooler Box Envelope Other _____ NA
- 3. Were custody seals on coolers? NA Y N If yes, how many and where? 1 front, 2-side
- If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	NA	Filed
-0.7	-0.8	0.5	0.4	-0.1	359	NA	8738 8171 7730		

- 4. Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves
- 5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
- 6. Did all bottles arrive in good condition (unbroken)? Indicate in the table below. NA Y N
- 7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
- 8. Did all sample labels and tags agree with custody papers? Indicate major discrepancies in the table on page 2. NA Y N
- 9. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
- 10. Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? Indicate in the table below. NA Y N
- 11. Were VOA vials received without headspace? Indicate in the table below. NA Y N
- 12. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count	Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: _____



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 www.alsglobal.com

SOIL - ICS
 CHAIN-OF-CUSTODY RECORD

DATE: 4/17/15
 PAGE: 1 OF 1

SR # / LAB USE ONLY

LABORATORY CLIENT Teck American Incorporated				CLIENT PROJECT NAME / NUMBER Bossburg Soil/Sediment				P.O. NO. UCR-CAS-D21-14													
ADDRESS 501 N. Riverpoint Blvd Ste 300, Spokane, WA 99202				PROJECT CONTACT Dave Enos, Teck American Incorporated				Bd To Dave Enos, Teck American Incorporated													
TEL 509-623-4505		Cell 509-795-9599		E-MAIL dave_enos@teck.com		SAMPLER(S) (PRINT and SIGNATURE)				TEMPERATURE UPON RECEIPT _____ °C											
AECOM CONTACT Christine Gebel				REQUESTED ANALYSES				HOLDING TIME REQUIREMENTS													
ADDRESS 1501 4th Avenue, Suite 1400, Seattle, WA 98101																					
TEL 206-438-2103		Fax 866-495-5288		E-MAIL christine.gebel@aecom.com		<input type="checkbox"/> < 2 mm <input type="checkbox"/> < 150 µm <input type="checkbox"/> Whole Sed.		EPA 6020A / Metals - 180 Days EPA 6010C / Metals - 180 Days EPA 7471B / Mercury - 28 Days Percent Moisture - 180 Days pH - 7 Days TOC - 28 Days IVBA - 180 Days Grain Size - 180 Days EPA 9080 / CEC - 14 Days													
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CLIENT SAMPLE ID		ALS LAB ID (Lab Use Only)										SAMPLING DATE TIME		MATRIX* TYPE		NO. OF CONTAINERS					
1	UPU-02 UPU-02-1CS			4/17/15	0830	Soil	2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	no splits
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3								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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6								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
9								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
10								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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Relinquished by: (Print/Signature/Affiliation) Amy Dahi / Amy Dahi / Aecom / URS		Date 4/17/15		Time 1430		Received By: (Print/Signature/Affiliation) ALS		Date 4/18/15		Time 0900											
Relinquished by: (Print/Signature/Affiliation)		Date		Time		Received by: (Print/Signature/Affiliation)		Date		Time											
Relinquished by: (Print/Signature/Affiliation)		Date		Time		Received by: (Print/Signature/Affiliation)		Date		Time											

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DATE: 4/16/15
PAGE: 1 OF 1



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9						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																																																																																																																																																																																					
10						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																																																																																																																																																																																					
*Matrix Type: FB (Field Blank), PW (Porewater), R (Rinsate), SE (Sediment)					REPORT REQUIREMENTS:																																																																																																																																																																																														
Additional Comments: FedEx tracking # 8733 9171 7604					<input type="checkbox"/> I. Routine Report: Method Blank, Surrogate, as required <input type="checkbox"/> II. Report Dup., MS, MSD as required <input type="checkbox"/> III. CLP Like Summary (no raw data) <input checked="" type="checkbox"/> IV. Data Validation Report <input checked="" type="checkbox"/> V. EDD																																																																																																																																																																																														
					Relinquished by: (Print/Signature/Affiliation) Amey Dant / Amy Dant / AECOM/URS		Date 4/16/15		Time 1430		Received by: (Print/Signature/Affiliation) SWOLF Ben / ALS		Date 4/17/15		Time 0900																																																																																																																																																																																				
Relinquished by: (Print/Signature/Affiliation)		Date		Time		Received by: (Print/Signature/Affiliation)		Date		Time																																																																																																																																																																																									
Relinquished by: (Print/Signature/Affiliation)		Date		Time		Received by: (Print/Signature/Affiliation)		Date		Time																																																																																																																																																																																									



PC Christian

Cooler Receipt and Preservation Form

Client / Project: Teck Am Service Request K15 03988

Received: 4/7/15 Opened: 4/7/15 By: [Signature] Unloaded: 4/7/15 By: [Signature]

1. Samples were received via? Mail Fed Ex UPS DHL PDX Courier Hand Delivered

2. Samples were received in: (circle) Cooler Box Envelope Other NA

3. Were custody seals on coolers? NA Y N If yes, how many and where? 2 sides

If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	NA	Filed
-0.3	-0.2	3.0	3.1	10.1	361	NA	8738 8717601		

4. Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves

- Were custody papers properly filled out (ink, signed, etc.)? NA Y N
- Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* NA Y N
- Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
- Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA Y N
- Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
- Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? *Indicate in the table below* NA Y N
- Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
- Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions:



PC JCA

Cooler Receipt and Preservation Form

Client / Project: TRK Service Request K15 03982
 Received: 4/18/15 Opened: 4/18/15 By: [Signature] Unloaded: 4/18/15 By: [Signature]

1. Samples were received via? **Mail** **Fed Ex** **UPS** **DHL** **PDX** **Courier** **Hand Delivered**
2. Samples were received in: (circle) **Cooler** **Box** **Envelope** **Other** NA
3. Were custody seals on coolers? **NA** **Y** **N** If yes, how many and where? 1 SIDE FRONT
- If present, were custody seals intact? **Y** **N** If present, were they signed and dated? **Y** **N**

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	NA	Filed
0.5	0.4	1.8	1.7	-0.1	325	NA	873881717784		
1.7	1.7	2.6	2.6	0	348		873881717773		

4. Packing material: **Inserts** **Baggies** **Bubble Wrap** **Gel Packs** **Wet Ice** **Dry Ice** **Sleeves**
5. Were custody papers properly filled out (ink, signed, etc.)? **NA** **Y** **N**
6. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* **NA** **Y** **N**
7. Were all sample labels complete (i.e analysis, preservation, etc.)? **NA** **Y** **N**
8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* **NA** **Y** **N**
9. Were appropriate bottles/containers and volumes received for the tests indicated? **NA** **Y** **N**
10. Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? *Indicate in the table below* **NA** **Y** **N**
11. Were VOA vials received without headspace? *Indicate in the table below.* **NA** **Y** **N**
12. Was C12/Res negative? **NA** **Y** **N**

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: _____



PCChristian

Cooler Receipt and Preservation Form

Client / Project: TECK AMERICAN Service Request K15 03982
 Received: 4/21/15 Opened: 4/21/15 By: KB Unloaded: 4/21/15 By: KB

1. Samples were received via? **Mail** **Fed Ex** **UPS** **DHL** **PDX** **Courier** **Hand Delivered** **NA**
2. Samples were received in: (circle) **Cooler** **Box** **Envelope** **Other** **NA**
3. Were custody seals on coolers? **NA** **Y** **N** If yes, how many and where? 2, side 1, FRONT
- If present, were custody seals intact? **Y** **N** If present, were they signed and dated? **Y** **N**

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	NA	Filed
-3	-1	1.7	1.9	+2	308	NA	8738 8171 7762	NA	

4. Packing material: **Inserts** **Baggies** **Bubble Wrap** **Gel Packs** **Wet Ice** **Dry Ice** **Sleeves** **NA** **Y** **N**
5. Were custody papers properly filled out (ink, signed, etc.)? **NA** **Y** **N**
6. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* **NA** **Y** **N**
7. Were all sample labels complete (i.e analysis, preservation, etc.)? **NA** **Y** **N** **N** *
8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* **NA** **Y** **N**
9. Were appropriate bottles/containers and volumes received for the tests indicated? **NA** **Y** **N**
10. Were the pH-preserved bottles (see *SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* **NA** **Y** **N**
11. Were VOA vials received without headspace? *Indicate in the table below.* **NA** **Y** **N**
12. Was C12/Res negative? **NA** **Y** **N**

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Out of Head-Temp space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: Client wrote 17 for the year; lagged as '15.



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SOIL - ICS
CHAIN-OF-CUSTODY RECORD

DATE 4/20/15
PAGE 1 OF 1

SR # / LAB USE ONLY
V1503982

LABORATORY CLIENT Teck American Incorporated						CLIENT PROJECT NAME / NUMBER Bossburg Soil/Sediment						P.O. NO. UCR-CAS-D21-14											
ADDRESS 501 N. Riverpoint Blvd Ste 300, Spokane, WA 99202						PROJECT CONTACT Dave Enos, Teck American Incorporated						B# To Dave Enos, Teck American Incorporated											
TEL 509-623-4505		Cell 509-795-9599		E-MAIL dave.enos@teck.com		SAMPLER(S) (PRINT and SIGNATURE) <i>Ken Yang + Amy Dahl</i>						TEMPERATURE UPON RECEIPT _____ °C											
AECOM CONTACT Christine Gebel						REQUESTED ANALYSES						HOLDING TIME REQUIREMENTS EPA 6020A / Metals - 180 Days EPA 6010C / Metals - 180 Days EPA 7471B / Mercury - 28 Days Percent Moisture - 180 Days pH - 7 Days TOC - 28 Days IVBA - 180 Days Grain Size - 180 Days EPA 9080 / CEC - 14 Days											
ADDRESS 1501 4th Avenue, Suite 1400, Seattle, WA 98101																							
TEL 206-438-2103		Fax 866-495-5288		E-MAIL christine.gebel@aecom.com		< 2 mm		< 150 µm		Whole Sed.													
TURNAROUND TIME <input type="radio"/> SAME DAY <input type="radio"/> 24 HR <input type="radio"/> 48 HR <input type="radio"/> 72 HR <input checked="" type="radio"/> Standard						TAL* Metals		% Moisture / EPA 160.3		PH / EPA 9045D				TOC / ASTM D4129-05		CEC / EPA 9080		TAL Metals*		IVBA / Ruby Extr. EPA 6020A		Grain Size / PESP	
SPECIAL INSTRUCTIONS *TAL Metals: Metals by EPA 6020A: Al, Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Mn, Ni, Se, Ag, Ti, V, Zn Metals by EPA 6010C: Ca, Fe, Mg, K, Na Mercury by EPA 7471B IVBA: As & Pb by EPA 6020A						CLIENT SAMPLE ID		ALS LAB ID (Lab Use Only)		SAMPLING DATE TIME		MATRIX TYPE		NO. OF CONTAINERS		Comments							
1		VDU-03-ICS				4/19/17 1010		Soil		1		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		EPA split	
2		VDU-04-ICS-A				4/19/17 1739		Soil		1		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>			
3												<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>			
4												<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>			
5												<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>			
6												<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>			
7												<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>			
8												<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>			
9												<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>			
10												<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>			
*Matrix Type: FB (Field Blank), PW (Porewater), R (Rinsate), SE (Sediment)						REPORT REQUIREMENTS:																	
Additional Comments: FedEx Tracking 9738 8171 7767						<input type="checkbox"/> I. Routine Report. Method Blank. Surrogate, as required																	
						<input type="checkbox"/> II. Report Dup., MS, MSD as required																	
						<input type="checkbox"/> III. CLP Like Summary (no raw data)																	
						<input checked="" type="checkbox"/> IV. Data Validation Report																	
						<input checked="" type="checkbox"/> V. EDD																	
Relinquished by: (Print/Signature/Affiliation) <i>Amy Dahl / Amy Dahl / AECOM</i>		Date <u>4/20/15</u>		Time <u>1415</u>		Received by: (Print/Signature/Affiliation) <i>Smith</i>		Date <u>4/21/15</u>		Time <u>0920</u>													
Relinquished by: (Print/Signature/Affiliation)		Date		Time		Received by: (Print/Signature/Affiliation)		Date		Time													
Relinquished by: (Print/Signature/Affiliation)		Date		Time		Received by: (Print/Signature/Affiliation)		Date		Time													



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SOIL - ICS
 CHAIN-OF-CUSTODY RECORD

DATE 4/21/15

PAGE 1 OF 1

SR # / LAB USE ONLY

LABORATORY CLIENT Teck American Incorporated							CLIENT PROJECT NAME / NUMBER Bossburg Soil/Sediment					P.O. NO. UCR-CAS-D21-14												
ADDRESS 501 N. Riverpoint Blvd Ste 300, Spokane, WA 99202							PROJECT CONTACT Dave Enos, Teck American Incorporated					B# To Dave Enos, Teck American Incorporated												
TEL 509-623-4505		Cell 509-795-9599		E-MAIL dave.enos@teck.com			SAMPLER(S) (PRINT and SIGNATURE) <i>Ken Yang Amy Dahl</i>					TEMPERATURE UPON RECEIPT _____ °C												
AECOM CONTACT Christine Gebel							REQUESTED ANALYSES					HOLDING TIME REQUIREMENTS												
ADDRESS 1501 4th Avenue, Suite 1400, Seattle, WA 98101																								
TEL 206-438-2103		Fax 866-495-5288		E-MAIL christine.gebel@aecom.com			< 2 mm		< 150 µm		Whole Sed.													
TURNAROUND TIME <input type="radio"/> SAME DAY <input type="radio"/> 24 HR <input type="radio"/> 48 HR <input type="radio"/> 72 HR <input checked="" type="radio"/> Standard							TAL* Metals		% Moisture / EPA 160.3		pH / EPA 9045D		TOC / ASTM D4129-05		CEC / EPA 9080		TAL Metals*		IVBA / Ruby Extr. EPA 6020A		Grain Size / PESP		ISM	
SPECIAL INSTRUCTIONS *TAL Metals: Metals by EPA 6020A: Al, Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Mn, Ni, Se, Ag, Tl, V, Zn Metals by EPA 6010C: Ca, Fe, Mg, K, Na Mercury by EPA 7471B IVBA: As & Pb by EPA 6020A							EPA 6020A / Metals - 180 Days		EPA 6010C / Metals - 180 Days		EPA 7471B / Mercury - 28 Days		Percent Moisture - 180 Days		pH - 7 Days		TOC - 28 Days		IVBA - 180 Days		Grain Size - 180 Days		EPA 9080 / CEC - 14 Days	
CLIENT SAMPLE ID		ALS LAB ID (Lab Use Only)		SAMPLING DATE		TIME	MATRIX* TYPE	NO. OF CONTAINERS											Comments					
1	V0V-04-1CS-B	13,14,15	4/21/15	0757	Soil	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	no splits				
2	V0V-04-1CS-C	16,17,18	4/21/15	0818	Soil	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	no splits				
3							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
4							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
5							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
6							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
7							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
8							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
9							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
10							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
*Matrix Type: FB (Field Blank), PW (Porewater), R (Rinsate), SE (Sediment)							REPORT REQUIREMENTS:																	
Additional Comments: <i>FedEx Tracking 8738 8171 7751</i>							<input type="checkbox"/> I. Routine Report. Method Blank. Surrogate, as required <input type="checkbox"/> II. Report Dup., MS, MSD as required <input type="checkbox"/> III. CLP Like Summary (no raw data) <input checked="" type="checkbox"/> IV. Data Validation Report <input checked="" type="checkbox"/> V. EDD																	
Relinquished by: (Print/Signature/Affiliation) <i>Amy Dahl / Amy Dahl / AECOM</i>			Date <i>4/21/15</i>		Time <i>1415</i>		Received by: (Print/Signature/Affiliation) <i>[Signature] ALS</i>			Date <i>4/21/15</i>		Time <i>10:10</i>												
Relinquished by: (Print/Signature/Affiliation)			Date		Time		Received by: (Print/Signature/Affiliation)			Date		Time												
Relinquished by: (Print/Signature/Affiliation)			Date		Time		Received by: (Print/Signature/Affiliation)			Date		Time												



Cooler Receipt and Preservation Form

Client / Project: AECOM

Service Request K15 03982

Received: 4 22 15 Opened: 4 22 15 By: DW

Unloaded: 4 22 15 By: DW

1. Samples were received via? Mail Fed Ex UPS DHL PDX Courier Hand Delivered
2. Samples were received in: (circle) Cooler Box Envelope Other 3 sides front NA
3. Were custody seals on coolers? NA Y N N If yes, how many and where? _____
- If present, were custody seals intact? Y N N If present, were they signed and dated? Y N N

Raw Temp Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	NA	Filed
-03	0.4	2.9	2.8	-01	325	NA	8738-8171-7751		

4. Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves
5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
6. Did all bottles arrive in good condition (unbroken)? Indicate in the table below. NA Y N
7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
8. Did all sample labels and tags agree with custody papers? Indicate major discrepancies in the table on page 2. NA Y N
9. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
10. Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? Indicate in the table below NA Y N
11. Were VOA vials received without headspace? Indicate in the table below. NA Y N
12. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Out of Head- Temp space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: _____



Environmental

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SOIL - ICS
CHAIN-OF-CUSTODY RECORD

DATE: 5/1/15

PAGE: 1 OF 4

SR # / LAB USE ONLY
K1503982

LABORATORY CLIENT: Teck American Incorporated						CLIENT PROJECT NAME / NUMBER: Bossburg Soil/Sediment						P.O. NO.: UCR-CAS-D21-14											
ADDRESS: 501 N. Riverpoint Blvd Ste 300, Spokane, WA 99202						PROJECT CONTACT: Dave Enos, Teck American Incorporated						BILL TO: Dave Enos, Teck American Incorporated											
TEL: 509-623-4505		Cell: 509-795-9599		E-MAIL: dave.enos@teck.com		SAMPLER(S) (PRINT and SIGNATURE): KY/ALD						TEMPERATURE UPON RECEIPT: _____ °C											
AECOM CONTACT: Christine Gebel						REQUESTED ANALYSES						HOLDING TIME REQUIREMENTS											
ADDRESS: 1501 4th Avenue, Suite 1400, Seattle, WA 98101																							
TEL: 206-438-2103		Fax: 866-495-5288		E-MAIL: christine.gebel@aecom.com		< 2 mm		< 150 µm		Whole Sed.		EPA 6020A / Metals - 180 Days EPA 6010C / Metals - 180 Days EPA 7471B / Mercury - 28 Days Percent Moisture - 180 Days pH - 7 Days TOC - 28 Days IVBA - 180 Days Grain Size - 180 Days EPA 9080 / CEC - 14 Days											
TURNAROUND TIME: <input type="radio"/> SAME DAY <input type="radio"/> 24 HR <input type="radio"/> 48 HR <input type="radio"/> 72 HR <input checked="" type="radio"/> Standard																							
SPECIAL INSTRUCTIONS: *TAL Metals: Metals by EPA 6020A: Al, Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Mn, Ni, Se, Ag, Ti, V, Zn Metals by EPA 6010C: Ca, Fe, Mg, K, Na Mercury by EPA 7471B IVBA: As & Pb by EPA 6020A						TAL* Metals		% Moisture / EPA 160.3		pH / EPA 9045D		TOC / ASTM D4129-05		CEC / EPA 9080		TAL Metals*		IVBA / Ruby Ext: EPA 6020A		Grain Size / PESP		ISM	
CLIENT SAMPLE ID						ALS LAB ID (Lab Use Only)		SAMPLING DATE		TIME		MATRIX TYPE		NO. OF CONTAINERS		Comments							
19 1						VDV-05-1CS		5/1/15		0742		Soil		1		no split							
2																							
3																							
4																							
5																							
6																							
7																							
8																							
9																							
10																							
*Matrix Type: FB (Field Blank), PW (Porewater), R (Rinsate), SE (Sediment)						REPORT REQUIREMENTS:						I. Routine Report: Method Blank, Surrogate, as required											
Additional Comments: FedEx Tracking 8738 8171 7821												II. Report Dup., MS, MSD as required											
												III. CLP Like Summary (no raw data)											
												IV. Data Validation Report											
												V. EDD											
Relinquished by: (Print/Signature/Affiliation): Amy Dahl / Amy Dahl / AECOM				Date: 5/1/15		Time: 1415		Received by: (Print/Signature/Affiliation): [Signature] MS				Date: 5/2/15		Time: 0930									
Relinquished by: (Print/Signature/Affiliation)				Date		Time		Received by: (Print/Signature/Affiliation)				Date		Time									
Relinquished by: (Print/Signature/Affiliation)				Date		Time		Received by: (Print/Signature/Affiliation)				Date		Time									



PC Christian

Cooler Receipt and Preservation Form

Client / Project: TECK Service Request K15 03982
 Received: 5/2/15 Opened: 5/2/15 By: [Signature] Unloaded: 5/2/15 By: [Signature]

1. Samples were received via? Mail Fed Ex UPS DHL PDX Courier Hand Delivered
 2. Samples were received in: (circle) Cooler Box Envelope Other NA
 3. Were custody seals on coolers? NA Y N If yes, how many and where? 1 F25
 If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	NA	Filed
0.6	0.4	0.7	0.5	-0.2	352	NA	873881717821		

4. Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves
 5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
 6. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* NA Y N
 7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
 8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA Y N
 9. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
 10. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
 11. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
 12. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count	Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: _____



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K1503982

SOIL - ICS
CHAIN-OF-CUSTODY RECORD

DATE: 5/8/15
PAGE: 1 OF 1

SR # / LAB USE ONLY

LABORATORY CLIENT: Teck American Incorporated						CLIENT PROJECT NAME / NUMBER: Bossburg Soil/Sediment						P.O. NO.: UCR-CAS-D21-14							
ADDRESS: 501 N. Riverpoint Blvd Ste 300, Spokane, WA 99202						PROJECT CONTACT: Dave Enos, Teck American Incorporated						BILL TO: Dave Enos, Teck American Incorporated							
TEL: 509-623-4505		Cell: 509-795-9599		E-MAIL: dave.enos@teck.com		SAMPLER(S): (PRINT and SIGNATURE) AT						TEMPERATURE UPON RECEIPT: _____ °C							
AECOM CONTACT: Christine Gebel						REQUESTED ANALYSES						HOLDING TIME REQUIREMENTS							
ADDRESS: 1501 4th Avenue, Suite 1400, Seattle, WA 98101																			
TEL: 206-438-2103		Fax: 866-495-5288		E-MAIL: christine.gebel@aecom.com		< 2 mm		< 150 µm		Whole Sed.		EPA 6020A / Metals - 180 Days EPA 6010C / Metals - 180 Days EPA 7471B / Mercury - 28 Days Percent Moisture - 180 Days pH - 7 Days TOC - 28 Days IVBA - 180 Days Grain Size - 180 Days EPA 9080 / CEC - 14 Days Comments Field split							
TURNAROUND TIME: <input type="radio"/> SAME DAY <input type="radio"/> 24 HR <input type="radio"/> 48 HR <input type="radio"/> 72 HR <input checked="" type="radio"/> Standard						TAL * Metals		Grain Size / PESP		ISM									
SPECIAL INSTRUCTIONS: *TAL Metals: Metals by EPA 6020A: Al, Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Mn, Ni, Se, Ag, Ti, V, Zn Metals by EPA 6010C: Ca, Fe, Mg, K, Na Mercury by EPA 7471B IVBA: As & Pb by EPA 6020A						TAL * Metals		Grain Size / PESP		ISM									
CLIENT SAMPLE ID		ALS LAB ID (Lab Use Only)		SAMPLING DATE TIME		MATRIX TYPE		NO. OF CONTAINERS		TAL * Metals				Grain Size / PESP		ISM			
1		ODU-06-1CS		22		5/8/15 0738		Soil		2				<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
2														<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	
3														<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	
4														<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	
5														<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	
6														<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	
7												<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>			
8												<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>			
9												<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>			
10												<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>			
*Matrix Type: FB (Field Blank), PW (Porewater), R (Rinsate), SE (Sediment)						REPORT REQUIREMENTS:													
Additional Comments: FedEx tracking 8065 0584 1523						<input type="checkbox"/> I. Routine Report: Method Blank, Surrogate, as required <input type="checkbox"/> II. Report Dup., MS, MSD as required <input type="checkbox"/> III. CLP Like Summary (no raw data) <input checked="" type="checkbox"/> IV. Data Validation Report <input checked="" type="checkbox"/> V. EDD													
Relinquished by: (Print/Signature/Affiliation) Amy Dahl / Amy Dahl / AECOM		Date 5/8/15		Time 0915		Relinquished by: (Print/Signature/Affiliation) [Signature] ALS		Date 5/8/15		Time 0930									
Relinquished by: (Print/Signature/Affiliation)		Date		Time		Relinquished by: (Print/Signature/Affiliation)		Date		Time									
Relinquished by: (Print/Signature/Affiliation)		Date		Time		Relinquished by: (Print/Signature/Affiliation)		Date		Time									



Cooler Receipt and Preservation Form

Client TECK Service Request K15 3992
 Received: 5/9/15 Opened: 5/9/15 By: AN Unloaded: 5/9/15 By: AN

- Samples were received via? Mail Fed Ex UPS DHL PDX Courier Hand Delivered
- Samples were received in: (circle) Cooler Box Envelope Other NA
- Were custody seals on coolers? NA Y N If yes, how many and where? 2 SIDE / FRONT
 If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	NA	Filed
0.4	0.4	1.2	1.2	0	361	<u>NA</u>	837881717854		
1.0	1.0	3.0	3.0	0	360		806505941523		
1.5	1.4	1.7	1.6	-0.1	352		806505941453		

- Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves
- Were custody papers properly filled out (ink, signed, etc.)? NA Y N
- Did all bottles arrive in good condition (unbroken)? Indicate in the table below. NA Y N
- Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
- Did all sample labels and tags agree with custody papers? Indicate major discrepancies in the table on page 2. NA Y N
- Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
- Were the pH-preserved bottles (see SMO-GEN SOP) received at the appropriate pH? Indicate in the table below. NA Y N
- Were VOA vials received without headspace? Indicate in the table below. NA Y N
- Was CI2/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: _____



Environmental

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**SOIL OR SEDIMENT - XRF
 CHAIN-OF-CUSTODY RECORD**

DATE: 5/1/15
 PAGE: 3 OF 4

SR # / LAB USE ONLY
K1503999
K150434/m

LABORATORY CLIENT: Teck American Incorporated						CLIENT PROJECT NAME / NUMBER: Bossburg Soil/Sediment			P.O. NO.: UCR-CAS-D21-14					
ADDRESS: 501 N. Riverpoint Blvd Ste 300, Spokane, WA 99202						PROJECT CONTACT: Dave Enos, Teck American Incorporated			B# To: Dave Enos, Teck American Incorporated					
TEL: 509-623-4505		Cell: 509-795-9599		E-MAIL: dave.enos@teck.com		SAMPLER(S): (PRINT and SIGNATURE) AP			TEMPERATURE UPON RECEIPT: _____ °C					
AECOM CONTACT: Christine Gebel						REQUESTED ANALYSES			HOLDING TIME REQUIREMENTS					
ADDRESS: 1501 4th Avenue, Suite 1400, Seattle, WA 98101														
TEL: 206-438-2103		Fax: 866-495-5288		E-MAIL: christine.gebel@aecom.com		Total Lead / EPA 6020A			EPA 6020A / Total Lead - 180 Days					
TURNAROUND TIME: <input type="radio"/> SAME DAY <input type="radio"/> 24 HR <input type="radio"/> 48 HR <input type="radio"/> 72 HR <input checked="" type="radio"/> Standard														
SPECIAL INSTRUCTIONS:									Comments					
CLIENT SAMPLE ID		ALS LAB ID (Lab Use Only)	SAMPLING DATE TIME		MATRIX TYPE	NO. OF CONTAINERS								
8	1	VDU-05-XRF-01	4/30/15	0952	Soil	1	<input checked="" type="checkbox"/>				no split			
	2						<input type="checkbox"/>							
	3						<input type="checkbox"/>							
	4						<input type="checkbox"/>							
	5						<input type="checkbox"/>							
	6						<input type="checkbox"/>							
	7						<input type="checkbox"/>							
	8						<input type="checkbox"/>							
	9						<input type="checkbox"/>							
	10						<input type="checkbox"/>							
*Matrix Type: FB (Field Blank), PW (Porewater), R (Rinsate), SE (Sediment)						REPORT REQUIREMENTS:								
Additional Comments: FedEx tracking 9738 8171 7821						<input type="checkbox"/> I. Routine Report: Method Blank, Surrogate, as required <input type="checkbox"/> II. Report Dup., MS, MSD as required <input type="checkbox"/> III. CLP Like Summary (no raw data) <input checked="" type="checkbox"/> IV. Data Validation Report <input checked="" type="checkbox"/> V. EDD								
Relinquished by: (Print/Signature/Affiliation) Amy Dahl / Amy Dahl / AECOM			Date: 5/1/15			Time: 1415			Received by: (Print/Signature/Affiliation) [Signature] ALS			Date: 5/2/15		
Relinquished by: (Print/Signature/Affiliation)			Date:			Time:			Received by: (Print/Signature/Affiliation)			Date:		
Relinquished by: (Print/Signature/Affiliation)			Date:			Time:			Received by: (Print/Signature/Affiliation)			Date:		



Cooler Receipt and Preservation Form

Client / Project: TECK Service Request K15 ~~434~~ 3999
 Received: 5/2/15 Opened: 5/2/15 By: [Signature] Unloaded: 5/2/15 By: [Signature]

1. Samples were received via? *Mail* *Fed Ex* *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
 2. Samples were received in: (circle) *Cooler* *Box* *Envelope* *Other* NA
 3. Were custody seals on coolers? NA *Y* *N* If yes, how many and where? 1 F25
 If present, were custody seals intact? *Y* *N* If present, were they signed and dated? *Y* *N*

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	NA	Filed
0.6	0.4	0.7	0.5	-0.2	352	<u>NA</u>	873881717821		

4. Packing material: *Inserts* *Baggies* *Bubble Wrap* *Gel Packs* *Wet Ice* *Dry Ice* *Sleeves* _____
 5. Were custody papers properly filled out (ink, signed, etc.)? NA *Y* *N*
 6. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* NA *Y* *N*
 7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA *Y* *N*
 8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA *Y* *N*
 9. Were appropriate bottles/containers and volumes received for the tests indicated? NA *Y* *N*
 10. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA *Y* *N*
 11. Were VOA vials received without headspace? *Indicate in the table below.* NA *Y* *N*
 12. Was C12/Res negative? NA *Y* *N*

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count	Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: _____



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SOIL OR SEDIMENT - XRF
 CHAIN-OF-CUSTODY RECORD

DATE 4/17/15
 PAGE 1 OF 2

SR # / LAB USE ONLY
K1503999

LABORATORY CLIENT Teck American Incorporated					CLIENT PROJECT NAME / NUMBER Bossburg Soil/Sediment					P.O. NO. UCR-CAS-D21-14									
ADDRESS 501 N. Riverpoint Blvd Ste 300, Spokane, WA 99202										PROJECT CONTACT Dave Enos, Teck American Incorporated					Billed To Dave Enos, Teck American Incorporated				
TEL 509-623-4505			Cell 509-795-9599		E-MAIL dave.enos@teck.com					TEMPERATURE UPON RECEIPT _____ °C									
AECOM CONTACT Christine Gebel										REQUESTED ANALYSES					HOLDING TIME REQUIREMENTS				
ADDRESS 1501 4th Avenue, Suite 1400, Seattle, WA 98101																			
TEL 206-438-2103			Fax 866-495-5288		E-MAIL christine.gebel@aecom.com					EPA 6020A / Total Lead - 180 Days									
TURNAROUND TIME <input type="radio"/> SAME DAY <input type="radio"/> 24 HR <input type="radio"/> 48 HR <input type="radio"/> 72 HR <input checked="" type="radio"/> Standard																			
SPECIAL INSTRUCTIONS																			
CLIENT SAMPLE ID		ALS LAB ID (Lab Use Only)		SAMPLING DATE		SAMPLING TIME		MATRIX TYPE		NO. OF CONTAINERS		Total Lead / EPA 6020A		Comments					
1	VDU-02-XRF-01			4/16/15	1030	Soil			1	<input checked="" type="checkbox"/>				no splits	Time = 10:31				
2	VDV-02-XRF-06			4/16/15	1100	Soil			1	<input checked="" type="checkbox"/>				no splits	Time = 11:28				
3										<input type="checkbox"/>									
4										<input type="checkbox"/>									
5										<input type="checkbox"/>									
6										<input type="checkbox"/>									
7										<input type="checkbox"/>									
8										<input type="checkbox"/>									
9										<input type="checkbox"/>									
10										<input type="checkbox"/>									
*Matrix Type: FB (Field Blank), PW (Porewater), R (Rinsate), SE (Sediment)										REPORT REQUIREMENTS:									
Additional Comments: Fed Ex tracking 8738 9171 7773										<input type="checkbox"/> I. Routine Report Method Blank, Surrogate, as required <input type="checkbox"/> II. Report Dup., MS, MSD as required <input type="checkbox"/> III. CLP Like Summary (no raw data) <input checked="" type="checkbox"/> IV. Data Validation Report <input checked="" type="checkbox"/> V. EDD									
Relinquished by (Print/Signature/Affiliation) Amy Dahl / amy.dahl / AECOM/URS				Date 4/17/15		Time 1430		Received by (Print/Signature/Affiliation) [Signature] ALS				Date 4/18/15		Time 0900					
Relinquished by (Print/Signature/Affiliation)				Date		Time		Received by (Print/Signature/Affiliation)				Date		Time					
Relinquished by (Print/Signature/Affiliation)				Date		Time		Received by (Print/Signature/Affiliation)				Date		Time					



PC Christian

Cooler Receipt and Preservation Form

Client / Project: Treck Ann Service Request K15 03999
 Received: 4/17/15 Opened: 4/17/15 By: [Signature] Unloaded: 4/17/15 By: [Signature]

1. Samples were received via? **Mail** **Fed Ex** **UPS** **DHL** **PDX** **Courier** **Hand Delivered**
2. Samples were received in: (circle) **Cooler** **Box** **Envelope** **Other** NA
3. Were custody seals on coolers? **NA** **Y** **N** If yes, how many and where? one front two sides
- If present, were custody seals intact? **Y** **N** If present, were they signed and dated? **Y** **N**

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	Filed
-0.3	-0.4	1.0	0.9	-0.1	349	NA	8738 8171 7795	NA

4. Packing material: **Inserts** **Baggies** **Bubble Wrap** **Gel Packs** **Wet Ice** **Dry Ice** **Sleeves**
5. Were custody papers properly filled out (ink, signed, etc.)? **NA** **Y** **N**
6. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* **NA** **Y** **N**
7. Were all sample labels complete (i.e analysis, preservation, etc.)? **NA** **Y** **N**
8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* **NA** **Y** **N**
9. Were appropriate bottles/containers and volumes received for the tests indicated? **NA** **Y** **N**
10. Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? *Indicate in the table below* **NA** **Y** **N**
11. Were VOA vials received without headspace? *Indicate in the table below.* **NA** **Y** **N**
12. Was C12/Res negative? **NA** **Y** **N**

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Out of Head- Temp space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: _____



PCJ CH

Cooler Receipt and Preservation Form

Client / Project: TEZK Service Request K15 03999
 Received: 4/18/15 Opened: 4/18/15 By: A Unloaded: 4/18/15 By: A

1. Samples were received via? **Mail** **Fed Ex** **UPS** **DHL** **PDX** **Courier** **Hand Delivered** **NA**
2. Samples were received in: (circle) **Cooler** **Box** **Envelope** **Other** **NA**
3. Were custody seals on coolers? **NA** **N** **Y** **N** If yes, how many and where? 1 SIDE FRONT
- If present, were custody seals intact? **Y** **N** If present, were they signed and dated? **Y** **N**

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	NA	Filed
0.5	0.4	1.8	1.7	-0.1	325	NA	873881717784		
1.7	1.7	2.6	2.6	0	348		873881717773		

4. Packing material: **Inserts** **Baggies** **Bubble Wrap** **Gel Packs** **Wet Ice** **Dry Ice** **Sleeves** **NA** **N**
5. Were custody papers properly filled out (ink, signed, etc.)? **NA** **Y** **N**
6. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* **NA** **Y** **N**
7. Were all sample labels complete (i.e analysis, preservation, etc.)? **NA** **Y** **N**
8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* **NA** **Y** **N**
9. Were appropriate bottles/containers and volumes received for the tests indicated? **NA** **Y** **N**
10. Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? *Indicate in the table below* **NA** **Y** **N**
11. Were VOA vials received without headspace? *Indicate in the table below.* **NA** **Y** **N**
12. Was C12/Res negative? **NA** **Y** **N**

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Out of Temp space	Head- space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: _____



Environmental

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SOIL OR SEDIMENT - XRF
CHAIN-OF-CUSTODY RECORD

DATE 4/20/15
PAGE 2 OF 3

SR # / LAB USE ONLY
W1503999

LABORATORY CLIENT Teck American Incorporated						CLIENT PROJECT NAME / NUMBER Bossburg Soil/Sediment						P.O. NO. UCR-CAS-D21-14																		
ADDRESS 501 N. Riverpoint Blvd Ste 300, Spokane, WA 99202												PROJECT CONTACT Dave Enos, Teck American Incorporated						BILL TO Dave Enos, Teck American Incorporated												
TEL 509-623-4505				Cell 509-795-9599				E-MAIL dave.enos@teck.com				TEMPERATURE UPON RECEIPT _____ °C																		
AECOM CONTACT Christine Gebel												REQUESTED ANALYSES						HOLDING TIME REQUIREMENTS												
ADDRESS 1501 4th Avenue, Suite 1400, Seattle, WA 98101																														
TEL 206-438-2103				Fax 866-495-5288				E-MAIL christine.gebel@aecom.com				EPA 6020A / Total Lead - 180 Days																		
TURNAROUND TIME <input type="radio"/> SAME DAY <input type="radio"/> 24 HR <input type="radio"/> 48 HR <input type="radio"/> 72 HR <input checked="" type="radio"/> Standard																														
SPECIAL INSTRUCTIONS												Total Lead / EPA 6020A						Comments												
CLIENT SAMPLE ID		ALS LAB ID (Lab Use Only)		SAMPLING DATE		SAMPLING TIME		MATRIX TYPE		NO. OF CONTAINERS																				
1	UDU-03-XRF-01			4/16/15	1424	Soil		1																<input checked="" type="checkbox"/>	EPASplit					
2	UDU-03-XRF-02			4/16/15	1301	Soil		1																<input checked="" type="checkbox"/>						
3																								<input type="checkbox"/>						
4																								<input type="checkbox"/>						
5																								<input type="checkbox"/>						
6																								<input type="checkbox"/>						
7																								<input type="checkbox"/>						
8																								<input type="checkbox"/>						
9												<input type="checkbox"/>																		
10												<input type="checkbox"/>																		
*Matrix Type: FB (Field Blank), PW (Porewater), R (Rinsate), SE (Sediment)												REPORT REQUIREMENTS:																		
Additional Comments: FedEx tracking 8738 9171 7876												<input type="checkbox"/> I. Routine Report: Method Blank, Surrogate, as required <input type="checkbox"/> II. Report Dup., MS, MSD as required <input type="checkbox"/> III. CLP Like Summary (no raw data) <input checked="" type="checkbox"/> IV. Data Validation Report <input checked="" type="checkbox"/> V. EDD																		
Relinquished by: (Print/Signature/Affiliation) Amy Dahl / Amy Dahl / AECOM				Date 4/20/15		Time 1415		Received by: (Print/Signature/Affiliation) KSmith / KSmith / ALS				Date 4/21/15		Time 0920																
Relinquished by: (Print/Signature/Affiliation)				Date		Time		Received by: (Print/Signature/Affiliation)				Date		Time																
Relinquished by: (Print/Signature/Affiliation)				Date		Time		Received by: (Print/Signature/Affiliation)				Date		Time																



Cooler Receipt and Preservation Form

Client / Project: TECK AMERICAN Service Request K15 03999
 Received: 4/21/15 Opened: 4/21/15 By: KG Unloaded: 4/21/15 By: KG

1. Samples were received via? Mail Fed Ex UPS DHL PDX Courier Hand Delivered
2. Samples were received in: (circle) Cooler Box Envelope Other NA
3. Were custody seals on coolers? Y N If yes, how many and where? 2 Side, 1 front
- If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	NA	Filed
.0	.0	.7	.7	.0	337	NA	8738 8171 7876	NA	NA

4. Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves
5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
6. Did all bottles arrive in good condition (unbroken)? Indicate in the table below. NA Y N
7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
8. Did all sample labels and tags agree with custody papers? Indicate major discrepancies in the table on page 2. NA Y N
9. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
10. Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? Indicate in the table below NA Y N
11. Were VOA vials received without headspace? Indicate in the table below. NA Y N
12. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions:



Environmental

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K1503999

SOIL OR SEDIMENT - XRF
CHAIN-OF-CUSTODY RECORD

DATE: 5/8/15
PAGE: 1 OF 3

SR # / LAB USE ONLY

LABORATORY CLIENT: **Teck American Incorporated**

ADDRESS: **501 N. Riverpoint Blvd Ste 300, Spokane, WA 99202**

TEL: **509-623-4505** Call: **509-795-9599** E-MAIL: **dave.enos@teck.com**

AECOM CONTACT: **Christine Gebel**

ADDRESS: **1501 4th Avenue, Suite 1400, Seattle, WA 98101**

TEL: **206-438-2103** Fax: **866-495-5288** E-MAIL: **christine.gebel@aecom.com**

TURNAROUND TIME:
 SAME DAY 24 HR 48 HR 72 HR Standard

SPECIAL INSTRUCTIONS:

CLIENT PROJECT NAME / NUMBER: **Bossburg Soil/Sediment**

P.O. NO.: **UCR-CAS-D21-14**

PROJECT CONTACT: **Dave Enos, Teck American Incorporated**

BIT To: **Dave Enos, Teck American Incorporated**

SAMPLER(S) (PRINT and SIGNATURE): **AP/MS**

TEMPERATURE UPON RECEIPT: _____ °C

REQUESTED ANALYSES					HOLDING TIME REQUIREMENTS				
					EPA 6020A / Total Lead - 180 Days				

CLIENT SAMPLE ID	ALS LAB ID (Lab Use Only)	SAMPLING		MATRIX TYPE	NO. OF CONTAINERS	Total Lead / EPA 6020A
		DATE	TIME			
1	SDV-08-XRF-02	5/2/15	0945	SE	1	<input checked="" type="checkbox"/>
2	SDV-09-XRF-R03	5/2/15	1013	SE	1	<input checked="" type="checkbox"/>
3	SDV-09-XRF-01	4/27/15	1028	SE	1	<input checked="" type="checkbox"/>
4	UDV-04-XRF-02	9	4/18/15	SDI	1	<input checked="" type="checkbox"/>
5	UDV-04-XRF-05	10	4/18/15	SDI	1	<input checked="" type="checkbox"/>
6	UDV-04-XRF-R01	11	4/18/15	SDI	1	<input checked="" type="checkbox"/>
7	UDV-06-XRF-05	12	5/6/15	SDI	1	<input checked="" type="checkbox"/>
8						<input type="checkbox"/>
9						<input type="checkbox"/>
10						<input type="checkbox"/>

Comments				
no splits				
no splits				
additional confirmation sample				
↓				
Field split				

*Matrix Type: FB (Field Blank), PW (Porewater), R (Rinsate), SE (Sediment)

Additional Comments:
Fedex tracking 8738 8171 7854

- REPORT REQUIREMENTS:
- I. Routine Report: Method Blank, Surrogate, as required
 - II. Report Dup., MS, MSD as required
 - III. CLP Like Summary (no raw data)
 - IV. Data Validation Report
 - V. EDD

Relinquished by: (Print/Signature/Affiliation) Amy Dahl / Amy Dahl / AECOM	Date 5/8/15	Time 0915
Relinquished by: (Print/Signature/Affiliation)	Date	Time
Relinquished by: (Print/Signature/Affiliation)	Date	Time

Received by: (Print/Signature/Affiliation) [Signature] ALS	Date 5/9/15	Time 0930
Received by: (Print/Signature/Affiliation)	Date	Time
Received by: (Print/Signature/Affiliation)	Date	Time



PC Christian

Cooler Receipt and Preservation Form

Client Teck Service Request K15 03999
 Received: 5/9/15 Opened: 5/9/15 By: AR Unloaded: 5/9/15 By: AR

- Samples were received via? Mail Fed Ex UPS DHL PDX Courier Hand Delivered
- Samples were received in: (circle) Cooler Box Envelope Other _____ NA
- Were custody seals on coolers? NA Y N If yes, how many and where? 2 SIDE / FRONT
 If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	NA	Filed
0.4	0.4	1.2	1.2	0	361	<u>NA</u>	837881717854		
1.0	1.0	3.0	3.0	0	360		806505941523		
1.5	1.4	1.7	1.6	-0.1	352		806505941453		

- Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves
- Were custody papers properly filled out (ink, signed, etc.)? NA Y N
- Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* NA Y N
- Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
- Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA Y N
- Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
- ~~Were the pH preserved bottles (see SMO-GEN-SOP) received at the appropriate pH? *Indicate in the table below*~~ ~~NA~~ ~~Y~~ ~~N~~
- Were VOA vials received without headspace? *Indicate in the table below.* ~~NA~~ ~~Y~~ ~~N~~
- Was Cl2/Res negative? ~~NA~~ ~~Y~~ ~~N~~

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count	Out of	Head	Broke	pH	Reagent	Volume	Reagent Lot	Initials	Time
	Bottle Type	Temp	space				added	Number		

Notes, Discrepancies, & Resolutions: _____

K1504134

SOIL - CORE
CHAIN-OF-CUSTODY RECORD

DATE 4/20/15
PAGE 1 OF 3

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SR # / LAB USE ONLY

LABORATORY CLIENT Teck American Incorporated		CLIENT PROJECT NAME / NUMBER Bossburg Soil/Sediment		P.O. NO. UCR-CAS-D21-14	
ADDRESS 501 N. Riverpoint Blvd Ste 300, Spokane, WA 99202		PROJECT CONTACT Dave Enos, Teck American Incorporated		B# To Dave Enos, Teck American Incorporated	
TEL 509-623-4505	Cell# 509-795-9599	E-MAIL dave.enos@teck.com		TEMPERATURE UPON RECEIPT _____ °C	
AECOM CONTACT Christine Gebel		SAMPLER(S) (PRINT and SIGNATURE) <i>Tony Palmieri</i>		REQUESTED ANALYSES	
ADDRESS 1501 4th Avenue, Suite 1400, Seattle, WA 98101		TEL 206-438-2103		FAX 866-495-5288	
TURNAROUND TIME <input type="radio"/> SAME DAY <input type="radio"/> 24 HR <input type="radio"/> 48 HR <input type="radio"/> 72 HR <input checked="" type="radio"/> Standard		SPECIAL INSTRUCTIONS *TAL Metals: Metals by EPA 6020A: Al, Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Mn, Ni, Se, Ag, Tl, V, Zn Metals by EPA 6010C: Ca, Fe, Mg, K, Na Mercury by EPA 7471B IVBA: As & Pb by EPA 6020A		HOLDING TIME REQUIREMENTS	
CLIENT SAMPLE ID		ALS LAB ID (Lab Use Only)		NO. OF CONTAINERS	
SAMPLING DATE		SAMPLING TIME		MATRIX* TYPE	
1	VDU-01-COR-01-001	4/13/15	0835	Soil	1
2	VDU-01-COR-01-002		0855		1
3	VDU-01-COR-01-003		0911		1
4	VDU-01-COR-02-001		0957		1
5	VDU-01-COR-02-002		0949		2
6	VDU-01-COR-02-003		1002		1
7	VDU-01-COR-03-001		1030		2
8	VDU-01-COR-03-002		1033		1
9	VDU-01-COR-03-003		1037		1
10					
*Matrix Type: FB (Field Blank), PW (Porewater), R (Rinsate), SE (Sediment)		REPORT REQUIREMENTS:			
Additional Comments: <i>Redex + rucking 9738 9171 7876</i>		<input type="checkbox"/> I. Routine Report Method Blank, Surrogate, as required <input type="checkbox"/> II. Report Dup., MS, MSD as required <input type="checkbox"/> III. CLP Like Summary (no raw data) <input checked="" type="checkbox"/> IV. Data Validation Report <input checked="" type="checkbox"/> V. EDD			
Relinquished by: (Print/Signature/Affiliation) <i>Amy Dahl / Amy Dahl / AECOM</i>	Date 4/20/15	Time 1415	Received by: (Print/Signature/Affiliation) <i>KSmith ALS</i>	Date 4/21/15	Time 0920
Relinquished by: (Print/Signature/Affiliation)	Date	Time	Received by: (Print/Signature/Affiliation)	Date	Time
Relinquished by: (Print/Signature/Affiliation)	Date	Time	Received by: (Print/Signature/Affiliation)	Date	Time



Cooler Receipt and Preservation Form

Client / Project: TECK AMERICAN Service Request K15 04137
 Received: 4/21/15 Opened: 4/21/15 By: KG Unloaded: 4/21/15 By: KG

1. Samples were received via? **Mail** **Fed Ex** **UPS** **DHL** **PDX** **Courier** **Hand Delivered**
2. Samples were received in: (circle) **Cooler** **Box** **Envelope** **Other** NA
3. Were custody seals on coolers? **NA** **Y** **N** If yes, how many and where? 2 Side 1 front
- If present, were custody seals intact? **Y** **Y** **N** If present, were they signed and dated? **Y** **N**

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	NA	Filled
.0	.0	.7	.7	.0	337	NA	8138 8171 7876		

4. Packing material: **Inserts** **Baggies** **Bubble Wrap** **Gel Packs** **Wet Ice** **Dry Ice** **Sleeves**
5. Were custody papers properly filled out (ink, signed, etc.)? **NA** **Y** **N**
6. Did all bottles arrive in good condition (unbroken)? **NA** **Y** **N**
7. Were all sample labels complete (i.e analysis, preservation, etc.)? **NA** **Y** **N**
8. Did all sample labels and tags agree with custody papers? **NA** **Y** **N**
9. Were appropriate bottles/containers and volumes received for the tests indicated? **NA** **Y** **N**
10. Were the pH-preserved bottles (see SMO-GEN SOP) received at the appropriate pH? **NA** **Y** **N**
11. Were VOA vials received without headspace? **NA** **Y** **N**
12. Was C12/Res negative? **NA** **Y** **N**

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions:



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Handwritten number: K1504270

SOIL - CORE CHAIN-OF-CUSTODY RECORD

DATE 4/21/15
PAGE 1 OF 2

SR # / LAB USE ONLY

Form containing laboratory client info (Teck American), project name (Bossburg Soil/Sediment), requested analyses, holding time requirements, sample log table, and report requirements.



Cooler Receipt and Preservation Form

Client / Project: Teek America (AECOM)

Service Request K15 04200

Received: 4/22/15 Opened: 4/22/15 By: DW

Unloaded: 4/22/15 By: bu

1. Samples were received via? Mail Fed Ex UPS DHL PDX Courier Hand Delivered

2. Samples were received in: (circle) Cooler Box Envelope Other NA

3. Were custody seals on coolers? NA Y N If yes, how many and where? (3) 2 Sides / 1 Front

If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	NA	Filed
-06	-0.6	1.3	1.2	-0.1	316	NA	8738-8171-7740	NA	

4. Packing material: Insert Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves

- 5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
- 6. Did all bottles arrive in good condition (unbroken)? NA Y N
- 7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
- 8. Did all sample labels and tags agree with custody papers? NA Y N
- 9. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
- 10. Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? NA Y N
- 11. Were VOA vials received without headspace? NA Y N
- 12. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions:



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SR # / LAB USE ONLY

11504331
SEDIMENT
SOIL - ICS
CHAIN-OF-CUSTODY RECORD
DATE 4/22/15
PAGE 1 OF 1

LABORATORY CLIENT Teck American Incorporated				CLIENT PROJECT NAME / NUMBER Boasburg Soil/Sediment				P.O. NO. UCR-CAS-D21-14							
ADDRESS 601 N. Riverpoint Blvd Ste 300, Spokane, WA 99202				PROJECT CONTACT Dave Enos, Teck American Incorporated				DATE Dave Enos, Teck American Incorporated							
TEL 509-623-4505		COR 509-795-9599		E-MAIL dave.enos@teck.com		TEMPERATURE (C/DI RECEIPT) _____ °C									
ACCOM CONTACT Christine Gebel				SAMPLERS, (PRINT AND SIGNATURE) Ken Yang / Amy Dahl				REQUESTED ANALYSES <i>copy to file</i>							
ADDRESS 1601 4th Avenue, Suite 1400, Seattle, WA 98101				HOLDING TIME REQUIREMENTS				EPA 6020A / Metals - 180 Days EPA 6010C / Metals - 180 Days EPA 7471B / Mercury - 28 Days Percent Moisture - 180 Days pH - 7 Days TOC - 28 Days IVBA - 180 Days Grain Size - 180 Days EPA 9080 / CEC - 14 Days							
TEL 206-438-2103		FAX 866-495-6288		E-MAIL christine.gebel@tecom.com		TURNAROUND TIME <input type="radio"/> SAME DAY <input type="radio"/> 24 HR <input type="radio"/> 48 HR <input type="radio"/> 72 HR <input checked="" type="radio"/> Standard									
SPECIAL RESTRICTIONS *TAL Metals: Metals by EPA 6020A: Al, Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Mn, Ni, Se, Ag, Ti, V, Zn Metals by EPA 6010C: Ca, Fe, Mg, K, Na Mercury by EPA 7471B IVBA: As & Pb by EPA 6020A				Requested Analyses Matrix				Holding Time Requirements							
CLIENT SAMPLE ID	ALS LAB ID (Lab Use Only)	SAMPLING		MATRIX	NO. OF CONTAINERS	Requested Analyses Matrix									
		DATE	TIME			TAL Metals	% Moisture / EPA 1003	pH / EPA 9045D	TOC / ASTM D4129-05	IVBA / Fluor Est: EPA 6020A	Grain Size / PESP	ISM	Comments		
1	SDU-01-ICS	4/22/15	0756	SE	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	EPA split
2	SDU-02-ICS-A	4/22/15	1211	SE	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
3						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
9						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
10						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
*Matrix Type: FB (Field Blank), PW (Porewater), R (Rinsate), SE (Sediment)				REPORT REQUIREMENTS:				I. Routine Report, Method Blank, Surrogate, as required							
Additional Comments: FedEx tracking 8738 8171 7729				<input type="checkbox"/>				II. Report Dup., MS, MSD as required							
				<input type="checkbox"/>				III. CLP Like Summary (no raw data)							
				<input checked="" type="checkbox"/>				IV. Data Validation Report							
				<input checked="" type="checkbox"/>				V. EDO							
Requisitioned by: (Print/Signature/Affiliation) Amy Dahl / Amy Dahl / AECOM		Date 4/22/15		Time 1415		Received by: (Print/Signature/Affiliation) Ken Yang / ALS		Date 4/24/15		Time 1000					
Requisitioned by: (Print/Signature/Affiliation)		Date		Time		Received by: (Print/Signature/Affiliation)		Date		Time					
Requisitioned by: (Print/Signature/Affiliation)		Date		Time		Received by: (Print/Signature/Affiliation)		Date		Time					



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SOIL - ICS
CHAIN-OF-CUSTODY RECORD

DATE: 4/22/15
PAGE: 1 OF 1

SR # / LAB USE ONLY

LABORATORY CLIENT: Teck American Incorporated				CLIENT PROJECT NAME / NUMBER: Bossburg Soil/Sediment				P.O. NO.: UCR-CAS-D21-14											
ADDRESS: 501 N. Riverpoint Blvd Ste 300, Spokane, WA 99202				PROJECT CONTACT: Dave Enos, Teck American Incorporated				B# To: Dave Enos, Teck American Incorporated											
TEL: 509-623-4505	Cell 509-795-9599	E-MAIL: dave.enos@teck.com		SAMPLER(S): (PRINT and SIGNATURE) <i>Ken Yang / Amy Dahl</i>				TEMPERATURE UPON RECEIPT: _____ °C											
AECOM CONTACT: Christine Gebel				REQUESTED ANALYSES				HOLDING TIME REQUIREMENTS											
ADDRESS: 1501 4th Avenue, Suite 1400, Seattle, WA 98101																			
TEL: 206-438-2103	Fax 866-495-5288	E-MAIL: christine.gebel@aecom.com		< 2 mm		< 150 µm		Whole Sed.											
TURNAROUND TIME: <input type="radio"/> SAME DAY <input type="radio"/> 24 HR <input type="radio"/> 48 HR <input type="radio"/> 72 HR <input checked="" type="radio"/> Standard				TAL * Metals		% Moisture / EPA 160.3		pH / EPA 9045D											
SPECIAL INSTRUCTIONS: *TAL Metals: Metals by EPA 6020A: Al, Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Mn, Ni, Se, Ag, Ti, V, Zn Metals by EPA 6010C: Ca, Fe, Mg, K, Na Mercury by EPA 7471B IVBA: As & Pb by EPA 6020A				TOC / ASTM D4129-05		CEC / EPA 9080		TAL Metals*											
CLIENT SAMPLE ID				ALS LAB ID (Lab Use Only)		SAMPLING DATE		MATRIX TYPE		NO. OF CONTAINERS		IVBA / Ruby Extr. EPA 6020A		Grain Size / PESP		ISM			
1 SDU-01-ICS						4/22/15 0756		SE		1		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		EPA split	
2 SDU-02-ICS-A						4/22/15 1211		SE		1		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>			
3												<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>			
4												<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>			
5												<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>			
6												<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>			
7												<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>			
8												<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>			
9												<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>			
10												<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>			
*Matrix Type: FB (Field Blank), PW (Porewater), R (Rinsate), SE (Sediment)				REPORT REQUIREMENTS:															
Additional Comments: <i>FedEx tracking 8738 8171 7729</i>				<input type="checkbox"/> I. Routine Report: Method Blank, Surrogate, as required															
				<input type="checkbox"/> II. Report Dup., MS, MSD as required															
				<input type="checkbox"/> III. CLP Like Summary (no raw data)															
				<input checked="" type="checkbox"/> IV. Data Validation Report															
				<input checked="" type="checkbox"/> V. EDD															
Relinquished by: (Print/Signature/Affiliation) <i>Amy Dahl / Amy Dahl / AECOM</i>		Date <i>4/22/15</i>		Time <i>1415</i>		Received by: (Print/Signature/Affiliation) <i>Les Kennedy / ALS</i>		Date <i>4/24/15</i>		Time <i>1000</i>									
Relinquished by: (Print/Signature/Affiliation)		Date		Time		Received by: (Print/Signature/Affiliation)		Date		Time									
Relinquished by: (Print/Signature/Affiliation)		Date		Time		Received by: (Print/Signature/Affiliation)		Date		Time									



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SEDIMENT - ICS
CHAIN-OF-CUSTODY RECORD

SR # / LAB USE ONLY
K1504331
DATE: 4/23/15
PAGE: 1 OF 1

LABORATORY CLIENT: Teck American Incorporated						CLIENT PROJECT NAME / NUMBER: Bossburg Soil/Sediment						P.O. NO.: UCR-CAS-D21-14				
ADDRESS: 501 N. Riverpoint Blvd Ste 300, Spokane, WA 99202						PROJECT CONTACT: Dave Enos, Teck American Incorporated						B# To: Dave Enos, Teck American Incorporated				
TEL: 509-623-4505		Cell: 509-795-9599		E-MAIL: dave.enos@teck.com		SAMPLER(S): (PRINT and SIGNATURE) Amy Dahl						TEMPERATURE UPON RECEIPT: _____ °C				
AECOM CONTACT: Christine Gebel						REQUESTED ANALYSES						HOLDING TIME REQUIREMENTS				
ADDRESS: 1501 4th Avenue, Suite 1400, Seattle, WA 98101																
TEL: 206-438-2103		Fax: 866-495-5288		E-MAIL: christine.gebel@aecom.com		< 2 mm		< 250 µm		Whole Sed.						
TURNAROUND TIME <input type="radio"/> SAME DAY <input type="radio"/> 24 HR <input type="radio"/> 48 HR <input type="radio"/> 72 HR <input checked="" type="radio"/> Standard						TAL Metals*		TOC / ASTM D4129-05		IVBA / Rubby Extr. EPA 6020A		Grain Size / PESP		EPA 6020A / Metals - 180 Days EPA 6010C / Metals - 180 Days EPA 7471B / Mercury - 28 Days Percent Moisture - 180 Days pH - 7 Days TOC - 28 Days IVBA - 180 Days Grain Size - 180 Days Comments Field split no split		
SPECIAL INSTRUCTIONS: *TAL Metals: Metals by EPA 6020A: Al, Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Mn, Ni, Se, Ag, Tl, V, Zn Metals by EPA 6010C: Ca, Fe, Mg, K, Na Mercury by EPA 7471B IVBA: As & Pb by EPA 6020A						% Moisture / EPA 180.3		pH / EPA 9045D		TAL Metals*						
CLIENT SAMPLE ID		ALS LAB ID (Lab Use Only)		SAMPLING DATE TIME		MATRIX* TYPE		NO. OF CONTAINERS		ISM						
7, 8, 9 10, 11, 12	1	SDV-02-1CS-B		4/23/15	0904	SE	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>
	2	SDV-02-1CS-C		4/23/15	1050	SE	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>
	3							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>
	4							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>
	5							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>
	6							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>
	7							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>
	8							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	9							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	10							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
*Matrix Type: FB (Field Blank), PW (Porewater), R (Rinsate), SE (Sediment)						REPORT REQUIREMENTS:										
Additional Comments: FedEx tracking 8738 8171 7718						<input type="checkbox"/> I. Routine Report: Method Blank, Surrogate, as required <input type="checkbox"/> II. Report Dup., MS, MSD as required <input type="checkbox"/> III. CLP Like Summary (no raw data) <input checked="" type="checkbox"/> IV. Data Validation Report <input checked="" type="checkbox"/> V. EDP										
Relinquished by: (Print/Signature/Affiliation) Amy Dahl / AECOM		Date 4/23/15		Time 1430		Received by: (Print/Signature/Affiliation) ALS		Date 4/25/15		Time 0940						
Relinquished by: (Print/Signature/Affiliation)		Date		Time		Received by: (Print/Signature/Affiliation)		Date		Time						
Relinquished by: (Print/Signature/Affiliation)		Date		Time		Received by: (Print/Signature/Affiliation)		Date		Time						



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SEDIMENT - ICS
CHAIN-OF-CUSTODY RECORD

DATE: 4/24/15
PAGE: 1 OF 1

SR # / LAB USE ONLY
K1504331

LABORATORY CLIENT: Teck American Incorporated						CLIENT PROJECT NAME / NUMBER Bossburg Soil/Sediment						P.O. NO.: UCR-CAS-D21-14									
ADDRESS: 501 N. Riverpoint Blvd Ste 300, Spokane, WA 99202						PROJECT CONTACT: Dave Enos, Teck American Incorporated						BR To: Dave Enos, Teck American Incorporated									
TEL: 509-623-4505		Cell: 509-795-9599		E-MAIL: dave.enos@teck.com		SAMPLER(S): (PRINT and SIGNATURE) <i>Amy Dahl</i>						TEMPERATURE UPON RECEIPT: _____ °C									
AECOM CONTACT: Christine Gebel						REQUESTED ANALYSES						HOLDING TIME REQUIREMENTS									
ADDRESS: 1501 4th Avenue, Suite 1400, Seattle, WA 98101																					
TEL: 206-438-2103		Fax: 866-495-5288		E-MAIL: christine.gebel@aecom.com		< 2 mm		< 250 µm		Whole Sed.											
TURNAROUND TIME: <input type="radio"/> SAME DAY <input type="radio"/> 24 HR <input type="radio"/> 48 HR <input type="radio"/> 72 HR <input checked="" type="radio"/> Standard						TAL Metals*		% Moisture / EPA 180.3		PH / EPA 9045D		TOC / ASTM D4129-05		TAL Metals*		IVBA / Ruby Extr. EPA 6020A		Grain Size / PESP		ISM	
SPECIAL INSTRUCTIONS: *TAL Metals: Metals by EPA 6020A: Al, Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Mn, Ni, Se, Ag, Tl, V, Zn Metals by EPA 6010C: Ca, Fe, Mg, K, Na Mercury by EPA 7471B IVBA: As & Pb by EPA 6020A						EPA 6020A / Metals - 180 Days		EPA 6010C / Metals - 180 Days		EPA 7471B / Mercury - 28 Days		Percent Moisture - 180 Days		pH - 7 Days		TOC - 28 Days		IVBA - 180 Days		Grain Size - 180 Days	
CLIENT SAMPLE ID		ALS LAB ID (Lab Use Only)		SAMPLING DATE TIME		MATRIX TYPE		NO. OF CONTAINERS		Comments											
13, 14, 15 16, 17, 18	1	SDV-03-1CS-A		4/24/15	0928	SE	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	EPA split	
	2	SDV-03-1CS-B		4/24/15	0919	SE	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	no splits	
	3							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	4							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	5							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	6							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	7							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	8							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	9							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	10							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
*Matrix Type: FB (Field Blank), PW (Porewater), R (Rinsate), SE (Sediment)						REPORT REQUIREMENTS:															
Additional Comments: FedEx tracking 8738 8171 7707						<input type="checkbox"/> I. Routine Report: Method Blank, Surrogate, as required															
						<input type="checkbox"/> II. Report Dup., MS, MSD as required															
						<input type="checkbox"/> III. CLP Like Summary (no raw data)															
						<input checked="" type="checkbox"/> IV. Data Validation Report															
						<input checked="" type="checkbox"/> V. EDD															
Relinquished by: (Print/Signature/Affiliation) <i>Amy Dahl / amy dahl / AECOM</i>			Date <u>4/24/15</u>			Time <u>1430</u>			Received by: (Print/Signature/Affiliation) <i>Amy Dahl / ALS</i>			Date <u>4/25/15</u>			Time <u>0940</u>						
Relinquished by: (Print/Signature/Affiliation)			Date			Time			Received by: (Print/Signature/Affiliation)			Date			Time						
Relinquished by: (Print/Signature/Affiliation)			Date			Time			Received by: (Print/Signature/Affiliation)			Date			Time						



PC *Christian*

Cooler Receipt and Preservation Form

Client / Project: Teck Service Request K15 04331

Received: 4/24/15 Opened: 4/24/15 By: UA Unloaded: 4/24/15 By: UA

1. Samples were received via? Mail Fed Ex UPS DHL PDX Courier Hand Delivered
2. Samples were received in: (circle) Cooler Box Envelope Other _____ NA
3. Were custody seals on coolers? NA Y N If yes, how many and where? 2 Sides, 1 front
- If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp. Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	NA	Filed
-0.3	-0.1	0.8	1.0	+0.2	323	NA	8738 8171 7729		

4. Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves
5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
6. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* NA Y N
7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA Y N
9. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
10. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
11. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
12. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count	Out of	Head-	Broke	pH	Reagent	Volume	Reagent Lot	Initials	Time
	Bottle Type	Temp	space				added	Number		

Notes, Discrepancies, & Resolutions: _____



Cooler Receipt and Preservation Form

Client / Project: Teck Service Request K15 04331

Received: 4/25/15 Opened: 4/25/15 By: [Signature] Unloaded: 4/25/15 By: [Signature]

- 1. Samples were received via? Mail ~~Fed Ex~~ UPS DHL PDX Courier Hand Delivered
- 2. Samples were received in: (circle) Cooler Box Envelope Other _____ NA
- 3. Were custody seals on coolers? NA Y N If yes, how many and where? 1 FRONT SIDE
- If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	NA	Filed
0.1	0	2.4	2.3	-0.1	358	NA	873881717707		
0.0	0.1	1.6	1.7	0.1	360		873881717718		

- 4. Packing material: Inserts Buggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves _____
- 5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
- 6. Did all bottles arrive in good condition (unbroken)? Indicate in the table below. NA Y N
- 7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
- 8. Did all sample labels and tags agree with custody papers? Indicate major discrepancies in the table on page 2. NA Y N
- 9. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
- 10. Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? Indicate in the table below. NA Y N
- 11. Were VOA vials received without headspace? Indicate in the table below. NA Y N
- 12. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count	Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: _____



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SOIL OR SEDIMENT - XRF
CHAIN-OF-CUSTODY RECORD

DATE: 4/29/15
PAGE: 2 OF 3

SR # / LAB USE ONLY
K1504341

LABORATORY CLIENT: Teck American Incorporated						CLIENT PROJECT NAME / NUMBER: Bossburg Soil/Sediment						P.O. NO.: UCR-CAS-D21-14											
ADDRESS: 501 N. Riverpoint Blvd Ste 300, Spokane, WA 99202												PROJECT CONTACT: Dave Enos, Teck American Incorporated						Billed To: Dave Enos, Teck American Incorporated					
TEL: 509-623-4505				Cell: 509-795-9599				E-MAIL: dave.enos@teck.com				TEMPERATURE UPON RECEIPT: _____ °C											
AECOM CONTACT: Christine Gebel												REQUESTED ANALYSES						HOLDING TIME REQUIREMENTS					
ADDRESS: 1501 4th Avenue, Suite 1400, Seattle, WA 98101																							
TEL: 206-438-2103				Fax: 866-495-5288				E-MAIL: christine.gebel@aecom.com				EPA 6020A / Total Lead - 180 Days											
TURNAROUND TIME: <input type="radio"/> SAME DAY <input type="radio"/> 24 HR <input type="radio"/> 48 HR <input type="radio"/> 72 HR <input checked="" type="radio"/> Standard																							
SPECIAL INSTRUCTIONS:																							
CLIENT SAMPLE ID	ALS LAB ID (Lab Use Only)	SAMPLING		MATRIX TYPE	NO. OF CONTAINERS	Total Lead / EPA 6020A												Comments					
		DATE	TIME																				
1	SDV-05-XRF-R03	4/24/15	1201	SE	1	<input checked="" type="checkbox"/>											reserve for SDV-05-XRF-07						
2	SDV-09-XRF-02	4/27/15	1014		1	<input checked="" type="checkbox"/>											Field split						
3	SDV-09-XRF-04	4/27/15	0946		1	<input checked="" type="checkbox"/>																	
4	SDV-10-XRF-02	4/27/15	0945		1	<input checked="" type="checkbox"/>																	
5	SDV-10-XRF-04	4/27/15	1003	↓	1	<input checked="" type="checkbox"/>																	
6						<input type="checkbox"/>																	
7						<input type="checkbox"/>																	
8						<input type="checkbox"/>																	
9						<input type="checkbox"/>																	
10						<input type="checkbox"/>																	
*Matrix Type: FB (Field Blank), PW (Porewater), R (Rinsate), SE (Sediment)						REPORT REQUIREMENTS:																	
Additional Comments: Fed Ex Tracking 9738 9171 7626						<input type="checkbox"/> I. Routine Report: Method Blank, Surrogate, as required <input type="checkbox"/> II. Report Dup., MS, MSD as required <input type="checkbox"/> III. CLP Like Summary (no raw data) <input checked="" type="checkbox"/> IV. Data Validation Report <input checked="" type="checkbox"/> V. EDD																	
Relinquished by: (Print/Signature/Affiliation) Amy Stahl / Amy Stahl / AECOM				Date: 4/29/15		Time: 1415		Received by: (Print/Signature/Affiliation) [Signature] ALS				Date: 5/1/15		Time: 0940									
Relinquished by: (Print/Signature/Affiliation)				Date:		Time:		Received by: (Print/Signature/Affiliation)				Date:		Time:									
Relinquished by: (Print/Signature/Affiliation)				Date:		Time:		Received by: (Print/Signature/Affiliation)				Date:		Time:									



PC Christian

Cooler Receipt and Preservation Form

Client / Project: Teck American Service Request K15 04341

Received: 4/5/15 Opened: 5/1/15 By: [Signature] Unloaded: 5/1/15 By: [Signature]

- 1. Samples were received via? Mail Fed Ex UPS DHL PDX Courier Hand Delivered
- 2. Samples were received in: (circle) Cooler Box Envelope Other NA
- 3. Were custody seals on coolers? NA Y N If yes, how many and where? 2, Sides 1, Front
- If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr Factor	Thermometer ID	Cooler/COC ID	Tracking Number	NA	Filed
-3	-4	1.2	1.1	-1	350	<u>NA</u>	8738 8171 7626		

- 4. Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves
- 5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
- 6. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* NA Y N
- 7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
- 8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA Y N
- 9. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
- 10. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
- 11. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
- 12. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count	Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: _____

11504341

**SOIL OR SEDIMENT - XRF
CHAIN-OF-CUSTODY RECORD**

DATE: 4/22/15

PAGE: 1 OF 2



Environmental

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SR # / LAB USE ONLY

LABORATORY CLIENT: Teck American Incorporated					CLIENT PROJECT NAME / NUMBER: Bossburg Soil/Sediment			P.O. NO.: UCR-CAS-D21-14	
ADDRESS: 501 N. Riverpoint Blvd Ste 300, Spokane, WA 99202					PROJECT CONTACT: Dave Enos, Teck American Incorporated			BILL TO: Dave Enos, Teck American Incorporated	
TEL: 509-623-4505		Cell: 509-795-9599		E-MAIL: dave.enos@teck.com		SAMPLER(S): (PRINT and SIGNATURE) <i>Eric Lillywhite & Tony Palmieri</i>			TEMPERATURE UPON RECEIPT: _____ °C
AECOM CONTACT: Christine Gebel					REQUESTED ANALYSES			HOLDING TIME REQUIREMENTS	
ADDRESS: 1501 4th Avenue, Suite 1400, Seattle, WA 98101									
TEL: 206-438-2103		Fax: 866-495-5288		E-MAIL: christine.gebel@aecom.com					
TURNAROUND TIME: <input type="radio"/> SAME DAY <input type="radio"/> 24 HR <input type="radio"/> 48 HR <input type="radio"/> 72 HR <input checked="" type="radio"/> Standard								EPA 6020A / Total Lead - 180 Days	
SPECIAL INSTRUCTIONS:									
CLIENT SAMPLE ID	ALS LAB ID (Lab Use Only)	SAMPLING		MATRIX* TYPE	NO. OF CONTAINERS	Total Lead / EPA 6020A			Comments
		DATE	TIME						
1	SDU-01-XRF-03	4/20/15	1415	Soil SE	1	<input checked="" type="checkbox"/>			no splits
2	SDU-01-XRF-04	↓	1355	↓	1	<input checked="" type="checkbox"/>			↓
3	SDU-01-XRF-07	↓	1345	↓	1	<input checked="" type="checkbox"/>			↓
4	SDU-02-XRF-01	4/21/15	0933	SE	1	<input checked="" type="checkbox"/>			EPA split
5						<input type="checkbox"/>			
6						<input type="checkbox"/>			
7						<input type="checkbox"/>			
8						<input type="checkbox"/>			
9						<input type="checkbox"/>			
10						<input type="checkbox"/>			
*Matrix Type: FB (Field Blank), PW (Porewater), R (Rinsate), SE (Sediment)					REPORT REQUIREMENTS:				
Additional Comments: <i>FedEx tracking 8738 8171 7730</i>					<input type="checkbox"/> I. Routine Report: Method Blank, Surrogate, as required <input type="checkbox"/> II. Report Dup., MS, MSD as required <input type="checkbox"/> III. CLP Like Summary (no raw data) <input checked="" type="checkbox"/> IV. Data Validation Report <input checked="" type="checkbox"/> V. EDD				
					Relinquished by: (Print/Signature/Affiliation) <i>Amy Dahl / Amy Dahl / AECOM</i> Date: <i>4/22/15</i> Time: <i>1415</i>				
Relinquished by: (Print/Signature/Affiliation)					Received by: (Print/Signature/Affiliation)				
Relinquished by: (Print/Signature/Affiliation)					Received by: (Print/Signature/Affiliation)				



PC Christian

Cooler Receipt and Preservation Form

Client / Project: TACK Service Request K15 04341

Received: 4/24/15 Opened: 4/24/15 By: UU Unloaded: 4/24/15 By: UU

- 1. Samples were received via? Mail Fed Ex UPS DHL PDX Courier Hand Delivered
- 2. Samples were received in: (circle) Cooler Box Envelope Other _____ NA
- 3. Were custody seals on coolers? NA Y N If yes, how many and where? 1 front, 2-side
 If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	NA	Filed
-0.7	-0.8	0.5	0.4	-0.1	359	<u>NA</u>	8738 8171 7730		

- 4. Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves _____
- 5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
- 6. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* NA Y N
- 7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
- 8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA Y N
- 9. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
- 10. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
- 11. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
- 12. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Out of Temp	Head- space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: _____



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SOIL OR SEDIMENT - XRF
 CHAIN-OF-CUSTODY RECORD

DATE: 5/9/15
 PAGE: 1 OF 3

SR # / LAB USE ONLY
K1904341

LABORATORY CLIENT Teck American Incorporated							CLIENT PROJECT NAME / NUMBER Bossburg Soil/Sediment				P.O. NO. UCR-CAS-D21-14																									
ADDRESS 501 N. Riverpoint Blvd Ste 300, Spokane, WA 99202							PROJECT CONTACT Dave Enos, Teck American Incorporated				B# To Dave Enos, Teck American Incorporated																									
TEL 509-623-4505		Cell 509-795-9599		E-MAIL dave.enos@teck.com			SAMPLER(S) (PRINT and SIGNATURE) AP/MS				TEMPERATURE UPON RECEIPT _____ °C																									
AECOM CONTACT Christine Gebel							REQUESTED ANALYSES				HOLDING TIME REQUIREMENTS																									
ADDRESS 1501 4th Avenue, Suite 1400, Seattle, WA 98101																																				
TEL 206-438-2103		Fax 866-495-5288		E-MAIL christine.gebel@aecom.com			<table border="1"> <tr> <td>Total Lead / EPA 6020A</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td></td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>				Total Lead / EPA 6020A																									
Total Lead / EPA 6020A																																				
TURNAROUND TIME <input type="radio"/> SAME DAY <input type="radio"/> 24 HR <input type="radio"/> 48 HR <input type="radio"/> 72 HR <input checked="" type="radio"/> Standard							<table border="1"> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>																												EPA 6020A / Total Lead - 180 Days	
SPECIAL INSTRUCTIONS							<table border="1"> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>																												Comments	
CLIENT SAMPLE ID		ALS LAB ID (Lab Use Only)	SAMPLING DATE TIME		MATRIX TYPE	NO. OF CONTAINERS																														
1	SDU-08-XRF-02	11	5/2/15	0945	SE	1	<input checked="" type="checkbox"/>						no splits																							
2	SDU-08-XRF-R03	12	5/2/15	1013	SE	1	<input checked="" type="checkbox"/>						no splits																							
3	SDU-09-XRF-01	13	4/27/15	1028	SE	1	<input checked="" type="checkbox"/>						additional confirmation sample																							
4	UDU-04-XRF-02		4/18/15	1233	soil	1	<input checked="" type="checkbox"/>						↓																							
5	UDU-04-XRF-05		4/18/15	1344	soil	1	<input checked="" type="checkbox"/>						↓																							
6	UDU-04-XRF-R01		4/18/15	1203	soil	1	<input checked="" type="checkbox"/>						↓																							
7	UDU-06-XRF-05		5/6/15	1457	soil	1	<input checked="" type="checkbox"/>						Field split																							
8							<input type="checkbox"/>																													
9							<input type="checkbox"/>																													
10							<input type="checkbox"/>																													
*Matrix Type: FB (Field Blank), PW (Porewater), R (Rinsate), SE (Sediment)							REPORT REQUIREMENTS:																													
Additional Comments: Fedex tracking 8738 8171 7854							<input type="checkbox"/> I. Routine Report: Method Blank, Surrogate, as required <input type="checkbox"/> II. Report Dup., MS, MSD as required <input type="checkbox"/> III. CLP Like Summary (no raw data) <input checked="" type="checkbox"/> IV. Data Validation Report <input checked="" type="checkbox"/> V. EDD																													
							Relinquished by: (Print/Signature/Affiliation) Amy Dahl / Amy Dahl / AECOM		Date 5/15/15	Time 0915	Received by: (Print/Signature/Affiliation) [Signature] ALS		Date 5/9/15	Time 0930																						
Relinquished by: (Print/Signature/Affiliation)		Date	Time	Received by: (Print/Signature/Affiliation)		Date	Time																													
Relinquished by: (Print/Signature/Affiliation)		Date	Time	Received by: (Print/Signature/Affiliation)		Date	Time																													



PC JCH

Cooler Receipt and Preservation Form

Client Teck Service Request K15 4341
 Received: 5/9/15 Opened: 5/9/15 By: AK Unloaded: 5/9/15 By: AK

1. Samples were received via? **Mail** **Fed Ex** **UPS** **DHL** **PDX** **Courier** **Hand Delivered**
 2. Samples were received in: (circle) **Cooler** **Box** **Envelope** **Other** NA
 3. Were custody seals on coolers? **NA** **N** If yes, how many and where? 2 SIDE / FRONT
 If present, were custody seals intact? **N** If present, were they signed and dated? **N**

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	NA	Filed
0.4	0.4	1.2	1.2	0	361	NA	837081717854		
1.0	1.0	3.0	3.0	0	360		806505941523		
1.5	1.4	1.7	1.6	-0.1	352		806505941453		

4. Packing material: **Inserts** **Baggies** **Bubble Wrap** **Gel Packs** **Wet Ice** **Dry Ice** **Sleeves**
 5. Were custody papers properly filled out (ink, signed, etc.)? NA **N**
 6. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* NA **N**
 7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA **N**
 8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA **N**
 9. Were appropriate bottles/containers and volumes received for the tests indicated? NA **N**
 10. Were the pH-preserved bottles (see SMO-GEN-SOP) received at the appropriate pH? *Indicate in the table below.* NA **N**
 11. Were VOA vials received without headspace? *Indicate in the table below.* NA **N**
 12. Was C12/Res negative? NA **N**

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count	Out of Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions:



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11504428
**SEDIMENT - CORE
 CHAIN-OF-CUSTODY RECORD**

DATE: 4/27/15
 PAGE: 1 OF 1

SR # / LAB USE ONLY

LABORATORY CLIENT: Teck American Incorporated						CLIENT PROJECT NAME / NUMBER: Bossburg Soil/Sediment						P.O. NO.: UCR-CAS-D21-14								
ADDRESS: 501 N. Riverpoint Blvd Ste 300, Spokane, WA 99202						PROJECT CONTACT: Dave Enos, Teck American Incorporated						BR To: Dave Enos, Teck American Incorporated								
TEL: 509-623-4505		Cell: 509-795-9599		E-MAIL: dave.enos@teck.com		SAMPLER(S): (PRINT and SIGNATURE) AP/ MV						TEMPERATURE UPON RECEIPT: _____ °C								
AECOM CONTACT: Christine Gebel						REQUESTED ANALYSES						HOLDING TIME REQUIREMENTS								
ADDRESS: 1501 4th Avenue, Suite 1400, Seattle, WA 98101																				
TEL: 206-438-2103		Fax: 866-495-5288		E-MAIL: christine.gebel@aecom.com		< 2 mm		< 250 µm		Whole Sed.		EPA 6020A / Metals - 180 Days EPA 6010C / Metals - 180 Days EPA 7471B / Mercury - 28 Days Percent Moisture - 180 Days pH - 7 Days TOC - 28 Days IVBA - 180 Days Grain Size - 180 Days								
TURNAROUND TIME: <input type="radio"/> SAME DAY <input type="radio"/> 24 HR <input type="radio"/> 48 HR <input type="radio"/> 72 HR <input checked="" type="radio"/> Standard																				
SPECIAL INSTRUCTIONS: *TAL Metals: Metals by EPA 6020A: Al, Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Mn, Ni, Se, Ag, Ti, V, Zn Metals by EPA 6010C: Ca, Fe, Mg, K, Na Mercury by EPA 7471B IVBA: As & Pb by EPA 6020A						TAL Metals*		% Moisture / EPA 160.3		pH / EPA 9045D		TOC / ASTM D4129-05		TAL Metals*		IVBA / Ruby Extr. EPA 6020A		Grain Size / PESP		
CLIENT SAMPLE ID		ALS LAB ID (Lab Use Only)		SAMPLING DATE TIME		MATRIX TYPE		NO. OF CONTAINERS												
1	SDV-03-COR-01-001			4/25/15	1415	SE	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
2	SDV-03-COR-01-002			4/25/15	1419		2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	extra volume
3	SDV-03-COR-01-003				1425		1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
4	SDV-03-COR-02-001				1419		1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
5	SDV-03-COR-02-002				1422		1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
6	SDV-03-COR-02-003				1425		1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
7	SDV-03-COR-03-001				1442		1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
8	SDV-03-COR-03-002				1445		1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
9	SDV-03-COR-03-003			0	1446	0	2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	EPA split
10								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
*Matrix Type: FB (Field Blank), PW (Porewater), R (Rinsate), SE (Sediment)						REPORT REQUIREMENTS:														
Additional Comments: Fed Ex tracking 8738 9171 7692						<input type="checkbox"/> I. Routine Report: Method Blank, Surrogate, as required <input type="checkbox"/> II. Report Dup., MS, MSD as required <input type="checkbox"/> III. CLP Like Summary (no raw data) <input checked="" type="checkbox"/> IV. Data Validation Report <input checked="" type="checkbox"/> V. EDD														
Relinquished by: (Print/Signature/Affiliation) Amy Dahl / Amy Dahl / AECOM		Date 4/27/15		Time 1415		Received by: (Print/Signature/Affiliation) Duligt		Date 4/28/15		Time 9:20										
Relinquished by: (Print/Signature/Affiliation)		Date		Time		Received by: (Print/Signature/Affiliation)		Date		Time										
Relinquished by: (Print/Signature/Affiliation)		Date		Time		Received by: (Print/Signature/Affiliation)		Date		Time										



PC Christian

Cooler Receipt and Preservation Form

Client Tack American Service Request K15 04428
 Received: 4-28-15 Opened: 4-28-15 By: BW Unloaded: 4-28-15 By: BW

1. Samples were received via? Mail Fed Ex UPS DHL PDX Courier Hand Delivered
2. Samples were received in: (circle) Cooler Box Envelope Other NA
3. Were custody seals on coolers? NA Y N If yes, how many and where? 1, front 2, side
 If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	NA	Filed
0.1	0	2.1	2.0	-0.1	350	NA	8738 8171 7692		

4. Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves
5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
6. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* NA Y N
7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA Y N
9. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
10. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
11. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
12. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count	Out of	Head-	Broke	pH	Reagent	Volume	Reagent Lot	Initials	Time
	Bottle Type	Temp	space				added	Number		

Notes, Discrepancies, & Resolutions: _____



Environmental

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W1504436

SEDIMENT - CORE
CHAIN-OF-CUSTODY RECORD

DATE: 4/27/15

PAGE: 1 OF 1

SR # / LAB USE ONLY

LABORATORY CLIENT: Teck American Incorporated						CLIENT PROJECT NAME / NUMBER: Bossburg Soil/Sediment						P.O. NO.: UCR-CAS-D21-14							
ADDRESS: 501 N. Riverpoint Blvd Ste 300, Spokane, WA 99202						PROJECT CONTACT: Dave Enos, Teck American Incorporated						BILL TO: Dave Enos, Teck American Incorporated							
TEL: 509-623-4505		Cell: 509-795-9599		E-MAIL: dave.enos@teck.com		SAMPLER(S): (PRINT and SIGNATURE) MV						TEMPERATURE UPON RECEIPT: _____ °C							
AECOM CONTACT: Christine Gebel						REQUESTED ANALYSES						HOLDING TIME REQUIREMENTS							
ADDRESS: 1501 4th Avenue, Suite 1400, Seattle, WA 98101																			
TEL: 206-438-2103		Fax: 866-495-5288		E-MAIL: christine.gebel@aecom.com		< 2 mm		< 250 µm		Whole Sed.		EPA 6020A / Metals - 180 Days EPA 6010C / Metals - 180 Days EPA 7471B / Mercury - 28 Days Percent Moisture - 180 Days pH - 7 Days TOC - 28 Days IVBA - 180 Days Grain Size - 180 Days							
TURNAROUND TIME: <input type="radio"/> SAME DAY <input type="radio"/> 24 HR <input type="radio"/> 48 HR <input type="radio"/> 72 HR <input checked="" type="radio"/> Standard																			
SPECIAL INSTRUCTIONS: *TAL Metals: Metals by EPA 6020A: Al, Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Mn, Ni, Se, Ag, Ti, V, Zn Metals by EPA 6010C: Ca, Fe, Mg, K, Na Mercury by EPA 7471B IVBA: As & Pb by EPA 6020A						TAL Metals*		% Moisture / EPA 160.3		PH / EPA 9045D		TOC / ASTM D4129-05		TAL Metals*		IVBA / Ruby Extr. EPA 6020A		Grain Size / PESP	
CLIENT SAMPLE ID		ALS LAB ID (Lab Use Only)		SAMPLING DATE		TIME		MATRIX TYPE		NO. OF CONTAINERS									
1 F-1-COR-01-001				4/25/15		1216		SE		1		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
2 F-1-COR-01-002						1221				1		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
3 F-1-COR-01-003						1227				2		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
4 F-1-COR-02-001						1241				2		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
5 F-1-COR-02-002						1246				2		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
6 F-1-COR-02-003						1258				1		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
7 F-1-COR-03-001						1318				1		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
8 F-1-COR-03-002						1323				2		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
9 F-1-COR-03-003				0		1327				1		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
10												<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	
*Matrix Type: FB (Field Blank), PW (Porewater), R (Rinsate), SE (Sediment)						REPORT REQUIREMENTS:													
Additional Comments: FedEx Tracking 8738 8171 7660						<input type="checkbox"/> I. Routine Report: Method Blank, Surrogate, as required													
						<input type="checkbox"/> II. Report Dup., MS, MSD as required													
						<input type="checkbox"/> III. CLP Like Summary (no raw data)													
						<input checked="" type="checkbox"/> IV. Data Validation Report													
						<input checked="" type="checkbox"/> V. EDD													
Relinquished by: (Print/Signature/Affiliation) Amy Dahl / Amy Dahl / AECOM		Date: 4/27/15		Time: 1415		Received by: (Print/Signature/Affiliation) Dave Enos / ALS		Date: 4/28/15		Time: 9:20									
Relinquished by: (Print/Signature/Affiliation)		Date:		Time:		Received by: (Print/Signature/Affiliation)		Date:		Time:									
Relinquished by: (Print/Signature/Affiliation)		Date:		Time:		Received by: (Print/Signature/Affiliation)		Date:		Time:									



PC Christian

Cooler Receipt and Preservation Form

Client Teck American Inc. Service Request K15 04436
 Received: 4-28-15 Opened: 4-28-15 By: BW Unloaded: 4-28-15 By: BW

- Samples were received via? *Mail* Fed Ex *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
- Samples were received in: (circle) Cooler *Box* *Envelope* *Other* NA
- Were custody seals on coolers? *NA* Y *N* If yes, how many and where? 1 Front 1 Side
 If present, were custody seals intact? Y *N* If present, were they signed and dated? Y *N*

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	NA	Filed
-0.3	-0.1	1.2	1.4	10.2	323	NA	8738 8171 7660		

- Packing material: *Inserts* Baggies *Bubble Wrap* *Gel Packs* *Wet Ice* *Dry Ice* *Sleeves*
- Were custody papers properly filled out (ink, signed, etc.)? *NA* Y *N*
- Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* *NA* Y *N*
- Were all sample labels complete (i.e analysis, preservation, etc.)? *NA* Y *N*
- Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* *NA* Y *N*
- Were appropriate bottles/containers and volumes received for the tests indicated? *NA* Y *N*
- Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* *NA* Y *N*
- Were VOA vials received without headspace? *Indicate in the table below.* *NA* Y *N*
- Was CI2/Res negative? *NA* Y *N*

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count	Out of	Head-	Broke	pH	Reagent	Volume	Reagent Lot	Initials	Time
	Bottle Type	Temp	space				added	Number		

Notes, Discrepancies, & Resolutions: _____



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K1504492

RINSATE BLANKS
CHAIN-OF-CUSTODY RECORD

DATE: 4/29/15
PAGE: 3 OF 3

LABORATORY CLIENT: Teck American Incorporated					CLIENT PROJECT NAME / NUMBER: Bossburg Soil/Sediment					P.O. NO.: UCR-CAS-D21-14																																																																																																																																																																																	
ADDRESS: 501 N. Riverpoint Blvd Ste 300, Spokane, WA 99202					PROJECT CONTACT: Dave Enos, Teck American Incorporated					SA To: Dave Enos, Teck American Incorporated																																																																																																																																																																																	
TEL: 509-623-4505		Call: 509-795-9599		E-MAIL: dave.enos@teck.com			SAMPLER(S): (PRINT and SIGNATURE) DL/DC/OK/KY/LAD					TEMPERATURE UPON RECEIPT: _____ °C																																																																																																																																																																															
AECOM CONTACT: Christine Gebel					REQUESTED ANALYSES					HOLDING TIME REQUIREMENTS																																																																																																																																																																																	
ADDRESS: 1501 4th Avenue, Suite 1400, Seattle, WA 98101					<table border="1" style="width:100%"><thead><tr><th rowspan="2"></th><th rowspan="2">TAL Metals*</th><th colspan="2">SAMPLING</th><th rowspan="2">MATRIX TYPE</th><th rowspan="2">NO. OF CONTAINERS</th></tr><tr><th>DATE</th><th>TIME</th></tr></thead><tbody><tr><td>1</td><td>SDU-05-ER-B-20150427</td><td>4/27/15</td><td>1557</td><td>FB</td><td>1</td><td><input checked="" type="checkbox"/></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>2</td><td>SDU-06A-ER-A-20150427</td><td>4/27/15</td><td>1735</td><td>FB</td><td>1</td><td><input checked="" type="checkbox"/></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>3</td><td>SDU-10-ER-B-20150428</td><td>4/28/15</td><td>1520</td><td>FB</td><td>1</td><td><input checked="" type="checkbox"/></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>4</td><td>SDU-06C-ER-A-20150428</td><td>4/28/15</td><td>1720</td><td>FB</td><td>1</td><td><input checked="" type="checkbox"/></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>5</td><td>SDU-06-ER-B-20150429</td><td>4/29/15</td><td>1003</td><td>FB</td><td>1</td><td><input checked="" type="checkbox"/></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>6</td><td></td><td></td><td></td><td></td><td></td><td><input type="checkbox"/></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>7</td><td></td><td></td><td></td><td></td><td></td><td><input type="checkbox"/></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>8</td><td></td><td></td><td></td><td></td><td></td><td><input type="checkbox"/></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>9</td><td></td><td></td><td></td><td></td><td></td><td><input type="checkbox"/></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>10</td><td></td><td></td><td></td><td></td><td></td><td><input type="checkbox"/></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></tbody></table>						TAL Metals*	SAMPLING		MATRIX TYPE	NO. OF CONTAINERS	DATE	TIME	1	SDU-05-ER-B-20150427	4/27/15	1557	FB	1	<input checked="" type="checkbox"/>										2	SDU-06A-ER-A-20150427	4/27/15	1735	FB	1	<input checked="" type="checkbox"/>										3	SDU-10-ER-B-20150428	4/28/15	1520	FB	1	<input checked="" type="checkbox"/>										4	SDU-06C-ER-A-20150428	4/28/15	1720	FB	1	<input checked="" type="checkbox"/>										5	SDU-06-ER-B-20150429	4/29/15	1003	FB	1	<input checked="" type="checkbox"/>										6						<input type="checkbox"/>										7						<input type="checkbox"/>										8						<input type="checkbox"/>										9						<input type="checkbox"/>										10						<input type="checkbox"/>										TURNAROUND TIME: <input type="radio"/> SAME DAY <input type="radio"/> 24 HR <input type="radio"/> 48 HR <input type="radio"/> 72 HR <input checked="" type="radio"/> Standard					EPA 6020A / Metals - 180 Days EPA 6010C / Metals - 180 Days EPA 7470A / Mercury - 28 Days				
	TAL Metals*	SAMPLING		MATRIX TYPE								NO. OF CONTAINERS																																																																																																																																																																															
		DATE	TIME																																																																																																																																																																																								
1	SDU-05-ER-B-20150427	4/27/15	1557	FB						1	<input checked="" type="checkbox"/>																																																																																																																																																																																
2	SDU-06A-ER-A-20150427	4/27/15	1735	FB						1	<input checked="" type="checkbox"/>																																																																																																																																																																																
3	SDU-10-ER-B-20150428	4/28/15	1520	FB	1	<input checked="" type="checkbox"/>																																																																																																																																																																																					
4	SDU-06C-ER-A-20150428	4/28/15	1720	FB	1	<input checked="" type="checkbox"/>																																																																																																																																																																																					
5	SDU-06-ER-B-20150429	4/29/15	1003	FB	1	<input checked="" type="checkbox"/>																																																																																																																																																																																					
6						<input type="checkbox"/>																																																																																																																																																																																					
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SPECIAL INSTRUCTIONS: *TAL Metals: Metals by EPA 6020A: Al, Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Mn, Ni, Se, Ag, Tl, V, Zn Metals by EPA 6010C: Ca, Fe, Mg, K, Na Mercury by EPA 7470A					Comments																																																																																																																																																																																						
CLIENT SAMPLE ID					ALS LAB ID (Lab Use Only)		SAMPLING		MATRIX TYPE	NO. OF CONTAINERS																																																																																																																																																																																	
							DATE TIME																																																																																																																																																																																				

REPORT REQUIREMENTS:

- I. Routine Report: Method Blank, Surrogate, as required
- II. Report Dup., MS, MSD as required
- III. CLP Like Summary (no raw data)
- IV. Data Validation Report
- V. EDD

Relinquished by: (Print/Signature/Affiliation) Amy Dahl / Amy Dahl / AECOM	Date 4/29/15	Time 1415	Received by: (Print/Signature/Affiliation) K. Smith ALS	Date 5/1/15	Time 0940
Relinquished by: (Print/Signature/Affiliation)	Date	Time	Received by: (Print/Signature/Affiliation)	Date	Time
Relinquished by: (Print/Signature/Affiliation)	Date	Time	Received by: (Print/Signature/Affiliation)	Date	Time

Additional Comments: Fed Ex Tracking 8738 8171 7626

*Matrix Type: FB (Field Blank), PW (Porewater), R (Rinsate), SE (Sediment)



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**RINSATE BLANKS
CHAIN-OF-CUSTODY RECORD**

DATE: 4/29/15 *add 4/30/15*
PAGE: 2 OF 2

SR # / LAB USE ONLY
H1504492

LABORATORY CLIENT: Teck American Incorporated						CLIENT PROJECT NAME / NUMBER: Bossburg Soil/Sediment						P.O. NO.: UCR-CAS-D21-14																																																															
ADDRESS: 501 N. Riverpoint Blvd Ste 300, Spokane, WA 99202						PROJECT CONTACT: Dave Enos, Teck American Incorporated						B# To: Dave Enos, Teck American Incorporated																																																															
TEL: 509-623-4505		Cell: 509-795-9599		E-MAIL: dave.enos@teck.com		SAMPLER(S): (PRINT and SIGNATURE) ALP/AP						TEMPERATURE UPON RECEIPT: _____ °C																																																															
AECOM CONTACT: Christine Gebel						REQUESTED ANALYSES						HOLDING TIME REQUIREMENTS																																																															
ADDRESS: 1501 4th Avenue, Suite 1400, Seattle, WA 98101																																																																											
TEL: 206-438-2103		Fax: 866-495-5288		E-MAIL: christine.gebel@aecom.com		<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">TAL Metals*</th> <th colspan="2">SAMPLING</th> <th rowspan="2">MATRIX* TYPE</th> <th rowspan="2">NO. OF CONTAINERS</th> </tr> <tr> <th>DATE</th> <th>TIME</th> </tr> </thead> <tbody> <tr> <td><input checked="checked" type="checkbox"/></td> <td>4/29/15</td> <td>1647</td> <td>FB</td> <td>1</td> </tr> <tr> <td><input checked="checked" type="checkbox"/></td> <td>4/29/15</td> <td>1649</td> <td>FB</td> <td>1</td> </tr> <tr> <td><input checked="checked" type="checkbox"/></td> <td>4/29/15</td> <td>1704</td> <td>FB</td> <td>1</td> </tr> <tr> <td><input type="checkbox"/></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><input type="checkbox"/></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><input type="checkbox"/></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><input type="checkbox"/></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><input type="checkbox"/></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><input type="checkbox"/></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><input type="checkbox"/></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><input type="checkbox"/></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>						TAL Metals*	SAMPLING		MATRIX* TYPE	NO. OF CONTAINERS	DATE	TIME	<input checked="checked" type="checkbox"/>	4/29/15	1647	FB	1	<input checked="checked" type="checkbox"/>	4/29/15	1649	FB	1	<input checked="checked" type="checkbox"/>	4/29/15	1704	FB	1	<input type="checkbox"/>					<input type="checkbox"/>					<input type="checkbox"/>					<input type="checkbox"/>					<input type="checkbox"/>					<input type="checkbox"/>					<input type="checkbox"/>					<input type="checkbox"/>					EPA 6020A / Metals - 180 Days EPA 6010C / Metals - 180 Days EPA 7470A / Mercury - 28 Days	
TAL Metals*	SAMPLING		MATRIX* TYPE	NO. OF CONTAINERS																																																																							
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SPECIAL INSTRUCTIONS: *TAL Metals: Metals by EPA 6020A: Al, Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Mn, Ni, Se, Ag, Tl, V, Zn Metals by EPA 6010C: Ca, Fe, Mg, K, Na Mercury by EPA 7470A																																																																											
CLIENT SAMPLE ID	ALS LAB ID (Lab Use Only)	SAMPLING		MATRIX* TYPE	NO. OF CONTAINERS	TAL Metals*											Comments																																																										
		DATE	TIME																																																																								
1	<i>SDU-06-ER-D-20150429</i>	<i>4/29/15</i>	<i>1647</i>	<i>FB</i>	<i>1</i>	<input checked="checked" type="checkbox"/>																																																																					
2	<i>UDU-05-ER-A-20150429</i>	<i>4/29/15</i>	<i>1649</i>	<i>FB</i>	<i>1</i>	<input checked="checked" type="checkbox"/>																																																																					
3	<i>SDU-06-ER-C-20150429</i>	<i>4/29/15</i>	<i>1704</i>	<i>FB</i>	<i>1</i>	<input checked="checked" type="checkbox"/>																																																																					
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10						<input type="checkbox"/>																																																																					

REPORT REQUIREMENTS:

I. Routine Report: Method Blank, Surrogate, as required

II. Report Dup., MS, MSD as required

III. CLP Like Summary (no raw data)

IV. Data Validation Report

V. EDD

*Matrix Type: FB (Field Blank), PW (Porewater), R (Rinsate), SE (Sediment)

Additional Comments: *shipped with core samples from SDU-06*

fedEx tracking 8738 8171 7637

Relinquished by: (Print/Signature/Affiliation) <i>Amy Dahl / AECOM</i>	Date <i>4/30/15</i>	Time <i>1415</i>	Received by: (Print/Signature/Affiliation) <i>[Signature] ALS</i>	Date <i>5/1/15</i>	Time <i>0940</i>
Relinquished by: (Print/Signature/Affiliation)	Date	Time	Received by: (Print/Signature/Affiliation)	Date	Time
Relinquished by: (Print/Signature/Affiliation)	Date	Time	Received by: (Print/Signature/Affiliation)	Date	Time



PC Christian

Cooler Receipt and Preservation Form

Client / Project: Teck American Service Request K15 04492
 Received: 4/5/15 Opened: 5/1/15 By: [Signature] Unloaded: 5/1/15 By: [Signature]

1. Samples were received via? Mail Fed Ex UPS DHL PDX Courier Hand Delivered
 2. Samples were received in: (circle) Cooler Box Envelope Other NA
 3. Were custody seals on coolers? NA Y N If yes, how many and where? 2, sides 1, front
 If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	NA	Filed
-3	-4	1.2	1.1	-1	350	NA	8738 8171 7626		
-4	-5	.3	.2	-1	325		8738 8171 7637		

4. Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves
 5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
 6. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* NA Y N
 7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
 8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA Y N
 9. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
 10. Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? *Indicate in the table below* NA Y N
 11. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
 12. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count	Out of	Head-	Broke	pH	Reagent	Volume	Reagent Lot	Initials	Time
	Bottle Type	Temp	space				added	Number		

Notes, Discrepancies, & Resolutions: _____



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K1504492
**RINSATE BLANKS
 CHAIN-OF-CUSTODY RECORD**
 DATE: 5/4/15
 PAGE: 2 OF 2

SR # / LAB USE ONLY

LABORATORY CLIENT: Teck American Incorporated		CLIENT PROJECT NAME / NUMBER Bossburg Soil/Sediment			P.O. NO. UCR-CAS-D21-14							
ADDRESS: 501 N. Riverpoint Blvd Ste 300, Spokane, WA 99202		PROJECT CONTACT: Dave Enos, Teck American Incorporated			BW To: Dave Enos, Teck American Incorporated							
TEL: 509-623-4505	Cell: 509-795-9599	E-MAIL: dave.enos@teck.com		TEMPERATURE UPON RECEIPT _____ °C								
AECOM CONTACT: Christine Gebel		SAMPLER(S) (PRINT and SIGNATURE) DC/DL/KY			<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 50%;">REQUESTED ANALYSES</th> <th style="width: 50%;">HOLDING TIME REQUIREMENTS</th> </tr> <tr> <td style="height: 100px;"></td> <td style="height: 100px; vertical-align: top;"> EPA 6020A / Metals - 180 Days EPA 6010C / Metals - 180 Days EPA 7470A / Mercury - 28 Days </td> </tr> <tr> <td colspan="2" style="text-align: center;">Comments</td> </tr> </table>		REQUESTED ANALYSES	HOLDING TIME REQUIREMENTS		EPA 6020A / Metals - 180 Days EPA 6010C / Metals - 180 Days EPA 7470A / Mercury - 28 Days	Comments	
REQUESTED ANALYSES	HOLDING TIME REQUIREMENTS											
	EPA 6020A / Metals - 180 Days EPA 6010C / Metals - 180 Days EPA 7470A / Mercury - 28 Days											
Comments												
ADDRESS: 1501 4th Avenue, Suite 1400, Seattle, WA 98101		SPECIAL INSTRUCTIONS *TAL Metals: Metals by EPA 6020A: Al, Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Mn, Ni, Se, Ag, Tl, V, Zn Metals by EPA 6010C: Ca, Fe, Mg, K, Na Mercury by EPA 7470A										
TEL: 206-438-2103	Fax: 866-495-5288	E-MAIL: christine.gebel@aecom.com										
TURNAROUND TIME: <input type="radio"/> SAME DAY <input type="radio"/> 24 HR <input type="radio"/> 48 HR <input type="radio"/> 72 HR <input checked="" type="radio"/> Standard												
CLIENT SAMPLE ID		ALS LAB ID (Lab Use Only)	SAMPLING		MATRIX* TYPE	NO. OF CONTAINERS	TAL Metals*					
		DATE		TIME								
1	SDV-05-ER-C-20150501	16	5/1/15	1530	FB	1	<input checked="" type="checkbox"/>					
2	UDV-05-ER-D-20150501	17	5/1/15	1535		1	<input checked="" type="checkbox"/>					
3	SDV-10-ER-A-20150501	18	5/1/15	1705		1	<input checked="" type="checkbox"/>					
4	SDV-08-ER-B-20150502	19	5/2/15	1631		1	<input checked="" type="checkbox"/>					
5	SDV-04-ER-A-20150502	20	5/2/15	1740		1	<input checked="" type="checkbox"/>					
6							<input type="checkbox"/>					
7							<input type="checkbox"/>					
8							<input type="checkbox"/>					
9							<input type="checkbox"/>					
10							<input type="checkbox"/>					
*Matrix Type: FB (Field Blank), PW (Porewater), R (Rinsate), SE (Sediment)							REPORT REQUIREMENTS:					
Additional Comments: <i>Feed Extraction 8738 8171 7832</i>							<input type="checkbox"/> I. Routine Report: Method Blank, Surrogate, as required <input type="checkbox"/> II. Report Dup., MS, MSD as required <input type="checkbox"/> III. CLP Like Summary (no raw data) <input checked="" type="checkbox"/> IV. Data Validation Report <input checked="" type="checkbox"/> V. EDD					
							Relinquished by: (Print/Signature/Affiliation) <i>Amy Dahl / Amy Dahl / AECOM</i>		Date <i>5/4/15</i>	Time <i>1415</i>		Received by: (Print/Signature/Affiliation) <i>Smith & Smith ALS</i>
Relinquished by: (Print/Signature/Affiliation)		Date	Time		Received by: (Print/Signature/Affiliation)		Date	Time				
Relinquished by: (Print/Signature/Affiliation)		Date	Time		Received by: (Print/Signature/Affiliation)		Date	Time				



Cooler Receipt and Preservation Form

Client / Project: Teck American Service Request K15 04492
 Received: 5/5/15 Opened: 5/5/15 By: [Signature] Unloaded: 5/5/15 By: [Signature]

- Samples were received via? **Mail** Fed Ex UPS DHL PDX Courier Hand Delivered
- Samples were received in: (circle) Cooler Box Envelope Other NA
- Were custody seals on coolers? NA Y N If yes, how many and where? 2, sides 1, front
 If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	NA	Filed
<u>-5</u>	<u>-7</u>	<u>7</u>	<u>.5</u>	<u>-2</u>	<u>355</u>	<u>NA</u>	<u>8738 8171 7832</u>		

- Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves
- Were custody papers properly filled out (ink, signed, etc.)? NA Y N
- Did all bottles arrive in good condition (unbroken)? Indicate in the table below. NA Y N
- Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
- Did all sample labels and tags agree with custody papers? Indicate major discrepancies in the table on page 2. NA Y N
- Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
- Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? Indicate in the table below. NA Y N
- Were VOA vials received without headspace? Indicate in the table below. NA Y N
- Was Cl2/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count	Out of	Head-	Broke	pH	Reagent	Volume	Reagent Lot	Initials	Time
	Bottle Type	Temp	space				added	Number		

Notes, Discrepancies, & Resolutions: _____



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③

W1804492 -

RINSATE BLANKS
CHAIN-OF-CUSTODY RECORD

DATE: 4/27/15
PAGE: 2 OF 2

SR # / LAB USE ONLY

LABORATORY CLIENT Teck American Incorporated			CLIENT PROJECT NAME / NUMBER Bossburg Soil/Sediment			P.O. NO. UCR-CAS-D21-14		
ADDRESS 501 N. Riverpoint Blvd Ste 300, Spokane, WA 99202			PROJECT CONTACT Dave Enos, Teck American Incorporated			B# To Dave Enos, Teck American Incorporated		
TEL 509-623-4505	C# 509-795-9599	E-MAIL dave.enos@teck.com	SAMPLER(S) (PRINT and SIGNATURE) DL/AD/DK			TEMPERATURE UPON RECEIPT _____ °C		
AECOM CONTACT Christine Gebel			REQUESTED ANALYSES			HOLDING TIME REQUIREMENTS		
ADDRESS 1501 4th Avenue, Suite 1400, Seattle, WA 98101								
TEL 206-438-2103	Fax 866-495-5288	E-MAIL christine.gebel@aecom.com	TAL Metals*			EPA 6020A / Metals - 180 Days EPA 6010C / Metals - 180 Days EPA 7470A / Mercury - 28 Days		
TURNAROUND TIME <input type="radio"/> SAME DAY <input type="radio"/> 24 HR <input type="radio"/> 48 HR <input type="radio"/> 72 HR <input checked="" type="radio"/> Standard								
SPECIAL INSTRUCTIONS *TAL Metals: Metals by EPA 6020A: Al, Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Mn, Ni, Se, Ag, Ti, V, Zn Metals by EPA 6010C: Ca, Fe, Mg, K, Na Mercury by EPA 7470A			Comments					

CLIENT SAMPLE ID	ALS LAB ID (Lab Use Only)	SAMPLING		MATRIX TYPE	NO. OF CONTAINERS	TAL Metals*	REQUESTED ANALYSES										HOLDING TIME REQUIREMENTS			
		DATE	TIME																	
1	SDU-02B-ER-A-20150422		4/23/15	1710	FB	1	<input checked="" type="checkbox"/>													
2	Sterileware Scoop-202-20150423		4/23/15	1507	FB	1	<input checked="" type="checkbox"/>													
3	SDU-03B-ER-A-20150423		4/23/15	1400	FB	1	<input checked="" type="checkbox"/>													
4	SDU-03C-ER-A-20150424		4/24/15	1740	FB	1	<input checked="" type="checkbox"/>													
5	VDU-04-ER-C-20150424	1	4/24/15	1745	FB	1	<input checked="" type="checkbox"/>													
6	SDU-05-ER-A-20150425	2	4/25/15	1600	FB	1	<input checked="" type="checkbox"/>													
7	VDU-04-ER-C-20150425	3	4/25/15	1605	FB	1	<input checked="" type="checkbox"/>													
8	VDU-03-ER-D-20150425	4	4/25/15	1610	FB	1	<input checked="" type="checkbox"/>													
9							<input type="checkbox"/>													
10							<input type="checkbox"/>													

*Matrix Type: FB (Field Blank), PW (Porewater), R (Rinsate), SE (Sediment)

Additional Comments: FedEx Tracking 8738 8171 7681 (with SDU-03-1C5-C)

REPORT REQUIREMENTS:
 I. Routine Report: Method Blank, Surrogate, as required
 II. Report Dup., MS, MSD as required
 III. CLP Like Summary (no raw data)
 IV. Data Validation Report
 V. EDD

Relinquished by: (Print/Signature/Affiliation) Amy Dahl / Amy Dahl / AECOM	Date 4/27/15	Time 1415	Received by: (Print/Signature/Affiliation) Les Kennedy / ALS	Date 4/29/15	Time 1000
Relinquished by: (Print/Signature/Affiliation)	Date	Time	Received by: (Print/Signature/Affiliation)	Date	Time
Relinquished by: (Print/Signature/Affiliation)	Date	Time	Received by: (Print/Signature/Affiliation)	Date	Time



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RINSATE BLANKS
 CHAIN-OF-CUSTODY RECORD

DATE: 4/29/15
 PAGE: 3 OF 3

SR # / LAB USE ONLY
K1504492

LABORATORY CLIENT Teck American Incorporated						CLIENT PROJECT NAME / NUMBER Bossburg Soil/Sediment						P.O. NO. UCR-CAS-D21-14											
ADDRESS 501 N. Riverpoint Blvd Ste 300, Spokane, WA 99202												PROJECT CONTACT Dave Enos, Teck American Incorporated						B# To Dave Enos, Teck American Incorporated					
TEL 509-623-4505				Cell 509-795-9599				E-MAIL dave.enos@teck.com				TEMPERATURE UPON RECEIPT _____ °C											
AECOM CONTACT Christine Gebel												REQUESTED ANALYSES						HOLDING TIME REQUIREMENTS					
ADDRESS 1501 4th Avenue, Suite 1400, Seattle, WA 98101																							
TEL 206-438-2103				Fax 866-495-5288				E-MAIL christine.gebel@aecom.com				EPA 6020A / Metals - 180 Days EPA 6010C / Metals - 180 Days EPA 7470A / Mercury - 28 Days Comments											
TURNAROUND TIME <input type="radio"/> SAME DAY <input type="radio"/> 24 HR <input type="radio"/> 48 HR <input type="radio"/> 72 HR <input checked="" type="radio"/> Standard																							
SPECIAL INSTRUCTIONS *TAL Metals: Metals by EPA 6020A: Al, Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Mn, Ni, Se, Ag, Ti, V, Zn Metals by EPA 6010C: Ca, Fe, Mg, K, Na Mercury by EPA 7470A																							
CLIENT SAMPLE ID	ALS LAB ID (Lab Use Only)	SAMPLING		MATRIX* TYPE	NO. OF CONTAINERS	TAL Metals*																	
		DATE	TIME																				
1	SDU-05-ER-B-20150427	4/27/15	1557	FB	1	<input checked="" type="checkbox"/>																	
2	SDU-06A-ER-A-20150427	4/27/15	1735	FB	1	<input checked="" type="checkbox"/>																	
3	SDU-10-ER-B-20150428	4/28/15	1520	FB	1	<input checked="" type="checkbox"/>																	
4	SDU-06C-ER-A-20150428	4/28/15	1720	FB	1	<input checked="" type="checkbox"/>																	
5	SDU-06-ER-B-20150429	4/29/15	1003	FB	1	<input checked="" type="checkbox"/>																	
6						<input type="checkbox"/>																	
7						<input type="checkbox"/>																	
8						<input type="checkbox"/>																	
9						<input type="checkbox"/>																	
10						<input type="checkbox"/>																	
*Matrix Type: FB (Field Blank), PW (Porewater), R (Rinsate), SE (Sediment)						REPORT REQUIREMENTS:																	
Additional Comments: <u>Fed Ex Tracking 8738 8171 7626</u>						<input type="checkbox"/> I. Routine Report, Method Blank, Surrogate, as required <input type="checkbox"/> II. Report Dup., MS, MSD as required <input type="checkbox"/> III. CLP Like Summary (no raw data) <input checked="" type="checkbox"/> IV. Data Validation Report <input checked="" type="checkbox"/> V. EDD																	
Relinquished by: (Print/Signature/Affiliation) <u>Amy Doherty / Amy Doherty / AECOM</u>				Date <u>4/29/15</u>		Time <u>1415</u>		Received by: (Print/Signature/Affiliation) <u>[Signature] ALS</u>				Date <u>5/1/15</u>		Time <u>0940</u>									
Relinquished by: (Print/Signature/Affiliation)				Date		Time		Received by: (Print/Signature/Affiliation)				Date		Time									
Relinquished by: (Print/Signature/Affiliation)				Date		Time		Received by: (Print/Signature/Affiliation)				Date		Time									



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RINSATE BLANKS
CHAIN-OF-CUSTODY RECORD

DATE: 4/29/15
PAGE: 2 OF 2

SR # / LAB USE ONLY
K1504492

Laboratory client: Teck American Incorporated
Client project name: Bossburg Soil/Sediment
Requested analyses: TAL Metals
Holding time requirements: EPA 6020A / Metals - 180 Days, EPA 6010C / Metals - 180 Days, EPA 7470A / Mercury - 28 Days
Report requirements: IV, Data Validation Report



PC Christina

Cooler Receipt and Preservation Form

Client / Project: Teck American Service Request K1504492
 Received: 4/29/15 Opened: 4/29/15 By: UC Unloaded: 4/29/15 By: UC

1. Samples were received via? **Mail** Fed Ex **UPS** Box **DHL** Envelope **PDX** Other **Courier** Hand Delivered
2. Samples were received in: (circle) Cooler **Box** **Envelope** **Other** **NA**
3. Were custody seals on coolers? **NA** Y **N** If yes, how many and where? 1 front & sides
- If present, were custody seals intact? Y **N** If present, were they signed and dated? Y **N**

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	NA	Filed
0.5	0.4	2.6	2.5	-0.1	349	3	8738 8171 7681	NA	

4. Packing material: **Inserts** **Baggies** **Bubble Wrap** **Gel Packs** Wet Ice **Dry Ice** **Sleeves**
5. Were custody papers properly filled out (ink, signed, etc.)? **NA** Y **N**
6. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* **NA** Y **N**
7. Were all sample labels complete (i.e analysis, preservation, etc.)? **NA** Y **N**
8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* **NA** Y **N**
9. Were appropriate bottles/containers and volumes received for the tests indicated? **NA** Y **N**
10. Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? *Indicate in the table below* **NA** Y **N**
11. Were VOA vials received without headspace? *Indicate in the table below.* **NA** Y **N**
12. Was C12/Res negative? **NA** Y **N**

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time
VDU-04-EE-C-20150425	116 fails				✓	HNO ₃	1ml	RE1-31-L	UC	1110

Notes, Discrepancies, & Resolutions:



Cooler Receipt and Preservation Form

Client / Project: Teck American Service Request K15 04492
 Received: 4/5/15 Opened: 5/1/15 By: AD Unloaded: 5/1/15 By: AD

1. Samples were received via? **Mail** Fed Ex UPS DHL PDX Courier Hand Delivered
2. Samples were received in: (circle) Cooler Box Envelope Other NA
3. Were custody seals on coolers? NA Y N
 If present, were custody seals intact? NA Y N
 If yes, how many and where? 2 Sides i, front
 If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	NA	Filed
<u>-3</u>	<u>-4</u>	<u>1.2</u>	<u>1.1</u>	<u>-1</u>	<u>350</u>	<u>NA</u>	<u>8738 8171 7626</u>		
<u>-4</u>	<u>-5</u>	<u>.3</u>	<u>.2</u>	<u>-1</u>	<u>325</u>		<u>8738 8171 7627</u>		

4. Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves
5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
6. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* NA Y N
7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA Y N
9. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
10. Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? *Indicate in the table below* NA Y N
11. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
12. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Out of Temp space	Head- space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions:



Environmental

1317 South 13th Ave.
Kelso, WA 98626
TEL: (360) 577-7222 / (800) 695-7222 / FAX: (360) 636-1068
www.alsglobal.com

RINSATE BLANKS
CHAIN-OF-CUSTODY RECORD

DATE: 5/1/15
PAGE: 4 OF 4

SR # / LAB USE ONLY
K1504492

Form containing client information, laboratory details, project name (Bossburg Soil/Sediment), contact info (Dave Enos), sampling details (UDV-05-ER-B-20150430), and a table of samples with columns for ID, date, time, matrix type, and containers. Includes sections for 'Requested Analyses', 'Holding Time Requirements', 'Matrix Type', and 'Report Requirements'.

13
17
15



PC J CH

Cooler Receipt and Preservation Form

Client / Project: TECK Service Request K15 4492
 Received: 5/2/15 Opened: 5/2/15 By: [Signature] Unloaded: 5/2/15 By: [Signature]

1. Samples were received via? *Mail* *Fed Ex* *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
 2. Samples were received in: (circle) *Cooler* *Box* *Envelope* *Other* *NA*
 3. Were custody seals on coolers? *NA* *Y* *N* If yes, how many and where? 1 F25
 If present, were custody seals intact? *Y* *N* If present, were they signed and dated? *Y* *N*

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	NA	Filed
0.6	0.4	0.7	0.5	-0.2	352	NA	873581717821		

4. Packing material: *Inserts* *Baggies* *Bubble Wrap* *Gel Packs* *Wet Ice* *Dry Ice* *Sleeves*
 5. Were custody papers properly filled out (ink, signed, etc.)? *NA* *Y* *N*
 6. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* *NA* *Y* *N*
 7. Were all sample labels complete (i.e analysis, preservation, etc.)? *NA* *Y* *N*
 8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* *NA* *Y* *N*
 9. Were appropriate bottles/containers and volumes received for the tests indicated? *NA* *Y* *N*
 10. Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? *Indicate in the table below* *NA* *Y* *N*
 11. Were VOA vials received without headspace? *Indicate in the table below.* *NA* *Y* *N*
 12. Was C12/Res negative? *NA* *Y* *N*

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count	Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: _____



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SR # / LAB USE ONLY

K1504493

SOIL - CORE
CHAIN-OF-CUSTODY RECORD

DATE: 4/28/15
PAGE: 1 OF 1

LABORATORY CLIENT: Teck American Incorporated					CLIENT PROJECT NAME / NUMBER: Bossburg Soil/Sediment					P.O. NO.: UCR-CAS-D21-14																																																																																																																																																																																																																																					
ADDRESS: 501 N. Riverpoint Blvd Ste 300, Spokane, WA 99202					PROJECT CONTACT: Dave Enos, Teck American Incorporated					BN To: Dave Enos, Teck American Incorporated																																																																																																																																																																																																																																					
TEL: 509-623-4505		Cell: 509-795-9599		E-MAIL: dave.enos@teck.com		SAMPLER(S): (PRINT and SIGNATURE) MV/AP					TEMPERATURE UPON RECEIPT: _____ °C																																																																																																																																																																																																																																				
AECOM CONTACT: Christine Gebel					<table border="1"> <thead> <tr> <th colspan="10">REQUESTED ANALYSES</th> <th colspan="5">HOLDING TIME REQUIREMENTS</th> </tr> <tr> <th colspan="2"></th> <th colspan="2">< 2 mm</th> <th colspan="2">< 150 µm</th> <th colspan="2">Whole Sed.</th> <th colspan="2"></th> <th colspan="5"></th> </tr> <tr> <th>TAL Metals</th> <th>% Moisture / EPA 1603</th> <th>pH / EPA 9045D</th> <th>TOC / ASTM D4129-05</th> <th>CEC / EPA 9080</th> <th>TAL Metals*</th> <th>IVBA / Ruby Extr. EPA 6020A</th> <th colspan="3">Grain Size / PESP</th> <th colspan="5"></th> </tr> </thead> <tbody> <tr> <td><input checked="" type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td colspan="5"></td> </tr> <tr> <td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td colspan="5"></td> </tr> <tr> <td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td colspan="5">EPA 6020A / Metals - 180 Days</td> </tr> <tr> <td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td colspan="5">EPA 6010C / Metals - 180 Days</td> </tr> <tr> <td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td colspan="5">EPA 7471B / Mercury - 28 Days</td> </tr> <tr> <td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td colspan="5">Percent Moisture - 180 Days</td> </tr> <tr> <td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td colspan="5">pH - 7 Days</td> </tr> <tr> <td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td colspan="5">TOC - 28 Days</td> </tr> <tr> <td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td colspan="5">IVBA - 180 Days</td> </tr> <tr> <td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td colspan="5">Grain Size - 180 Days</td> </tr> <tr> <td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td colspan="5">EPA 9080 / CEC - 14 Days</td> </tr> <tr> <td colspan="15" style="text-align: center;">Comments</td> </tr> </tbody> </table>										REQUESTED ANALYSES										HOLDING TIME REQUIREMENTS							< 2 mm		< 150 µm		Whole Sed.									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ADDRESS: 1501 4th Avenue, Suite 1400, Seattle, WA 98101																																																																																																																																																																																																																																															
TEL: 206-438-2103		Fax: 866-495-5288		E-MAIL: christine.gebel@aecom.com																																																																																																																																																																																																																																											
TURNAROUND TIME: <input type="checkbox"/> SAME DAY <input type="checkbox"/> 24 HR <input type="checkbox"/> 48 HR <input type="checkbox"/> 72 HR <input checked="" type="checkbox"/> Standard																																																																																																																																																																																																																																															
SPECIAL INSTRUCTIONS: *TAL Metals: Metals by EPA 6020A: Al, Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Mn, Ni, Se, Ag, Tl, V, Zn Metals by EPA 6010C: Ca, Fe, Mg, K, Na Mercury by EPA 7471B IVBA: As & Pb by EPA 6020A																																																																																																																																																																																																																																															
CLIENT SAMPLE ID	ALS LAB ID (Lab Use Only)	SAMPLING		MATRIX* TYPE	NO. OF CONTAINERS																																																																																																																																																																																																																																										
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1	VDU-03-COR-01-001		4/25/15 1124	Soil	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>																																																																																																																																																																																																																																	
2	VDU-03-COR-01-002		↓ 1132	↓	1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																																																																																																																																																																																																																																	
3	VDU-03-COR-01-003		↓ 1138	↓	2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	extra volume																																																																																																																																																																																																																																
4	VDU-03-COR-02-001	10	4/24/15 1626	↓	1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Field Split																																																																																																																																																																																																																																
5	VDU-03-COR-02-002		↓ 1630	↓	1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																																																																																																																																																																																																																																	
6	VDU-03-COR-02-003		↓ 1635	↓	1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																																																																																																																																																																																																																																	
7	VDU-03-COR-03-001		↓ 1538	↓	1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																																																																																																																																																																																																																																	
8	VDU-03-COR-03-002	22	↓ 1538	↓	2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Field Split																																																																																																																																																																																																																																
9	VDU-03-COR-03-003	25	↓ 1538	↓	3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	EPA split																																																																																																																																																																																																																																
10						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																																																																																																																																																																																																																																	
*Matrix Type: FB (Field Blank), PW (Porewater), R (Rinsate), SE (Sediment)					REPORT REQUIREMENTS:																																																																																																																																																																																																																																										
Additional Comments: Fed Extracking 8738 8171 7643					<input type="checkbox"/> I. Routine Report: Method Blank, Surrogate, as required <input type="checkbox"/> II. Report Dup., MS, MSD as required <input type="checkbox"/> III. CLP Like Summary (no raw data) <input checked="" type="checkbox"/> IV. Data Validation Report <input checked="" type="checkbox"/> V. EDD																																																																																																																																																																																																																																										
Relinquished by: (Print/Signature/Affiliation) Amy Dahl / Amy Dahl / AECOM		Date: 4/28/15		Time: 1415		Received by: (Print/Signature/Affiliation) Les Kennedy ALS		Date: 4/29/15		Time: 1000																																																																																																																																																																																																																																					
Relinquished by: (Print/Signature/Affiliation)		Date:		Time:		Received by: (Print/Signature/Affiliation)		Date:		Time:																																																																																																																																																																																																																																					
Relinquished by: (Print/Signature/Affiliation)		Date:		Time:		Received by: (Print/Signature/Affiliation)		Date:		Time:																																																																																																																																																																																																																																					



PC Christian

Cooler Receipt and Preservation Form

Client / Project: Teck American Service Request K15 04493

Received: 4/29/15 Opened: 4/29/15 By: UU Unloaded: 4/29/15 By: UU

- 1. Samples were received via? Mail Fed Ex UPS DHL PDX Courier Hand Delivered
- 2. Samples were received in: (circle) Cooler Box Envelope Other _____ NA
- 3. Were custody seals on coolers? NA Y N If yes, how many and where? 1 front 2 sides
- If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID NA	Tracking Number	NA	Filed
-0.7	-0.6	0.7	0.8	+0.1	361	①	8738 8171 7648		

- 4. Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves _____
- 5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
- 6. Did all bottles arrive in good condition (unbroken)? Indicate in the table below. NA Y N
- 7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
- 8. Did all sample labels and tags agree with custody papers? Indicate major discrepancies in the table on page 2. NA Y N
- 9. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
- 10. Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? Indicate in the table below. NA Y N
- 11. Were VOA vials received without headspace? Indicate in the table below. NA Y N
- 12. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count	Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: _____



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SEDIMENT - ICS
CHAIN-OF-CUSTODY RECORD

DATE: 4/29/15
PAGE: 1 OF 3

SR # / LAB USE ONLY
V1504531

LABORATORY CLIENT: Teck American Incorporated						CLIENT PROJECT NAME / NUMBER: Bossburg Soil/Sediment						P.O. NO.: UCR-CAS-D21-14									
ADDRESS: 501 N. Riverpoint Blvd Ste 300, Spokane, WA 99202						PROJECT CONTACT: Dave Enos, Teck American Incorporated						B# To: Dave Enos, Teck American Incorporated									
TEL: 509-623-4505		Call: 509-795-9599		E-MAIL: dave.enos@teck.com		SAMPLER(S): (PRINT and SIGNATURE) KY						TEMPERATURE UPON RECEIPT: _____ °C									
AECOM CONTACT: Christine Gebel						REQUESTED ANALYSES						HOLDING TIME REQUIREMENTS									
ADDRESS: 1501 4th Avenue, Suite 1400, Seattle, WA 98101																					
TEL: 206-438-2103		Fax: 866-495-5288		E-MAIL: christine.gebel@aecom.com		< 2 mm		< 250 µm		Whole Sed.		EPA 6020A / Metals - 180 Days EPA 6010C / Metals - 180 Days EPA 7471B / Mercury - 28 Days Percent Moisture - 180 Days pH - 7 Days TOC - 28 Days IVBA - 180 Days Grain Size - 180 Days									
TURNAROUND TIME: <input type="radio"/> SAME DAY <input type="radio"/> 24 HR <input type="radio"/> 48 HR <input type="radio"/> 72 HR <input checked="" type="radio"/> Standard																					
SPECIAL INSTRUCTIONS: *TAL Metals: Metals by EPA 6020A: Al, Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Mn, Ni, Se, Ag, Ti, V, Zn Metals by EPA 6010C: Ca, Fe, Mg, K, Na Mercury by EPA 7471B IVBA: As & Pb by EPA 6020A						TAL Metals*		% Moisture / EPA 160.3		pH / EPA 9045D		TOC / ASTM D4129-05		TAL Metals*		IVBA / Ruby Extr. EPA 6020A		Grain Size / PESP		ISM	
CLIENT SAMPLE ID		ALS LAB ID (Lab Use Only)		SAMPLING DATE TIME		MATRIX TYPE		NO. OF CONTAINERS												Comments	
1		SDU-06-1CS-C		4/29/15 0940		SE		1		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		Field Split	
2										<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>			
3										<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>			
4										<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>			
5										<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>			
6										<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>			
7										<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>			
8										<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>			
9										<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>			
10										<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>			
*Matrix Type: FB (Field Blank), PW (Porewater), R (Rinsate), SE (Sediment)						REPORT REQUIREMENTS:															
Additional Comments: Fed Ex Tracking # 8738 8171 7626						<input type="checkbox"/> I. Routine Report: Method Blank, Surrogate, as required															
						<input type="checkbox"/> II. Report Dup., MS, MSD as required															
						<input type="checkbox"/> III. CLP Like Summary (no raw data)															
						<input checked="" type="checkbox"/> IV. Data Validation Report															
						<input checked="" type="checkbox"/> V. EDD															
Relinquished by: (Print/Signature/Affiliation) Amy Dahl / Amy Dahl / AECOM		Date 4/29/15		Time 1415		Received by: (Print/Signature/Affiliation) [Signature] ALS		Date 5/1/15		Time 0940											
Relinquished by: (Print/Signature/Affiliation)		Date		Time		Received by: (Print/Signature/Affiliation)		Date		Time											
Relinquished by: (Print/Signature/Affiliation)		Date		Time		Received by: (Print/Signature/Affiliation)		Date		Time											



PC Christian

Cooler Receipt and Preservation Form

Client / Project: Teck American Service Request K15 04531
 Received: 4/5/15 Opened: 5/1/15 By: [Signature] Unloaded: 5/1/15 By: [Signature]

- Samples were received via? Mail Fed Ex UPS DHL PDX Courier Hand Delivered
- Samples were received in: (circle) Cooler Box Envelope Other NA
- Were custody seals on coolers? NA Y N If yes, how many and where? 2, Sides 1, front
 If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	NA	Filed
-3	-4	1.2	1.1	-1	350	NA	8738 8171 7626		

- Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves
- Were custody papers properly filled out (ink, signed, etc.)? NA Y N
- Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* NA Y N
- Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
- Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA Y N
- Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
- Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
- Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
- Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count	Out of	Head-	Broke	pH	Reagent	Volume	Reagent Lot	Initials	Time
	Bottle Type	Temp	space				added	Number		

Notes, Discrepancies, & Resolutions:



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SR # / LAB USE ONLY
 K1504531

SEDIMENT - ICS
 CHAIN-OF-CUSTODY RECORD

DATE: 5/4/15
 PAGE: 1 OF 1

LABORATORY CLIENT Teck American Incorporated						CLIENT PROJECT NAME / NUMBER Bossburg Soil/Sediment						P.O. NO. UCR-CAS-D21-14		
ADDRESS 501 N. Riverpoint Blvd Ste 300, Spokane, WA 99202						PROJECT CONTACT Dave Enos, Teck American Incorporated						B# To: Dave Enos, Teck American Incorporated		
TEL 509-623-4505		Cell 509-795-9599		E-MAIL dave.enos@teck.com		SAMPLER(S) (PRINT and SIGNATURE) EV/ALD						TEMPERATURE UPON RECEIPT _____ °C		
AECOM CONTACT Christine Gebel						REQUESTED ANALYSES						HOLDING TIME REQUIREMENTS		
ADDRESS 1501 4th Avenue, Suite 1400, Seattle, WA 98101														
TEL 206-438-2103		Fax 866-495-5288		E-MAIL christine.gebel@aecom.com		< 2 mm		< 250 µm		Whole Sed.		EPA 6020A / Metals - 180 Days EPA 6010C / Metals - 180 Days EPA 7471B / Mercury - 28 Days Percent Moisture - 180 Days pH - 7 Days TOC - 28 Days IVBA - 180 Days Grain Size - 180 Days		
TURNAROUND TIME <input type="radio"/> SAME DAY <input type="radio"/> 24 HR <input type="radio"/> 48 HR <input type="radio"/> 72 HR <input checked="" type="radio"/> Standard						TAL Metals*		TAL Metals*		Grain Size / PESP				
SPECIAL INSTRUCTIONS: *TAL Metals: Metals by EPA 6020A: Al, Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Mn, Ni, Se, Ag, Tl, V, Zn Metals by EPA 6010C: Ca, Fe, Mg, K, Na Mercury by EPA 7471B IVBA: As & Pb by EPA 6020A						TAL Metals*		IVBA / Ruby Extr. EPA 6020A		ISM		Comments		
CLIENT SAMPLE ID		ALS LAB ID (Lab Use Only)		SAMPLING DATE TIME		MATRIX* TYPE		NO. OF CONTAINERS						
1	SDV-09-1CS-A			5/2/15	0905	SE	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	no split
2	SDV-10-1CS			5/4/15	0749	SE	2*	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	EPA split
3								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	* increment SDV-10-R05
5								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	was saturated + sent in
6								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	separately for special
7								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	handling for wet samples
8								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
9								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
10								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
*Matrix Type: FB (Field Blank), PW (Porewater), R (Rinsate), SE (Sediment)						REPORT REQUIREMENTS:								
Additional Comments: Fe & Extracting 8065 0584 1501						<input type="checkbox"/> I. Routine Report: Method Blank, Surrogate, as required <input type="checkbox"/> II. Report Dup., MS, MSD as required <input type="checkbox"/> III. CLP Like Summary (no raw data) <input checked="" type="checkbox"/> IV. Data Validation Report <input checked="" type="checkbox"/> V. EDD								
Relinquished by: (Print/Signature/Affiliation) Amy Dahl / AECOM		Date 5/4/15		Time 1415		Received by: (Print/Signature/Affiliation) Kemith ALS		Date 5/5/15		Time 0950				
Relinquished by: (Print/Signature/Affiliation)		Date		Time		Received by: (Print/Signature/Affiliation)		Date		Time				
Relinquished by: (Print/Signature/Affiliation)		Date		Time		Received by: (Print/Signature/Affiliation)		Date		Time				



Cooler Receipt and Preservation Form

Client / Project: Teck American Service Request K15 04531
 Received: 5/5/15 Opened: 5/5/15 By: [Signature] Unloaded: 5/5/15 By: [Signature]

- Samples were received via? Mail Fed Ex UPS DHL PDX Courier Hand Delivered
- Samples were received in: (circle) Cooler Box Envelope Other NA
- Were custody seals on coolers? NA Y N If yes, how many and where? 2, sides 1, front
 If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp.	Corrected Cooler Temp.	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	NA	Filed
<u>-4</u>	<u>-4</u>	<u>.4</u>	<u>.4</u>	<u>0</u>	<u>339</u>	<u>NA</u>	<u>8065 05841501</u>		

- Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves
- Were custody papers properly filled out (ink, signed, etc.)? NA Y N
- Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* NA Y N
- Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
- Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA Y N
- Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
- Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
- Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
- Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count	Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: _____



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SEDIMENT - ICS
CHAIN-OF-CUSTODY RECORD

DATE: 5/5/15
PAGE: 1 OF 2

SR # / LAB USE ONLY
K1504531

LABORATORY CLIENT Teck American Incorporated						CLIENT PROJECT NAME / NUMBER Bossburg Soil/Sediment						P.O. NO. UCR-CAS-D21-14	
ADDRESS: 501 N. Riverpoint Blvd Ste 300, Spokane, WA 99202						PROJECT CONTACT: Dave Enos, Teck American Incorporated						B# To: Dave Enos, Teck American Incorporated	
TEL 509-623-4505		Cell 509-795-9599		E-MAIL dave.enos@teck.com		SAMPLER(S) (PRINT and SIGNATURE) KY						TEMPERATURE UPON RECEIPT: _____ °C	
AECOM CONTACT: Christine Gebel						REQUESTED ANALYSES						HOLDING TIME REQUIREMENTS	
ADDRESS: 1501 4th Avenue, Suite 1400, Seattle, WA 98101													
TEL 206-438-2103		Fax 866-495-5288		E-MAIL: christine.gebel@aecom.com		< 2 mm		< 250 µm		Whole Sed.		EPA 6020A / Metals - 180 Days EPA 6010C / Metals - 180 Days EPA 7471B / Mercury - 28 Days Percent Moisture - 180 Days pH - 7 Days TOC - 28 Days IVBA - 180 Days Grain Size - 180 Days	
TURNAROUND TIME <input type="radio"/> SAME DAY <input type="radio"/> 24 HR <input type="radio"/> 48 HR <input type="radio"/> 72 HR <input checked="" type="radio"/> Standard													
SPECIAL INSTRUCTIONS *TAL Metals: Metals by EPA 6020A: Al, Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Mn, Ni, Se, Ag, Tl, V, Zn Metals by EPA 6010C: Ca, Fe, Mg, K, Na Mercury by EPA 7471B IVBA: As & Pb by EPA 6020A						TAL Metals*		TAL Metals*		Grain Size / PESP		ISM	
CLIENT SAMPLE ID		ALS LAB ID (Lab Use Only)		SAMPLING DATE TIME		MATRIX* TYPE		NO. OF CONTAINERS				Comments	
1 SDV-04-ICS				5/5/15 0755		SE		1		<input checked="" type="checkbox"/>		no splits	
2										<input type="checkbox"/>			
3										<input type="checkbox"/>			
4										<input type="checkbox"/>			
5										<input type="checkbox"/>			
6										<input type="checkbox"/>			
7										<input type="checkbox"/>			
8										<input type="checkbox"/>			
9										<input type="checkbox"/>			
10										<input type="checkbox"/>			
*Matrix Type: FB (Field Blank), PW (Porewater), R (Rinsate), SE (Sediment)						REPORT REQUIREMENTS:							
Additional Comments: FedEx tracking 8065 0594 1464						<input type="checkbox"/> I. Routine Report: Method Blank, Surrogate, as required							
						<input type="checkbox"/> II. Report Dup., MS, MSD as required							
						<input type="checkbox"/> III. CLP Like Summary (no raw data)							
						<input checked="" type="checkbox"/> IV. Data Validation Report							
						<input checked="" type="checkbox"/> V. EDD							
Relinquished by: (Print/Signature/Affiliation) Amy Dahl / Amy Dahl / AECOM		Date 5/5/15		Time 1415		Received by: (Print/Signature/Affiliation) SIWOLF / ALS		Date 5/6/15		Time 1010			
Relinquished by: (Print/Signature/Affiliation)		Date		Time		Received by: (Print/Signature/Affiliation)		Date		Time			
Relinquished by: (Print/Signature/Affiliation)		Date		Time		Received by: (Print/Signature/Affiliation)		Date		Time			



PC Christian

Cooler Receipt and Preservation Form

Client / Project: Tech Ann Service Request K15 04531

Received: 5/6/19 Opened: 5/6/19 By: Jur Unloaded: 5/6/19 By: Jur

- 1. Samples were received via? Mail Fed Ex UPS DHL PDX Courier Hand Delivered
- 2. Samples were received in: (circle) Cooler Box Envelope Other NA
- 3. Were custody seals on coolers? NA Y N If yes, how many and where? one front, 2 sides
- If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	NA	Filed
-0.5	-0.6	broken →		-0.1	316	NA	8065 0584 1464		

- 4. Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves
- 5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
- 6. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* NA Y N
- 7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
- 8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA Y N
- 9. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
- 10. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
- 11. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
- 12. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count	Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: _____



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SEDIMENT - ICS
 CHAIN-OF-CUSTODY RECORD

DATE: 5/7/15
 PAGE: 1 OF 1

SR # / LAB USE ONLY
W1504531

LABORATORY CLIENT: Teck American Incorporated						CLIENT PROJECT NAME / NUMBER: Bossburg Soil/Sediment						P.O. NO.: UCR-CAS-D21-14			
ADDRESS: 501 N. Riverpoint Blvd Ste 300, Spokane, WA 99202						PROJECT CONTACT: Dave Enos, Teck American Incorporated						B# To.: Dave Enos, Teck American Incorporated			
TEL: 509-623-4505		Cell: 509-795-9599		E-MAIL: dave.enos@teck.com		SAMPLER(S): (PRINT and SIGNATURE) AUD						TEMPERATURE UPON RECEIPT: _____ °C			
AECOM CONTACT: Christine Gebel						REQUESTED ANALYSES						HOLDING TIME REQUIREMENTS			
ADDRESS: 1501 4th Avenue, Suite 1400, Seattle, WA 98101															
TEL: 206-438-2103		Fax: 866-495-5288		E-MAIL: christine.gebel@aecom.com		< 2 mm		< 250 µm		Whole Sed.		EPA 6020A / Metals - 180 Days EPA 6010C / Metals - 180 Days EPA 7471B / Mercury - 28 Days Percent Moisture - 180 Days pH - 7 Days TOC - 28 Days IVBA - 180 Days Grain Size - 180 Days			
TURNAROUND TIME: <input type="radio"/> SAME DAY <input type="radio"/> 24 HR <input type="radio"/> 48 HR <input type="radio"/> 72 HR <input checked="" type="radio"/> Standard						TAL Metals*		TAL Metals*		Grain Size / PESP				ISM	
SPECIAL INSTRUCTIONS: *TAL Metals: Metals by EPA 6020A: Al, Sb, As, Ba, Be, Cd, Cr, Co, Cu,Pb, Mn, Ni, Se, Ag, Tl, V, Zn Metals by EPA 6010C: Ca, Fe, Mg, K, Na Mercury by EPA 7471B IVBA: As & Pb by EPA 6020A						% Moisture / EPA 180.3		PH / EPA 9045D		TOC / ASTM D4129-05				IVBA / Ruby Extr. EPA 6020A	
CLIENT SAMPLE ID		ALS LAB ID (Lab Use Only)		SAMPLING DATE		SAMPLING TIME		MATRIX* TYPE		NO. OF CONTAINERS				Comments	
1		SDU-07-1CS-A		5/6/15		1023		SE		1				no splits	
2		SDU-07-1CS-B		5/6/15		1001		SE		1				no splits	
3															
4															
5															
6															
7															
8															
9															
10															
*Matrix Type: FB (Field Blank), PW (Porewater), R (Rinsate), SE (Sediment)						REPORT REQUIREMENTS:									
Additional Comments: FedEx Tracking 8065 0584 1534						<input type="checkbox"/> I. Routine Report: Method Blank, Surrogate, as required <input type="checkbox"/> II. Report Dup., MS, MSD as required <input type="checkbox"/> III. CLP Like Summary (no raw data) <input checked="" type="checkbox"/> IV. Data Validation Report <input checked="" type="checkbox"/> V. EDD									
						Relinquished by: (Print/Signature/Affiliation) Amey Dahl / AECOM		Date 5/7/15		Time 1415		Received by: (Print/Signature/Affiliation) K Smith ALS		Date 5/8/15	
Relinquished by: (Print/Signature/Affiliation)		Date		Time		Received by: (Print/Signature/Affiliation)		Date		Time					
Relinquished by: (Print/Signature/Affiliation)		Date		Time		Received by: (Print/Signature/Affiliation)		Date		Time					



Cooler Receipt and Preservation Form

Client / Project: Teck American Service Request K15 04531

Received: 5/8/15 Opened: 5/8/15 By: HD Unloaded: 5/8/15 By: HD

- 1. Samples were received via? Mail Fed Ex UPS DHL PDX Courier Hand Delivered
- 2. Samples were received in: (circle) Cooler Box Envelope Other NA
- 3. Were custody seals on coolers? NA Y N If yes, how many and where? 1, front 2, sides
 If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	NA	Filed
1.0	1.1	1.5	1.6	+1	342		80650584 1584		
-3	-4	1.2	1.1	-1	351		80650584 1497		
-7	-7	1.6	1.6	0	358		80650584 1512		
1.5	1.6	1.6	1.7	+1	322		80650584 1486		

- 4. Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves
- 5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
- 6. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* NA Y N
- 7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
- 8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA Y N
- 9. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
- 10. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
- 11. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
- 12. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count	Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: _____



Environmental

1317 South 13th Ave.
Kelso, WA 98626
TEL: (360) 577-7222 / (800) 695-7222 / FAX: (360) 636-1068
www.alsglobal.com

SOIL - CORE
CHAIN-OF-CUSTODY RECORD

DATE: 4/28/15

PAGE: 1 OF 1

SR # / LAB USE ONLY
K1504536

LABORATORY CLIENT Teck American Incorporated					CLIENT PROJECT NAME / NUMBER Bossburg Soil/Sediment					P.O. NO. UCR-CAS-D21-14																																																																																				
ADDRESS 501 N. Riverpoint Blvd Ste 300, Spokane, WA 99202										PROJECT CONTACT Dave Enos, Teck American Incorporated					BILL TO Dave Enos, Teck American Incorporated																																																																															
TEL: 509-623-4505			Cell: 509-795-9599		E-MAIL: dave.enos@teck.com					TEMPERATURE UPON RECEIPT _____ °C																																																																																				
AECOM CONTACT Christine Gebel										SAMPLER(S); (PRINT and SIGNATURE) MS/MV					REQUESTED ANALYSES																																																																															
ADDRESS: 1501 4th Avenue, Suite 1400, Seattle, WA 98101										HOLDING TIME REQUIREMENTS																																																																																				
TEL: 206-438-2103			Fax: 866-495-5288		E-MAIL: christine.gebel@aecom.com					<table border="1"> <tr> <td>< 2 mm</td> <td>< 150 µm</td> <td>Whole Sed.</td> </tr> <tr> <td></td> <td></td> <td></td> </tr> </table>					< 2 mm	< 150 µm	Whole Sed.																																																																													
< 2 mm	< 150 µm	Whole Sed.																																																																																												
TURNAROUND TIME <input type="radio"/> SAME DAY <input type="radio"/> 24 HR <input type="radio"/> 48 HR <input type="radio"/> 72 HR <input checked="" type="radio"/> Standard										<table border="1"> <tr> <td>TAL* Metals</td> <td>% Moisture / EPA 160.3</td> <td>pH / EPA 9045D</td> <td>TOC / ASTM D4129-05</td> <td>CEC / EPA 9080</td> <td>TAL Metals*</td> <td>IVBA / Ruby Extr. EPA 6020A</td> <td>Grain Size / PESP</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>					TAL* Metals	% Moisture / EPA 160.3	pH / EPA 9045D	TOC / ASTM D4129-05	CEC / EPA 9080	TAL Metals*	IVBA / Ruby Extr. EPA 6020A	Grain Size / PESP																																																																								
TAL* Metals	% Moisture / EPA 160.3	pH / EPA 9045D	TOC / ASTM D4129-05	CEC / EPA 9080	TAL Metals*	IVBA / Ruby Extr. EPA 6020A	Grain Size / PESP																																																																																							
SPECIAL INSTRUCTIONS *TAL Metals: Metals by EPA 6020A: Al, Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Mn, Ni, Se, Ag, Tl, V, Zn Metals by EPA 6010C: Ca, Fe, Mg, K, Na Mercury by EPA 7471B IVBA: As & Pb by EPA 6020A										<table border="1"> <tr> <td colspan="8">EPA 6020A / Metals - 180 Days</td> </tr> <tr> <td colspan="8">EPA 6010C / Metals - 180 Days</td> </tr> <tr> <td colspan="8">EPA 7471B / Mercury - 28 Days</td> </tr> <tr> <td colspan="8">Percent Moisture - 180 Days</td> </tr> <tr> <td colspan="8">pH - 7 Days</td> </tr> <tr> <td colspan="8">TOC - 28 Days</td> </tr> <tr> <td colspan="8">IVBA - 180 Days</td> </tr> <tr> <td colspan="8">Grain Size - 180 Days</td> </tr> <tr> <td colspan="8">EPA 9080 / CEC - 14 Days</td> </tr> <tr> <td colspan="8">Comments</td> </tr> </table>					EPA 6020A / Metals - 180 Days								EPA 6010C / Metals - 180 Days								EPA 7471B / Mercury - 28 Days								Percent Moisture - 180 Days								pH - 7 Days								TOC - 28 Days								IVBA - 180 Days								Grain Size - 180 Days								EPA 9080 / CEC - 14 Days								Comments							
EPA 6020A / Metals - 180 Days																																																																																														
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EPA 9080 / CEC - 14 Days																																																																																														
Comments																																																																																														
CLIENT SAMPLE ID		ALS LAB ID (Lab Use Only)		SAMPLING DATE TIME		MATRIX* TYPE	NO. OF CONTAINERS																																																																																							
1	VDV-04-COR-01-001		4/24/15	1634	Soil	2		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	EPA split																																																																												
2	VDV-04-COR-01-002			1648		1		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>																																																																													
3	VDV-04-COR-01-003			1645		1		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>																																																																													
4	VDV-04-COR-02-001		4/25/15	0826		1		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	EPA split + extravalume																																																																												
5	VDV-04-COR-02-002			0850		3		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>																																																																													
6	VDV-04-COR-02-003			0930		1		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>																																																																													
7	VDV-04-COR-03-001			1013		1		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>																																																																													
8	VDV-04-COR-03-002			1018		1		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>																																																																													
9	VDV-04-COR-03-003			1036		1		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>																																																																													
10								<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>																																																																													
*Matrix Type: FB (Field Blank), PW (Porewater), R (Rinsate), SE (Sediment)										REPORT REQUIREMENTS:																																																																																				
Additional Comments: FedEx tracking 9738 5171 7659										<input type="checkbox"/> I. Routine Report: Method Blank, Surrogate, as required <input type="checkbox"/> II. Report Dup., MS, MSD as required <input type="checkbox"/> III. CLP Like Summary (no raw data) <input checked="" type="checkbox"/> IV. Data Validation Report <input checked="" type="checkbox"/> V. EDD																																																																																				
Relinquished by: (Print/Signature/Affiliation) Amy Dahl / Amy Dahl / AECOM			Date 4/28/15		Time 1415		Received by: (Print/Signature/Affiliation) K. Smith / ALS			Date 4/30/15		Time 0920																																																																																		
Relinquished by: (Print/Signature/Affiliation)			Date		Time		Received by: (Print/Signature/Affiliation)			Date		Time																																																																																		
Relinquished by: (Print/Signature/Affiliation)			Date		Time		Received by: (Print/Signature/Affiliation)			Date		Time																																																																																		



PC Christian

Cooler Receipt and Preservation Form

Client / Project: Teek Service Request K15 04536
 Received: 4/30/15 Opened: 4/30/15 By: [Signature] Unloaded: 4/30/15 By: [Signature]

1. Samples were received via? Mail Fed Ex UPS DHL PDX Courier Hand Delivered
2. Samples were received in: (circle) Cooler Box Envelope Other _____ NA
3. Were custody seals on coolers? NA Y N If yes, how many and where? 1 From 2 side
 If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	NA	Filed
1.3	1.4	2.6	2.7	0.1	360	<u>NA</u>	873881717659		

4. Packing material: Inserts Raggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves _____
5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
6. Did all bottles arrive in good condition (unbroken)? Indicate in the table below. NA Y N
7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
8. Did all sample labels and tags agree with custody papers? Indicate major discrepancies in the table on page 2. NA Y N
9. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
10. Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? Indicate in the table below. NA Y N
11. Were VOA vials received without headspace? Indicate in the table below. NA Y N
12. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count	Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: _____



Environmental

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SEDIMENT - CORE
CHAIN-OF-CUSTODY RECORD

DATE: 4/30/15
PAGE: 1 OF 1

SR # / LAB USE ONLY
K1504599

LABORATORY CLIENT: Teck American Incorporated						CLIENT PROJECT NAME / NUMBER: Bossburg Soil/Sediment						P.O. NO.: UCR-CAS-D21-14							
ADDRESS: 501 N. Riverpoint Blvd Ste 300, Spokane, WA 99202						PROJECT CONTACT: Dave Enos, Teck American Incorporated						BILL TO: Dave Enos, Teck American Incorporated							
TEL: 509-623-4505		Cell: 509-795-9599		E-MAIL: dave.enos@teck.com		SAMPLER(S): (PRINT and SIGNATURE) MS						TEMPERATURE UPON RECEIPT: _____ °C							
AECOM CONTACT: Christine Gebel						REQUESTED ANALYSES						HOLDING TIME REQUIREMENTS							
ADDRESS: 1501 4th Avenue, Suite 1400, Seattle, WA 98101																			
TEL: 206-438-2103		Fax: 866-495-5288		E-MAIL: christine.gebel@aecom.com		< 2 mm		< 250 µm		Whole Sed.									
TURNAROUND TIME: <input type="radio"/> SAME DAY <input type="radio"/> 24 HR <input type="radio"/> 48 HR <input type="radio"/> 72 HR <input checked="" type="radio"/> Standard						TAL Metals*		% Moisture / EPA 160.3		pH / EPA 9045D		TOC / ASTM D4129-05		TAL Metals*		IVBA / Ruby Extr. EPA 6020A		Grain Size / PESP	
SPECIAL INSTRUCTIONS: *TAL Metals: Metals by EPA 6020A: Al, Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Mn, Ni, Se, Ag, Tl, V, Zn Metals by EPA 6010C: Ca, Fe, Mg, K, Na Mercury by EPA 7471B IVBA: As & Pb by EPA 6020A						EPA 6020A / Metals - 180 Days EPA 6010C / Metals - 180 Days EPA 7471B / Mercury - 28 Days Percent Moisture - 180 Days pH - 7 Days TOC - 28 Days IVBA - 180 Days Grain Size - 180 Days													
CLIENT SAMPLE ID	ALS LAB ID (Lab Use Only)	SAMPLING		MATRIX* TYPE	NO. OF CONTAINERS	TAL Metals*	% Moisture / EPA 160.3	pH / EPA 9045D	TOC / ASTM D4129-05	TAL Metals*	IVBA / Ruby Extr. EPA 6020A	Grain Size / PESP	Comments						
		DATE	TIME																
1	SDU-01-COR-01-001	4/29/15	0849	SE	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>							
2	SDU-01-COR-01-002		0854		1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>							
3	SDU-01-COR-01-003		0858		1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>							
4	SDU-01-COR-02-001		0909		1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>							
5	SDU-01-COR-02-002		0912		1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>							
6	SDU-01-COR-02-003		0920		1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>							
7	SDU-01-COR-03-001		0932		1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>							
8	SDU-01-COR-03-002		0935		1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>							
9	SDU-01-COR-03-003	0	0941	0	3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		Field + EPA splits					
10						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>							
*Matrix Type: FB (Field Blank), PW (Porewater), R (Rinsate), SE (Sediment)						REPORT REQUIREMENTS:													
Additional Comments: FedEx tracking 8778 8171 7800						<input type="checkbox"/> I. Routine Report: Method Blank, Surrogate, as required													
						<input type="checkbox"/> II. Report Dup., MS, MSD as required													
						<input type="checkbox"/> III. CLP Like Summary (no raw data)													
						<input checked="" type="checkbox"/> IV. Data Validation Report													
						<input checked="" type="checkbox"/> V. EDD													
Relinquished by: (Print/Signature/Affiliation) <i>Amy Duke / AECOM</i>		Date 4/30/15		Time 1415		Received by: (Print/Signature/Affiliation) <i>[Signature] ALS</i>		Date 5/1/15		Time 0940									
Relinquished by: (Print/Signature/Affiliation)		Date		Time		Received by: (Print/Signature/Affiliation)		Date		Time									
Relinquished by: (Print/Signature/Affiliation)		Date		Time		Received by: (Print/Signature/Affiliation)		Date		Time									



PC Christian

Cooler Receipt and Preservation Form

Client / Project: Teck American Service Request K15 04599
 Received: 4/5/15 Opened: 5/1/15 By: [Signature] Unloaded: 5/1/15 By: [Signature]

1. Samples were received via? Mail Fed Ex UPS DHL PDX Courier Hand Delivered
 2. Samples were received in: (circle) Cooler Box Envelope Other
 3. Were custody seals on coolers? NA Y N If yes, how many and where? 2, sides 1, front
 If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp: Blank	Corrected Temp: Blank	Gorr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	NA	Filed
<u>-.4</u>	<u>-.6</u>	<u>.3</u>	<u>.3</u>	<u>0</u>	<u>339</u>	<u>NA</u>	<u>7800 8171 7800</u>		

4. Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves
 5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
 6. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* NA Y N
 7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
 8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA Y N
 9. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
 10. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
 11. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
 12. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Out of Temp	Head- space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: _____



Environmental

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SEDIMENT - CORE
CHAIN-OF-CUSTODY RECORD

DATE: 4/30/15
PAGE: 1 OF 1

SR # / LAB USE ONLY
11504600

LABORATORY CLIENT: Teck American Incorporated						CLIENT PROJECT NAME / NUMBER: Bossburg Soil/Sediment						P.O. NO.: UCR-CAS-D21-14									
ADDRESS: 501 N. Riverpoint Blvd Ste 300, Spokane, WA 99202						PROJECT CONTACT: Dave Enos, Teck American Incorporated						BILL TO: Dave Enos, Teck American Incorporated									
TEL: 509-623-4505		Cell: 509-795-9599		E-MAIL: dave.enos@teck.com		SAMPLER(S) (PRINT and SIGNATURE): MS						TEMPERATURE UPON RECEIPT: _____ °C									
AECOM CONTACT: Christine Gebel						REQUESTED ANALYSES						HOLDING TIME REQUIREMENTS									
ADDRESS: 1501 4th Avenue, Suite 1400, Seattle, WA 98101																					
TEL: 206-438-2103		Fax: 866-495-5288		E-MAIL: christine.gebel@aecom.com		< 2 mm		< 250 µm		Whole Sed.		EPA 6020A / Metals - 180 Days EPA 6010C / Metals - 180 Days EPA 7471B / Mercury - 28 Days Percent Moisture - 180 Days pH - 7 Days TOC - 28 Days IVBA - 180 Days Grain Size - 180 Days									
TURNAROUND TIME: <input type="radio"/> SAME DAY <input type="radio"/> 24 HR <input type="radio"/> 48 HR <input type="radio"/> 72 HR <input checked="" type="radio"/> Standard						TAL Metals*		% Moisture / EPA 160.3		pH / EPA 9045D				TOC / ASTM D4129-05		TAL Metals*		IVBA / Ruby Extr. EPA 6020A		Grain Size / PESP	
SPECIAL INSTRUCTIONS: *TAL Metals: Metals by EPA 6020A: Al, Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Mn, Ni, Se, Ag, Tl, V, Zn Metals by EPA 6010C: Ca, Fe, Mg, K, Na Mercury by EPA 7471B IVBA: As & Pb by EPA 6020A																					
CLIENT SAMPLE ID	ALS LAB ID (Lab Use Only)	SAMPLING		MATRIX* TYPE	NO. OF CONTAINERS											Comments					
		DATE	TIME																		
1	SDU-02-COR-01-001		4/24/15	1018	SE	2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Field + EPA splits				
2	SDU-02-COR-01-002			1027		2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Field split				
3	SDU-02-COR-01-003			1036		1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
4	SDU-02-COR-02-001			1110		1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
5	SDU-02-COR-02-002			1114		1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
6	SDU-COR-02-003			1118		1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
7	SDU-02-COR-03-001			1136		1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
8	SDU-02-COR-03-002			1140		2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	EPA split				
9	SDU-02-COR-03-003			1148		1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					
10							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
*Matrix Type: FB (Field Blank), PW (Porewater), R (Rinsate), SE (Sediment)						REPORT REQUIREMENTS:															
Additional Comments: FedEx tracking 8738 8171 7810						<input type="checkbox"/> I. Routine Report: Method Blank, Surrogate, as required <input type="checkbox"/> II. Report Dup., MS, MSD as required <input type="checkbox"/> III. CLP Like Summary (no raw data) <input checked="" type="checkbox"/> IV. Data Validation Report <input checked="" type="checkbox"/> V. EDD															
Relinquished by: (Print/Signature/Affiliation) Amy Dahl / Amy Dahl / AECOM			Date 4/30/15			Time 1415			Received by: (Print/Signature/Affiliation) ALS			Date 5/1/15			Time 0940						
Relinquished by: (Print/Signature/Affiliation)			Date			Time			Received by: (Print/Signature/Affiliation)			Date			Time						
Relinquished by: (Print/Signature/Affiliation)			Date			Time			Received by: (Print/Signature/Affiliation)			Date			Time						



PC Christian

Cooler Receipt and Preservation Form

Client / Project: Teck American Service Request K15 04600
 Received: 4/5/15 Opened: 5/1/15 By: [Signature] Unloaded: 5/1/15 By: [Signature]

1. Samples were received via? Mail Fed Ex UPS DHL PDX Courier Hand Delivered
2. Samples were received in: (circle) Cooler Box Envelope Other NA
3. Were custody seals on coolers? NA Y N
 If present, were custody seals intact? Y N
 If yes, how many and where? 2, Sides 1, front
 If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp/Blank	Corrected Temp/Blank	Corr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	NA	Filed
<u>-.6</u>	<u>-.7</u>	<u>.4</u>	<u>.3</u>	<u>-.1</u>	<u>359</u>	<u>NA</u>	<u>8138 8171 7810</u>		

4. Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves
5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
6. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* NA Y N
7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA Y N
9. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
10. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
11. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
12. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Out of Temp	Head- space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: _____



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SEDIMENT - CORE
CHAIN-OF-CUSTODY RECORD

DATE: 4/30/15
PAGE: 1 OF 2

SR # / LAB USE ONLY
K1504604

LABORATORY CLIENT: Teck American Incorporated						CLIENT PROJECT NAME / NUMBER: Bossburg Soil/Sediment						P.O. NO.: UCR-CAS-D21-14									
ADDRESS: 501 N. Riverpoint Blvd Ste 300, Spokane, WA 99202						PROJECT CONTACT: Dave Enos, Teck American Incorporated						Bill To: Dave Enos, Teck American Incorporated									
TEL: 509-623-4505		Cell: 509-795-9599		E-MAIL: dave.enos@teck.com		SAMPLER(S): (PRINT and SIGNATURE) MS						TEMPERATURE UPON RECEIPT: _____ °C									
AECOM CONTACT: Christine Gebel						REQUESTED ANALYSES						HOLDING TIME REQUIREMENTS									
ADDRESS: 1501 4th Avenue, Suite 1400, Seattle, WA 98101																					
TEL: 206-438-2103		Fax: 866-495-5288		E-MAIL: christine.gebel@aecom.com		< 2 mm		< 250 µm		Whole Sed.											
TURNAROUND TIME: <input type="radio"/> SAME DAY <input type="radio"/> 24 HR <input type="radio"/> 48 HR <input type="radio"/> 72 HR <input checked="" type="radio"/> Standard						TAL Metals*		% Moisture / EPA 160.3		pH / EPA 9045D		TOC / ASTM D4129-05		TAL Metals*		IVBA / Ruby Extr. EPA 9020A		Grain Size / PESP			
SPECIAL INSTRUCTIONS: *TAL Metals: Metals by EPA 6020A: Al, Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Mn, Ni, Se, Ag, Ti, V, Zn Metals by EPA 6010C: Ca, Fe, Mg, K, Na Mercury by EPA 7471B IVBA: As & Pb by EPA 6020A						EPA 6020A / Metals - 180 Days		EPA 6010C / Metals - 180 Days		EPA 7471B / Mercury - 28 Days		Percent Moisture - 180 Days		pH - 7 Days		TOC - 28 Days		IVBA - 180 Days		Grain Size - 180 Days	
CLIENT SAMPLE ID		ALS LAB ID (Lab Use Only)		SAMPLING DATE TIME		MATRIX* TYPE		NO. OF CONTAINERS													
1	SDV-06-COR-01-001			4/29/15	1453	SE	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
2	SDV-06-COR-01-002				1500		1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
3	SDV-06-COR-01-003				1503		1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
4	SDV-06-COR-02-001				1524		1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
5	SDV-06-COR-02-002				1532		1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
6	SDV-06-COR-02-003				1534		1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
7	SDV-06-COR-03-001				1548		1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
8	SDV-06-COR-03-002				1602		1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
9	SDV-06-COR-03-003			0	1609		1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	EPA split	
10								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
*Matrix Type: FB (Field Blank), PW (Porewater), R (Rinsate), SE (Sediment)						REPORT REQUIREMENTS:															
Additional Comments: <i>shipped with rinsate blanks</i>						<input type="checkbox"/> I. Routine Report: Method Blank, Surrogate, as required															
<i>FedEx tracking 8738 8171 7637</i>						<input type="checkbox"/> II. Report Dup., MS, MSD as required															
						<input type="checkbox"/> III. CLP Like Summary (no raw data)															
						<input checked="" type="checkbox"/> IV. Data Validation Report															
						<input checked="" type="checkbox"/> V. EDD															
Relinquished by: (Print/Signature/Affiliation) <i>Amy Dahl / Amy Dahl / AECOM</i>		Date <i>4/30/15</i>		Time <i>1415</i>		Received by: (Print/Signature/Affiliation) <i>Hallas Smith ALS</i>		Date <i>3/1/15</i>		Time <i>0940</i>											
Relinquished by: (Print/Signature/Affiliation)		Date		Time		Received by: (Print/Signature/Affiliation)		Date		Time											
Relinquished by: (Print/Signature/Affiliation)		Date		Time		Received by: (Print/Signature/Affiliation)		Date		Time											



PC Christian

Cooler Receipt and Preservation Form

Client / Project: Teck American Service Request K15 04604
 Received: 4/5/15 Opened: 5/1/15 By: [Signature] Unloaded: 5/1/15 By: [Signature]

- Samples were received via? Mail Fed Ex UPS DHL PDX Courier Hand Delivered
- Samples were received in: (circle) Cooler Box Envelope Other NA
- Were custody seals on coolers? NA Y N
 If present, were custody seals intact? Y N
 If yes, how many and where? 2, sides 1, front
 If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp/Blank	Corrected Temp/Blank	Corr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	NA	Filed
<u>-4</u>	<u>-5</u>	<u>.3</u>	<u>.2</u>	<u>-1</u>	<u>325</u>	<u>NA</u>	<u>838 8171 7637</u>		

- Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves
- Were custody papers properly filled out (ink, signed, etc.)? NA Y N
- Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* NA Y N
- Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
- Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA Y N
- Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
- Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below.* NA Y N
- Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
- Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Out of Temp	Head- space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: _____

61504670

**SEDIMENT - CORE
CHAIN-OF-CUSTODY RECORD**

DATE: 5/1/15
PAGE: 2 OF 4



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SR # / LAB USE ONLY

LABORATORY CLIENT: Teck American Incorporated						CLIENT PROJECT NAME / NUMBER: Bossburg Soil/Sediment						P.O. NO.: UCR-CAS-D21-14								
ADDRESS: 501 N. Riverpoint Blvd Ste 300, Spokane, WA 99202						PROJECT CONTACT: Dave Enos, Teck American Incorporated						BILL TO: Dave Enos, Teck American Incorporated								
TEL: 509-623-4505		Cell: 509-795-9599		E-MAIL: dave.enos@teck.com		SAMPLER(S): (PRINT and SIGNATURE) AP						TEMPERATURE UPON RECEIPT: _____ °C								
AECOM CONTACT: Christine Gebel						REQUESTED ANALYSES						HOLDING TIME REQUIREMENTS								
ADDRESS: 1501 4th Avenue, Suite 1400, Seattle, WA 98101																				
TEL: 206-438-2103		Fax: 866-495-5288		E-MAIL: christine.gebel@aecom.com		< 2 mm		< 250 µm		Whole Sed.		EPA 6020A / Metals - 180 Days EPA 6010C / Metals - 180 Days EPA 7471B / Mercury - 28 Days Percent Moisture - 180 Days pH - 7 Days TOC - 28 Days IVBA - 180 Days Grain Size - 180 Days								
TURNAROUND TIME: <input type="radio"/> SAME DAY <input type="radio"/> 24 HR <input type="radio"/> 48 HR <input type="radio"/> 72 HR <input checked="" type="radio"/> Standard																				
SPECIAL INSTRUCTIONS: *TAL Metals: Metals by EPA 6020A: Al, Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Mn, Ni, Se, Ag, Tl, V, Zn Metals by EPA 6010C: Ca, Fe, Mg, K, Na Mercury by EPA 7471B IVBA: As & Pb by EPA 6020A						TAL Metals*		% Moisture / EPA 160.3		pH / EPA 9045D		TOC / ASTM D4129-05		TAL Metals*		IVBA / Ruby Extr. EPA 6020A		Grain Size / PESP		
CLIENT SAMPLE ID		ALS LAB ID (Lab Use Only)		SAMPLING DATE TIME		MATRIX* TYPE		NO. OF CONTAINERS										Comments		
1	SDV-05-COR-03-001			4/30/15	1606	SE	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	no splits
2	SDV-05-COR-03-002			4/30/15	1609	SE	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
3	SDV-05-COR-03-003			4/30/15	1603	SE	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
4								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
9								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
10								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
*Matrix Type: FB (Field Blank), PW (Porewater), R (Rinsate), SE (Sediment)						REPORT REQUIREMENTS:														
Additional Comments: Fed Ex Tracking 8738 8171 7921						<input type="checkbox"/> I. Routine Report: Method Blank, Surrogate, as required														
						<input type="checkbox"/> II. Report Dup., MS, MSD as required														
						<input type="checkbox"/> III. CLP Like Summary (no raw data)														
						<input checked="" type="checkbox"/> IV. Data Validation Report														
						<input checked="" type="checkbox"/> V. EDD														
Relinquished by: (Print/Signature/Affiliation) Amy Dahl / amy.dahl@AECOM		Date 5/1/15		Time 1415		Received by: (Print/Signature/Affiliation) [Signature] AS		Date 5/2/15		Time 0930										
Relinquished by: (Print/Signature/Affiliation)		Date		Time		Received by: (Print/Signature/Affiliation)		Date		Time										
Relinquished by: (Print/Signature/Affiliation)		Date		Time		Received by: (Print/Signature/Affiliation)		Date		Time										



PC Christian

Cooler Receipt and Preservation Form

Client / Project: TECK Service Request K15 04670
 Received: 5/2/15 Opened: 5/2/15 By: [Signature] Unloaded: 5/2/15 By: [Signature]

1. Samples were received via? Mail ~~Fed Ex~~ UPS DHL PDX Courier Hand Delivered
 2. Samples were received in: (circle) Cooler Box Envelope Other NA
 3. Were custody seals on coolers? NA Y N If yes, how many and where? 1F25
 If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	NA	Filed
0.6	0.4	0.7	0.5	-0.2	352	NA	873851717821		

4. Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves
 5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
 6. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* NA Y N
 7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
 8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA Y N
 9. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
 10. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
 11. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
 12. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count	Out of	Head-	Broke	pH	Reagent	Volume	Reagent Lot	Initials	Time
	Bottle Type	Temp	space				added	Number		

Notes, Discrepancies, & Resolutions: _____



Environmental

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SEDIMENT - CORE
CHAIN-OF-CUSTODY RECORD

DATE: 5/4/15
PAGE: 1 OF 2

SR # / LAB USE ONLY
K1504670

LABORATORY CLIENT Teck American Incorporated						CLIENT PROJECT NAME / NUMBER Bossburg Soil/Sediment						P.O. NO. UCR-CAS-D21-14									
ADDRESS 501 N. Riverpoint Blvd Ste 300, Spokane, WA 99202						PROJECT CONTACT Dave Enos, Teck American Incorporated						B# To Dave Enos, Teck American Incorporated									
TEL 509-623-4505		Cell 509-795-9599		E-MAIL dave.enos@teck.com		SAMPLER(S) (PRINT and SIGNATURE) AP						TEMPERATURE UPON RECEIPT _____ °C									
AECOM CONTACT Christine Gebel						REQUESTED ANALYSES						HOLDING TIME REQUIREMENTS									
ADDRESS 1501 4th Avenue, Suite 1400, Seattle, WA 98101																					
TEL 206-438-2103		Fax 866-495-5288		E-MAIL christine.gebel@aecom.com		< 2 mm		< 250 µm		Whole Sed.											
TURNAROUND TIME <input type="radio"/> SAME DAY <input type="radio"/> 24 HR <input type="radio"/> 48 HR <input type="radio"/> 72 HR <input checked="" type="radio"/> Standard						TAL Metals*		% Moisture / EPA 180.3		pH / EPA 9045D		TOC / ASTM D4129-05		TAL Metals*		IVBA / Ruby Extr. EPA 6020A		Grain Size / PESP			
SPECIAL INSTRUCTIONS *TAL Metals: Metals by EPA 6020A: Al, Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Mn, Ni, Se, Ag, Tl, V, Zn Metals by EPA 6010C: Ca, Fe, Mg, K, Na Mercury by EPA 7471B IVBA: As & Pb by EPA 6020A						EPA 6020A / Metals - 180 Days		EPA 6010C / Metals - 180 Days		EPA 7471B / Mercury - 28 Days		Percent Moisture - 180 Days		pH - 7 Days		TOC - 28 Days		IVBA - 180 Days		Grain Size - 180 Days	
CLIENT SAMPLE ID		ALS LAB ID (Lab Use Only)		SAMPLING DATE TIME		MATRIX* TYPE		NO. OF CONTAINERS		Comments											
1	SDV-05-COR-01-001			5/1/15	0955	SE		2		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				Field + EPA split	
2	SDV-05-COR-01-002				0900			1		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
3	SDV-05-COR-01-003				0905			1		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
4	SDV-05-COR-02-001				0930			1		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
5	SDV-05-COR-02-002				0940			2		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				Field split	
6	SDV-05-COR-02-003				0945			1		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					
7										<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
8										<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
9										<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
10										<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
*Matrix Type: FB (Field Blank), PW (Porewater), R (Rinsate), SE (Sediment)						REPORT REQUIREMENTS:															
Additional Comments: FedEx tracking 8738 8171 7832						<input type="checkbox"/> I. Routine Report: Method Blank, Surrogate, as required															
						<input type="checkbox"/> II. Report Dup., MS, MSD as required															
						<input type="checkbox"/> III. CLP Like Summary (no raw data)															
						<input checked="" type="checkbox"/> IV. Data Validation Report															
						<input checked="" type="checkbox"/> V. EDD															
Relinquished by: (Print/Signature/Affiliation) Amy Dabel / Amy Dabel / AECOM		Date 5/4/15		Time 1415		Received by: (Print/Signature/Affiliation) K Smith / K Smith ALS		Date 5/5/15		Time 0950											
Relinquished by: (Print/Signature/Affiliation)		Date		Time		Received by: (Print/Signature/Affiliation)		Date		Time											
Relinquished by: (Print/Signature/Affiliation)		Date		Time		Received by: (Print/Signature/Affiliation)		Date		Time											



PC Christian

Cooler Receipt and Preservation Form

Client / Project: Teck American Service Request K15 04670
 Received: 5/5/15 Opened: 5/5/15 By: [Signature] Unloaded: 5/5/15 By: [Signature]

1. Samples were received via? Mail Fed Ex UPS DHL PDX Courier Hand Delivered
 2. Samples were received in: (circle) Cooler Box Envelope Other NA
 3. Were custody seals on coolers? NA Y N If yes, how many and where? 2, sides 1, front
 If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	NA	Filed
-5	-7	7	5	-2	355	NA	8738 8171 7832		

4. Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves
 5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
 6. Did all bottles arrive in good condition (unbroken)? Indicate in the table below. NA Y N
 7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
 8. Did all sample labels and tags agree with custody papers? Indicate major discrepancies in the table on page 2. NA Y N
 9. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
 10. Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? Indicate in the table below. NA Y N
 11. Were VOA vials received without headspace? Indicate in the table below. NA Y N
 12. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count	Out of	Head-	Broke	pH	Reagent	Volume	Reagent Lot	Initials	Time
	Bottle Type	Temp	space				added	Number		

Notes, Discrepancies, & Resolutions: _____



Environmental

1317 South 13th Ave.
 Kelso, WA 98626
 TEL: (360) 577-7222 / (800) 695-7222 / FAX: (360) 636-1068
 www.alsglobal.com

SOIL - CORE
 CHAIN-OF-CUSTODY RECORD

DATE: 5/4/15
 PAGE: 1 OF 1

SR # / LAB USE ONLY
W1504735

LABORATORY CLIENT Teck American Incorporated ADDRESS 501 N. Riverpoint Blvd Ste 300, Spokane, WA 99202 TEL: 509-623-4505 Cell: 509-795-9599 E-MAIL: dave.enos@teck.com AECOM CONTACT: Christine Gebel ADDRESS: 1501 4th Avenue, Suite 1400, Seattle, WA 98101 TEL: 206-438-2103 Fax: 866-495-5288 E-MAIL: christine.gebel@aecom.com TURNAROUND TIME <input type="checkbox"/> SAME DAY <input type="checkbox"/> 24 HR <input type="checkbox"/> 48 HR <input type="checkbox"/> 72 HR <input checked="" type="checkbox"/> Standard SPECIAL INSTRUCTIONS *TAL Metals: Metals by EPA 6020A: Al, Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Mn, Ni, Se, Ag, Tl, V, Zn Metals by EPA 6010C: Ca, Fe, Mg, K, Na Mercury by EPA 7471B IVBA: As & Pb by EPA 6020A						CLIENT PROJECT NAME / NUMBER Bossburg Soil/Sediment PROJECT CONTACT Dave Enos, Teck American Incorporated SAMPLER(S) (PRINT and SIGNATURE) AP				P.O. NO. UCR-CAS-D21-14 Bill To. Dave Enos, Teck American Incorporated TEMPERATURE UPON RECEIPT _____ °C																																																																																																																																																																																			
<table border="1"> <thead> <tr> <th rowspan="2">CLIENT SAMPLE ID</th> <th rowspan="2">ALS LAB ID (Lab Use Only)</th> <th colspan="2">SAMPLING</th> <th rowspan="2">MATRIX* TYPE</th> <th rowspan="2">NO. OF CONTAINERS</th> <th colspan="8">REQUESTED ANALYSES</th> <th rowspan="2">HOLDING TIME REQUIREMENTS</th> </tr> <tr> <th>DATE</th> <th>TIME</th> <th>< 2 mm</th> <th>< 150 µm</th> <th>Whole Sed.</th> <th>TAL Metals</th> <th>% Moisture / EPA 180.3</th> <th>pH / EPA 9045D</th> <th>TOC / ASTM D4129-05</th> <th>CEC / EPA 9080</th> <th>TAL Metals*</th> <th>IVBA / Ruby Extr. EPA 6020A</th> <th>Grain Size / PESP</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>UDU-05-COR-01-001</td> <td>5/1/15</td> <td>1300</td> <td>Soil</td> <td>1</td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td rowspan="10"> EPA 6020A / Metals - 180 Days EPA 6010C / Metals - 180 Days EPA 7471B / Mercury - 28 Days Percent Moisture - 180 Days pH - 7 Days TOC - 28 Days IVBA - 180 Days Grain Size - 180 Days EPA 9080 / CEC - 14 Days Comments </td> </tr> <tr> <td>2</td> <td>UDU-05-COR-01-002</td> <td></td> <td>1310</td> <td></td> <td>2</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>Field split</td> </tr> <tr> <td>3</td> <td>UDU-05-COR-01-003</td> <td></td> <td>1315</td> <td></td> <td>1</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td></td> </tr> <tr> <td>4</td> <td>UDU-05-COR-02-001</td> <td></td> <td>1355</td> <td></td> <td>1</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td></td> </tr> <tr> <td>5</td> <td>UDU-05-COR-02-002</td> <td></td> <td>1400</td> <td></td> <td>1</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td></td> </tr> <tr> <td>6</td> <td>UDU-05-COR-02-003</td> <td></td> <td>1405</td> <td></td> <td>1</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td></td> </tr> <tr> <td>7</td> <td>UDU-05-COR-03-001</td> <td></td> <td>1140</td> <td></td> <td>1</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>EPA split</td> </tr> <tr> <td>8</td> <td>UDU-05-COR-03-002</td> <td></td> <td>1150</td> <td></td> <td>1</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td></td> </tr> <tr> <td>9</td> <td>UDU-05-COR-03-003</td> <td></td> <td>1155</td> <td></td> <td>1</td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td></td> </tr> <tr> <td>10</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td></td> </tr> </tbody> </table>						CLIENT SAMPLE ID	ALS LAB ID (Lab Use Only)	SAMPLING		MATRIX* TYPE	NO. 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EPA 6020A	Grain Size / PESP	1	UDU-05-COR-01-001	5/1/15	1300	Soil	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	EPA 6020A / Metals - 180 Days EPA 6010C / Metals - 180 Days EPA 7471B / Mercury - 28 Days Percent Moisture - 180 Days pH - 7 Days TOC - 28 Days IVBA - 180 Days Grain Size - 180 Days EPA 9080 / CEC - 14 Days Comments	2	UDU-05-COR-01-002		1310		2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Field split	3	UDU-05-COR-01-003		1315		1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		4	UDU-05-COR-02-001		1355		1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		5	UDU-05-COR-02-002		1400		1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		6	UDU-05-COR-02-003		1405		1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		7	UDU-05-COR-03-001		1140		1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	EPA split	8	UDU-05-COR-03-002		1150		1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		9	UDU-05-COR-03-003		1155		1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		10						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		REPORT REQUIREMENTS: <input type="checkbox"/> I. 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*Matrix Type: FB (Field Blank), PW (Porewater), R (Rinsate), SE (Sediment) Additional Comments: FedEx tracking 8738 8171 7843						Relinquished by: (Print/Signature/Affiliation) <u>Amy Dahl / Amy Dahl / AECOM</u> Date <u>5/4/15</u> Time <u>1415</u> Relinquished by: (Print/Signature/Affiliation) _____ Date _____ Time _____ Relinquished by: (Print/Signature/Affiliation) _____ Date _____ Time _____						Received by: (Print/Signature/Affiliation) <u>Smith / Smith ALS</u> Date <u>5/5/15</u> Time <u>0950</u> Received by: (Print/Signature/Affiliation) _____ Date _____ Time _____ Received by: (Print/Signature/Affiliation) _____ Date _____ Time _____																																																																																																																																																																																	



PC Christian

Cooler Receipt and Preservation Form

Client / Project: Teck American Service Request K15 04735
 Received: 5/5/15 Opened: 5/5/15 By: [Signature] Unloaded: 5/5/15 By: [Signature]

1. Samples were received via? Mail Fed Ex UPS DHL PDX Courier Hand Delivered
 2. Samples were received in: (circle) Cooler Box Envelope Other NA
 3. Were custody seals on coolers? NA Y N If yes, how many and where? 2, Sides 1, Front
 If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp B/blank	Corrected Temp B/blank	Corr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	NA	Filed
-4	-5	2.4	2.3	-1	316	NA	8738 8171 1843		

4. Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves
 5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
 6. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* NA Y N
 7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
 8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA Y N
 9. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
 10. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
 11. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
 12. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count	Out of	Head-	Broke	pH	Reagent	Volume	Reagent Lot	Initials	Time
	Bottle Type	Temp	space				added	Number		

Notes, Discrepancies, & Resolutions: _____



Environmental

1317 South 13th Ave.
Kelso, WA 98626
TEL: (360) 577-7222 / (800) 695-7222 / FAX: (360) 636-1068
www.alsglobal.com

SEDIMENT - CORE
CHAIN-OF-CUSTODY RECORD

DATE: 5/5/15

PAGE: 1 OF 1

SR # / LAB USE ONLY
N1504788

LABORATORY CLIENT: Teck American Incorporated
ADDRESS: 501 N. Riverpoint Blvd Ste 300, Spokane, WA 99202
TEL: 509-623-4505
AECOM CONTACT: Christine Gebel
ADDRESS: 1501 4th Avenue, Suite 1400, Seattle, WA 98101
TEL: 206-438-2103
TURNAROUND TIME: Standard
SPECIAL INSTRUCTIONS: *TAL Metals: Metals by EPA 6020A: Al, Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Mn, Ni, Se, Ag, Ti, V, Zn...
CLIENT PROJECT NAME / NUMBER: Bossburg Soil/Sediment
PROJECT CONTACT: Dave Enos, Teck American Incorporated
REQUESTED ANALYSES: < 2 mm, < 250 um, Whole Sed.
HOLDING TIME REQUIREMENTS: EPA 6020A / Metals - 180 Days, EPA 6010C / Metals - 180 Days...
CLIENT SAMPLE ID, ALS LAB ID, SAMPLING DATE, TIME, MATRIX TYPE, NO. OF CONTAINERS table with 10 rows.
REPORT REQUIREMENTS: I. Routine Report, Method Blank, Surrogate, as required; II. Report Dup., MS, MSD as required; III. CLP Like Summary (no raw data); IV. Data Validation Report; V. EDD.
Relinquished by: Amy Dahl / AECOM, Date: 5/5/15, Time: 1415
Received by: SWOLF, ALS, Date: 5/6/15, Time: 1010



PC Christian

Cooler Receipt and Preservation Form

Client / Project: Teck Am

Service Request K15 04788

Received: 5/6/15 Opened: 5/6/15 By: [Signature] Unloaded: 5/6/15 By: [Signature]

- 1. Samples were received via? Mail Fed Ex UPS DHL PDX Courier Hand Delivered
- 2. Samples were received in: (circle) Cooler Box Envelope Other NA
- 3. Were custody seals on coolers? NA Y N If yes, how many and where? one front, 2 sides
- If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	NA	Filed
-0.6	-0.7	0.1	0.0	-0.1	352	NA	8065 0584 1475		

- 4. Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves
- 5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
- 6. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* NA Y N
- 7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
- 8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA Y N
- 9. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
- 10. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
- 11. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
- 12. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count	Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: _____



Environmental

1317 South 13th Ave.
Kelso, WA 98626
TEL: (360) 577-7222 / (800) 695-7222 / FAX: (360) 636-1068
www.alsglobal.com

RINSATE BLANKS
CHAIN-OF-CUSTODY RECORD

DATE: 5/15/15
PAGE: 2 OF 2 ²⁹⁰ 5/15/15

SR # / LAB USE ONLY
N1504790

LABORATORY CLIENT: Teck American Incorporated						CLIENT PROJECT NAME / NUMBER: Bossburg Soil/Sediment						P.O. NO.: UCR-CAS-D21-14																																																																																																																																																																																																																																																																				
ADDRESS: 501 N. Riverpoint Blvd Ste 300, Spokane, WA 99202						PROJECT CONTACT: Dave Enos, Teck American Incorporated						B# To: Dave Enos, Teck American Incorporated																																																																																																																																																																																																																																																																				
TEL: 509-623-4505		Cell: 509-795-9599		E-MAIL: dave.enos@teck.com		SAMPLER(S): (PRINT and SIGNATURE) KY / AT / DL						TEMPERATURE UPON RECEIPT: _____ °C																																																																																																																																																																																																																																																																				
AECOM CONTACT: Christine Gebel						REQUESTED ANALYSES						HOLDING TIME REQUIREMENTS																																																																																																																																																																																																																																																																				
ADDRESS: 1501 4th Avenue, Suite 1400, Seattle, WA 98101																																																																																																																																																																																																																																																																																
TEL: 206-438-2103		Fax: 866-495-5288		E-MAIL: christine.gebel@aecom.com		<table border="1"> <tr> <th rowspan="2">CLIENT SAMPLE ID</th> <th rowspan="2">ALS LAB ID (Lab Use Only)</th> <th colspan="2">SAMPLING</th> <th rowspan="2">MATRIX TYPE</th> <th rowspan="2">NO. OF CONTAINERS</th> <th rowspan="2">TAL Metals*</th> <td colspan="10"></td> </tr> <tr> <th>DATE</th> <th>TIME</th> <td colspan="10"></td> </tr> <tr> <td>1</td> <td>SDV-07-ER-B-20150504</td> <td>5/4/15</td> <td>1527</td> <td>FB</td> <td>1</td> <td><input checked="" type="checkbox"/></td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>2</td> <td>SDV-04-ERA-20150504</td> <td>5/4/15</td> <td>1800</td> <td>FB</td> <td>1</td> <td><input checked="" type="checkbox"/></td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>3</td> <td>SDV-04-ER-D-20150504</td> <td>5/4/15</td> <td>1805</td> <td>FB</td> <td>1</td> <td><input checked="" type="checkbox"/></td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>4</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td><input type="checkbox"/></td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>5</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td><input type="checkbox"/></td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>6</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td><input type="checkbox"/></td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>7</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td><input type="checkbox"/></td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>8</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td><input type="checkbox"/></td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>9</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td><input type="checkbox"/></td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>10</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td><input type="checkbox"/></td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>						CLIENT SAMPLE ID	ALS LAB ID (Lab Use Only)	SAMPLING		MATRIX TYPE	NO. OF CONTAINERS	TAL Metals*											DATE	TIME											1	SDV-07-ER-B-20150504	5/4/15	1527	FB	1	<input checked="" type="checkbox"/>																	2	SDV-04-ERA-20150504	5/4/15	1800	FB	1	<input checked="" type="checkbox"/>																	3	SDV-04-ER-D-20150504	5/4/15	1805	FB	1	<input checked="" type="checkbox"/>																	4						<input type="checkbox"/>																	5						<input type="checkbox"/>																	6						<input type="checkbox"/>																	7						<input type="checkbox"/>																	8						<input type="checkbox"/>																	9						<input type="checkbox"/>																	10						<input type="checkbox"/>																	EPA 6020A / Metals - 180 Days EPA 6010C / Metals - 180 Days EPA 7470A / Mercury - 28 Days	
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SPECIAL INSTRUCTIONS: *TAL Metals: Metals by EPA 6020A: Al, Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Mn, Ni, Se, Ag, Tl, V, Zn Metals by EPA 6010C: Ca, Fe, Mg, K, Na Mercury by EPA 7470A																																																																																																																																																																																																																																																																																
*Matrix Type: FB (Field Blank), PW (Porewater), R (Rinsate), SE (Sediment)						REPORT REQUIREMENTS:																																																																																																																																																																																																																																																																										
Additional Comments: FedEx tracking 8065 0584 1464						<input type="checkbox"/> I. Routine Report: Method Blank, Surrogate, as required <input type="checkbox"/> II. Report Dup., MS, MSD as required <input type="checkbox"/> III. CLP Like Summary (no raw data) <input checked="" type="checkbox"/> IV. Data Validation Report <input checked="" type="checkbox"/> V. EDD																																																																																																																																																																																																																																																																										
Relinquished by: (Print/Signature/Affiliation) Amy Dahl / Amy Dahl / AECOM		Date: 5/5/15		Time: 1415		Received by: (Print/Signature/Affiliation) JWORF / ALS		Date: 5/6/15		Time: 1010																																																																																																																																																																																																																																																																						
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Cooler Receipt and Preservation Form

Client / Project: Teck Ann Service Request K15 04790

Received: 5/6/19 Opened: 5/6/19 By: [Signature] Unloaded: 5/6/19 By: [Signature]

- 1. Samples were received via? Mail Fed Ex UPS DHL PDX Courier Hand Delivered
- 2. Samples were received in: (circle) Cooler Box Envelope Other NA
- 3. Were custody seals on coolers? NA Y N If yes, how many and where? one front, 2 sides
- If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	NA	Filed
-0.5	-0.6	broken →		-0.1	316	NA	8065 0584 1464		

- 4. Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves
- 5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
- 6. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* NA Y N
- 7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
- 8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA Y N
- 9. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
- 10. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
- 11. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
- 12. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count	Out of	Head-	Broke	pH	Reagent	Volume	Reagent Lot	Initials	Time
	Bottle Type	Temp	space				added	Number		

Notes, Discrepancies, & Resolutions: _____



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Kelso, WA 98626
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www.alsglobal.com

RINSATE BLANKS
CHAIN-OF-CUSTODY RECORD

DATE: 5/9/15
PAGE: 2 OF 3

SR # / LAB USE ONLY
K1504790

LABORATORY CLIENT: Teck American Incorporated							CLIENT PROJECT NAME / NUMBER: Bossburg Soil/Sediment					P.O. NO.: UCR-CAS-D21-14					
ADDRESS: 501 N. Riverpoint Blvd Ste 300, Spokane, WA 99202							PROJECT CONTACT: Dave Enos, Teck American Incorporated					B# To: Dave Enos, Teck American Incorporated					
TEL: 509-623-4505		Cell: 509-795-9599		E-MAIL: dave.enos@teck.com			SAMPLER(S): (PRINT and SIGNATURE) DL/AT					TEMPERATURE UPON RECEIPT: _____ °C					
AECOM CONTACT: Christine Gebel							REQUESTED ANALYSES					HOLDING TIME REQUIREMENTS					
ADDRESS: 1501 4th Avenue, Suite 1400, Seattle, WA 98101																	
TEL: 206-438-2103		Fax: 866-495-5288		E-MAIL: christine.gebel@aecom.com													
TURNAROUND TIME: <input type="radio"/> SAME DAY <input type="radio"/> 24 HR <input type="radio"/> 48 HR <input type="radio"/> 72 HR <input checked="" type="radio"/> Standard							TAL Metals*					EPA 6020A / Metals - 180 Days EPA 6010C / Metals - 180 Days EPA 7470A / Mercury - 28 Days					
SPECIAL INSTRUCTIONS: *TAL Metals: Metals by EPA 6020A: Al, Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Mn, Ni, Se, Ag, Ti, V, Zn Metals by EPA 6010C: Ca, Fe, Mg, K, Na Mercury by EPA 7470A																	
CLIENT SAMPLE ID		ALS LAB ID (Lab Use Only)		SAMPLING DATE TIME		MATRIX* TYPE	NO. OF CONTAINERS						Comments				
1	SDV-08-ER-A-20150505	4	5/5/15	1730	FB	1	<input checked="" type="checkbox"/>										
2	UDV-06-ER-A-20150506	5	5/6/15	1735		1	<input checked="" type="checkbox"/>										
3	SDV-07-ER-C-20150506	6	↓	1740		1	<input checked="" type="checkbox"/>										
4	SDV-08-ER-D-20150506	7	↓	1745		1	<input checked="" type="checkbox"/>										
5	UDV-06-ER-B-20150507	8	5/7/15	1304	FB	1	<input checked="" type="checkbox"/>										
6	UDV-06-ER-A-20150507	9	5/7/15	1700		1	<input checked="" type="checkbox"/>										
7	UDV-06-ER-C-20150507	10	5/7/15	1705		1	<input checked="" type="checkbox"/>										
8							<input type="checkbox"/>										
9							<input type="checkbox"/>										
10							<input type="checkbox"/>										
*Matrix Type: FB (Field Blank), PW (Porewater), R (Rinsate), SE (Sediment)							REPORT REQUIREMENTS:										
Additional Comments: FedEX Tracking 8738 8171 7854							<input type="checkbox"/> I. Routine Report: Method Blank, Surrogate, as required										
							<input type="checkbox"/> II. Report Dup., MS, MSD as required										
							<input type="checkbox"/> III. CLP Like Summary (no raw data)										
							<input checked="" type="checkbox"/> IV. Data Validation Report										
							<input checked="" type="checkbox"/> V. EDD										
Relinquished by: (Print/Signature/Affiliation) Amy Dahi / Amy Dahi / AECOM		Date 5/8/15		Time 0915		Received by: (Print/Signature/Affiliation) [Signature] ALS		Date 5/9/15		Time 0930							
Relinquished by: (Print/Signature/Affiliation)		Date		Time		Received by: (Print/Signature/Affiliation)		Date		Time							
Relinquished by: (Print/Signature/Affiliation)		Date		Time		Received by: (Print/Signature/Affiliation)		Date		Time							



Cooler Receipt and Preservation Form

Client TECK Service Request K15 04790
 Received: 5/9/15 Opened: 5/9/15 By: AM Unloaded: 5/9/15 By: AM

1. Samples were received via? Mail Fed Ex UPS DHL PDX Courier Hand Delivered
2. Samples were received in: (circle) Cooler Box Envelope Other _____ NA
3. Were custody seals on coolers? NA Y N If yes, how many and where? 2 SIDE / FRONT
 If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	NA	Filed
0.4	0.4	1.2	1.2	0	361	<u>NA</u>	837881717854		
1.0	1.0	3.0	3.0	0	360		806505941523		
1.5	1.4	1.7	1.6	-0.1	352		806505941453		

4. Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves
5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
6. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* NA Y N
7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA Y N
9. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
10. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
11. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
12. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count	Out of	Head-	Broke	pH	Reagent	Volume	Reagent Lot	Initials	Time
	Bottle Type	Temp	space				added	Number		

Notes, Discrepancies, & Resolutions: _____



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Kelso, WA 98626
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www.alsglobal.com

LABORATORY CLIENT: **Teck American Incorporated**

ADDRESS: **501 N. Riverpoint Blvd Ste 300, Spokane, WA 99202**

TEL: **509-623-4505** FAX: **509-795-9599** E-MAIL: **dave.enos@teck.com**

ACCOUNT CONTACT: **Christine Gebel**

ADDRESS: **1501 4th Avenue, Suite 1400, Seattle, WA 98101**

TEL: **206-438-2103** FAX: **866-495-5288** E-MAIL: **christine.gebel@acom.com**

TURNAROUND TIME: SAME DAY 24 HR 48 HR 72 HR Standard

SPECIAL INSTRUCTIONS: **TAL Metals: Metals by EPA 6020A: Al, Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Mn, Ni, Se, Ag, Ti, V, Zn
Mercury by EPA 7471B
IVBA: As & Pb by EPA 6020A**

CLIENT SAMPLE ID	ALS LAB ID (Lab Use Only)	SAMPLING		MATRIX TYPE	NO. OF CONTAINERS
		DATE	TIME		
1	SDV-08-COR-01-001	5/6/15	1200	SE	1
2	SDV-08-COR-01-002		1205		1
3	SDV-08-COR-01-003		1210		1
4	SDV-08-COR-02-001		1345		1
5	SDV-08-COR-02-002		1345		2
6	SDV-08-COR-02-003		1350		1
7	SDV-08-COR-03-001		1305		2
8	SDV-08-COR-03-002		1310		1
9	SDV-08-COR-03-003		1315		2
10					

*Matrix Type: FB (Field Blank), PW (Porewater), R (Rinsate), SE (Sediment)

Additional Comments: **Fed Ex tracking 8065 0584 1512**

* See attached email correspondence, Army Paul / Amy Yone / Aecom

Requested by: (Print/Signature/Affiliation)	Date	Time
Amy Paul / Amy Yone / Aecom	5/7/15	1415
Requested by: (Print/Signature/Affiliation)	Date	Time
Requested by: (Print/Signature/Affiliation)	Date	Time

SR # / LAB USE ONLY
MS040925

CLIENT PROJECT NAME / NUMBER: **Bossburg Soil/Sediment**

PROJECT CONTACT: **Dave Enos, Teck American Incorporated**

SAMPLES: (PRINT and SIGNATURE): **AP**

REQUESTED ANALYSES	< 2 mm	< 250 µm	Whole Sed
TAL Metals*	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
% Moisture / EPA 160.3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
pH / EPA 9045D	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
TOC / ASTM D4129-05	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
TAL Metals*	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
IVBA / Ruby Extr, EPA 6020A	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Grain Size / PESP	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

HOLDING TIME REQUIREMENTS

EPA 6020A / Metals - 180 Days
EPA 6010C / Metals - 180 Days
EPA 7471B / Mercury - 28 Days
Percent Moisture - 180 Days
pH - 7 Days
TOC - 28 Days
IVBA - 180 Days
Grain Size - 180 Days

REPORT REQUIREMENTS:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I. Routine Report, Method Blank, Surrogate, as required	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
II. Report Dup., MS, MSD as required	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
III. CIP Like Summary (no raw data)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
IV. Data Validation Report	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
V. EDD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Requested by: (Print/Signature/Affiliation)	Date	Time
Dave Enos / Teck American Incorporated	5/7/15	1000
Requested by: (Print/Signature/Affiliation)	Date	Time
Christine Gebel / Aecom	5/8/15	
Requested by: (Print/Signature/Affiliation)	Date	Time
Requested by: (Print/Signature/Affiliation)	Date	Time

CHAIN-OF-CUSTODY RECORD
DATE: **5/7/15**
PAGE: **1** OF **1**

Jeff Christian

From: McCaig Kris SPOK <Kris.McCaig@teck.com>
Sent: Tuesday, May 12, 2015 12:12 PM
To: Jeff Christian; McCullough, Paul; Enos Dave SPOK; Henselen Becky SPOK; Gebel, Christine; Cristy Kessel (ckessel@exponent.com)
Cc: Dahl, Amy (amy.dahl@aecom.com)
Subject: RE: Additional Field Split - Bossburg

Jeff,

This is acceptable to me. Please document in the Case Narrative of the lab report.

Thanks,

Kris

Kris McCaig
Manager, Environment & Public Affairs
Teck American Incorporated
Phone: +1.509.623.4501
Fax: +1.509.922.8767
Mobile: +1.509.434.8542
eMail: Kris.McCaig@teck.com
www.teck.com

From: Jeff Christian [<mailto:Jeff.Christian@alsglobal.com>]
Sent: Tuesday, May 12, 2015 11:36 AM
To: McCullough, Paul; Enos Dave SPOK; McCaig Kris SPOK; Henselen Becky SPOK; Gebel, Christine
Cc: Dahl, Amy (amy.dahl@aecom.com)
Subject: Additional Field Split - Bossburg

All,

I spoke to Becky, and then Amy this morning in regard to adding an additional Field Split to the Bossburg core samples. Please note:

- All samples received to date have been started air drying. An aliquot for pH and Grain Size were removed prior to initiating the air drying process. Thus, performing a Field Split for pH is not feasible. A split can be done on the air dried material for Grain Size, TOC, and Metals (and CEC is a soil is chosen).
- Amy said sample SDU-08-COR-03-003 was identified as a viable candidate for the additional Field Split. We can proceed with processing it as mentioned (above) for Grain Size, TOC, and Metals. We will have a pH result for the parent sample, but not for the split (i.e. BOSS-xxx).
- If this is acceptable, please let me know as soon as possible. We will revise the work order by adding the split (BOSS-xxx), note the change on the COC, and include this e-mail note in the documentation.

Regards,

Jeff Christian

Director of Operations - Western USA
ALS Life Sciences Division | Environmental

1317 South 13th Avenue
Kelso, WA 98626

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M +1 360 577 7222
C +1 360 355 5128
F +1 360 636 1068

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Cooler Receipt and Preservation Form

Client / Project: Teck American Service Request K15 04923
 Received: 5/8/15 Opened: 5/8/15 By: HD Unloaded: 5/8/15 By: HD

1. Samples were received via? Mail Fed Ex UPS DHL PDX Courier Hand Delivered
2. Samples were received in: (circle) Cooler Box Envelope Other NA
3. Were custody seals on coolers? NA Y N If yes, how many and where? 1, front 2, sides
 If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr Factor	Thermometer ID	Cooler/COC ID	Tracking Number	NA	Filed
1.0	1.1	1.5	1.6	+1	342	<input checked="" type="radio"/> NA	80650584 1534		
-3	-4	1.2	1.1	-1	351		80650584 1497		
-7	-7	1.6	1.6	0	358		80650584 1512		
5	6	1.6	1.7	+1	322		80650584 1486		

4. Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves
5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
6. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* NA Y N
7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA Y N
9. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
10. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
11. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
12. Was Cl2/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count	Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: _____



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Kelso, WA 98626
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SEDIMENT - CORE
CHAIN-OF-CUSTODY RECORD

DATE: 5/7/15

PAGE: 1 OF 1

SR # / LAB USE ONLY
K1504927

LABORATORY CLIENT: Teck American Incorporated						CLIENT PROJECT NAME / NUMBER: Bossburg Soil/Sediment						P.O. NO.: UCR-CAS-D21-14									
ADDRESS: 501 N. Riverpoint Blvd Ste 300, Spokane, WA 99202						PROJECT CONTACT: Dave Enos, Teck American Incorporated						B# To: Dave Enos, Teck American Incorporated									
TEL: 509-623-4505		Cell: 509-795-9599		E-MAIL: dave.enos@teck.com		SAMPLER(S): (PRINT and SIGNATURE) MS						TEMPERATURE UPON RECEIPT: _____ °C									
AECOM CONTACT: Christine Gebel						REQUESTED ANALYSES						HOLDING TIME REQUIREMENTS									
ADDRESS: 1501 4th Avenue, Suite 1400, Seattle, WA 98101																					
TEL: 206-438-2103		Fax: 866-495-5288		E-MAIL: christine.gebel@aecom.com		< 2 mm		< 250 µm		Whole Sed.		EPA 6020A / Metals - 180 Days EPA 6010C / Metals - 180 Days EPA 7471B / Mercury - 28 Days Percent Moisture - 180 Days pH - 7 Days TOC - 28 Days IVBA - 180 Days Grain Size - 180 Days									
TURNAROUND TIME: <input type="radio"/> SAME DAY <input type="radio"/> 24 HR <input type="radio"/> 48 HR <input type="radio"/> 72 HR <input checked="" type="radio"/> Standard																					
SPECIAL INSTRUCTIONS: *TAL Metals: Metals by EPA 6020A: Al, Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Mn, Ni, Se, Ag, Ti, V, Zn Metals by EPA 6010C: Ca, Fe, Mg, K, Na Mercury by EPA 7471B IVBA: As & Pb by EPA 6020A						TAL Metals*		% Moisture / EPA 160.3		pH / EPA 9045D		TOC / ASTM D4129-05		TAL Metals*		IVBA / Ruby Extr. EPA 6020A		Grain Size / PESP			
CLIENT SAMPLE ID		ALS LAB ID (Lab Use Only)		SAMPLING DATE TIME		MATRIX TYPE		NO. OF CONTAINERS										Comments			
1	SDV-07-COR-01-001			5/6/15	1006	SE	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
2	SDV-07-COR-01-002				1011		2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	CPA split	
3	SDV-07-COR-01-003				1017		1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
4	SDV-07-COR-02-001				1136		1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
5	SDV-07-COR-02-002				1140		1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
6	SDV-07-COR-02-003				1144		1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
7	SDV-07-COR-02-001				1059		1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
8	SDV-07-COR-03-002				1102		2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Field split	
9	SDV-07-COR-03-003				1110		2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CPA split	
10								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
*Matrix Type: FB (Field Blank), PW (Porewater), R (Rinsate), SE (Sediment)						REPORT REQUIREMENTS:															
Additional Comments: FedEx tracking 8065 0584 1497						<input type="checkbox"/> I. Routine Report: Method Blank, Surrogate, as required															
						<input type="checkbox"/> II. Report Dup., MS, MSD as required															
						<input type="checkbox"/> III. CLP Like Summary (no raw data)															
						<input checked="" type="checkbox"/> IV. Data Validation Report															
						<input checked="" type="checkbox"/> V. EDD															
Relinquished by: (Print/Signature/Affiliation) Andy Dahl / Andy Dahl / AECOM		Date 5/7/15		Time 1415		Received by: (Print/Signature/Affiliation) W Smith / W Smith / ALS		Date 5/8/15		Time 1000											
Relinquished by: (Print/Signature/Affiliation)		Date		Time		Received by: (Print/Signature/Affiliation)		Date		Time											
Relinquished by: (Print/Signature/Affiliation)		Date		Time		Received by: (Print/Signature/Affiliation)		Date		Time											



Cooler Receipt and Preservation Form

Client / Project: Teck American Service Request K15 04927

Received: 5/8/15 Opened: 5/8/15 By: AD Unloaded: 5/8/15 By: AD

- 1. Samples were received via? Mail Fed Ex UPS DHL PDX Courier Hand Delivered
- 2. Samples were received in: (circle) Cooler Box Envelope Other NA
- 3. Were custody seals on coolers? NA Y N If yes, how many and where? 1, front 2, sides
If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	NA	Filed
1.0	1.1	1.5	1.6	+1	342	<u>NA</u>	8065 0584 1534		
-3	-4	1.2	1.1	-1	351		8065 0584 1497		
-7	-7	1.6	1.6	0	358		8065 0584 1512		
1.5	1.6	1.6	1.7	+1	322		8065 0584 1486		

- 4. Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves
- 5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
- 6. Did all bottles arrive in good condition (unbroken)? Indicate in the table below. NA Y N
- 7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
- 8. Did all sample labels and tags agree with custody papers? Indicate major discrepancies in the table on page 2. NA Y N
- 9. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
- 10. Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? Indicate in the table below. NA Y N
- 11. Were VOA vials received without headspace? Indicate in the table below. NA Y N
- 12. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count	Out of	Head-	Broke	pH	Reagent	Volume	Reagent Lot	Initials	Time
	Bottle Type	Temp	space				added	Number		

Notes, Discrepancies, & Resolutions: _____



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SEDIMENT - ICS
CHAIN-OF-CUSTODY RECORD

SR # / LAB USE ONLY
W1504933
DATE: 5/7/15
PAGE: 1 OF 1

LABORATORY CLIENT: Teck American Incorporated						CLIENT PROJECT NAME / NUMBER Bossburg Soil/Sediment						P.O. NO.: UCR-CAS-D21-14					
ADDRESS: 501 N. Riverpoint Blvd Ste 300, Spokane, WA 99202						PROJECT CONTACT: Dave Enos, Teck American Incorporated						B# To: Dave Enos, Teck American Incorporated					
TEL: 509-623-4505		Cell: 509-795-9599		E-MAIL: dave.enos@teck.com		SAMPLER(S): (PRINT and SIGNATURE) AT/ALD						TEMPERATURE UPON RECEIPT: _____ °C					
AECOM CONTACT: Christine Gebel						REQUESTED ANALYSES						HOLDING TIME REQUIREMENTS					
ADDRESS: 1501 4th Avenue, Suite 1400, Seattle, WA 98101																	
TEL: 206-438-2103		Fax: 866-495-5288		E-MAIL: christine.gebel@aecom.com		< 2 mm		< 250 µm		Whole Sed.		EPA 6020A / Metals - 180 Days EPA 6010C / Metals - 180 Days EPA 7471B / Mercury - 28 Days Percent Moisture - 180 Days pH - 7 Days TOC - 28 Days IVBA - 180 Days Grain Size - 180 Days					
TURNAROUND TIME: <input type="radio"/> SAME DAY <input type="radio"/> 24 HR <input type="radio"/> 48 HR <input type="radio"/> 72 HR <input checked="" type="radio"/> Standard																	
SPECIAL INSTRUCTIONS: *TAL Metals: Metals by EPA 6020A: Al, Sb, As, Ba, Be, Cd, Cr, Co, Cu,Pb, Mn, Ni, Se, Ag, Tl, V, Zn Metals by EPA 6010C: Ca, Fe, Mg, K, Na Mercury by EPA 7471B IVBA: As & Pb by EPA 6020A						TAL Metals*		TAL Metals*		Grain Size / PESP		ISM					
CLIENT SAMPLE ID		ALS LAB ID (Lab Use Only)		SAMPLING DATE TIME		MATRIX TYPE	NO. OF CONTAINERS	% Moisture / EPA 160.3	PH / EPA 9045D	TOC / ASTM D4129-05	IVBA / Ruby Extr. EPA 6020A	Grain Size / PESP	ISM	Comments			
1	SDV-07-ICS-C			5/7/15	0803	SE	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	no splits			
2	SDV-08-ICS			5/7/15	0806	SE	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	no splits			
3								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
4								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
5								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
6								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
7								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
8								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
9								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
10								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
*Matrix Type: FB (Field Blank), PW (Porewater), R (Rinsate), SE (Sediment)						REPORT REQUIREMENTS:											
Additional Comments: FedEx tracking 9065 0584 1486						<input type="checkbox"/> I. Routine Report: Method Blank, Surrogate, as required											
						<input type="checkbox"/> II. Report Dup., MS, MSD as required											
						<input type="checkbox"/> III. CLP Like Summary (no raw data)											
						<input checked="" type="checkbox"/> IV. Data Validation Report											
						<input checked="" type="checkbox"/> V. EDD											
Relinquished by: (Print/Signature/Affiliation) Amy Dale / Amy Dale / AECOM			Date 5/7/15			Time 1415			Received by: (Print/Signature/Affiliation) W Smith / W Smith / ALS			Date 5/8/15			Time 1000		
Relinquished by: (Print/Signature/Affiliation)			Date			Time			Received by: (Print/Signature/Affiliation)			Date			Time		
Relinquished by: (Print/Signature/Affiliation)			Date			Time			Received by: (Print/Signature/Affiliation)			Date			Time		



PC Christian

Cooler Receipt and Preservation Form

Client / Project: Teck American Service Request K15 04933

Received: 5/8/15 Opened: 5/8/15 By: HO Unloaded: 5/8/15 By: HO

- 1. Samples were received via? Mail Fed Ex UPS DHL PDX Courier Hand Delivered
- 2. Samples were received in: (circle) Cooler Box Envelope Other NA
- 3. Were custody seals on coolers? NA Y N If yes, how many and where? 1, front 2, sides
- If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	NA	Filed
1.0	1.1	1.5	1.6	+1	342	<u>NA</u>	80650584 1534		
-3	-4	1.2	1.1	-1	351		80650584 1497		
-7	-7	1.6	1.6	0	358		80650584 1512		
.5	.6	1.6	1.7	+1	322		80650584 1486		

- 4. Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves
- 5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
- 6. Did all bottles arrive in good condition (unbroken)? Indicate in the table below. NA Y N
- 7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
- 8. Did all sample labels and tags agree with custody papers? Indicate major discrepancies in the table on page 2. NA Y N
- 9. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
- 10. Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? Indicate in the table below. NA Y N
- 11. Were VOA vials received without headspace? Indicate in the table below. NA Y N
- 12. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: _____



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SOIL - CORE
CHAIN-OF-CUSTODY RECORD

SR # / LAB USE ONLY
K1504985
DATE: 5/8/15
PAGE: 1 OF 1

LABORATORY CLIENT: Teck American Incorporated						CLIENT PROJECT NAME / NUMBER: Bossburg Soil/Sediment						P.O. NO.: UCR-CAS-D21-14											
ADDRESS: 501 N. Riverpoint Blvd Ste 300, Spokane, WA 99202						PROJECT CONTACT: Dave Enos, Teck American Incorporated						BR To: Dave Enos, Teck American Incorporated											
TEL: 509-623-4505		Cell: 509-795-9599		E-MAIL: dave.enos@teck.com		SAMPLER(S): (PRINT and SIGNATURE) AP						TEMPERATURE UPON RECEIPT: _____ °C											
AECOM CONTACT: Christine Gebel						REQUESTED ANALYSES						HOLDING TIME REQUIREMENTS											
ADDRESS: 1501 4th Avenue, Suite 1400, Seattle, WA 98101																							
TEL: 206-438-2103		Fax: 866-495-5288		E-MAIL: christine.gebel@aecom.com		< 2 mm		< 150 µm		Whole Sed.													
TURNAROUND TIME: <input type="radio"/> SAME DAY <input type="radio"/> 24 HR <input type="radio"/> 48 HR <input type="radio"/> 72 HR <input checked="" type="radio"/> Standard						TAL* Metals		% Moisture / EPA 160.3		pH / EPA 9045D		TOC / ASTM D4129-05		CEC / EPA 9080		TAL Metals*		IVBA / Ruby Exr. EPA 6020A		Grain Size / PESP			
SPECIAL INSTRUCTIONS: *TAL Metals: Metals by EPA 6020A: Al, Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Mn, Ni, Se, Ag, Tl, V, Zn Metals by EPA 6010C: Ca, Fe, Mg, K, Na Mercury by EPA 7471B IVBA: As & Pb by EPA 6020A						EPA 6020A / Metals - 180 Days		EPA 6010C / Metals - 180 Days		EPA 7471B / Mercury - 28 Days		Percent Moisture - 180 Days		pH - 7 Days		TOC - 28 Days		IVBA - 180 Days		Grain Size - 180 Days		EPA 9080 / CEC - 14 Days	
CLIENT SAMPLE ID		ALS LAB ID (Lab Use Only)		SAMPLING DATE TIME		MATRIX* TYPE		NO. OF CONTAINERS		Comments													
1	VDV-06-COR-01-001			5/7/15	1445	Soil				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	EPA Split	
2	VDV-06-COR-01-002				1450					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
3	UPV-06-COR-01-003				1455					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
4	UPV-06-COR-02-001				1505					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
5	UPV-06-COR-02-002				1510					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
6	UPV-06-COR-02-003				1515					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Field Split	
7	UPV-06-COR-03-001				1530					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Field Split	
8	UPV-06-COR-03-002				1535					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
9	UPV-06-COR-03-003				1540					<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Field Split	
10										<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
*Matrix Type: FB (Field Blank), PW (Porewater), R (Rinsate), SE (Sediment)						REPORT REQUIREMENTS:																	
Additional Comments: FedEx tracking 8065 0584 1453						<input type="checkbox"/> I. Routine Report: Method Blank, Surrogate, as required																	
						<input type="checkbox"/> II. Report Dup., MS, MSD as required																	
						<input type="checkbox"/> III. CLP Like Summary (no raw data)																	
						<input checked="" type="checkbox"/> IV. Data Validation Report																	
						<input checked="" type="checkbox"/> V. EDD																	
Relinquished by: (Print/Signature/Affiliation) Amy Dahl / Amy.dahl@ac.com		Date 5/8/15		Time 0915		Received by: (Print/Signature/Affiliation) [Signature] ALS		Date 5/9/15		Time 0930													
Relinquished by: (Print/Signature/Affiliation)		Date		Time		Received by: (Print/Signature/Affiliation)		Date		Time													
Relinquished by: (Print/Signature/Affiliation)		Date		Time		Received by: (Print/Signature/Affiliation)		Date		Time													



PC Christian

Cooler Receipt and Preservation Form

Client TECK Service Request K1504985
 Received: 5/9/15 Opened: 5/9/15 By: AR Unloaded: 5/9/15 By: AR

- Samples were received via? Mail Fed Ex UPS DHL PDX Courier Hand Delivered
- Samples were received in: (circle) Cooler Box Envelope Other _____ NA
- Were custody seals on coolers? NA Y N If yes, how many and where? 2 SIDE / FRONT
 If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp: Blank	Corrected Temp: Blank	Corr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	NA	Filed
0.4	0.4	1.2	1.2	0	361	<u>NA</u>	837881717854		
1.0	1.0	3.0	3.0	0	360		806505941523		
1.5	1.4	1.7	1.6	-0.1	352		806505941453		

- Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves _____
- Were custody papers properly filled out (ink, signed, etc.)? NA Y N
- Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* NA Y N
- Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
- Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA Y N
- Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
- Were the pH-preserved bottles (see SMO-GEN SOP) received at the appropriate pH? *Indicate in the table below* NA Y N
- Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
- Was CI2/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count	Bottle Type	Out of Temp	Head space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: _____



Environmental

1317 South 13th Ave.
Kelso, WA 98626
TEL: (360) 577-7222 / (800) 695-7222 / FAX: (360) 636-1068
www.alsglobal.com

1PW

RINSATE-BLANKS
CHAIN-OF-CUSTODY RECORD

DATE: 5/8/15
PAGE: 3 OF 3

SR # / LAB USE ONLY
W1505000

LABORATORY CLIENT: Teck American Incorporated		CLIENT PROJECT NAME / NUMBER: Bossburg Soil/Sediment		P.O. NO.: UCR-CAS-D21-14											
ADDRESS: 501 N. Riverpoint Blvd Ste 300, Spokane, WA 99202		PROJECT CONTACT: Dave Enos, Teck American Incorporated		BILL TO: Dave Enos, Teck American Incorporated											
TEL: 509-623-4505	Cell: 509-795-9599	E-MAIL: dave.enos@teck.com		TEMPERATURE UPON RECEIPT: _____ °C											
AECOM CONTACT: Christine Gebel		SAMPLER(S): (PRINT and SIGNATURE) GP													
ADDRESS: 1501 4th Avenue, Suite 1400, Seattle, WA 98101		REQUESTED ANALYSES		HOLDING TIME REQUIREMENTS											
TEL: 206-438-2103	Fax: 866-495-5288	E-MAIL: christine.gebel@aecom.com		EPA 6020A / Metals - 180 Days EPA 6010C / Metals - 180 Days EPA 7470A / Mercury - 28 Days											
TURNAROUND TIME: <input type="radio"/> SAME DAY <input type="radio"/> 24 HR <input type="radio"/> 48 HR <input type="radio"/> 72 HR <input checked="" type="radio"/> Standard		TAL Metals* RCRA Metals PH TCLP Metals @ 5/10/15		Comments PH cancelled; un-preserved bottle not rec'd. @ 5/11/15 Total Metals changed to TCLP/ Metals as per Teck American. @ 5/12/15											
SPECIAL INSTRUCTIONS: RCRA Metals by EPA 6020A: Al, Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Mn, Ni, Se, Ag, Ti, V, Zn Metals by EPA 6010C: Ca, Fe, Mg, K, Na Mercury by EPA 7470A / 7471															
CLIENT SAMPLE ID	ALS LAB ID (Lab Use Only)	SAMPLING		MATRIX TYPE	NO. OF CONTAINERS	TAL Metals*	RCRA Metals	PH	TCLP Metals						
		DATE	TIME												
1		5/8/15	0746	Solid	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						
2		5/8/15	0805	W	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						
3						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						
4						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						
5						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						
6						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						
7						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						
8						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						
9						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						
10						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						
*Matrix Type: FB (Field Blank), PW (Porewater), R (Rinsate), SE (Sediment)						REPORT REQUIREMENTS:									
Additional Comments: FedEx tracking 8738 8171 7854						<input type="checkbox"/> I. Routine Report: Method Blank, Surrogate, as required <input checked="" type="checkbox"/> II. Report Dup., MS, MSD as required <input type="checkbox"/> III. CLP Like Summary (no raw data) <input checked="" type="checkbox"/> IV. Data Validation Report @ 5/12/15 <input type="checkbox"/> V. EDD									
Relinquished by: (Print/Signature/Affiliation) Amy Dale Campbell / AECOM		Date: 5/8/15	Time: 0915	Received by: (Print/Signature/Affiliation) MS		Date: 5/9/15	Time: 0930								
Relinquished by: (Print/Signature/Affiliation)		Date:	Time:	Received by: (Print/Signature/Affiliation)		Date:	Time:								
Relinquished by: (Print/Signature/Affiliation)		Date:	Time:	Received by: (Print/Signature/Affiliation)		Date:	Time:								



PC Christian

Cooler Receipt and Preservation Form

Client TECK Service Request K1505000
 Received: 5/9/15 Opened: 5/9/15 By: AK Unloaded: 5/9/15 By: AK

- Samples were received via? Mail Fed Ex UPS DHL PDX Courier Hand Delivered
- Samples were received in: (circle) Cooler Box Envelope Other _____ NA
- Were custody seals on coolers? NA Y N If yes, how many and where? 2 SIDE / FRONT
 If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	NA	Filed
0.4	0.4	1.2	1.2	0	361	<u>NA</u>	837881717854		
1.0	1.0	3.0	3.0	0	360		806505941523		
1.5	1.4	1.7	1.6	-0.1	352		806505941453		

- Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves _____
- Were custody papers properly filled out (ink, signed, etc.)? NA Y N
- Did all bottles arrive in good condition (unbroken)? Indicate in the table below. NA Y N
- Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
- Did all sample labels and tags agree with custody papers? Indicate major discrepancies in the table on page 2. NA Y N
- Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
- ~~Were the pH preserved bottles (see SMO-GEN SOP) received at the appropriate pH? Indicate in the table below~~ ~~NA Y N~~
- Were VOA vials received without headspace? Indicate in the table below. NA Y N
- Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count	Out of	Head-	Broke	pH	Reagent	Volume	Reagent Lot	Initials	Time
	Bottle Type	Temp	space				added	Number		

Notes, Discrepancies, & Resolutions: DID NOT RECEIVE AN UNPRESERVED BOTTLE FOR PH.

Appendix E
ALS Confirmation of Sample Receipt Forms



Confirmation of Sample Receipt

To:	Dave Enos	From:	Jeff Christian
Email:	dave.enos@teck.com	Email:	Jeff.Christian@alsglobal.com
Fax:	509-459-4400	Fax:	360-636-1068
Phone:	509-623-4505	Phone:	360-577-7222 x3316

Samples for analysis have been received by ALS Environmental on 4/17 - 24/15 and assigned our Service Request number **K1503981**. **Please verify the following information and notify me of any corrections as soon as possible.**

The estimated completion date for this work is: 5/15/15

Client: Teck American Incorporated
Project: Bossburg Soil/Sediment

PO Number: UCR-CAS-D21-14

EDD Required: No

Tier: V

Report To: Dave Enos
 Teck American Incorporated
 501 North Riverpoint Blvd., Suite 300
 Spokane, WA 99202

Billing Address: Kris McCaig
 Teck American Incorporated
 501 North Riverpoint Blvd., Suite 300
 Spokane, WA 99202

Comments:

Thank you for your business!

A - Test is Authorized

H - Test is On Hold

HP - Test is On Hold
Pending InputP - Test is Authorized for
Prep Only

C - Test has been Cancelled

* - Test has assigned QC

				6010C Metals T	6020A Metals T	7470A Hg T	Archive Archive RT
K1503981-001	UDU-01-ER-A-20150414	Aqueous Equip Blank	4/14/15 1815	A	A	A	A
K1503981-002	UDU-01-ER-B-20150415	Aqueous Equip Blank	4/15/15 1130	A	A	A	A
K1503981-003	UDU-01-ER-A-20150415	Aqueous Equip Blank	4/15/15 1755	A	A	A	A
K1503981-004	UDU-01-ER-B-20150416	Aqueous Equip Blank	4/16/15 1305	A	A	A	A
K1503981-005	UDU-02-ER-A	Aqueous Equip Blank	4/16/15 1725	A	A	A	A
K1503981-006	UDU-02-ER-B	Aqueous Equip Blank	4/17/15 1210	A	A	A	A
K1503981-007	UDU-03-ER-B	Aqueous Equip Blank	4/18/15 1320	A	A	A	A
K1503981-008	UDU-03-ER-A	Aqueous Equip Blank	4/17/15 1815	A	A	A	A
K1503981-009	UDU-04A-ER-A	Aqueous Equip Blank	4/18/15 1750	A	A	A	A
K1503981-010	UDU-01-ER-C	Aqueous Equip Blank	4/18/15 1755	A	A	A	A
K1503981-011	UDU-04-ER-B	Aqueous Equip Blank	4/20/15 1231	A	A	A	A
K1503981-012	UDU-02-ER-C	Aqueous Equip Blank	4/20/15 1800	A	A	A	A
K1503981-013	SDU-01-ER-A	Aqueous Equip Blank	4/20/15 1755	A	A	A	A
K1503981-014	SDU-01-ER-B-20150421	Aqueous Equip Blank	4/21/15 1500	A	A	A	A

				6010C Metals T	6020A Metals T	7470A Hg T	Archive Archive RT
K1503981-015	SDU-02-ER-A-20150421	Aqueous Equip Blank	4/21/15 1720	A	A	A	A
K1503981-016	SDU-03-ER-B-20150422	Aqueous Equip Blank	4/22/15 1012	A	A	A	A

Test Comments:

Group	Test/Method	Samples	Comments
Metals	7470A/Hg T	1-16	Hg
Metals	6010C/Metals T	1-16	Ca,Mg,Fe,K,Na
Metals	6020A/Metals T	1-16	Al,Sb,As,Ba,Be,Cd,Cr,Co,Cu,Pb,Mn,Ni,Se,Ag,Tl,V,Zn



Confirmation of Sample Receipt

To:	Dave Enos	From:	Jeff Christian
Email:	dave.enos@teck.com	Email:	Jeff.Christian@alsglobal.com
Fax:	509-459-4400	Fax:	360-636-1068
Phone:	509-623-4505	Phone:	360-577-7222 x3316

Samples for analysis have been received by ALS Environmental on 4/17/15 - 5/ 9/15 and assigned our Service Request number **K1503982**. **Please verify the following information and notify me of any corrections as soon as possible.**

The estimated completion date for this work is: 5/15/15

Client: Teck American Incorporated
Project: Bossburg Soil/Sediment

PO Number: UCR-CAS-D21-14

EDD Required: Yes

Tier: V

Report To: Dave Enos
 Teck American Incorporated
 501 North Riverpoint Blvd., Suite 300
 Spokane, WA 99202

Billing Address: Kris McCaig
 Teck American Incorporated
 501 North Riverpoint Blvd., Suite 300
 Spokane, WA 99202

Comments: Samples -008 and -009 are EPA Splits.
 Sample -022 is a Field Split to create -025 (BOSS-017)

Thank you for your business!

A - Test is Authorized

H - Test is On Hold

HP - Test is On Hold
Pending InputP - Test is Authorized for
Prep Only

C - Test has been Cancelled

* - Test has assigned QC

				160.3 Modified TS	160.3 Modified TS-Air Dried	6010C Metals T	6020A IVBA Metals T	6020A Metals T	7062 As T	7471B Hg	7742 Se T	9045D pH	9080 NH3 CEC	Archive Archive 4C	ASTM D4129-05 Modified TOC
K1503982-001	UDU-01-ICS	Soil	4/16/15 1120	A								A		A	
K1503982-002	UDU-01-ICS-2mm	Soil	4/16/15 1120		A	A		A	H	A	H		A	A	A
K1503982-003	UDU-01-ICS-150um	Soil	4/16/15 1120		A	A	A	A	H	A	H			A	
K1503982-004	UDU-02-ICS	Soil	4/17/15 0830	A								A		A	
K1503982-005	UDU-02-ICS-2mm	Soil	4/17/15 0830		A	A		A	H	A	H		A	A	A
K1503982-006	UDU-02-ICS-150um	Soil	4/17/15 0830		A	A	A	A	H	A	H			A	
K1503982-007	UDU-03-ICS	Soil	4/18/15 1010	A								A		A	
K1503982-008	UDU-03-ICS-2mm	Soil	4/18/15 1010		A	A		A	H	A	H		A	A	A
K1503982-009	UDU-03-ICS-150um	Soil	4/18/15 1010		A	A	A	A	H	A	H			A	
K1503982-010	UDU-04-ICS-A	Soil	4/18/15 1738	A								A		A	
K1503982-011	UDU-04-ICS-A-2mm	Soil	4/18/15 1738		A	A		A	H	A	H		A	A	A
K1503982-012	UDU-04-ICS-A-150um	Soil	4/18/15 1738		A	A	A	A	H	A	H			A	
K1503982-013	UDU-04-ICS-B	Soil	4/21/15 0757	A								A		A	
K1503982-014	UDU-04-ICS-B-2mm	Soil	4/21/15 0757		A	A		A	H	A	H		A	A	A

				ISM Sieve ISM Sieve	ISM Subsample ISM Subsample	PSEP PS PSEP PartSizeCB	Sieve Sieve
K1503982-001	UDU-01-ICS	Soil	4/16/15 1120	A	A	A	
K1503982-002	UDU-01-ICS-2mm	Soil	4/16/15 1120				A
K1503982-003	UDU-01-ICS-150um	Soil	4/16/15 1120				
K1503982-004	UDU-02-ICS	Soil	4/17/15 0830	A	A	A	
K1503982-005	UDU-02-ICS-2mm	Soil	4/17/15 0830				A
K1503982-006	UDU-02-ICS-150um	Soil	4/17/15 0830				
K1503982-007	UDU-03-ICS	Soil	4/18/15 1010	A	A	A	
K1503982-008	UDU-03-ICS-2mm	Soil	4/18/15 1010				A
K1503982-009	UDU-03-ICS-150um	Soil	4/18/15 1010				
K1503982-010	UDU-04-ICS-A	Soil	4/18/15 1738	A	A	A	
K1503982-011	UDU-04-ICS-A-2mm	Soil	4/18/15 1738				A
K1503982-012	UDU-04-ICS-A-150um	Soil	4/18/15 1738				
K1503982-013	UDU-04-ICS-B	Soil	4/21/15 0757	A	A	A	
K1503982-014	UDU-04-ICS-B-2mm	Soil	4/21/15 0757				A

				160.3 Modified TS	160.3 Modified TS-Air Dried	6010C Metals T	6020A IVBA Metals T	6020A Metals T	7062 As T	7471B Hg	7742 Se T	9045D pH	9080 NH3 CEC	Archive Archive 4C	ASTM D4129-05 Modified TOC
K1503982-015	UDU-04-ICS-B-150um	Soil	4/21/15 0757		A	A	A	A	H	A	H			A	
K1503982-016	UDU-04-ICS-C	Soil	4/21/15 0818	A								A		A	
K1503982-017	UDU-04-ICS-C-2mm	Soil	4/21/15 0818		A	A		A	H	A	H		A	A	A
K1503982-018	UDU-04-ICS-C-150um	Soil	4/21/15 0818		A	A	A	A	H	A	H			A	
K1503982-019	UDU-05-ICS	Soil	5/ 1/15 0742	A								A		A	
K1503982-020	UDU-05-ICS-2mm	Soil	5/ 1/15 0742		A	A		A	H	A	H		A	A	A
K1503982-021	UDU-05-ICS-150um	Soil	5/ 1/15 0742		A	A	A	A	H	A	H			A	
K1503982-022	UDU-06-ICS	Soil	5/ 8/15 0738	HP								HP		A	
K1503982-023	UDU-06-ICS-2mm	Soil	5/ 8/15 0738		A	HP		HP	H	HP	H		HP	A	HP
K1503982-024	UDU-06-ICS-150um	Soil	5/ 8/15 0738		A	HP	HP	HP	H	HP	H			A	
K1503982-025	BOSS-017	Soil	5/ 8/15 0738	HP								HP		A	
K1503982-026	BOSS-017-2mm	Soil	5/ 8/15 0738		A	HP		HP	H	HP	H		HP	A	HP
K1503982-027	BOSS-017-150um	Soil	5/ 8/15 0738		A	HP	HP	HP	H	HP	H			A	

				ISM Sieve ISM Sieve	ISM Subsample ISM Subsample	PSEP PS PSEP PartSizeCB	Sieve Sieve
K1503982-015	UDU-04-ICS-B-150um	Soil	4/21/15 0757				
K1503982-016	UDU-04-ICS-C	Soil	4/21/15 0818	A	A	A	
K1503982-017	UDU-04-ICS-C-2mm	Soil	4/21/15 0818				A
K1503982-018	UDU-04-ICS-C-150um	Soil	4/21/15 0818				
K1503982-019	UDU-05-ICS	Soil	5/ 1/15 0742	A	A	A	
K1503982-020	UDU-05-ICS-2mm	Soil	5/ 1/15 0742				A
K1503982-021	UDU-05-ICS-150um	Soil	5/ 1/15 0742				
K1503982-022	UDU-06-ICS	Soil	5/ 8/15 0738	A	A	HP	
K1503982-023	UDU-06-ICS-2mm	Soil	5/ 8/15 0738				A
K1503982-024	UDU-06-ICS-150um	Soil	5/ 8/15 0738				
K1503982-025	BOSS-017	Soil	5/ 8/15 0738	A	A	HP	
K1503982-026	BOSS-017-2mm	Soil	5/ 8/15 0738				A
K1503982-027	BOSS-017-150um	Soil	5/ 8/15 0738				

Test Comments:

Group	Test/Method	Samples	Comments
Metals	7742/Se T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	(1) Anallysis performed if Se < 6020 MRL.
Metals	7062/As T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	(1) Anallysis performed if As < 6020 MRL.
GenChem	Sieve/Sieve	2, 5, 8, 11, 14, 17, 20, 23, 26	(1) Sieving of 2 mm fraction from ISM to generate a 150 um fraction.
SMO	Archive/Archive 4C	1-27	(1) Archive charges start 30 days after release of analytical report. (2) Charge is \$3/container/month. If 5 gallon buckets are archived,charge is \$14/bucket/month.
Metals	6010C/Metals T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	Ca,Mg,Fe,K,Na
Metals	6020A/Metals T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	Al,Sb,As,Ba,Be,Cd,Cr,Co,Cu,Pb,Mn,Ni,Se,Ag,Tl,V,Zn
Metals	7471B/Hg	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	Hg
Metals	6020A/TVBA Metals T	3, 6, 9, 12, 15, 18, 21, 24, 27	(1) Pb & As only.



Confirmation of Sample Receipt

To:	Dave Enos	From:	Jeff Christian
Email:	dave.enos@teck.com	Email:	Jeff.Christian@alsglobal.com
Fax:	509-459-4400	Fax:	360-636-1068
Phone:	509-623-4505	Phone:	360-577-7222 x3316

Samples for analysis have been received by ALS Environmental on 4/17/15 - 5/ 9/15 and assigned our Service Request number **K1503999**. **Please verify the following information and notify me of any corrections as soon as possible.**

The estimated completion date for this work is: 5/15/15

Client: Teck American Incorporated
Project: Bossburg Soil/Sediment

PO Number: UCR-CAS-D21-14

EDD Required: No

Tier: V

Report To: Dave Enos
Teck American Incorporated
501 North Riverpoint Blvd., Suite 300
Spokane, WA 99202

Billing Address: Kris McCaig
Teck American Incorporated
501 North Riverpoint Blvd., Suite 300
Spokane, WA 99202

Comments: Samples -003 and -006 are EPA Splits. Sample -012 is a Field Split to create -013 (BOSS-018).

Thank you for your business!

A - Test is Authorized

H - Test is On Hold

HP - Test is On Hold
Pending Input

P - Test is Authorized for
Prep Only

C - Test has been Cancelled

* - Test has assigned QC

				160.3 Modified TS	6020A Metals T	Archive Archive 4C
K1503999-001	UDU-01-XRF-01	Soil	4/15/15 1646	A	A	A
K1503999-002	UDU-01-XRF-04	Soil	4/15/15 1512	A	A	A
K1503999-003	UDU-01-XRF-07	Soil	4/15/15 1346	A	A	A
K1503999-004	UDU-02-XRF-02	Soil	4/16/15 1031	A	A	A
K1503999-005	UDU-02-XRF-06	Soil	4/16/15 1128	A	A	A
K1503999-006	UDU-03-XRF-01	Soil	4/16/15 1424	A	A	A
K1503999-007	UDU-03-XRF-02	Soil	4/16/15 1301	A	A	A
K1503999-008	UDU-05-XRF-01	Soil	4/30/15 0952	A	A	A
K1503999-009	UDU-04-XRF-02	Soil	4/18/15 1233	A	A	A
K1503999-010	UDU-04-XRF-05	Soil	4/18/15 1344	A	A	A
K1503999-011	UDU-04-XRF-R01	Soil	4/18/15 1203	A	A	A
K1503999-012	UDU-06-XRF-05	Soil	5/ 6/15 1457	A	A	A
K1503999-013	BOSS-018	Soil	5/ 6/15 1457	A	A	A

Test Comments:

Group	Test/Method	Samples	Comments
Metals	6020A/Metals T	1-13	(1) XRF Confirmations. (2) Pb only.



Confirmation of Sample Receipt

To:	Dave Enos	From:	Jeff Christian
Email:	dave.enos@teck.com	Email:	Jeff.Christian@alsglobal.com
Fax:	509-459-4400	Fax:	360-636-1068
Phone:	509-623-4505	Phone:	360-577-7222 x3316

Samples for analysis have been received by ALS Environmental on 4/17/15 and assigned our Service Request number **K1504039**. **Please verify the following information and notify me of any corrections as soon as possible.**

The estimated completion date for this work is: 5/15/15

Client: Teck American Incorporated
Project: Bossburg Soil/Sand Blanks

PO Number: UCR-CAS-D21-14

EDD Required: Yes

Tier: V

Report To: Dave Enos
 Teck American Incorporated
 501 North Riverpoint Blvd., Suite 300
 Spokane, WA 99202

Billing Address: Kris McCaig
 Teck American Incorporated
 501 North Riverpoint Blvd., Suite 300
 Spokane, WA 99202

Comments:

Thank you for your business!

A - Test is Authorized

H - Test is On Hold

HP - Test is On Hold
Pending Input

P - Test is Authorized for
Prep Only

C - Test has been Cancelled

* - Test has assigned QC

				6010C Metals T	6020A Metals T	7471B Hg
K1504039-001	Acid Washed Sand Blank	Soil	4/17/15	A	A	A
K1504039-002	Experimental Sand Blank-2mm	Soil	4/16/15	A	A	A
K1504039-003	Experimental Sand Blank-250um	Soil	4/16/15	A	A	A
K1504039-004	Experimental Sand Blank-150um	Soil	4/16/15	A	A	A

Test Comments:

Group	Test/Method	Samples	Comments
Metals	6010C/Metals T	1-4	Ca,Fe,Mg,K,Na
Metals	6020A/Metals T	1-4	Al,Sb,As,Ba,Be,Cd,Cr,Co,Cu,Pb,Mn,Ni,Se,Ag,Tl,V,Zn
Metals	7471B/Hg	1-4	Hg



Confirmation of Sample Receipt

To:	Dave Enos	From:	Jeff Christian
Email:	dave.enos@teck.com	Email:	Jeff.Christian@alsglobal.com
Fax:	509-459-4400	Fax:	360-636-1068
Phone:	509-623-4505	Phone:	360-577-7222 x3316

Samples for analysis have been received by ALS Environmental on 4/21/15 and assigned our Service Request number **K1504137**. **Please verify the following information and notify me of any corrections as soon as possible.**

The estimated completion date for this work is: 5/19/15

Client: Teck American Incorporated
Project: Bossburg Soil/Sediment

PO Number: UCR-CAS-D21-14

EDD Required: Yes

Tier: V

Report To: Dave Enos
 Teck American Incorporated
 501 North Riverpoint Blvd., Suite 300
 Spokane, WA 99202

Billing Address: Kris McCaig
 Teck American Incorporated
 501 North Riverpoint Blvd., Suite 300
 Spokane, WA 99202

Comments: Sample -014, -015, -020 and -021 are EPA splits.

Thank you for your business!

A - Test is Authorized

H - Test is On Hold

HP - Test is On Hold
Pending InputP - Test is Authorized for
Prep Only

C - Test has been Cancelled

* - Test has assigned QC

				160.3 Modified TS	160.3 Modified TS-Air Dried	6010C Metals T	6020A IVBA Metals T	6020A Metals T	7062 As T	7471B Hg	7742 Se T	9045D pH	9080 NH3 CEC	Archive Archive 4C	ASTM D4129-05 Modified TOC
K1504137-001	UDU-01-COR-01-001	Soil	4/18/15 0835	A								A		A	
K1504137-002	UDU-01-COR-01-001-2mm	Soil	4/18/15 0835		A	A		A	H	A	H		A	A	A
K1504137-003	UDU-01-COR-01-001-150um	Soil	4/18/15 0835		A	HP	HP	HP	H	HP	H			A	
K1504137-004	UDU-01-COR-01-002	Soil	4/18/15 0855	A								A		A	
K1504137-005	UDU-01-COR-01-002-2mm	Soil	4/18/15 0855		A	A		A	H	A	H		A	A	A
K1504137-006	UDU-01-COR-01-002-150um	Soil	4/18/15 0855		A	HP	HP	HP	H	HP	H			A	
K1504137-007	UDU-01-COR-01-003	Soil	4/18/15 0911	A								A		A	
K1504137-008	UDU-01-COR-01-003-2mm	Soil	4/18/15 0911		A	A		A	H	A	H		A	A	A
K1504137-009	UDU-01-COR-01-003-150um	Soil	4/18/15 0911		A	HP	HP	HP	H	HP	H			A	
K1504137-010	UDU-01-COR-02-001	Soil	4/18/15 0957	A								A		A	
K1504137-011	UDU-01-COR-02-001-2mm	Soil	4/18/15 0957		A	A		A	H	A	H		A	A	A
K1504137-012	UDU-01-COR-02-001-150um	Soil	4/18/15 0957		A	HP	HP	HP	H	HP	H			A	
K1504137-013	UDU-01-COR-02-002	Soil	4/18/15 0949	A								A		A	
K1504137-014	UDU-01-COR-02-002-2mm	Soil	4/18/15 0949		A	A		A	H	A	H		A	A	A

				PSEP PS PSEP PartSizeCB	Sieve Sieve
K1504137-001	UDU-01-COR-01-001	Soil	4/18/15 0835	A	A
K1504137-002	UDU-01-COR-01-001-2mm	Soil	4/18/15 0835		A
K1504137-003	UDU-01-COR-01-001-150um	Soil	4/18/15 0835		
K1504137-004	UDU-01-COR-01-002	Soil	4/18/15 0855	A	A
K1504137-005	UDU-01-COR-01-002-2mm	Soil	4/18/15 0855		A
K1504137-006	UDU-01-COR-01-002-150um	Soil	4/18/15 0855		
K1504137-007	UDU-01-COR-01-003	Soil	4/18/15 0911	A	A
K1504137-008	UDU-01-COR-01-003-2mm	Soil	4/18/15 0911		A
K1504137-009	UDU-01-COR-01-003-150um	Soil	4/18/15 0911		
K1504137-010	UDU-01-COR-02-001	Soil	4/18/15 0957	A	A
K1504137-011	UDU-01-COR-02-001-2mm	Soil	4/18/15 0957		A
K1504137-012	UDU-01-COR-02-001-150um	Soil	4/18/15 0957		
K1504137-013	UDU-01-COR-02-002	Soil	4/18/15 0949	A	A
K1504137-014	UDU-01-COR-02-002-2mm	Soil	4/18/15 0949		A

				160.3 Modified TS	160.3 Modified TS-Air Dried	6010C Metals T	6020A IVBA Metals T	6020A Metals T	7062 As T	7471B Hg	7742 Se T	9045D pH	9080 NH3 CEC	Archive Archive 4C	ASTM D4129-05 Modified TOC
K1504137-015	UDU-01-COR-02-002-150um	Soil	4/18/15 0949		A	HP	HP	HP	H	HP	H			A	
K1504137-016	UDU-01-COR-02-003	Soil	4/18/15 1002	A								A		A	
K1504137-017	UDU-01-COR-02-003-2mm	Soil	4/18/15 1002		A	A		A	H	A	H		A	A	A
K1504137-018	UDU-01-COR-02-003-150um	Soil	4/18/15 1002		A	HP	HP	HP	H	HP	H			A	
K1504137-019	UDU-01-COR-03-001	Soil	4/18/15 1030	A								A		A	
K1504137-020	UDU-01-COR-03-001-2mm	Soil	4/18/15 1030		A	HP		HP	H	HP	H		HP	A	HP
K1504137-021	UDU-01-COR-03-001-150um	Soil	4/18/15 1030		A	HP	HP	HP	H	HP	H			A	
K1504137-022	UDU-01-COR-03-002	Soil	4/18/15 1033	A								A		A	
K1504137-023	UDU-01-COR-03-002-2mm	Soil	4/18/15 1033		A	HP		HP	H	HP	H		HP	A	HP
K1504137-024	UDU-01-COR-03-002-150um	Soil	4/18/15 1033		A	HP	HP	HP	H	HP	H			A	
K1504137-025	UDU-01-COR-03-003	Soil	4/18/15 1037	A								A		A	
K1504137-026	UDU-01-COR-03-003-2mm	Soil	4/18/15 1037		A	HP		HP	H	HP	H		HP	A	HP
K1504137-027	UDU-01-COR-03-003-150um	Soil	4/18/15 1037		A	HP	HP	HP	H	HP	H			A	

				PSEP PS PSEP PartSizeCB	Sieve Sieve
K1504137-015	UDU-01-COR-02-002-150um	Soil	4/18/15 0949		
K1504137-016	UDU-01-COR-02-003	Soil	4/18/15 1002	A	A
K1504137-017	UDU-01-COR-02-003-2mm	Soil	4/18/15 1002		A
K1504137-018	UDU-01-COR-02-003-150um	Soil	4/18/15 1002		
K1504137-019	UDU-01-COR-03-001	Soil	4/18/15 1030	A	A
K1504137-020	UDU-01-COR-03-001-2mm	Soil	4/18/15 1030		A
K1504137-021	UDU-01-COR-03-001-150um	Soil	4/18/15 1030		
K1504137-022	UDU-01-COR-03-002	Soil	4/18/15 1033	A	A
K1504137-023	UDU-01-COR-03-002-2mm	Soil	4/18/15 1033		A
K1504137-024	UDU-01-COR-03-002-150um	Soil	4/18/15 1033		
K1504137-025	UDU-01-COR-03-003	Soil	4/18/15 1037	A	A
K1504137-026	UDU-01-COR-03-003-2mm	Soil	4/18/15 1037		A
K1504137-027	UDU-01-COR-03-003-150um	Soil	4/18/15 1037		

Test Comments:

Group	Test/Method	Samples	Comments
Metals	7742/Se T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	(1) Analysis performed if Se < 6020 MRL.
Metals	7062/As T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	(1) Analysis performed if As < 6020 MRL.
GenChem	Sieve/Sieve	1-2, 4-5, 7-8, 10-11, 13-14, 16-17, 19-20, 22-23, 25	(1) Sieving of 2 mm fraction from ISM to generate a 150 um fraction.
SMO	Archive/Archive 4C	1-27	(1) Archive charges start 30 days after release of analytical report. (2) Charge is \$3/container/month. If 5 gallon buckets are archived, charge is \$14/bucket/month.
Metals	6010C/Metals T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	Ca,Fe,Mg,K,Na
Metals	6020A/Metals T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	Al,Sb,As,Ba,Be,Cd,Cr,Co,Cu,Pb,Mn,Ni,Se,Ag,Tl,V,Zn
Metals	7471B/Hg	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	Hg
Metals	6020A/IVBA Metals T	3, 6, 9, 12, 15, 18, 21, 24, 27	(1) Pb & As only.



Confirmation of Sample Receipt

To:	Dave Enos	From:	Jeff Christian
Email:	dave.enos@teck.com	Email:	Jeff.Christian@alsglobal.com
Fax:	509-459-4400	Fax:	360-636-1068
Phone:	509-623-4505	Phone:	360-577-7222 x3316

Samples for analysis have been received by ALS Environmental on 4/22/15 and assigned our Service Request number **K1504220**. **Please verify the following information and notify me of any corrections as soon as possible.**

The estimated completion date for this work is: 5/20/15

Client: Teck American Incorporated
Project: Bossburg Soil/Sediment

PO Number: UCR-CAS-D21-14

EDD Required: Yes

Tier: V

Report To: Dave Enos
Teck American Incorporated
501 North Riverpoint Blvd., Suite 300
Spokane, WA 99202

Billing Address: Kris McCaig
Teck American Incorporated
501 North Riverpoint Blvd., Suite 300
Spokane, WA 99202

Comments: Samples -002 and -003 are EPA Splits

Thank you for your business!

A - Test is Authorized

H - Test is On Hold

HP - Test is On Hold
Pending InputP - Test is Authorized for
Prep Only

C - Test has been Cancelled

* - Test has assigned QC

				160.3 Modified TS	160.3 Modified TS-Air Dried	6010C Metals T	6020A IVBA Metals T	6020A Metals T	7062 As T	7471B Hg	7742 Se T	9045D pH	9080 NH3 CEC	Archive Archive 4C	ASTM D4129-05 Modified TOC
K1504220-001	UDU-02-COR-01-001	Soil	4/20/15 0839	A								A		A	
K1504220-002	UDU-02-COR-01-001-2mm	Soil	4/20/15 0839		A	HP		HP	H	HP	H		HP	A	HP
K1504220-003	UDU-02-COR-01-001-150um	Soil	4/20/15 0839		A	HP	HP	HP	H	HP	H			A	
K1504220-004	UDU-02-COR-01-002	Soil	4/20/15 0846	A								A		A	
K1504220-005	UDU-02-COR-01-002-2mm	Soil	4/20/15 0846		A	HP		HP	H	HP	H		HP	A	HP
K1504220-006	UDU-02-COR-01-002-150um	Soil	4/20/15 0846		A	HP	HP	HP	H	HP	H			A	
K1504220-007	UDU-02-COR-01-003	Soil	4/20/15 0849	A								A		A	
K1504220-008	UDU-02-COR-01-003-2mm	Soil	4/20/15 0849		A	HP		HP	H	HP	H		HP	A	HP
K1504220-009	UDU-02-COR-01-003-150um	Soil	4/20/15 0849		A	HP	HP	HP	H	HP	H			A	
K1504220-010	UDU-02-COR-02-001	Soil	4/20/15 0925	A								A		A	
K1504220-011	UDU-02-COR-02-001-2mm	Soil	4/20/15 0925		A	HP		HP	H	HP	H		HP	A	HP
K1504220-012	UDU-02-COR-02-001-150um	Soil	4/20/15 0925		A	HP	HP	HP	H	HP	H			A	
K1504220-013	UDU-02-COR-02-002	Soil	4/20/15 0927	A								A		A	
K1504220-014	UDU-02-COR-02-002-2mm	Soil	4/20/15 0927		A	HP		HP	H	HP	H		HP	A	HP

				PSEP PS PSEP PartSizeCB	Sieve Sieve
K1504220-001	UDU-02-COR-01-001	Soil	4/20/15 0839	A	A
K1504220-002	UDU-02-COR-01-001-2mm	Soil	4/20/15 0839		A
K1504220-003	UDU-02-COR-01-001-150um	Soil	4/20/15 0839		
K1504220-004	UDU-02-COR-01-002	Soil	4/20/15 0846	A	A
K1504220-005	UDU-02-COR-01-002-2mm	Soil	4/20/15 0846		A
K1504220-006	UDU-02-COR-01-002-150um	Soil	4/20/15 0846		
K1504220-007	UDU-02-COR-01-003	Soil	4/20/15 0849	A	A
K1504220-008	UDU-02-COR-01-003-2mm	Soil	4/20/15 0849		A
K1504220-009	UDU-02-COR-01-003-150um	Soil	4/20/15 0849		
K1504220-010	UDU-02-COR-02-001	Soil	4/20/15 0925	A	A
K1504220-011	UDU-02-COR-02-001-2mm	Soil	4/20/15 0925		A
K1504220-012	UDU-02-COR-02-001-150um	Soil	4/20/15 0925		
K1504220-013	UDU-02-COR-02-002	Soil	4/20/15 0927	A	A
K1504220-014	UDU-02-COR-02-002-2mm	Soil	4/20/15 0927		A

				160.3 Modified TS	160.3 Modified TS-Air Dried	6010C Metals T	6020A IVBA Metals T	6020A Metals T	7062 As T	7471B Hg	7742 Se T	9045D pH	9080 NH3 CEC	Archive Archive 4C	ASTM D4129-05 Modified TOC
K1504220-015	UDU-02-COR-02-002-150um	Soil	4/20/15 0927		A	HP	HP	HP	H	HP	H			A	
K1504220-016	UDU-02-COR-02-003	Soil	4/20/15 0932	A								A		A	
K1504220-017	UDU-02-COR-02-003-2mm	Soil	4/20/15 0932		A	HP		HP	H	HP	H		HP	A	HP
K1504220-018	UDU-02-COR-02-003-150um	Soil	4/20/15 0932		A	HP	HP	HP	H	HP	H			A	
K1504220-019	UDU-02-COR-03-001	Soil	4/20/15 1020	A								A		A	
K1504220-020	UDU-02-COR-03-001-2mm	Soil	4/20/15 1020		A	HP		HP	H	HP	H		HP	A	HP
K1504220-021	UDU-02-COR-03-001-150um	Soil	4/20/15 1020		A	HP	HP	HP	H	HP	H			A	
K1504220-022	UDU-02-COR-03-002	Soil	4/20/15 1025	A								A		A	
K1504220-023	UDU-02-COR-03-002-2mm	Soil	4/20/15 1025		A	HP		HP	H	HP	H		HP	A	HP
K1504220-024	UDU-02-COR-03-002-150um	Soil	4/20/15 1025		A	HP	HP	HP	H	HP	H			A	
K1504220-025	UDU-02-COR-03-003	Soil	4/20/15 1027	A								A		A	
K1504220-026	UDU-02-COR-03-003-2mm	Soil	4/20/15 1027		A	HP		HP	H	HP	H		HP	A	HP
K1504220-027	UDU-02-COR-03-003-150um	Soil	4/20/15 1027		A	HP	HP	HP	H	HP	H			A	

				PSEP PS PSEP PartSizeCB	Sieve Sieve
K1504220-015	UDU-02-COR-02-002-150um	Soil	4/20/15 0927		
K1504220-016	UDU-02-COR-02-003	Soil	4/20/15 0932	A	A
K1504220-017	UDU-02-COR-02-003-2mm	Soil	4/20/15 0932		A
K1504220-018	UDU-02-COR-02-003-150um	Soil	4/20/15 0932		
K1504220-019	UDU-02-COR-03-001	Soil	4/20/15 1020	A	A
K1504220-020	UDU-02-COR-03-001-2mm	Soil	4/20/15 1020		A
K1504220-021	UDU-02-COR-03-001-150um	Soil	4/20/15 1020		
K1504220-022	UDU-02-COR-03-002	Soil	4/20/15 1025	A	A
K1504220-023	UDU-02-COR-03-002-2mm	Soil	4/20/15 1025		A
K1504220-024	UDU-02-COR-03-002-150um	Soil	4/20/15 1025		
K1504220-025	UDU-02-COR-03-003	Soil	4/20/15 1027	A	A
K1504220-026	UDU-02-COR-03-003-2mm	Soil	4/20/15 1027		A
K1504220-027	UDU-02-COR-03-003-150um	Soil	4/20/15 1027		

Test Comments:

Group	Test/Method	Samples	Comments
Metals	7742/Se T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	(1) Analysis performed if Se < 6020 MRL.
Metals	7062/As T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	(1) Analysis performed if As < 6020 MRL.
GenChem	Sieve/Sieve	1-2, 4-5, 7-8, 10-11, 13-14, 16-17, 19-20, 22-23, 25	(1) Sieving of 2 mm fraction from ISM to generate a 150 um fraction.
SMO	Archive/Archive 4C	1-27	(1) Archive charges start 30 days after release of analytical report. (2) Charge is \$3/container/month. If 5 gallon buckets are archived, charge is \$14/bucket/month.
Metals	6010C/Metals T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	Ca,Fe,Mg,K,Na
Metals	6020A/Metals T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	Al,Sb,As,Ba,Be,Cd,Cr,Co,Cu,Pb,Mn,Ni,Se,Ag,Tl,V,Zn
Metals	7471B/Hg	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	Hg
Metals	6020A/IVBA Metals T	3, 6, 9, 12, 15, 18, 21, 24, 27	(1) Pb & As only.



Confirmation of Sample Receipt

To:	Dave Enos	From:	Jeff Christian
Email:	dave.enos@teck.com	Email:	Jeff.Christian@alsglobal.com
Fax:	509-459-4400	Fax:	360-636-1068
Phone:	509-623-4505	Phone:	360-577-7222 x3316

Samples for analysis have been received by ALS Environmental on 4/24 - 25/15 and assigned our Service Request number **K1504331**. **Please verify the following information and notify me of any corrections as soon as possible.**

The estimated completion date for this work is: 5/22/15

Client: Teck American Incorporated
Project: Bossburg Soil/Sediment

PO Number: UCR-CAS-D21-14

EDD Required: No

Tier: V

Report To: Dave Enos
 Teck American Incorporated
 501 North Riverpoint Blvd., Suite 300
 Spokane, WA 99202

Billing Address: Kris McCaig
 Teck American Incorporated
 501 North Riverpoint Blvd., Suite 300
 Spokane, WA 99202

Comments: (1) Samples -001 & -013 are EPA Splits. (2) Sample -007 is a field split to create -019, -020, and -021.

Thank you for your business!

A - Test is Authorized

H - Test is On Hold

HP - Test is On Hold
Pending InputP - Test is Authorized for
Prep Only

C - Test has been Cancelled

* - Test has assigned QC

				160.3 Modified TS	160.3 Modified TS-Air Dried	6010C Metals T	6020A IVBA Metals T	6020A Metals T	7062 As T	7471B Hg	7742 Se T	9045D pH	Archive Archive 4C	ASTM D4129-05 Modified TOC	ISM Sieve ISM Sieve
K1504331-001	SDU-01-ICS	Sediment	4/22/15 0756	A								A	A		A
K1504331-002	SDU-01-ICS-2mm	Sediment	4/22/15 0756		A	HP		HP	H	HP	H		A	HP	
K1504331-003	SDU-01-ICS-250um	Sediment	4/22/15 0756		A	HP	HP	HP	H	HP	H		A		
K1504331-004	SDU-02-ICS-A	Sediment	4/22/15 0756	A								A	A		A
K1504331-005	SDU-02-ICS-A-2mm	Sediment	4/22/15 0756		A	HP		HP	H	HP	H		A	HP	
K1504331-006	SDU-02-ICS-A-250um	Sediment	4/22/15 0756		A	HP	HP	HP	H	HP	H		A		
K1504331-007	SDU-02-ICS-B	Sediment	4/23/15 0904	HP								HP	A		A
K1504331-008	SDU-02-ICS-B-2mm	Sediment	4/23/15 0904		A	HP		HP	H	HP	H		A	HP	
K1504331-009	SDU-02-ICS-B-250um	Sediment	4/23/15 0904		A	HP	HP	HP	H	HP	H		A		
K1504331-010	SDU-02-ICS-C	Sediment	4/23/15 1050	HP								HP	A		A
K1504331-011	SDU-02-ICS-C-2mm	Sediment	4/23/15 1050		A	HP		HP	H	HP	H		A	HP	
K1504331-012	SDU-02-ICS-C-250um	Sediment	4/23/15 1050		A	HP	HP	HP	H	HP	H		A		
K1504331-013	SDU-03-ICS-A	Sediment	4/24/15 0828	HP								HP	A		A
K1504331-014	SDU-03-ICS-A-2mm	Sediment	4/24/15 0828		A	HP		HP	H	HP	H		A	HP	

				ISM Subsample ISM Subsample	PSEP PS PSEP PartSizeCB	Sieve Sieve
K1504331-001	SDU-01-ICS	Sediment	4/22/15 0756	A	A	A
K1504331-002	SDU-01-ICS-2mm	Sediment	4/22/15 0756			A
K1504331-003	SDU-01-ICS-250um	Sediment	4/22/15 0756			
K1504331-004	SDU-02-ICS-A	Sediment	4/22/15 0756	A	A	A
K1504331-005	SDU-02-ICS-A-2mm	Sediment	4/22/15 0756			A
K1504331-006	SDU-02-ICS-A-250um	Sediment	4/22/15 0756			
K1504331-007	SDU-02-ICS-B	Sediment	4/23/15 0904	A	HP	A
K1504331-008	SDU-02-ICS-B-2mm	Sediment	4/23/15 0904			A
K1504331-009	SDU-02-ICS-B-250um	Sediment	4/23/15 0904			
K1504331-010	SDU-02-ICS-C	Sediment	4/23/15 1050	A	HP	A
K1504331-011	SDU-02-ICS-C-2mm	Sediment	4/23/15 1050			A
K1504331-012	SDU-02-ICS-C-250um	Sediment	4/23/15 1050			
K1504331-013	SDU-03-ICS-A	Sediment	4/24/15 0828	A	HP	A
K1504331-014	SDU-03-ICS-A-2mm	Sediment	4/24/15 0828			A

				160.3 Modified TS	160.3 Modified TS-Air Dried	6010C Metals T	6020A IVBA Metals T	6020A Metals T	7062 As T	7471B Hg	7742 Se T	9045D pH	Archive Archive 4C	ASTM D4129-05 Modified TOC	ISM Sieve ISM Sieve
K1504331-015	SDU-03-ICS-A-250um	Sediment	4/24/15 0828		A	HP	HP	HP	H	HP	H		A		
K1504331-016	SDU-03-ICS-B	Sediment	4/24/15 0919	HP								HP	A		A
K1504331-017	SDU-03-ICS-B-2mm	Sediment	4/24/15 0919		A	HP		HP	H	HP	H		A	HP	
K1504331-018	SDU-03-ICS-B-250um	Sediment	4/24/15 0919		A	HP	HP	HP	H	HP	H		A		
K1504331-019	BOSS-001	Sediment	4/23/15 1050	HP								HP	A		A
K1504331-020	BOSS-001-2mm	Sediment	4/23/15 1050		A	HP		HP	H	HP	H		A	HP	
K1504331-021	BOSS-001-250um	Sediment	4/23/15 1050		A	HP	HP	HP	H	HP	H		A		

Test Comments:

Group	Test/Method	Samples	Comments
Metals	7742/Se T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21	(1) Analysis performed if Se < 6020 MRL.
Metals	7062/As T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21	(1) Analysis performed if As < 6020 MRL.
GenChem	Sieve/Sieve	1-2, 4-5, 7-8, 10-11, 13-14, 16-17, 19-20	(1) Sieving of 2 mm fraction from ISM to generate a 250 um fraction.
SMO	Archive/Archive 4C	1-21	(1) Archive charges start 30 days after release of analytical report. (2) Charge is \$3/container/month. If 5 gallon buckets are archived, charge is \$14/bucket/month.
Metals	6010C/Metals T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21	Ca, Mg, Fe, K, Na
Metals	6020A/Metals T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21	Al, Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Mn, Ni, Se, Ag, Tl, V, Zn
Metals	7471B/Hg	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21	Hg
Metals	6020A/IVBA Metals T	3, 6, 9, 12, 15, 18, 21	(1) As & Pb.

				ISM Subsample ISM Subsample	PSEP PS PSEP PartSizeCB	Sieve Sieve
K1504331-015	SDU-03-ICS-A-250um	Sediment	4/24/15 0828			
K1504331-016	SDU-03-ICS-B	Sediment	4/24/15 0919	A	HP	A
K1504331-017	SDU-03-ICS-B-2mm	Sediment	4/24/15 0919			A
K1504331-018	SDU-03-ICS-B-250um	Sediment	4/24/15 0919			
K1504331-019	BOSS-001	Sediment	4/23/15 1050	A	HP	A
K1504331-020	BOSS-001-2mm	Sediment	4/23/15 1050			A
K1504331-021	BOSS-001-250um	Sediment	4/23/15 1050			



Confirmation of Sample Receipt

To:	Dave Enos	From:	Jeff Christian
Email:	dave.enos@teck.com	Email:	Jeff.Christian@alsglobal.com
Fax:	509-459-4400	Fax:	360-636-1068
Phone:	509-623-4505	Phone:	360-577-7222 x3316

Samples for analysis have been received by ALS Environmental on 4/24/15 - 5/ 9/15 and assigned our Service Request number **K1504341**. **Please verify the following information and notify me of any corrections as soon as possible.**

The estimated completion date for this work is: 5/22/15

Client: Teck American Incorporated
Project: Bossburg Soil/Sediment

PO Number: UCR-CAS-D21-14

EDD Required: No

Tier: V

Report To: Dave Enos
Teck American Incorporated
501 North Riverpoint Blvd., Suite 300
Spokane, WA 99202

Billing Address: Kris McCaig
Teck American Incorporated
501 North Riverpoint Blvd., Suite 300
Spokane, WA 99202

Comments: (1) Sample -004 is an EPA Split. (2) Sample -006 is a field split to create -010.

Thank you for your business!

A - Test is Authorized

H - Test is On Hold

HP - Test is On Hold
Pending InputP - Test is Authorized for
Prep Only

C - Test has been Cancelled

* - Test has assigned QC

				160.3 Modified TS	6020A Metals T	Archive Archive 4C
K1504341-001	SDU-01-XRF-03	Sediment	4/20/15 1415	A	A	A
K1504341-002	SDU-01-XRF-04	Sediment	4/20/15 1355	A	A	A
K1504341-003	SDU-01-XRF-07	Sediment	4/20/15 1345	A	A	A
K1504341-004	SDU-02-XRF-01	Sediment	4/21/15 0933	A	A	A
K1504341-005	SDU-05-XRF-R03	Sediment	4/24/15 1201	A	A	A
K1504341-006	SDU-09-XRF-02	Sediment	4/27/15 1014	A	A	A
K1504341-007	SDU-09-XRF-04	Sediment	4/27/15 0946	A	A	A
K1504341-008	SDU-10-XRF-02	Sediment	4/27/15 0945	A	A	A
K1504341-009	SDU-10-XRF-04	Sediment	4/27/15 1003	A	A	A
K1504341-010	BOSS-005	Sediment	4/27/15 1014	A	A	A
K1504341-011	SDU-08-XRF-02	Sediment	5/2/15 0945	A	A	A
K1504341-012	SDU-08-XRF-R03	Sediment	5/2/15 1013	A	A	A
K1504341-013	SDU-09-XRF-01	Sediment	4/27/15 1028	A	A	A

Test Comments:

Group	Test/Method	Samples	Comments
Metals	6020A/Metals T	1-13	(1) XRF Confirmations. (2) Pb only.



Confirmation of Sample Receipt

To:	Dave Enos	From:	Jeff Christian
Email:	dave.enos@teck.com	Email:	Jeff.Christian@alsglobal.com
Fax:	509-459-4400	Fax:	360-636-1068
Phone:	509-623-4505	Phone:	360-577-7222 x3316

Samples for analysis have been received by ALS Environmental on 4/27/15 - 5/ 6/15 and assigned our Service Request number **K1504368**. **Please verify the following information and notify me of any corrections as soon as possible.**

The estimated completion date for this work is: 5/25/15

Client: Teck American Incorporated
Project: Bossburg Experimental Blanks

PO Number: UCR-CAS-D21-14

EDD Required: No

Tier: V

Report To: Dave Enos
 Teck American Incorporated
 501 North Riverpoint Blvd., Suite 300
 Spokane, WA 99202

Billing Address: Kris McCaig
 Teck American Incorporated
 501 North Riverpoint Blvd., Suite 300
 Spokane, WA 99202

Comments:

Thank you for your business!

A - Test is Authorized

H - Test is On Hold

HP - Test is On Hold
Pending InputP - Test is Authorized for
Prep Only

C - Test has been Cancelled

* - Test has assigned QC

				6010C Metals T	6020A Metals T	7470A Hg T	Archive Archive 4C
K1504368-001	Experimental Blank-2mm-04232015	Aqueous Equip Blank	4/23/15	A	A	A	A
K1504368-002	Experimental Blank-2mm-04242015	Aqueous Equip Blank	4/24/15	A	A	A	A
K1504368-003	Experimental Blank-150um-04272015	Aqueous Equip Blank	4/27/15	A	A	A	A
K1504368-004	Experimental Blank-150um-04282015	Aqueous Equip Blank	4/28/15	A	A	A	A
K1504368-005	Experimental Blank-2mm-04282015	Aqueous Equip Blank	4/28/15	A	A	A	A
K1504368-006	Experimental Blank-2mm-04292015	Aqueous Equip Blank	4/28/15	A	A	A	A
K1504368-007	Experimental Blank-2mm-04302015	Aqueous Equip Blank	4/30/15	A	A	A	A
K1504368-008	Experimental Blank-150um-0429015	Aqueous Equip Blank	4/29/15	A	A	A	A
K1504368-009	Experimental Blank-250um-04302015	Aqueous Equip Blank	4/30/15	A	A	A	A
K1504368-010	Experimental Blank-250um-05012015	Aqueous Equip Blank	5/ 1/15	A	A	A	A
K1504368-011	Experimental Blank-2mm-05012015	Aqueous Equip Blank	5/ 1/15	A	A	A	A
K1504368-012	Experimental Blank-2mm-05042015	Aqueous Equip Blank	5/ 4/15	A	A	A	A
K1504368-013	Experimental Blank-250um-05012015	Aqueous Equip Blank	5/ 4/15	A	A	A	A
K1504368-014	Experimental Blank-2mm-05052015	Aqueous Equip Blank	5/ 5/15	A	A	A	A

				6010C Metals T	6020A Metals T	7470A Hg T	Archive Archive 4C
K1504368-015	Experimental Blank-150um-05052015	Aqueous Equip Blank	5/ 5/15	A	A	A	A
K1504368-016	Experimental Blank-250um-05052015	Aqueous Equip Blank	5/ 5/15	A	A	A	A
K1504368-017	Experimental Blank-150um-05062015	Aqueous Equip Blank	5/ 6/15	A	A	A	A
K1504368-018	Experimental Blank-2mm-05062015	Aqueous Equip Blank	5/ 6/15	A	A	A	A
K1504368-019	Experimental Blank-250um-05062015	Aqueous Equip Blank	5/ 6/15	A	A	A	A

Test Comments:

Group	Test/Method	Samples	Comments
Metals	7470A/Hg T	1-19	Hg
Metals	6010C/Metals T	1-19	Ca,Mg,Fe,K,Na
Metals	6020A/Metals T	1-19	Al,Sb,As,Ba,Be,Cd,Cr,Co,Cu,Pb,Mn,Ni,Se,Ag,Tl,V,Zn



Confirmation of Sample Receipt

To:	Dave Enos	From:	Jeff Christian
Email:	dave.enos@teck.com	Email:	Jeff.Christian@alsglobal.com
Fax:	509-459-4400	Fax:	360-636-1068
Phone:	509-623-4505	Phone:	360-577-7222 x3316

Samples for analysis have been received by ALS Environmental on 4/28/15 and assigned our Service Request number **K1504428**. **Please verify the following information and notify me of any corrections as soon as possible.**

The estimated completion date for this work is: 5/26/15

Client: Teck American Incorporated
Project: Bossburg Soil/Sediment

PO Number: UCR-CAS-D21-14

EDD Required: No

Tier: V

Report To: Dave Enos
Teck American Incorporated
501 North Riverpoint Blvd., Suite 300
Spokane, WA 99202

Billing Address: Kris McCaig
Teck American Incorporated
501 North Riverpoint Blvd., Suite 300
Spokane, WA 99202

Comments: Sample -004 has extra volume and sample -025 is an EPA Split.

Thank you for your business!

A - Test is Authorized

H - Test is On Hold

HP - Test is On Hold
Pending InputP - Test is Authorized for
Prep Only

C - Test has been Cancelled

* - Test has assigned QC

				160.3 Modified TS	160.3 Modified TS-Air Dried	6010C Metals T	6020A IVBA Metals T	6020A Metals T	7062 As T	7471B Hg	7742 Se T	9045D pH	Archive Archive 4C	ASTM D4129-05 Modified TOC	PSEP PS PSEP PartSizeCB
K1504428-001	SDU-03-COR-01-001	Sediment	4/25/15 1415	A								A	A		A
K1504428-002	SDU-03-COR-01-001-2mm	Sediment	4/25/15 1415		HP	HP		HP	H	HP	H		A	HP	
K1504428-003	SDU-03-COR-01-001-250um	Sediment	4/25/15 1415		HP	HP	HP	HP	H	HP	H		A		
K1504428-004	SDU-03-COR-01-002	Sediment	4/25/15 1419	A								A	A		A
K1504428-005	SDU-03-COR-01-002-2mm	Sediment	4/25/15 1419		HP	HP		HP	H	HP	H		A	HP	
K1504428-006	SDU-03-COR-01-002-250um	Sediment	4/25/15 1419		HP	HP	HP	HP	H	HP	H		A		
K1504428-007	SDU-03-COR-01-003	Sediment	4/25/15 1425	A								A	A		A
K1504428-008	SDU-03-COR-01-003-2mm	Sediment	4/25/15 1425		HP	HP		HP	H	HP	H		A	HP	
K1504428-009	SDU-03-COR-01-003-250um	Sediment	4/25/15 1425		HP	HP	HP	HP	H	HP	H		A		
K1504428-010	SDU-03-COR-02-001	Sediment	4/25/15 1419	A								A	A		A
K1504428-011	SDU-03-COR-02-001-2mm	Sediment	4/25/15 1419		HP	HP		HP	H	HP	H		A	HP	
K1504428-012	SDU-03-COR-02-001-250um	Sediment	4/25/15 1419		HP	HP	HP	HP	H	HP	H		A		
K1504428-013	SDU-03-COR-02-002	Sediment	4/25/15 1422	A								A	A		A
K1504428-014	SDU-03-COR-02-002-2mm	Sediment	4/25/15 1422		HP	HP		HP	H	HP	H		A	HP	

				Sieve Sieve
K1504428-001	SDU-03-COR-01-001	Sediment	4/25/15 1415	A
K1504428-002	SDU-03-COR-01-001-2mm	Sediment	4/25/15 1415	A
K1504428-003	SDU-03-COR-01-001-250um	Sediment	4/25/15 1415	
K1504428-004	SDU-03-COR-01-002	Sediment	4/25/15 1419	A
K1504428-005	SDU-03-COR-01-002-2mm	Sediment	4/25/15 1419	A
K1504428-006	SDU-03-COR-01-002-250um	Sediment	4/25/15 1419	
K1504428-007	SDU-03-COR-01-003	Sediment	4/25/15 1425	A
K1504428-008	SDU-03-COR-01-003-2mm	Sediment	4/25/15 1425	A
K1504428-009	SDU-03-COR-01-003-250um	Sediment	4/25/15 1425	
K1504428-010	SDU-03-COR-02-001	Sediment	4/25/15 1419	A
K1504428-011	SDU-03-COR-02-001-2mm	Sediment	4/25/15 1419	A
K1504428-012	SDU-03-COR-02-001-250um	Sediment	4/25/15 1419	
K1504428-013	SDU-03-COR-02-002	Sediment	4/25/15 1422	A
K1504428-014	SDU-03-COR-02-002-2mm	Sediment	4/25/15 1422	A

				160.3 Modified TS	160.3 Modified TS-Air Dried	6010C Metals T	6020A IVBA Metals T	6020A Metals T	7062 As T	7471B Hg	7742 Se T	9045D pH	Archive Archive 4C	ASTM D4129-05 Modified TOC	PSEP PS PSEP PartSizeCB
K1504428-015	SDU-03-COR-02-002-250um	Sediment	4/25/15 1422		HP	HP	HP	HP	H	HP	H		A		
K1504428-016	SDU-03-COR-02-003	Sediment	4/25/15 1425	A								A	A		A
K1504428-017	SDU-03-COR-02-003-2mm	Sediment	4/25/15 1425		HP	HP		HP	H	HP	H		A	HP	
K1504428-018	SDU-03-COR-02-003-250um	Sediment	4/25/15 1425		HP	HP	HP	HP	H	HP	H		A		
K1504428-019	SDU-03-COR-03-001	Sediment	4/25/15 1442	A								A	A		A
K1504428-020	SDU-03-COR-03-001-2mm	Sediment	4/25/15 1442		HP	HP		HP	H	HP	H		A	HP	
K1504428-021	SDU-03-COR-03-001-250um	Sediment	4/25/15 1442		HP	HP	HP	HP	H	HP	H		A		
K1504428-022	SDU-03-COR-03-002	Sediment	4/25/15 1445	A								A	A		A
K1504428-023	SDU-03-COR-03-002-2mm	Sediment	4/25/15 1445		HP	HP		HP	H	HP	H		A	HP	
K1504428-024	SDU-03-COR-03-002-250um	Sediment	4/25/15 1445		HP	HP	HP	HP	H	HP	H		A		
K1504428-025	SDU-03-COR-03-003	Sediment	4/25/15 1446	A								A	A		A
K1504428-026	SDU-03-COR-03-003-2mm	Sediment	4/25/15 1446		HP	HP		HP	H	HP	H		A	HP	
K1504428-027	SDU-03-COR-03-003-250um	Sediment	4/25/15 1446		HP	HP	HP	HP	H	HP	H		A		

				Sieve Sieve
K1504428-015	SDU-03-COR-02-002-250um	Sediment	4/25/15 1422	
K1504428-016	SDU-03-COR-02-003	Sediment	4/25/15 1425	A
K1504428-017	SDU-03-COR-02-003-2mm	Sediment	4/25/15 1425	A
K1504428-018	SDU-03-COR-02-003-250um	Sediment	4/25/15 1425	
K1504428-019	SDU-03-COR-03-001	Sediment	4/25/15 1442	A
K1504428-020	SDU-03-COR-03-001-2mm	Sediment	4/25/15 1442	A
K1504428-021	SDU-03-COR-03-001-250um	Sediment	4/25/15 1442	
K1504428-022	SDU-03-COR-03-002	Sediment	4/25/15 1445	A
K1504428-023	SDU-03-COR-03-002-2mm	Sediment	4/25/15 1445	A
K1504428-024	SDU-03-COR-03-002-250um	Sediment	4/25/15 1445	
K1504428-025	SDU-03-COR-03-003	Sediment	4/25/15 1446	A
K1504428-026	SDU-03-COR-03-003-2mm	Sediment	4/25/15 1446	A
K1504428-027	SDU-03-COR-03-003-250um	Sediment	4/25/15 1446	

Test Comments:

Group	Test/Method	Samples	Comments
Metals	7742/Se T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	(1) Anallysis performed if Se < 6020 MRL.
Metals	7062/As T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	(1) Anallysis performed if As < 6020 MRL.
GenChem	Sieve/Sieve	1-2, 4-5, 7-8, 10-11, 13-14, 16-17, 19-20, 22-23, 25	(1) Sieving of 2 mm fraction from ISM to generate a 250 um fraction.
SMO	Archive/Archive 4C	1-27	(1) Archive charges start 30 days after release of analytical report. (2) Charge is \$3/container/month. If 5 gallon buckets are archived,charge is \$14/bucket/month.
Metals	6010C/Metals T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	Ca,Mg,Fe,K,Na
Metals	6020A/Metals T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	Al,Sb,As,Ba,Be,Cd,Cr,Co,Cu,Pb,Mn,Ni,Se,Ag,Tl,V,Zn
Metals	7471B/Hg	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	Hg
Metals	6020A/TVBA Metals T	3, 6, 9, 12, 15, 18, 21, 24, 27	(1) As & Pb.



Confirmation of Sample Receipt

To:	Dave Enos	From:	Jeff Christian
Email:	dave.enos@teck.com	Email:	Jeff.Christian@alsglobal.com
Fax:	509-459-4400	Fax:	360-636-1068
Phone:	509-623-4505	Phone:	360-577-7222 x3316

Samples for analysis have been received by ALS Environmental on 4/28/15 and assigned our Service Request number **K1504436**. **Please verify the following information and notify me of any corrections as soon as possible.**

The estimated completion date for this work is: 5/26/15

Client: Teck American Incorporated
Project: Bossburg Soil/Sediment

PO Number: UCR-CAS-D21-14

EDD Required: No

Tier: V

Report To: Dave Enos
Teck American Incorporated
501 North Riverpoint Blvd., Suite 300
Spokane, WA 99202

Billing Address: Kris McCaig
Teck American Incorporated
501 North Riverpoint Blvd., Suite 300
Spokane, WA 99202

Comments: Samples -007 and -022 are extra volume and sample -013 is an EPA split.

Thank you for your business!

A - Test is Authorized

H - Test is On Hold

HP - Test is On Hold
Pending InputP - Test is Authorized for
Prep Only

C - Test has been Cancelled

* - Test has assigned QC

				160.3 Modified TS	160.3 Modified TS-Air Dried	6010C Metals T	6020A IVBA Metals T	6020A Metals T	7062 As T	7471B Hg	7742 Se T	9045D pH	Archive Archive 4C	ASTM D4129-05 Modified TOC	PSEP PS PSEP PartSizeCB
K1504436-001	F-1-COR-01-001	Sediment	4/25/15 1216	A								A	A		A
K1504436-002	F-1-COR-01-001-2mm	Sediment	4/25/15 1216		HP	HP		HP	H	HP	H		A	HP	
K1504436-003	F-1-COR-01-001-250um	Sediment	4/25/15 1216		HP	HP	HP	HP	H	HP	H		A		
K1504436-004	F-1-COR-01-002	Sediment	4/25/15 1221	A								A	A		A
K1504436-005	F-1-COR-01-002-2mm	Sediment	4/25/15 1221		HP	HP		HP	H	HP	H		A	HP	
K1504436-006	F-1-COR-01-002-250um	Sediment	4/25/15 1221		HP	HP	HP	HP	H	HP	H		A		
K1504436-007	F-1-COR-01-003	Sediment	4/25/15 1227	A								A	A		A
K1504436-008	F-1-COR-01-003-2mm	Sediment	4/25/15 1227		HP	HP		HP	H	HP	H		A	HP	
K1504436-009	F-1-COR-01-003-250um	Sediment	4/25/15 1227		HP	HP	HP	HP	H	HP	H		A		
K1504436-010	F-1-COR-02-001	Sediment	4/25/15 1241	A								A	A		A
K1504436-011	F-1-COR-02-001-2mm	Sediment	4/25/15 1241		HP	HP		HP	H	HP	H		A	HP	
K1504436-012	F-1-COR-02-001-250um	Sediment	4/25/15 1241		HP	HP	HP	HP	H	HP	H		A		
K1504436-013	F-1-COR-02-002	Sediment	4/25/15 1246	A								A	A		A
K1504436-014	F-1-COR-02-002-2mm	Sediment	4/25/15 1246		HP	HP		HP	H	HP	H		A	HP	

				Sieve Sieve
K1504436-001	F-1-COR-01-001	Sediment	4/25/15 1216	A
K1504436-002	F-1-COR-01-001-2mm	Sediment	4/25/15 1216	A
K1504436-003	F-1-COR-01-001-250um	Sediment	4/25/15 1216	
K1504436-004	F-1-COR-01-002	Sediment	4/25/15 1221	A
K1504436-005	F-1-COR-01-002-2mm	Sediment	4/25/15 1221	A
K1504436-006	F-1-COR-01-002-250um	Sediment	4/25/15 1221	
K1504436-007	F-1-COR-01-003	Sediment	4/25/15 1227	A
K1504436-008	F-1-COR-01-003-2mm	Sediment	4/25/15 1227	A
K1504436-009	F-1-COR-01-003-250um	Sediment	4/25/15 1227	
K1504436-010	F-1-COR-02-001	Sediment	4/25/15 1241	A
K1504436-011	F-1-COR-02-001-2mm	Sediment	4/25/15 1241	A
K1504436-012	F-1-COR-02-001-250um	Sediment	4/25/15 1241	
K1504436-013	F-1-COR-02-002	Sediment	4/25/15 1246	A
K1504436-014	F-1-COR-02-002-2mm	Sediment	4/25/15 1246	A

				160.3 Modified TS	160.3 Modified TS-Air Dried	6010C Metals T	6020A IVBA Metals T	6020A Metals T	7062 As T	7471B Hg	7742 Se T	9045D pH	Archive Archive 4C	ASTM D4129-05 Modified TOC	PSEP PS PSEP PartSizeCB
K1504436-015	F-1-COR-02-002-250um	Sediment	4/25/15 1246		HP	HP	HP	HP	H	HP	H		A		
K1504436-016	F-1-COR-02-003	Sediment	4/25/15 1258	A								A	A		A
K1504436-017	F-1-COR-02-003-2mm	Sediment	4/25/15 1258		HP	HP		HP	H	HP	H		A	HP	
K1504436-018	F-1-COR-02-003-250um	Sediment	4/25/15 1258		HP	HP	HP	HP	H	HP	H		A		
K1504436-019	F-1-COR-03-001	Sediment	4/25/15 1318	A								A	A		A
K1504436-020	F-1-COR-03-001-2mm	Sediment	4/25/15 1318		HP	HP		HP	H	HP	H		A	HP	
K1504436-021	F-1-COR-03-001-250um	Sediment	4/25/15 1318		HP	HP	HP	HP	H	HP	H		A		
K1504436-022	F-1-COR-03-002	Sediment	4/25/15 1323	A								A	A		A
K1504436-023	F-1-COR-03-002-2mm	Sediment	4/25/15 1323		HP	HP		HP	H	HP	H		A	HP	
K1504436-024	F-1-COR-03-002-250um	Sediment	4/25/15 1323		HP	HP	HP	HP	H	HP	H		A		
K1504436-025	F-1-COR-03-003	Sediment	4/25/15 1327	A								A	A		A
K1504436-026	F-1-COR-03-003-2mm	Sediment	4/25/15 1327		HP	HP		HP	H	HP	H		A	HP	
K1504436-027	F-1-COR-03-003-250um	Sediment	4/25/15 1327		HP	HP	HP	HP	H	HP	H		A		

				Sieve Sieve
K1504436-015	F-1-COR-02-002-250um	Sediment	4/25/15 1246	
K1504436-016	F-1-COR-02-003	Sediment	4/25/15 1258	A
K1504436-017	F-1-COR-02-003-2mm	Sediment	4/25/15 1258	A
K1504436-018	F-1-COR-02-003-250um	Sediment	4/25/15 1258	
K1504436-019	F-1-COR-03-001	Sediment	4/25/15 1318	A
K1504436-020	F-1-COR-03-001-2mm	Sediment	4/25/15 1318	A
K1504436-021	F-1-COR-03-001-250um	Sediment	4/25/15 1318	
K1504436-022	F-1-COR-03-002	Sediment	4/25/15 1323	A
K1504436-023	F-1-COR-03-002-2mm	Sediment	4/25/15 1323	A
K1504436-024	F-1-COR-03-002-250um	Sediment	4/25/15 1323	
K1504436-025	F-1-COR-03-003	Sediment	4/25/15 1327	A
K1504436-026	F-1-COR-03-003-2mm	Sediment	4/25/15 1327	A
K1504436-027	F-1-COR-03-003-250um	Sediment	4/25/15 1327	

Test Comments:

Group	Test/Method	Samples	Comments
Metals	7742/Se T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	(1) Anallysis performed if Se < 6020 MRL.
Metals	7062/As T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	(1) Anallysis performed if As < 6020 MRL.
GenChem	Sieve/Sieve	1-2, 4-5, 7-8, 10-11, 13-14, 16-17, 19-20, 22-23, 25	(1) Sieving of 2 mm fraction from ISM to generate a 250 um fraction.
SMO	Archive/Archive 4C	1-27	(1) Archive charges start 30 days after release of analytical report. (2) Charge is \$3/container/month. If 5 gallon buckets are archived,charge is \$14/bucket/month.
Metals	6010C/Metals T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	Ca,Mg,Fe,K,Na
Metals	6020A/Metals T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	Al,Sb,As,Ba,Be,Cd,Cr,Co,Cu,Pb,Mn,Ni,Se,Ag,Tl,V,Zn
Metals	7471B/Hg	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	Hg
Metals	6020A/TVBA Metals T	3, 6, 9, 12, 15, 18, 21, 24, 27	(1) As & Pb.



Confirmation of Sample Receipt

To:	Dave Enos	From:	Jeff Christian
Email:	dave.enos@teck.com	Email:	Jeff.Christian@alsglobal.com
Fax:	509-459-4400	Fax:	360-636-1068
Phone:	509-623-4505	Phone:	360-577-7222 x3316

Samples for analysis have been received by ALS Environmental on 4/29/15 - 5/ 5/15 and assigned our Service Request number **K1504492**. **Please verify the following information and notify me of any corrections as soon as possible.**

The estimated completion date for this work is: 5/27/15

Client: Teck American Incorporated
Project: Bossburg Soil/Sediment

PO Number: UCR-CAS-D21-14

EDD Required: No

Tier: V

Report To: Dave Enos
Teck American Incorporated
501 North Riverpoint Blvd., Suite 300
Spokane, WA 99202

Billing Address: Kris McCaig
Teck American Incorporated
501 North Riverpoint Blvd., Suite 300
Spokane, WA 99202

Comments: Sample -003 preserved with HNO3 in lab @ 1110.

Thank you for your business!

A - Test is Authorized

H - Test is On Hold

HP - Test is On Hold
Pending InputP - Test is Authorized for
Prep Only

C - Test has been Cancelled

* - Test has assigned QC

				6010C Metals T	6020A Metals T	7470A Hg T	Archive Archive RT
K1504492-001	UDU-04-ER-C-20150424	Aqueous Equip Blank	4/24/15 1745	A	A	A	A
K1504492-002	SDU-05-ER-A-20150425	Aqueous Equip Blank	4/25/15 1600	A	A	A	A
K1504492-003	UDU-04-ER-C-20150425	Aqueous Equip Blank	4/25/15 1605	A	A	A	A
K1504492-004	UDU-03-ER-D-20150425	Aqueous Equip Blank	4/25/15 1610	A	A	A	A
K1504492-005	SDU-05-ER-B-20150427	Aqueous Equip Blank	4/27/15 1557	A	A	A	A
K1504492-006	SDU-06A-ER-A-20150427	Aqueous Equip Blank	4/27/15 1735	A	A	A	A
K1504492-007	SDU-10-ER-B-20150428	Aqueous Equip Blank	4/28/15 1520	A	A	A	A
K1504492-008	SDU-06C-ER-A-20150428	Aqueous Equip Blank	4/28/15 1720	A	A	A	A
K1504492-009	SDU-06-ER-B-20150429	Aqueous Equip Blank	4/29/15 1003	A	A	A	A
K1504492-010	SDU-06-ER-D-20150429	Aqueous Equip Blank	4/29/15 1647	A	A	A	A
K1504492-011	UDU-05-ER-A-20150429	Aqueous Equip Blank	4/29/15 1649	A	A	A	A
K1504492-012	SDU-06-ER-C-20150429	Aqueous Equip Blank	4/29/15 1704	A	A	A	A
K1504492-013	UDU-05-ER-B-20150430	Aqueous Equip Blank	4/30/15 1347	A	A	A	A
K1504492-014	SDU-05-ER-C-20150430	Aqueous Equip Blank	4/30/15 1705	A	A	A	A

				6010C Metals T	6020A Metals T	7470A Hg T	Archive Archive RT
K1504492-015	UDU-05-ER-A-20150430	Aqueous Equip Blank	4/30/15 1710	A	A	A	A
K1504492-016	SDU-05-ER-C-20150501	Aqueous Equip Blank	5/ 1/15 1530	A	A	A	A
K1504492-017	UDU-05-ER-D-20150501	Aqueous Equip Blank	5/ 1/15 1535	A	A	A	A
K1504492-018	SDU-10-ER-A-20150501	Aqueous Equip Blank	5/ 1/15 1705	A	A	A	A
K1504492-019	SDU-08-ER-B-20150502	Aqueous Equip Blank	5/ 2/15 1631	A	A	A	A
K1504492-020	SDU-04-ER-A-20150502	Aqueous Equip Blank	5/ 2/15 1740	A	A	A	A

Test Comments:

Group	Test/Method	Samples	Comments
Metals	7470A/Hg T	1-20	Hg
Metals	6010C/Metals T	1-20	Ca,Mg,Fe,K,Na
Metals	6020A/Metals T	1-20	Al,Sb,As,Ba,Be,Cd,Cr,Co,Cu,Pb,Mn,Ni,Se,Ag,Tl,V,Zn



Confirmation of Sample Receipt

To:	Dave Enos	From:	Jeff Christian
Email:	dave.enos@teck.com	Email:	Jeff.Christian@alsglobal.com
Fax:	509-459-4400	Fax:	360-636-1068
Phone:	509-623-4505	Phone:	360-577-7222 x3316

Samples for analysis have been received by ALS Environmental on 4/29/15 and assigned our Service Request number **K1504493**. **Please verify the following information and notify me of any corrections as soon as possible.**

The estimated completion date for this work is: 5/27/15

Client: Teck American Incorporated
Project: Bossburg Soil/Sediment

PO Number: UCR-CAS-D21-14

EDD Required: Yes

Tier: V

Report To: Dave Enos
Teck American Incorporated
501 North Riverpoint Blvd., Suite 300
Spokane, WA 99202

Billing Address: Kris McCaig
Teck American Incorporated
501 North Riverpoint Blvd., Suite 300
Spokane, WA 99202

Comments: Samples -010 and -022 are field splits and their corresponding splits are -028 and -031; sample -025 is an EPA split.

Thank you for your business!

A - Test is Authorized

H - Test is On Hold

HP - Test is On Hold
Pending Input

P - Test is Authorized for
Prep Only

C - Test has been Cancelled

* - Test has assigned QC

				160.3 Modified TS	160.3 Modified TS-Air Dried	6010C Metals T	6020A IVBA Metals T	6020A Metals T	7062 As T	7471B Hg	7742 Se T	9045D pH	9080 NH3 CEC	Archive Archive 4C	ASTM D4129-05 Modified TOC
K1504493-001	UDU-03-COR-01-001	Soil	4/25/15 1124	HP								HP		A	
K1504493-002	UDU-03-COR-01-001-2mm	Soil	4/25/15 1124		A	HP		HP	H	HP	H		HP	A	HP
K1504493-003	UDU-03-COR-01-001-150um	Soil	4/25/15 1124		A	HP	HP	HP	H	HP	H			A	
K1504493-004	UDU-03-COR-01-002	Soil	4/25/15 1132	HP								HP		A	
K1504493-005	UDU-03-COR-01-002-2mm	Soil	4/25/15 1132		A	HP		HP	H	HP	H		HP	A	HP
K1504493-006	UDU-03-COR-01-002-150um	Soil	4/25/15 1132		A	HP	HP	HP	H	HP	H			A	
K1504493-007	UDU-03-COR-01-003	Soil	4/25/15 1138	HP								HP		A	
K1504493-008	UDU-03-COR-01-003-2mm	Soil	4/25/15 1138		A	HP		HP	H	HP	H		HP	A	HP
K1504493-009	UDU-03-COR-01-003-150um	Soil	4/25/15 1138		A	HP	HP	HP	H	HP	H			A	
K1504493-010	UDU-03-COR-02-001	Soil	4/24/15 1626	HP								HP		A	
K1504493-011	UDU-03-COR-02-001-2mm	Soil	4/24/15 1626		A	HP		HP	H	HP	H		HP	A	HP
K1504493-012	UDU-03-COR-02-001-150um	Soil	4/24/15 1626		A	HP	HP	HP	H	HP	H			A	
K1504493-013	UDU-03-COR-02-002	Soil	4/24/15 1630	HP								HP		A	
K1504493-014	UDU-03-COR-02-002-2mm	Soil	4/24/15 1630		A	HP		HP	H	HP	H		HP	A	HP

				PSEP PS PSEP PartSizeCB	Sieve Sieve
K1504493-001	UDU-03-COR-01-001	Soil	4/25/15 1124	HP	A
K1504493-002	UDU-03-COR-01-001-2mm	Soil	4/25/15 1124		A
K1504493-003	UDU-03-COR-01-001-150um	Soil	4/25/15 1124		
K1504493-004	UDU-03-COR-01-002	Soil	4/25/15 1132	HP	A
K1504493-005	UDU-03-COR-01-002-2mm	Soil	4/25/15 1132		A
K1504493-006	UDU-03-COR-01-002-150um	Soil	4/25/15 1132		
K1504493-007	UDU-03-COR-01-003	Soil	4/25/15 1138	HP	A
K1504493-008	UDU-03-COR-01-003-2mm	Soil	4/25/15 1138		A
K1504493-009	UDU-03-COR-01-003-150um	Soil	4/25/15 1138		
K1504493-010	UDU-03-COR-02-001	Soil	4/24/15 1626	HP	A
K1504493-011	UDU-03-COR-02-001-2mm	Soil	4/24/15 1626		A
K1504493-012	UDU-03-COR-02-001-150um	Soil	4/24/15 1626		
K1504493-013	UDU-03-COR-02-002	Soil	4/24/15 1630	HP	A
K1504493-014	UDU-03-COR-02-002-2mm	Soil	4/24/15 1630		A

				160.3 Modified TS	160.3 Modified TS-Air Dried	6010C Metals T	6020A IVBA Metals T	6020A Metals T	7062 As T	7471B Hg	7742 Se T	9045D pH	9080 NH3 CEC	Archive Archive 4C	ASTM D4129-05 Modified TOC
K1504493-015	UDU-03-COR-02-002-150um	Soil	4/24/15 1630		A	HP	HP	HP	H	HP	H			A	
K1504493-016	UDU-03-COR-02-003	Soil	4/24/15 1635	HP								HP		A	
K1504493-017	UDU-03-COR-02-003-2mm	Soil	4/24/15 1635		A	HP		HP	H	HP	H		HP	A	HP
K1504493-018	UDU-03-COR-02-003-150um	Soil	4/24/15 1635		A	HP	HP	HP	H	HP	H			A	
K1504493-019	UDU-03-COR-03-001	Soil	4/24/15 1538	HP								HP		A	
K1504493-020	UDU-03-COR-03-001-2mm	Soil	4/24/15 1538		A	HP		HP	H	HP	H		HP	A	HP
K1504493-021	UDU-03-COR-03-001-150um	Soil	4/24/15 1538		A	HP	HP	HP	H	HP	H			A	
K1504493-022	UDU-03-COR-03-002	Soil	4/24/15 1538	HP								HP		A	
K1504493-023	UDU-03-COR-03-002-2mm	Soil	4/24/15 1538		A	HP		HP	H	HP	H		HP	A	HP
K1504493-024	UDU-03-COR-03-002-150um	Soil	4/24/15 1538		A	HP	HP	HP	H	HP	H			A	
K1504493-025	UDU-03-COR-03-003	Soil	4/24/15 1538	HP								HP		A	
K1504493-026	UDU-03-COR-03-003-2mm	Soil	4/24/15 1538		A	HP		HP	H	HP	H		HP	A	HP
K1504493-027	UDU-03-COR-03-003-150um	Soil	4/24/15 1538		A	HP	HP	HP	H	HP	H			A	
K1504493-028	BOSS-002	Soil	4/24/15 1626	HP								HP		A	

				PSEP PS PSEP PartSizeCB	Sieve Sieve
K1504493-015	UDU-03-COR-02-002-150um	Soil	4/24/15 1630		
K1504493-016	UDU-03-COR-02-003	Soil	4/24/15 1635	HP	A
K1504493-017	UDU-03-COR-02-003-2mm	Soil	4/24/15 1635		A
K1504493-018	UDU-03-COR-02-003-150um	Soil	4/24/15 1635		
K1504493-019	UDU-03-COR-03-001	Soil	4/24/15 1538	HP	A
K1504493-020	UDU-03-COR-03-001-2mm	Soil	4/24/15 1538		A
K1504493-021	UDU-03-COR-03-001-150um	Soil	4/24/15 1538		
K1504493-022	UDU-03-COR-03-002	Soil	4/24/15 1538	HP	A
K1504493-023	UDU-03-COR-03-002-2mm	Soil	4/24/15 1538		A
K1504493-024	UDU-03-COR-03-002-150um	Soil	4/24/15 1538		
K1504493-025	UDU-03-COR-03-003	Soil	4/24/15 1538	HP	A
K1504493-026	UDU-03-COR-03-003-2mm	Soil	4/24/15 1538		A
K1504493-027	UDU-03-COR-03-003-150um	Soil	4/24/15 1538		
K1504493-028	BOSS-002	Soil	4/24/15 1626	HP	A

				160.3 Modified TS	160.3 Modified TS-Air Dried	6010C Metals T	6020A IVBA Metals T	6020A Metals T	7062 As T	7471B Hg	7742 Se T	9045D pH	9080 NH3 CEC	Archive Archive 4C	ASTM D4129-05 Modified TOC
K1504493-029	BOSS-002-2mm	Soil	4/24/15 1626		A	HP		HP	H	HP	H		HP	A	HP
K1504493-030	BOSS-002-150um	Soil	4/24/15 1626		A	HP	HP	HP	H	HP	H			A	
K1504493-031	BOSS-003	Soil	4/24/15 1538	HP								HP		A	
K1504493-032	BOSS-003-2mm	Soil	4/24/15 1538		A	HP		HP	H	HP	H		HP	A	HP
K1504493-033	BOSS-003-150um	Soil	4/24/15 1538		A	HP	HP	HP	H	HP	H			A	

Test Comments:

Group	Test/Method	Samples	Comments
Metals	7742/Se T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	(1) Analysis performed if Se < 6020 MRL.
Metals	7062/As T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	(1) Analysis performed if As < 6020 MRL.
GenChem	Sieve/Sieve	1-2, 4-5, 7-8, 10-11, 13-14, 16-17, 19-20, 22-23, 25	(1) Sieving of 2 mm fraction from ISM to generate a 150 um fraction.
SMO	Archive/Archive 4C	1-33	(1) Archive charges start 30 days after release of analytical report. (2) Charge is \$3/container/month. If 5 gallon buckets are archived, charge is \$14/bucket/month.
Metals	6010C/Metals T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	Ca,Fe,Mg,K,Na
Metals	6020A/Metals T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	Al,Sb,As,Ba,Be,Cd,Cr,Co,Cu,Pb,Mn,Ni,Se,Ag,Tl,V,Zn
Metals	7471B/Hg	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	Hg
Metals	6020A/IVBA Metals T	3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33	(1) Pb & As only.

				PSEP PS PSEP PartSizeCB	Sieve Sieve
K1504493-029	BOSS-002-2mm	Soil	4/24/15 1626		A
K1504493-030	BOSS-002-150um	Soil	4/24/15 1626		
K1504493-031	BOSS-003	Soil	4/24/15 1538	HP	A
K1504493-032	BOSS-003-2mm	Soil	4/24/15 1538		A
K1504493-033	BOSS-003-150um	Soil	4/24/15 1538		



Confirmation of Sample Receipt

To:	Dave Enos	From:	Jeff Christian
Email:	dave.enos@teck.com	Email:	Jeff.Christian@alsglobal.com
Fax:	509-459-4400	Fax:	360-636-1068
Phone:	509-623-4505	Phone:	360-577-7222 x3316

Samples for analysis have been received by ALS Environmental on 4/30/15 - 5/ 8/15 and assigned our Service Request number **K1504531**. **Please verify the following information and notify me of any corrections as soon as possible.**

The estimated completion date for this work is: 5/28/15

Client: Teck American Incorporated
Project: Bossburg Soil/Sediment

PO Number: UCR-CAS-D21-14

EDD Required: No

Tier: V

Report To: Dave Enos
 Teck American Incorporated
 501 North Riverpoint Blvd., Suite 300
 Spokane, WA 99202

Billing Address: Kris McCaig
 Teck American Incorporated
 501 North Riverpoint Blvd., Suite 300
 Spokane, WA 99202

Comments: Sample -007 is a field split to create -010; sample -016 is an EPA split.

Thank you for your business!

A - Test is Authorized

H - Test is On Hold

HP - Test is On Hold
Pending InputP - Test is Authorized for
Prep Only

C - Test has been Cancelled

* - Test has assigned QC

				160.3 Modified TS	160.3 Modified TS-Air Dried	6010C Metals T	6020A IVBA Metals T	6020A Metals T	7062 As T	7471B Hg	7742 Se T	9045D pH	Archive Archive 4C	ASTM D4129-05 Modified TOC	ISM Sieve ISM Sieve
K1504531-001	SDU-06-ICS-A	Sediment	4/29/15 0748	A								A	A		A
K1504531-002	SDU-06-ICS-A-2mm	Sediment	4/29/15 0748		A	HP		HP	H	HP	H		A	HP	
K1504531-003	SDU-06-ICS-A-250um	Sediment	4/29/15 0748		A	A	A	A	H	A	H		A		
K1504531-004	SDU-06-ICS-B	Sediment	4/29/15 0804	A								A	A		A
K1504531-005	SDU-06-ICS-B-2mm	Sediment	4/29/15 0804		A	HP		HP	H	HP	H		A	HP	
K1504531-006	SDU-06-ICS-B-250um	Sediment	4/29/15 0804		A	A	A	A	H	A	H		A		
K1504531-007	SDU-06-ICS-C	Sediment	4/29/15 0940	A								A	A		A
K1504531-008	SDU-06-ICS-C-2mm	Sediment	4/29/15 0940		A	HP		HP	H	HP	H		A	HP	
K1504531-009	SDU-06-ICS-C-250um	Sediment	4/29/15 0940		A	A	A	A	H	A	H		A		
K1504531-010	BOSS-004	Sediment	4/29/15 0940	A								A	A		A
K1504531-011	BOSS-004-2mm	Sediment	4/29/15 0940		A	HP		HP	H	HP	H		A	HP	
K1504531-012	BOSS-004-250um	Sediment	4/29/15 0940		A	A	A	A	H	A	H		A		
K1504531-013	SDU-09-ICS-A	Sediment	5/2/15 0805	A								A	A		A
K1504531-014	SDU-09-ICS-A-2mm	Sediment	5/2/15 0805		A	HP		HP	H	HP	H		A	HP	

				ISM Subsample ISM Subsample	PSEP PS PSEP PartSizeCB	Sieve Sieve
K1504531-001	SDU-06-ICS-A	Sediment	4/29/15 0748	A	A	A
K1504531-002	SDU-06-ICS-A-2mm	Sediment	4/29/15 0748			A
K1504531-003	SDU-06-ICS-A-250um	Sediment	4/29/15 0748			
K1504531-004	SDU-06-ICS-B	Sediment	4/29/15 0804	A	A	A
K1504531-005	SDU-06-ICS-B-2mm	Sediment	4/29/15 0804			A
K1504531-006	SDU-06-ICS-B-250um	Sediment	4/29/15 0804			
K1504531-007	SDU-06-ICS-C	Sediment	4/29/15 0940	A	A	A
K1504531-008	SDU-06-ICS-C-2mm	Sediment	4/29/15 0940			A
K1504531-009	SDU-06-ICS-C-250um	Sediment	4/29/15 0940			
K1504531-010	BOSS-004	Sediment	4/29/15 0940	A	A	A
K1504531-011	BOSS-004-2mm	Sediment	4/29/15 0940			A
K1504531-012	BOSS-004-250um	Sediment	4/29/15 0940			
K1504531-013	SDU-09-ICS-A	Sediment	5/ 2/15 0805	A	A	A
K1504531-014	SDU-09-ICS-A-2mm	Sediment	5/ 2/15 0805			A

				160.3 Modified TS	160.3 Modified TS-Air Dried	6010C Metals T	6020A IVBA Metals T	6020A Metals T	7062 As T	7471B Hg	7742 Se T	9045D pH	Archive Archive 4C	ASTM D4129-05 Modified TOC	ISM Sieve ISM Sieve
K1504531-015	SDU-09-ICS-A-250um	Sediment	5/ 2/15 0805		A	HP	HP	HP	H	HP	H		A		
K1504531-016	SDU-10-ICS	Sediment	5/ 4/15 0749	A								A	A		A
K1504531-017	SDU-10-ICS-2mm	Sediment	5/ 4/15 0749		A	HP		HP	H	HP	H		A	HP	
K1504531-018	SDU-10-ICS-250um	Sediment	5/ 4/15 0749		A	HP	HP	HP	H	HP	H		A		
K1504531-019	SDU-04-ICS	Sediment	5/ 5/15 0755	A								A	A		A
K1504531-020	SDU-04-ICS-2mm	Sediment	5/ 5/15 0755		A	HP		HP	H	HP	H		A	HP	
K1504531-021	SDU-04-ICS-250um	Sediment	5/ 5/15 0755		A	HP	HP	HP	H	HP	H		A		
K1504531-022	SDU-07-ICS-A	Sediment	5/ 6/15 1023	A								A	A		A
K1504531-023	SDU-07-ICS-A-2mm	Sediment	5/ 6/15 1023		A	HP		HP	H	HP	H		A	HP	
K1504531-024	SDU-07-ICS-A-250um	Sediment	5/ 6/15 1023		A	HP	HP	HP	H	HP	H		A		
K1504531-025	SDU-07-ICS-B	Sediment	5/ 6/15 1001	A								A	A		A
K1504531-026	SDU-07-ICS-B-2mm	Sediment	5/ 6/15 1001		A	HP		HP	H	HP	H		A	HP	
K1504531-027	SDU-07-ICS-B-250um	Sediment	5/ 6/15 1001		A	HP	HP	HP	H	HP	H		A		

				ISM Subsample ISM Subsample	PSEP PS PSEP PartSizeCB	Sieve Sieve
K1504531-015	SDU-09-ICS-A-250um	Sediment	5/ 2/15 0805			
K1504531-016	SDU-10-ICS	Sediment	5/ 4/15 0749	A	A	A
K1504531-017	SDU-10-ICS-2mm	Sediment	5/ 4/15 0749			A
K1504531-018	SDU-10-ICS-250um	Sediment	5/ 4/15 0749			
K1504531-019	SDU-04-ICS	Sediment	5/ 5/15 0755	A	A	A
K1504531-020	SDU-04-ICS-2mm	Sediment	5/ 5/15 0755			A
K1504531-021	SDU-04-ICS-250um	Sediment	5/ 5/15 0755			
K1504531-022	SDU-07-ICS-A	Sediment	5/ 6/15 1023	A	A	A
K1504531-023	SDU-07-ICS-A-2mm	Sediment	5/ 6/15 1023			A
K1504531-024	SDU-07-ICS-A-250um	Sediment	5/ 6/15 1023			
K1504531-025	SDU-07-ICS-B	Sediment	5/ 6/15 1001	A	A	A
K1504531-026	SDU-07-ICS-B-2mm	Sediment	5/ 6/15 1001			A
K1504531-027	SDU-07-ICS-B-250um	Sediment	5/ 6/15 1001			

Test Comments:

Group	Test/Method	Samples	Comments
Metals	7742/Se T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	(1) Anallysis performed if Se < 6020 MRL.
Metals	7062/As T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	(1) Anallysis performed if As < 6020 MRL.
GenChem	Sieve/Sieve	1-2, 4-5, 7-8, 10-11, 13-14, 16-17, 19-20, 22-23, 25	(1) Sieving of 2 mm fraction from ISM to generate a 250 um fraction.
SMO	Archive/Archive 4C	1-27	(1) Archive charges start 30 days after release of analytical report. (2) Charge is \$3/container/month. If 5 gallon buckets are archived,charge is \$14/bucket/month.
Metals	6010C/Metals T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	Ca,Mg,Fe,K,Na
Metals	6020A/Metals T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	Al,Sb,As,Ba,Be,Cd,Cr,Co,Cu,Pb,Mn,Ni,Se,Ag,Tl,V,Zn
Metals	7471B/Hg	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	Hg
Metals	6020A/TVBA Metals T	3, 6, 9, 12, 15, 18, 21, 24, 27	(1) As & Pb.



Confirmation of Sample Receipt

To:	Dave Enos	From:	Jeff Christian
Email:	dave.enos@teck.com	Email:	Jeff.Christian@alsglobal.com
Fax:	509-459-4400	Fax:	360-636-1068
Phone:	509-623-4505	Phone:	360-577-7222 x3316

Samples for analysis have been received by ALS Environmental on 4/30/15 and assigned our Service Request number **K1504536**. **Please verify the following information and notify me of any corrections as soon as possible.**

The estimated completion date for this work is: 5/28/15

Client: Teck American Incorporated
Project: Bossburg Soil/Sediment

PO Number: UCR-CAS-D21-14

EDD Required: Yes

Tier: V

Report To: Dave Enos
 Teck American Incorporated
 501 North Riverpoint Blvd., Suite 300
 Spokane, WA 99202

Billing Address: Kris McCaig
 Teck American Incorporated
 501 North Riverpoint Blvd., Suite 300
 Spokane, WA 99202

Comments: Samples -001 and -013 are EPA split.

Thank you for your business!

A - Test is Authorized

H - Test is On Hold

HP - Test is On Hold Pending Input

P - Test is Authorized for Prep Only

C - Test has been Cancelled

* - Test has assigned QC

				160.3 Modified TS	160.3 Modified TS-Air Dried	6010C Metals T	6020A IVBA Metals T	6020A Metals T	7062 As T	7471B Hg	7742 Se T	9045D pH	9080 NH3 CEC	Archive Archive 4C	ASTM D4129-05 Modified TOC
K1504536-001	UDU-04-COR-01-001	Soil	4/24/15 1634	A								A		A	
K1504536-002	UDU-04-COR-01-001-2mm	Soil	4/24/15 1634		A	HP		HP	H	HP	H	C	HP	A	HP
K1504536-003	UDU-04-COR-01-001-150um	Soil	4/24/15 1634		A	HP	HP	HP	H	HP	H			A	
K1504536-004	UDU-04-COR-01-002	Soil	4/24/15 1648	A								A		A	
K1504536-005	UDU-04-COR-01-002-2mm	Soil	4/24/15 1648		A	HP		HP	H	HP	H	C	HP	A	HP
K1504536-006	UDU-04-COR-01-002-150um	Soil	4/24/15 1648		A	HP	HP	HP	H	HP	H			A	
K1504536-007	UDU-04-COR-01-003	Soil	4/24/15 1645	A								A		A	
K1504536-008	UDU-04-COR-01-003-2mm	Soil	4/24/15 1645		A	HP		HP	H	HP	H	C	HP	A	HP
K1504536-009	UDU-04-COR-01-003-150um	Soil	4/24/15 1645		A	HP	HP	HP	H	HP	H			A	
K1504536-010	UDU-04-COR-02-001	Soil	4/25/15 0826	A								A		A	
K1504536-011	UDU-04-COR-02-001-2mm	Soil	4/25/15 0826		A	HP		HP	H	HP	H	C	HP	A	HP
K1504536-012	UDU-04-COR-02-001-150um	Soil	4/25/15 0826		A	HP	HP	HP	H	HP	H			A	
K1504536-013	UDU-04-COR-02-002	Soil	4/25/15 0850	A								A		A	
K1504536-014	UDU-04-COR-02-002-2mm	Soil	4/25/15 0850		A	HP		HP	H	HP	H	C	HP	A	HP

				PSEP PS PSEP PartSizeCB	Sieve Sieve
K1504536-001	UDU-04-COR-01-001	Soil	4/24/15 1634	A	A
K1504536-002	UDU-04-COR-01-001-2mm	Soil	4/24/15 1634		HP
K1504536-003	UDU-04-COR-01-001-150um	Soil	4/24/15 1634		
K1504536-004	UDU-04-COR-01-002	Soil	4/24/15 1648	A	A
K1504536-005	UDU-04-COR-01-002-2mm	Soil	4/24/15 1648		HP
K1504536-006	UDU-04-COR-01-002-150um	Soil	4/24/15 1648		
K1504536-007	UDU-04-COR-01-003	Soil	4/24/15 1645	A	A
K1504536-008	UDU-04-COR-01-003-2mm	Soil	4/24/15 1645		HP
K1504536-009	UDU-04-COR-01-003-150um	Soil	4/24/15 1645		
K1504536-010	UDU-04-COR-02-001	Soil	4/25/15 0826	A	A
K1504536-011	UDU-04-COR-02-001-2mm	Soil	4/25/15 0826		HP
K1504536-012	UDU-04-COR-02-001-150um	Soil	4/25/15 0826		
K1504536-013	UDU-04-COR-02-002	Soil	4/25/15 0850	A	A
K1504536-014	UDU-04-COR-02-002-2mm	Soil	4/25/15 0850		HP

				160.3 Modified TS	160.3 Modified TS-Air Dried	6010C Metals T	6020A IVBA Metals T	6020A Metals T	7062 As T	7471B Hg	7742 Se T	9045D pH	9080 NH3 CEC	Archive Archive 4C	ASTM D4129-05 Modified TOC
K1504536-015	UDU-04-COR-02-002-150um	Soil	4/25/15 0850		A	HP	HP	HP	H	HP	H			A	
K1504536-016	UDU-04-COR-02-003	Soil	4/25/15 0930	A								A		A	
K1504536-017	UDU-04-COR-02-003-2mm	Soil	4/25/15 0930		A	HP		HP	H	HP	H	C	HP	A	HP
K1504536-018	UDU-04-COR-02-003-150um	Soil	4/25/15 0930		A	HP	HP	HP	H	HP	H			A	
K1504536-019	UDU-04-COR-03-001	Soil	4/25/15 1013	A								A		A	
K1504536-020	UDU-04-COR-03-001-2mm	Soil	4/25/15 1013		A	HP		HP	H	HP	H	C	HP	A	HP
K1504536-021	UDU-04-COR-03-001-150um	Soil	4/25/15 1013		A	HP	HP	HP	H	HP	H			A	
K1504536-022	UDU-04-COR-03-002	Soil	4/25/15 1018	A								A		A	
K1504536-023	UDU-04-COR-03-002-2mm	Soil	4/25/15 1018		A	HP		HP	H	HP	H	C	HP	A	HP
K1504536-024	UDU-04-COR-03-002-150um	Soil	4/25/15 1018		A	HP	HP	HP	H	HP	H			A	
K1504536-025	UDU-04-COR-03-003	Soil	4/25/15 1036	A								A		A	
K1504536-026	UDU-04-COR-03-003-2mm	Soil	4/25/15 1036		A	HP		HP	H	HP	H	C	HP	A	HP
K1504536-027	UDU-04-COR-03-003-150um	Soil	4/25/15 1036		A	HP	HP	HP	H	HP	H			A	

				PSEP PS PSEP PartSizeCB	Sieve Sieve
K1504536-015	UDU-04-COR-02-002-150um	Soil	4/25/15 0850		
K1504536-016	UDU-04-COR-02-003	Soil	4/25/15 0930	A	A
K1504536-017	UDU-04-COR-02-003-2mm	Soil	4/25/15 0930		HP
K1504536-018	UDU-04-COR-02-003-150um	Soil	4/25/15 0930		
K1504536-019	UDU-04-COR-03-001	Soil	4/25/15 1013	A	A
K1504536-020	UDU-04-COR-03-001-2mm	Soil	4/25/15 1013		HP
K1504536-021	UDU-04-COR-03-001-150um	Soil	4/25/15 1013		
K1504536-022	UDU-04-COR-03-002	Soil	4/25/15 1018	A	A
K1504536-023	UDU-04-COR-03-002-2mm	Soil	4/25/15 1018		HP
K1504536-024	UDU-04-COR-03-002-150um	Soil	4/25/15 1018		
K1504536-025	UDU-04-COR-03-003	Soil	4/25/15 1036	A	A
K1504536-026	UDU-04-COR-03-003-2mm	Soil	4/25/15 1036		HP
K1504536-027	UDU-04-COR-03-003-150um	Soil	4/25/15 1036		

Test Comments:

Group	Test/Method	Samples	Comments
Metals	7742/Se T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	(1) Anallysis performed if Se < 6020 MRL.
Metals	7062/As T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	(1) Anallysis performed if As < 6020 MRL.
GenChem	Sieve/Sieve	1-2, 4-5, 7-8, 10-11, 13-14, 16-17, 19-20, 22-23, 25	(1) Sieving of 2 mm fraction from ISM to generate a 150 um fraction.
SMO	Archive/Archive 4C	1-27	(1) Archive charges start 30 days after release of analytical report. (2) Charge is \$3/container/month. If 5 gallon buckets are archived,charge is \$14/bucket/month.
Metals	6010C/Metals T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	Ca,Fe,Mg,K,Na
Metals	6020A/Metals T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	Al,Sb,As,Ba,Be,Cd,Cr,Co,Cu,Pb,Mn,Ni,Se,Ag,Tl,V,Zn
Metals	7471B/Hg	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	Hg
Metals	6020A/TVBA Metals T	3, 6, 9, 12, 15, 18, 21, 24, 27	(1) Pb & As only.



Confirmation of Sample Receipt

To:	Dave Enos	From:	Jeff Christian
Email:	dave.enos@teck.com	Email:	Jeff.Christian@alsglobal.com
Fax:	509-459-4400	Fax:	360-636-1068
Phone:	509-623-4505	Phone:	360-577-7222 x3316

Samples for analysis have been received by ALS Environmental on 5/ 1/15 and assigned our Service Request number **K1504599**. **Please verify the following information and notify me of any corrections as soon as possible.**

The estimated completion date for this work is: **5/29/15**

Client: Teck American Incorporated
Project: Bossburg Soil/Sediment

PO Number: UCR-CAS-D21-14

EDD Required: No

Tier: V

Report To: Dave Enos
Teck American Incorporated
501 North Riverpoint Blvd., Suite 300
Spokane, WA 99202

Billing Address: Kris McCaig
Teck American Incorporated
501 North Riverpoint Blvd., Suite 300
Spokane, WA 99202

Comments: (1) Sample -025 is an EPA and a field split. The field split is to create -028.

Thank you for your business!

A - Test is Authorized

H - Test is On Hold

HP - Test is On Hold
Pending InputP - Test is Authorized for
Prep Only

C - Test has been Cancelled

* - Test has assigned QC

				160.3 Modified TS	160.3 Modified TS-Air Dried	6010C Metals T	6020A IVBA Metals T	6020A Metals T	7062 As T	7471B Hg	7742 Se T	9045D pH	Archive Archive 4C	ASTM D4129-05 Modified TOC	PSEP PS PSEP PartSizeCB
K1504599-001	SDU-01-COR-01-001	Sediment	4/29/15 0849	HP								HP	A		HP
K1504599-002	SDU-01-COR-01-001-2mm	Sediment	4/29/15 0849		A	HP		HP	H	HP	H		A	HP	
K1504599-003	SDU-01-COR-01-001-250um	Sediment	4/29/15 0849		A	HP	HP	HP	H	HP	H		A		
K1504599-004	SDU-01-COR-01-002	Sediment	4/29/15 0849	HP								HP	A		HP
K1504599-005	SDU-01-COR-01-002-2mm	Sediment	4/29/15 0849		A	HP		HP	H	HP	H		A	HP	
K1504599-006	SDU-01-COR-01-002-250um	Sediment	4/29/15 0849		A	HP	HP	HP	H	HP	H		A		
K1504599-007	SDU-01-COR-01-003	Sediment	4/29/15 0854	HP								HP	A		HP
K1504599-008	SDU-01-COR-01-003-2mm	Sediment	4/29/15 0854		A	HP		HP	H	HP	H		A	HP	
K1504599-009	SDU-01-COR-01-003-250um	Sediment	4/29/15 0854		A	HP	HP	HP	H	HP	H		A		
K1504599-010	SDU-01-COR-02-001	Sediment	4/29/15 0858	HP								HP	A		HP
K1504599-011	SDU-01-COR-02-001-2mm	Sediment	4/29/15 0858		A	HP		HP	H	HP	H		A	HP	
K1504599-012	SDU-01-COR-02-001-250um	Sediment	4/29/15 0858		A	HP	HP	HP	H	HP	H		A		
K1504599-013	SDU-01-COR-02-002	Sediment	4/29/15 0909	HP								HP	A		HP
K1504599-014	SDU-01-COR-02-002-2mm	Sediment	4/29/15 0909		A	HP		HP	H	HP	H		A	HP	

				Sieve Sieve
K1504599-001	SDU-01-COR-01-001	Sediment	4/29/15 0849	A
K1504599-002	SDU-01-COR-01-001-2mm	Sediment	4/29/15 0849	A
K1504599-003	SDU-01-COR-01-001-250um	Sediment	4/29/15 0849	
K1504599-004	SDU-01-COR-01-002	Sediment	4/29/15 0849	A
K1504599-005	SDU-01-COR-01-002-2mm	Sediment	4/29/15 0849	A
K1504599-006	SDU-01-COR-01-002-250um	Sediment	4/29/15 0849	
K1504599-007	SDU-01-COR-01-003	Sediment	4/29/15 0854	A
K1504599-008	SDU-01-COR-01-003-2mm	Sediment	4/29/15 0854	A
K1504599-009	SDU-01-COR-01-003-250um	Sediment	4/29/15 0854	
K1504599-010	SDU-01-COR-02-001	Sediment	4/29/15 0858	A
K1504599-011	SDU-01-COR-02-001-2mm	Sediment	4/29/15 0858	A
K1504599-012	SDU-01-COR-02-001-250um	Sediment	4/29/15 0858	
K1504599-013	SDU-01-COR-02-002	Sediment	4/29/15 0909	A
K1504599-014	SDU-01-COR-02-002-2mm	Sediment	4/29/15 0909	A

				160.3 Modified TS	160.3 Modified TS-Air Dried	6010C Metals T	6020A IVBA Metals T	6020A Metals T	7062 As T	7471B Hg	7742 Se T	9045D pH	Archive Archive 4C	ASTM D4129-05 Modified TOC	PSEP PS PSEP PartSizeCB
K1504599-015	SDU-01-COR-02-002-250um	Sediment	4/29/15 0909		A	HP	HP	HP	H	HP	H		A		
K1504599-016	SDU-01-COR-02-003	Sediment	4/29/15 0912	HP								HP	A		HP
K1504599-017	SDU-01-COR-02-003-2mm	Sediment	4/29/15 0912		A	HP		HP	H	HP	H		A	HP	
K1504599-018	SDU-01-COR-02-003-250um	Sediment	4/29/15 0912		A	HP	HP	HP	H	HP	H		A		
K1504599-019	SDU-01-COR-03-001	Sediment	4/29/15 0920	HP								HP	A		HP
K1504599-020	SDU-01-COR-03-001-2mm	Sediment	4/29/15 0920		A	HP		HP	H	HP	H		A	HP	
K1504599-021	SDU-01-COR-03-001-250um	Sediment	4/29/15 0920		A	HP	HP	HP	H	HP	H		A		
K1504599-022	SDU-01-COR-03-002	Sediment	4/29/15 0932	HP								HP	A		HP
K1504599-023	SDU-01-COR-03-002-2mm	Sediment	4/29/15 0932		A	HP		HP	H	HP	H		A	HP	
K1504599-024	SDU-01-COR-03-002-250um	Sediment	4/29/15 0932		A	HP	HP	HP	H	HP	H		A		
K1504599-025	SDU-01-COR-03-003	Sediment	4/29/15 0935	HP								HP	A		HP
K1504599-026	SDU-01-COR-03-003-2mm	Sediment	4/29/15 0935		A	HP		HP	H	HP	H		A	HP	
K1504599-027	SDU-01-COR-03-003-250um	Sediment	4/29/15 0935		A	HP	HP	HP	H	HP	H		A		
K1504599-028	BOSS-006	Sediment	4/29/15 0941	HP								HP	A		HP

				Sieve Sieve
K1504599-015	SDU-01-COR-02-002-250um	Sediment	4/29/15 0909	
K1504599-016	SDU-01-COR-02-003	Sediment	4/29/15 0912	A
K1504599-017	SDU-01-COR-02-003-2mm	Sediment	4/29/15 0912	A
K1504599-018	SDU-01-COR-02-003-250um	Sediment	4/29/15 0912	
K1504599-019	SDU-01-COR-03-001	Sediment	4/29/15 0920	A
K1504599-020	SDU-01-COR-03-001-2mm	Sediment	4/29/15 0920	A
K1504599-021	SDU-01-COR-03-001-250um	Sediment	4/29/15 0920	
K1504599-022	SDU-01-COR-03-002	Sediment	4/29/15 0932	A
K1504599-023	SDU-01-COR-03-002-2mm	Sediment	4/29/15 0932	A
K1504599-024	SDU-01-COR-03-002-250um	Sediment	4/29/15 0932	
K1504599-025	SDU-01-COR-03-003	Sediment	4/29/15 0935	A
K1504599-026	SDU-01-COR-03-003-2mm	Sediment	4/29/15 0935	A
K1504599-027	SDU-01-COR-03-003-250um	Sediment	4/29/15 0935	
K1504599-028	BOSS-006	Sediment	4/29/15 0941	A

				160.3 Modified TS											
				160.3 Modified TS-Air Dried											
				6010C Metals T											
				6020A IVBA Metals T											
				6020A Metals T											
				7062 As T											
				7471B Hg											
				7742 Se T											
				9045D pH											
				Archive Archive 4C											
				ASTM D4129-05 Modified TOC											
				PSEP PS PSEP PartSizeCB											
K1504599-029	BOSS-006-2mm	Sediment	4/29/15 0941		A	HP		HP	H	HP	H		A	HP	
K1504599-030	BOSS-006-250um	Sediment	4/29/15 0941		A	HP	HP	HP	H	HP	H		A		

Test Comments:

Group	Test/Method	Samples	Comments
Metals	7742/Se T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	(1) Analysis performed if Se < 6020 MRL.
Metals	7062/As T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	(1) Analysis performed if As < 6020 MRL.
GenChem	Sieve/Sieve	1-2, 4-5, 7-8, 10-11, 13-14, 16-17, 19-20, 22-23, 25	(1) Sieving of 2 mm fraction from ISM to generate a 250 um fraction.
SMO	Archive/Archive 4C	1-30	(1) Archive charges start 30 days after release of analytical report. (2) Charge is \$3/container/month. If 5 gallon buckets are archived, charge is \$14/bucket/month.
Metals	6010C/Metals T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	Ca, Mg, Fe, K, Na
Metals	6020A/Metals T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	Al, Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Mn, Ni, Se, Ag, Tl, V, Zn
Metals	7471B/Hg	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	Hg
Metals	6020A/IVBA Metals T	3, 6, 9, 12, 15, 18, 21, 24, 27, 30	(1) As & Pb.

K1504599-029	BOSS-006-2mm	Sediment	4/29/15 0941	A
K1504599-030	BOSS-006-250um	Sediment	4/29/15 0941	
				Sieve Sieve



Confirmation of Sample Receipt

To:	Dave Enos	From:	Jeff Christian
Email:	dave.enos@teck.com	Email:	Jeff.Christian@alsglobal.com
Fax:	509-459-4400	Fax:	360-636-1068
Phone:	509-623-4505	Phone:	360-577-7222 x3316

Samples for analysis have been received by ALS Environmental on 5/ 1/15 and assigned our Service Request number **K1504600**. **Please verify the following information and notify me of any corrections as soon as possible.**

The estimated completion date for this work is: **5/29/15**

Client: Teck American Incorporated
Project: Bossburg Soil/Sediment

PO Number: UCR-CAS-D21-14

EDD Required: No

Tier: V

Report To: Dave Enos
Teck American Incorporated
501 North Riverpoint Blvd., Suite 300
Spokane, WA 99202

Billing Address: Kris McCaig
Teck American Incorporated
501 North Riverpoint Blvd., Suite 300
Spokane, WA 99202

Comments: (1) Sample -001 is an EPA split and a field split. The field split is to create -028. (2) Sample -004 is a field split to create -031. (3) Sample -022 is an EPA split.

Thank you for your business!

A - Test is Authorized

H - Test is On Hold

HP - Test is On Hold
Pending InputP - Test is Authorized for
Prep Only

C - Test has been Cancelled

* - Test has assigned QC

				160.3 Modified TS	160.3 Modified TS-Air Dried	6010C Metals T	6020A IVBA Metals T	6020A Metals T	7062 As T	7471B Hg	7742 Se T	9045D pH	Archive Archive 4C	ASTM D4129-05 Modified TOC	PSEP PS PSEP PartSizeCB
K1504600-001	SDU-02-COR-01-001	Sediment	4/29/15 1018	HP								HP	A		HP
K1504600-002	SDU-02-COR-01-001-2mm	Sediment	4/29/15 1018		A	HP		HP	H	HP	H		A	HP	
K1504600-003	SDU-02-COR-01-001-250um	Sediment	4/29/15 1018		A	HP	HP	HP	H	HP	H		A		
K1504600-004	SDU-02-COR-01-002	Sediment	4/29/15 1027	HP								HP	A		HP
K1504600-005	SDU-02-COR-01-002-2mm	Sediment	4/29/15 1027		A	HP		HP	H	HP	H		A	HP	
K1504600-006	SDU-02-COR-01-002-250um	Sediment	4/29/15 1027		A	HP	HP	HP	H	HP	H		A		
K1504600-007	SDU-02-COR-01-003	Sediment	4/29/15 1036	HP								HP	A		HP
K1504600-008	SDU-02-COR-01-003-2mm	Sediment	4/29/15 1036		A	HP		HP	H	HP	H		A	HP	
K1504600-009	SDU-02-COR-01-003-250um	Sediment	4/29/15 1036		A	HP	HP	HP	H	HP	H		A		
K1504600-010	SDU-02-COR-02-001	Sediment	4/29/15 1110	HP								HP	A		HP
K1504600-011	SDU-02-COR-02-001-2mm	Sediment	4/29/15 1110		A	HP		HP	H	HP	H		A	HP	
K1504600-012	SDU-02-COR-02-001-250um	Sediment	4/29/15 1110		A	HP	HP	HP	H	HP	H		A		
K1504600-013	SDU-02-COR-02-002	Sediment	4/29/15 1114	HP								HP	A		HP
K1504600-014	SDU-02-COR-02-002-2mm	Sediment	4/29/15 1114		A	HP		HP	H	HP	H		A	HP	

				Sieve Sieve
K1504600-001	SDU-02-COR-01-001	Sediment	4/29/15 1018	A
K1504600-002	SDU-02-COR-01-001-2mm	Sediment	4/29/15 1018	A
K1504600-003	SDU-02-COR-01-001-250um	Sediment	4/29/15 1018	
K1504600-004	SDU-02-COR-01-002	Sediment	4/29/15 1027	A
K1504600-005	SDU-02-COR-01-002-2mm	Sediment	4/29/15 1027	A
K1504600-006	SDU-02-COR-01-002-250um	Sediment	4/29/15 1027	
K1504600-007	SDU-02-COR-01-003	Sediment	4/29/15 1036	A
K1504600-008	SDU-02-COR-01-003-2mm	Sediment	4/29/15 1036	A
K1504600-009	SDU-02-COR-01-003-250um	Sediment	4/29/15 1036	
K1504600-010	SDU-02-COR-02-001	Sediment	4/29/15 1110	A
K1504600-011	SDU-02-COR-02-001-2mm	Sediment	4/29/15 1110	A
K1504600-012	SDU-02-COR-02-001-250um	Sediment	4/29/15 1110	
K1504600-013	SDU-02-COR-02-002	Sediment	4/29/15 1114	A
K1504600-014	SDU-02-COR-02-002-2mm	Sediment	4/29/15 1114	A

				160.3 Modified TS	160.3 Modified TS-Air Dried	6010C Metals T	6020A IVBA Metals T	6020A Metals T	7062 As T	7471B Hg	7742 Se T	9045D pH	Archive Archive 4C	ASTM D4129-05 Modified TOC	PSEP PS PSEP PartSizeCB
K1504600-015	SDU-02-COR-02-002-250um	Sediment	4/29/15 1114		A	HP	HP	HP	H	HP	H		A		
K1504600-016	SDU-02-COR-02-003	Sediment	4/29/15 1118	HP								HP	A		HP
K1504600-017	SDU-02-COR-02-003-2mm	Sediment	4/29/15 1118		A	HP		HP	H	HP	H		A	HP	
K1504600-018	SDU-02-COR-02-003-250um	Sediment	4/29/15 1118		A	HP	HP	HP	H	HP	H		A		
K1504600-019	SDU-02-COR-03-001	Sediment	4/29/15 1136	HP								HP	A		HP
K1504600-020	SDU-02-COR-03-001-2mm	Sediment	4/29/15 1136		A	HP		HP	H	HP	H		A	HP	
K1504600-021	SDU-02-COR-03-001-250um	Sediment	4/29/15 1136		A	HP	HP	HP	H	HP	H		A		
K1504600-022	SDU-02-COR-03-002	Sediment	4/29/15 1140	HP								HP	A		HP
K1504600-023	SDU-02-COR-03-002-2mm	Sediment	4/29/15 1140		A	HP		HP	H	HP	H		A	HP	
K1504600-024	SDU-02-COR-03-002-250um	Sediment	4/29/15 1140		A	HP	HP	HP	H	HP	H		A		
K1504600-025	SDU-02-COR-03-003	Sediment	4/29/15 1148	HP								HP	A		HP
K1504600-026	SDU-02-COR-03-003-2mm	Sediment	4/29/15 1148		A	HP		HP	H	HP	H		A	HP	
K1504600-027	SDU-02-COR-03-003-250um	Sediment	4/29/15 1148		A	HP	HP	HP	H	HP	H		A		
K1504600-028	BOSS-007	Sediment	4/29/15 1018	HP								HP	A		HP

				Sieve Sieve
K1504600-015	SDU-02-COR-02-002-250um	Sediment	4/29/15 1114	
K1504600-016	SDU-02-COR-02-003	Sediment	4/29/15 1118	A
K1504600-017	SDU-02-COR-02-003-2mm	Sediment	4/29/15 1118	A
K1504600-018	SDU-02-COR-02-003-250um	Sediment	4/29/15 1118	
K1504600-019	SDU-02-COR-03-001	Sediment	4/29/15 1136	A
K1504600-020	SDU-02-COR-03-001-2mm	Sediment	4/29/15 1136	A
K1504600-021	SDU-02-COR-03-001-250um	Sediment	4/29/15 1136	
K1504600-022	SDU-02-COR-03-002	Sediment	4/29/15 1140	A
K1504600-023	SDU-02-COR-03-002-2mm	Sediment	4/29/15 1140	A
K1504600-024	SDU-02-COR-03-002-250um	Sediment	4/29/15 1140	
K1504600-025	SDU-02-COR-03-003	Sediment	4/29/15 1148	A
K1504600-026	SDU-02-COR-03-003-2mm	Sediment	4/29/15 1148	A
K1504600-027	SDU-02-COR-03-003-250um	Sediment	4/29/15 1148	
K1504600-028	BOSS-007	Sediment	4/29/15 1018	A

				160.3 Modified TS	160.3 Modified TS-Air Dried	6010C Metals T	6020A IVBA Metals T	6020A Metals T	7062 As T	7471B Hg	7742 Se T	9045D pH	Archive Archive 4C	ASTM D4129-05 Modified TOC	PSEP PS PSEP PartSizeCB
K1504600-029	BOSS-007-2mm	Sediment	4/29/15 1018		A	HP		HP	H	HP	H		A	HP	
K1504600-030	BOSS-007-250um	Sediment	4/29/15 1018		A	HP	HP	HP	H	HP	H		A		
K1504600-031	BOSS-008	Sediment	4/29/15 1027	HP								HP	A		HP
K1504600-032	BOSS-008-2mm	Sediment	4/29/15 1027		A	HP		HP	H	HP	H		A	HP	
K1504600-033	BOSS-008-250um	Sediment	4/29/15 1027		A	HP	HP	HP	H	HP	H		A		

Test Comments:

Group	Test/Method	Samples	Comments
Metals	7742/Se T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	(1) Analysis performed if Se < 6020 MRL.
Metals	7062/As T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	(1) Analysis performed if As < 6020 MRL.
GenChem	Sieve/Sieve	1-2, 4-5, 7-8, 10-11, 13-14, 16-17, 19-20, 22-23, 25	(1) Sieving of 2 mm fraction from ISM to generate a 250 um fraction.
SMO	Archive/Archive 4C	1-33	(1) Archive charges start 30 days after release of analytical report. (2) Charge is \$3/container/month. If 5 gallon buckets are archived, charge is \$14/bucket/month.
Metals	6010C/Metals T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	Ca, Mg, Fe, K, Na
Metals	6020A/Metals T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	Al, Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Mn, Ni, Se, Ag, Tl, V, Zn
Metals	7471B/Hg	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	Hg
Metals	6020A/IVBA Metals T	3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33	(1) As & Pb.

				Sieve Sieve
K1504600-029	BOSS-007-2mm	Sediment	4/29/15 1018	A
K1504600-030	BOSS-007-250um	Sediment	4/29/15 1018	
K1504600-031	BOSS-008	Sediment	4/29/15 1027	A
K1504600-032	BOSS-008-2mm	Sediment	4/29/15 1027	A
K1504600-033	BOSS-008-250um	Sediment	4/29/15 1027	



Confirmation of Sample Receipt

To:	Dave Enos	From:	Jeff Christian
Email:	dave.enos@teck.com	Email:	Jeff.Christian@alsglobal.com
Fax:	509-459-4400	Fax:	360-636-1068
Phone:	509-623-4505	Phone:	360-577-7222 x3316

Samples for analysis have been received by ALS Environmental on 5/ 1/15 and assigned our Service Request number **K1504604**. **Please verify the following information and notify me of any corrections as soon as possible.**

The estimated completion date for this work is: 5/29/15

Client: Teck American Incorporated
Project: Bossburg Soil/Sediment

PO Number: UCR-CAS-D21-14

EDD Required: No

Tier: V

Report To: Dave Enos
 Teck American Incorporated
 501 North Riverpoint Blvd., Suite 300
 Spokane, WA 99202

Billing Address: Kris McCaig
 Teck American Incorporated
 501 North Riverpoint Blvd., Suite 300
 Spokane, WA 99202

Comments: Sample -025 is an EPA split.

Thank you for your business!

A - Test is Authorized

H - Test is On Hold

HP - Test is On Hold
Pending InputP - Test is Authorized for
Prep Only

C - Test has been Cancelled

* - Test has assigned QC

				160.3 Modified TS	160.3 Modified TS-Air Dried	6010C Metals T	6020A IVBA Metals T	6020A Metals T	7062 As T	7471B Hg	7742 Se T	9045D pH	Archive Archive 4C	ASTM D4129-05 Modified TOC	PSEP PS PSEP PartSizeCB
K1504604-001	SDU-06-COR-01-001	Sediment	4/29/15 1453	HP								HP	A		HP
K1504604-002	SDU-06-COR-01-001-2mm	Sediment	4/29/15 1453		A	HP		HP	H	HP	H		A	HP	
K1504604-003	SDU-06-COR-01-001-250um	Sediment	4/29/15 1453		A	HP	HP	HP	H	HP	H		A		
K1504604-004	SDU-06-COR-01-002	Sediment	4/29/15 1500	HP								HP	A		HP
K1504604-005	SDU-06-COR-01-002-2mm	Sediment	4/29/15 1500		A	HP		HP	H	HP	H		A	HP	
K1504604-006	SDU-06-COR-01-002-250um	Sediment	4/29/15 1500		A	HP	HP	HP	H	HP	H		A		
K1504604-007	SDU-06-COR-01-003	Sediment	4/29/15 1503	HP								HP	A		HP
K1504604-008	SDU-06-COR-01-003-2mm	Sediment	4/29/15 1503		A	HP		HP	H	HP	H		A	HP	
K1504604-009	SDU-06-COR-01-003-250um	Sediment	4/29/15 1503		A	HP	HP	HP	H	HP	H		A		
K1504604-010	SDU-06-COR-02-001	Sediment	4/29/15 1524	HP								HP	A		HP
K1504604-011	SDU-06-COR-02-001-2mm	Sediment	4/29/15 1524		A	HP		HP	H	HP	H		A	HP	
K1504604-012	SDU-06-COR-02-001-250um	Sediment	4/29/15 1524		A	HP	HP	HP	H	HP	H		A		
K1504604-013	SDU-06-COR-02-002	Sediment	4/29/15 1532	HP								HP	A		HP
K1504604-014	SDU-06-COR-02-002-2mm	Sediment	4/29/15 1532		A	HP		HP	H	HP	H		A	HP	

				Sieve Sieve
K1504604-001	SDU-06-COR-01-001	Sediment	4/29/15 1453	A
K1504604-002	SDU-06-COR-01-001-2mm	Sediment	4/29/15 1453	A
K1504604-003	SDU-06-COR-01-001-250um	Sediment	4/29/15 1453	
K1504604-004	SDU-06-COR-01-002	Sediment	4/29/15 1500	A
K1504604-005	SDU-06-COR-01-002-2mm	Sediment	4/29/15 1500	A
K1504604-006	SDU-06-COR-01-002-250um	Sediment	4/29/15 1500	
K1504604-007	SDU-06-COR-01-003	Sediment	4/29/15 1503	A
K1504604-008	SDU-06-COR-01-003-2mm	Sediment	4/29/15 1503	A
K1504604-009	SDU-06-COR-01-003-250um	Sediment	4/29/15 1503	
K1504604-010	SDU-06-COR-02-001	Sediment	4/29/15 1524	A
K1504604-011	SDU-06-COR-02-001-2mm	Sediment	4/29/15 1524	A
K1504604-012	SDU-06-COR-02-001-250um	Sediment	4/29/15 1524	
K1504604-013	SDU-06-COR-02-002	Sediment	4/29/15 1532	A
K1504604-014	SDU-06-COR-02-002-2mm	Sediment	4/29/15 1532	A

				160.3 Modified TS	160.3 Modified TS-Air Dried	6010C Metals T	6020A IVBA Metals T	6020A Metals T	7062 As T	7471B Hg	7742 Se T	9045D pH	Archive Archive 4C	ASTM D4129-05 Modified TOC	PSEP PS PSEP PartSizeCB
K1504604-015	SDU-06-COR-02-002-250um	Sediment	4/29/15 1532		A	HP	HP	HP	H	HP	H		A		
K1504604-016	SDU-06-COR-02-003	Sediment	4/29/15 1534	HP								HP	A		HP
K1504604-017	SDU-06-COR-02-003-2mm	Sediment	4/29/15 1534		A	HP		HP	H	HP	H		A	HP	
K1504604-018	SDU-06-COR-02-003-250um	Sediment	4/29/15 1534		A	HP	HP	HP	H	HP	H		A		
K1504604-019	SDU-06-COR-03-001	Sediment	4/29/15 1548	HP								HP	A		HP
K1504604-020	SDU-06-COR-03-001-2mm	Sediment	4/29/15 1548		A	HP		HP	H	HP	H		A	HP	
K1504604-021	SDU-06-COR-03-001-250um	Sediment	4/29/15 1548		A	HP	HP	HP	H	HP	H		A		
K1504604-022	SDU-06-COR-03-002	Sediment	4/29/15 1602	HP								HP	A		HP
K1504604-023	SDU-06-COR-03-002-2mm	Sediment	4/29/15 1602		A	HP		HP	H	HP	H		A	HP	
K1504604-024	SDU-06-COR-03-002-250um	Sediment	4/29/15 1602		A	HP	HP	HP	H	HP	H		A		
K1504604-025	SDU-06-COR-03-003	Sediment	4/29/15 1609	HP								HP	A		HP
K1504604-026	SDU-06-COR-03-003-2mm	Sediment	4/29/15 1609		A	HP		HP	H	HP	H		A	HP	
K1504604-027	SDU-06-COR-03-003-250um	Sediment	4/29/15 1609		A	HP	HP	HP	H	HP	H		A		

				Sieve Sieve
K1504604-015	SDU-06-COR-02-002-250um	Sediment	4/29/15 1532	
K1504604-016	SDU-06-COR-02-003	Sediment	4/29/15 1534	A
K1504604-017	SDU-06-COR-02-003-2mm	Sediment	4/29/15 1534	A
K1504604-018	SDU-06-COR-02-003-250um	Sediment	4/29/15 1534	
K1504604-019	SDU-06-COR-03-001	Sediment	4/29/15 1548	A
K1504604-020	SDU-06-COR-03-001-2mm	Sediment	4/29/15 1548	A
K1504604-021	SDU-06-COR-03-001-250um	Sediment	4/29/15 1548	
K1504604-022	SDU-06-COR-03-002	Sediment	4/29/15 1602	A
K1504604-023	SDU-06-COR-03-002-2mm	Sediment	4/29/15 1602	A
K1504604-024	SDU-06-COR-03-002-250um	Sediment	4/29/15 1602	
K1504604-025	SDU-06-COR-03-003	Sediment	4/29/15 1609	A
K1504604-026	SDU-06-COR-03-003-2mm	Sediment	4/29/15 1609	A
K1504604-027	SDU-06-COR-03-003-250um	Sediment	4/29/15 1609	

Test Comments:

Group	Test/Method	Samples	Comments
Metals	7742/Se T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	(1) Anallysis performed if Se < 6020 MRL.
Metals	7062/As T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	(1) Anallysis performed if As < 6020 MRL.
GenChem	Sieve/Sieve	1-2, 4-5, 7-8, 10-11, 13-14, 16-17, 19-20, 22-23, 25	(1) Sieving of 2 mm fraction from ISM to generate a 250 um fraction.
SMO	Archive/Archive 4C	1-27	(1) Archive charges start 30 days after release of analytical report. (2) Charge is \$3/container/month. If 5 gallon buckets are archived,charge is \$14/bucket/month.
Metals	6010C/Metals T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	Ca,Mg,Fe,K,Na
Metals	6020A/Metals T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	Al,Sb,As,Ba,Be,Cd,Cr,Co,Cu,Pb,Mn,Ni,Se,Ag,Tl,V,Zn
Metals	7471B/Hg	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	Hg
Metals	6020A/TVBA Metals T	3, 6, 9, 12, 15, 18, 21, 24, 27	(1) As & Pb.



Confirmation of Sample Receipt

To:	Dave Enos	From:	Jeff Christian
Email:	dave.enos@teck.com	Email:	Jeff.Christian@alsglobal.com
Fax:	509-459-4400	Fax:	360-636-1068
Phone:	509-623-4505	Phone:	360-577-7222 x3316

Samples for analysis have been received by ALS Environmental on 5/ 2 - 05/15 and assigned our Service Request number **K1504670**. **Please verify the following information and notify me of any corrections as soon as possible.**

The estimated completion date for this work is: 6/1/15

Client: Teck American Incorporated
Project: Bossburg Soil/Sediment

PO Number: UCR-CAS-D21-14

EDD Required: No

Tier: V

Report To: Dave Enos
 Teck American Incorporated
 501 North Riverpoint Blvd., Suite 300
 Spokane, WA 99202

Billing Address: Kris McCaig
 Teck American Incorporated
 501 North Riverpoint Blvd., Suite 300
 Spokane, WA 99202

Comments: Sample -010 is a field split and EPA split; sample -022 is a field split.

Thank you for your business!

A - Test is Authorized

H - Test is On Hold

HP - Test is On Hold
Pending InputP - Test is Authorized for
Prep Only

C - Test has been Cancelled

* - Test has assigned QC

				160.3 Modified TS	160.3 Modified TS-Air Dried	6010C Metals T	6020A IVBA Metals T	6020A Metals T	7062 As T	7471B Hg	7742 Se T	9045D pH	Archive Archive 4C	ASTM D4129-05 Modified TOC	PSEP PS PSEP PartSizeCB
K1504670-001	SDU-05-COR-03-001	Sediment	4/30/15 1606	A								A	A		A
K1504670-002	SDU-05-COR-03-001-2mm	Sediment	4/30/15 1606		A	HP		HP	HP	HP	HP		A	HP	
K1504670-003	SDU-05-COR-03-001-250um	Sediment	4/30/15 1606		A	HP	HP	HP	HP	HP	HP		A		
K1504670-004	SDU-05-COR-03-002	Sediment	4/30/15 1609	A								A	A		A
K1504670-005	SDU-05-COR-03-002-2mm	Sediment	4/30/15 1609		A	HP		HP	HP	HP	HP		A	HP	
K1504670-006	SDU-05-COR-03-002-250um	Sediment	4/30/15 1609		A	HP	HP	HP	HP	HP	HP		A		
K1504670-007	SDU-05-COR-03-003	Sediment	4/30/15 1603	A								A	A		A
K1504670-008	SDU-05-COR-03-003-2mm	Sediment	4/30/15 1603		A	HP		HP	HP	HP	HP		A	HP	
K1504670-009	SDU-05-COR-03-003-250um	Sediment	4/30/15 1603		A	HP	HP	HP	HP	HP	HP		A		
K1504670-010	SDU-05-COR-01-001	Sediment	5/ 1/15 0855	A								A	A		A
K1504670-011	SDU-05-COR-01-001-2mm	Sediment	5/ 1/15 0855		A	HP		HP	HP	HP	HP		A	HP	
K1504670-012	SDU-05-COR-01-001-250um	Sediment	5/ 1/15 0855		A	HP	HP	HP	HP	HP	HP		A		
K1504670-013	SDU-05-COR-01-002	Sediment	5/ 1/15 0900	A								A	A		A
K1504670-014	SDU-05-COR-01-002-2mm	Sediment	5/ 1/15 0900		A	HP		HP	HP	HP	HP		A	HP	

				Sieve Sieve
K1504670-001	SDU-05-COR-03-001	Sediment	4/30/15 1606	A
K1504670-002	SDU-05-COR-03-001-2mm	Sediment	4/30/15 1606	A
K1504670-003	SDU-05-COR-03-001-250um	Sediment	4/30/15 1606	
K1504670-004	SDU-05-COR-03-002	Sediment	4/30/15 1609	A
K1504670-005	SDU-05-COR-03-002-2mm	Sediment	4/30/15 1609	A
K1504670-006	SDU-05-COR-03-002-250um	Sediment	4/30/15 1609	
K1504670-007	SDU-05-COR-03-003	Sediment	4/30/15 1603	A
K1504670-008	SDU-05-COR-03-003-2mm	Sediment	4/30/15 1603	A
K1504670-009	SDU-05-COR-03-003-250um	Sediment	4/30/15 1603	
K1504670-010	SDU-05-COR-01-001	Sediment	5/ 1/15 0855	A
K1504670-011	SDU-05-COR-01-001-2mm	Sediment	5/ 1/15 0855	A
K1504670-012	SDU-05-COR-01-001-250um	Sediment	5/ 1/15 0855	
K1504670-013	SDU-05-COR-01-002	Sediment	5/ 1/15 0900	A
K1504670-014	SDU-05-COR-01-002-2mm	Sediment	5/ 1/15 0900	A

				160.3 Modified TS	160.3 Modified TS-Air Dried	6010C Metals T	6020A IVBA Metals T	6020A Metals T	7062 As T	7471B Hg	7742 Se T	9045D pH	Archive Archive 4C	ASTM D4129-05 Modified TOC	PSEP PS PSEP PartSizeCB
K1504670-015	SDU-05-COR-01-002-250um	Sediment	5/ 1/15 0900		A	HP	HP	HP	HP	HP	HP		A		
K1504670-016	SDU-05-COR-01-003	Sediment	5/ 1/15 0905	A								A	A		A
K1504670-017	SDU-05-COR-01-003-2mm	Sediment	5/ 1/15 0905		A	HP		HP	HP	HP	HP		A	HP	
K1504670-018	SDU-05-COR-01-003-250um	Sediment	5/ 1/15 0905		A	HP	HP	HP	HP	HP	HP		A		
K1504670-019	SDU-05-COR-02-001	Sediment	5/ 1/15 0930	A								A	A		A
K1504670-020	SDU-05-COR-02-001-2mm	Sediment	5/ 1/15 0930		A	HP		HP	HP	HP	HP		A	HP	
K1504670-021	SDU-05-COR-02-001-250um	Sediment	5/ 1/15 0930		A	HP	HP	HP	HP	HP	HP		A		
K1504670-022	SDU-05-COR-02-002	Sediment	5/ 1/15 0940	A								A	A		A
K1504670-023	SDU-05-COR-02-002-2mm	Sediment	5/ 1/15 0940		A	HP		HP	HP	HP	HP		A	HP	
K1504670-024	SDU-05-COR-02-002-250um	Sediment	5/ 1/15 0940		A	HP	HP	HP	HP	HP	HP		A		
K1504670-025	SDU-05-COR-02-003	Sediment	5/ 1/15 0945	A								A	A		A
K1504670-026	SDU-05-COR-02-003-2mm	Sediment	5/ 1/15 0945		A	HP		HP	HP	HP	HP		A	HP	
K1504670-027	SDU-05-COR-02-003-250um	Sediment	5/ 1/15 0945		A	HP	HP	HP	HP	HP	HP		A		
K1504670-028	BOSS-009	Sediment	5/ 1/15 0855	A								A	A		A

				Sieve Sieve
K1504670-015	SDU-05-COR-01-002-250um	Sediment	5/ 1/15 0900	
K1504670-016	SDU-05-COR-01-003	Sediment	5/ 1/15 0905	A
K1504670-017	SDU-05-COR-01-003-2mm	Sediment	5/ 1/15 0905	A
K1504670-018	SDU-05-COR-01-003-250um	Sediment	5/ 1/15 0905	
K1504670-019	SDU-05-COR-02-001	Sediment	5/ 1/15 0930	A
K1504670-020	SDU-05-COR-02-001-2mm	Sediment	5/ 1/15 0930	A
K1504670-021	SDU-05-COR-02-001-250um	Sediment	5/ 1/15 0930	
K1504670-022	SDU-05-COR-02-002	Sediment	5/ 1/15 0940	A
K1504670-023	SDU-05-COR-02-002-2mm	Sediment	5/ 1/15 0940	A
K1504670-024	SDU-05-COR-02-002-250um	Sediment	5/ 1/15 0940	
K1504670-025	SDU-05-COR-02-003	Sediment	5/ 1/15 0945	A
K1504670-026	SDU-05-COR-02-003-2mm	Sediment	5/ 1/15 0945	A
K1504670-027	SDU-05-COR-02-003-250um	Sediment	5/ 1/15 0945	
K1504670-028	BOSS-009	Sediment	5/ 1/15 0855	A

				160.3 Modified TS	160.3 Modified TS-Air Dried	6010C Metals T	6020A IVBA Metals T	6020A Metals T	7062 As T	7471B Hg	7742 Se T	9045D pH	Archive Archive 4C	ASTM D4129-05 Modified TOC	PSEP PS PSEP PartSizeCB
K1504670-029	BOSS-009-2mm	Sediment	5/ 1/15 0855		A	HP		HP	HP	HP	HP		A	HP	
K1504670-030	BOSS-009-250um	Sediment	5/ 1/15 0855		A	HP	HP	HP	HP	HP	HP		A		
K1504670-031	BOSS-010	Sediment	5/ 1/15 0940	A								A	A		A
K1504670-032	BOSS-010-2mm	Sediment	5/ 1/15 0940		A	HP		HP	HP	HP	HP		A	HP	
K1504670-033	BOSS-010-250um	Sediment	5/ 1/15 0940		A	HP	HP	HP	HP	HP	HP		A		

Test Comments:

Group	Test/Method	Samples	Comments
Metals	7742/Se T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	(1) Analysis performed if Se < 6020 MRL.
Metals	7062/As T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	(1) Analysis performed if As < 6020 MRL.
GenChem	Sieve/Sieve	1-2, 4-5, 7-8, 10-11, 13-14, 16-17, 19-20, 22-23, 25	(1) Sieving of 2 mm fraction from ISM to generate a 250 um fraction.
SMO	Archive/Archive 4C	1-33	(1) Archive charges start 30 days after release of analytical report. (2) Charge is \$3/container/month. If 5 gallon buckets are archived, charge is \$14/bucket/month.
Metals	6010C/Metals T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	Ca, Mg, Fe, K, Na
Metals	6020A/Metals T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	Al, Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Mn, Ni, Se, Ag, Tl, V, Zn
Metals	7471B/Hg	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	Hg
Metals	6020A/IVBA Metals T	3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33	(1) As & Pb.

				Sieve Sieve
K1504670-029	BOSS-009-2mm	Sediment	5/ 1/15 0855	A
K1504670-030	BOSS-009-250um	Sediment	5/ 1/15 0855	
K1504670-031	BOSS-010	Sediment	5/ 1/15 0940	A
K1504670-032	BOSS-010-2mm	Sediment	5/ 1/15 0940	A
K1504670-033	BOSS-010-250um	Sediment	5/ 1/15 0940	



Confirmation of Sample Receipt

To:	Dave Enos	From:	Jeff Christian
Email:	dave.enos@teck.com	Email:	Jeff.Christian@alsglobal.com
Fax:	509-459-4400	Fax:	360-636-1068
Phone:	509-623-4505	Phone:	360-577-7222 x3316

Samples for analysis have been received by ALS Environmental on 5/ 5/15 and assigned our Service Request number **K1504735**. **Please verify the following information and notify me of any corrections as soon as possible.**

The estimated completion date for this work is: 6/2/15

Client: Teck American Incorporated
Project: Bossburg Soil/Sediment

PO Number: UCR-CAS-D21-14

EDD Required: Yes

Tier: V

Report To: Dave Enos
 Teck American Incorporated
 501 North Riverpoint Blvd., Suite 300
 Spokane, WA 99202

Billing Address: Kris McCaig
 Teck American Incorporated
 501 North Riverpoint Blvd., Suite 300
 Spokane, WA 99202

Comments: Sample -004 is a Field Split to create -028; sample -019 is an EPA split.

Thank you for your business!

A - Test is Authorized

H - Test is On Hold

HP - Test is On Hold
Pending InputP - Test is Authorized for
Prep Only

C - Test has been Cancelled

* - Test has assigned QC

				160.3 Modified TS	160.3 Modified TS-Air Dried	6010C Metals T	6020A IVBA Metals T	6020A Metals T	7062 As T	7471B Hg	7742 Se T	9045D pH	9080 NH3 CEC	Archive Archive 4C	ASTM D4129-05 Modified TOC
K1504735-001	UDU-05-COR-01-001	Soil	5/ 1/15 1300	A								A		A	
K1504735-002	UDU-05-COR-01-001-2mm	Soil	5/ 1/15 1300		A	HP		HP	H	HP	H		HP	A	HP
K1504735-003	UDU-05-COR-01-001-150um	Soil	5/ 1/15 1300		A	HP	HP	HP	H	HP	H			A	
K1504735-004	UDU-05-COR-01-002	Soil	5/ 1/15 1310	A								A		A	
K1504735-005	UDU-05-COR-01-002-2mm	Soil	5/ 1/15 1310		A	HP		HP	H	HP	H		HP	A	HP
K1504735-006	UDU-05-COR-01-002-150um	Soil	5/ 1/15 1310		A	HP	HP	HP	H	HP	H			A	
K1504735-007	UDU-05-COR-01-003	Soil	5/ 1/15 1315	A								A		A	
K1504735-008	UDU-05-COR-01-003-2mm	Soil	5/ 1/15 1315		A	HP		HP	H	HP	H		HP	A	HP
K1504735-009	UDU-05-COR-01-003-150um	Soil	5/ 1/15 1315		A	HP	HP	HP	H	HP	H			A	
K1504735-010	UDU-05-COR-02-001	Soil	5/ 1/15 1355	A								A		A	
K1504735-011	UDU-05-COR-02-001-2mm	Soil	5/ 1/15 1355		A	HP		HP	H	HP	H		HP	A	HP
K1504735-012	UDU-05-COR-02-001-150um	Soil	5/ 1/15 1355		A	HP	HP	HP	H	HP	H			A	
K1504735-013	UDU-05-COR-02-002	Soil	5/ 1/15 1400	A								A		A	
K1504735-014	UDU-05-COR-02-002-2mm	Soil	5/ 1/15 1400		A	HP		HP	H	HP	H		HP	A	HP

				PSEP PS PSEP PartSizeCB	Sieve Sieve
K1504735-001	UDU-05-COR-01-001	Soil	5/ 1/15 1300	A	A
K1504735-002	UDU-05-COR-01-001-2mm	Soil	5/ 1/15 1300		A
K1504735-003	UDU-05-COR-01-001-150um	Soil	5/ 1/15 1300		
K1504735-004	UDU-05-COR-01-002	Soil	5/ 1/15 1310	A	A
K1504735-005	UDU-05-COR-01-002-2mm	Soil	5/ 1/15 1310		A
K1504735-006	UDU-05-COR-01-002-150um	Soil	5/ 1/15 1310		
K1504735-007	UDU-05-COR-01-003	Soil	5/ 1/15 1315	A	A
K1504735-008	UDU-05-COR-01-003-2mm	Soil	5/ 1/15 1315		A
K1504735-009	UDU-05-COR-01-003-150um	Soil	5/ 1/15 1315		
K1504735-010	UDU-05-COR-02-001	Soil	5/ 1/15 1355	A	A
K1504735-011	UDU-05-COR-02-001-2mm	Soil	5/ 1/15 1355		A
K1504735-012	UDU-05-COR-02-001-150um	Soil	5/ 1/15 1355		
K1504735-013	UDU-05-COR-02-002	Soil	5/ 1/15 1400	A	A
K1504735-014	UDU-05-COR-02-002-2mm	Soil	5/ 1/15 1400		A

				160.3 Modified TS	160.3 Modified TS-Air Dried	6010C Metals T	6020A IVBA Metals T	6020A Metals T	7062 As T	7471B Hg	7742 Se T	9045D pH	9080 NH3 CEC	Archive Archive 4C	ASTM D4129-05 Modified TOC
K1504735-015	UDU-05-COR-02-002-150um	Soil	5/ 1/15 1400		A	HP	HP	HP	H	HP	H			A	
K1504735-016	UDU-05-COR-02-003	Soil	5/ 1/15 1405	A								A		A	
K1504735-017	UDU-05-COR-02-003-2mm	Soil	5/ 1/15 1405		A	HP		HP	H	HP	H		HP	A	HP
K1504735-018	UDU-05-COR-02-003-150um	Soil	5/ 1/15 1405		A	HP	HP	HP	H	HP	H			A	
K1504735-019	UDU-05-COR-03-001	Soil	5/ 1/15 1140	A								A		A	
K1504735-020	UDU-05-COR-03-001-2mm	Soil	5/ 1/15 1140		A	HP		HP	H	HP	H		HP	A	HP
K1504735-021	UDU-05-COR-03-001-150um	Soil	5/ 1/15 1140		A	HP	HP	HP	H	HP	H			A	
K1504735-022	UDU-05-COR-03-002	Soil	5/ 1/15 1150	A								A		A	
K1504735-023	UDU-05-COR-03-002-2mm	Soil	5/ 1/15 1150		A	HP		HP	H	HP	H		HP	A	HP
K1504735-024	UDU-05-COR-03-002-150um	Soil	5/ 1/15 1150		A	HP	HP	HP	H	HP	H			A	
K1504735-025	UDU-05-COR-03-003	Soil	5/ 1/15 1155	A								A		A	
K1504735-026	UDU-05-COR-03-003-2mm	Soil	5/ 1/15 1155		A	HP		HP	H	HP	H		HP	A	HP
K1504735-027	UDU-05-COR-03-003-150um	Soil	5/ 1/15 1155		A	HP	HP	HP	H	HP	H			A	
K1504735-028	BOSS-011	Soil	5/ 1/15 1310	A								A		A	

				PSEP PS PSEP PartSizeCB	Sieve Sieve
K1504735-015	UDU-05-COR-02-002-150um	Soil	5/ 1/15 1400		
K1504735-016	UDU-05-COR-02-003	Soil	5/ 1/15 1405	A	A
K1504735-017	UDU-05-COR-02-003-2mm	Soil	5/ 1/15 1405		A
K1504735-018	UDU-05-COR-02-003-150um	Soil	5/ 1/15 1405		
K1504735-019	UDU-05-COR-03-001	Soil	5/ 1/15 1140	A	A
K1504735-020	UDU-05-COR-03-001-2mm	Soil	5/ 1/15 1140		A
K1504735-021	UDU-05-COR-03-001-150um	Soil	5/ 1/15 1140		
K1504735-022	UDU-05-COR-03-002	Soil	5/ 1/15 1150	A	A
K1504735-023	UDU-05-COR-03-002-2mm	Soil	5/ 1/15 1150		A
K1504735-024	UDU-05-COR-03-002-150um	Soil	5/ 1/15 1150		
K1504735-025	UDU-05-COR-03-003	Soil	5/ 1/15 1155	A	A
K1504735-026	UDU-05-COR-03-003-2mm	Soil	5/ 1/15 1155		A
K1504735-027	UDU-05-COR-03-003-150um	Soil	5/ 1/15 1155		
K1504735-028	BOSS-011	Soil	5/ 1/15 1310	A	A

				160.3 Modified TS	160.3 Modified TS-Air Dried	6010C Metals T	6020A IVBA Metals T	6020A Metals T	7062 As T	7471B Hg	7742 Se T	9045D pH	9080 NH3 CEC	Archive Archive 4C	ASTM D4129-05 Modified TOC
K1504735-029	BOSS-011-2mm	Soil	5/ 1/15 1310		A	HP		HP	H	HP	H		HP	A	HP
K1504735-030	BOSS-011-150um	Soil	5/ 1/15 1310		A	HP	HP	HP	H	HP	H			A	

Test Comments:

Group	Test/Method	Samples	Comments
Metals	7742/Se T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	(1) Analysis performed if Se < 6020 MRL.
Metals	7062/As T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	(1) Analysis performed if As < 6020 MRL.
GenChem	Sieve/Sieve	1-2, 4-5, 7-8, 10-11, 13-14, 16-17, 19-20, 22-23, 25	(1) Sieving of 2 mm fraction from ISM to generate a 150 um fraction.
SMO	Archive/Archive 4C	1-30	(1) Archive charges start 30 days after release of analytical report. (2) Charge is \$3/container/month. If 5 gallon buckets are archived, charge is \$14/bucket/month.
Metals	6010C/Metals T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	Ca,Fe,Mg,K,Na
Metals	6020A/Metals T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	Al,Sb,As,Ba,Be,Cd,Cr,Co,Cu,Pb,Mn,Ni,Se,Ag,Tl,V,Zn
Metals	7471B/Hg	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	Hg
Metals	6020A/IVBA Metals T	3, 6, 9, 12, 15, 18, 21, 24, 27, 30	(1) Pb & As only.

				PSEP PS PSEP PartSizeCB	Sieve Sieve
K1504735-029	BOSS-011-2mm	Soil	5/ 1/15 1310		A
K1504735-030	BOSS-011-150um	Soil	5/ 1/15 1310		



Confirmation of Sample Receipt

To:	Dave Enos	From:	Jeff Christian
Email:	dave.enos@teck.com	Email:	Jeff.Christian@alsglobal.com
Fax:	509-459-4400	Fax:	360-636-1068
Phone:	509-623-4505	Phone:	360-577-7222 x3316

Samples for analysis have been received by ALS Environmental on 5/ 6/15 and assigned our Service Request number **K1504788**. **Please verify the following information and notify me of any corrections as soon as possible.**

The estimated completion date for this work is: **6/3/15**

Client: Teck American Incorporated
Project: Bossburg Soil/Sediment

PO Number: UCR-CAS-D21-14

EDD Required: No

Tier: V

Report To: Dave Enos
Teck American Incorporated
501 North Riverpoint Blvd., Suite 300
Spokane, WA 99202

Billing Address: Kris McCaig
Teck American Incorporated
501 North Riverpoint Blvd., Suite 300
Spokane, WA 99202

Comments: Sample -007 is a field split and Sample -013 is an EPA Split.

Thank you for your business!

A - Test is Authorized

H - Test is On Hold

HP - Test is On Hold
Pending Input

P - Test is Authorized for
Prep Only

C - Test has been Cancelled

* - Test has assigned QC

				160.3 Modified TS	160.3 Modified TS-Air Dried	6010C Metals T	6020A IVBA Metals T	6020A Metals T	7062 As T	7471B Hg	7742 Se T	9045D pH	Archive Archive 4C	ASTM D4129-05 Modified TOC	PSEP PS PSEP PartSizeCB
K1504788-001	SDU-04-COR-01-001	Sediment	5/4/15 1535	A								A	A		A
K1504788-002	SDU-04-COR-01-001-2mm	Sediment	5/4/15 1535		A	HP		HP	H	HP	H		A	HP	
K1504788-003	SDU-04-COR-01-001-250um	Sediment	5/4/15 1535		A	HP	HP	HP	H	HP	H		A		
K1504788-004	SDU-04-COR-01-002	Sediment	5/4/15 1537	A								A	A		A
K1504788-005	SDU-04-COR-01-002-2mm	Sediment	5/4/15 1537		A	HP		HP	H	HP	H		A	HP	
K1504788-006	SDU-04-COR-01-002-250um	Sediment	5/4/15 1537		A	HP	HP	HP	H	HP	H		A		
K1504788-007	SDU-04-COR-01-003	Sediment	5/4/15 1539	A								A	A		A
K1504788-008	SDU-04-COR-01-003-2mm	Sediment	5/4/15 1539		A	HP		HP	H	HP	H		A	HP	
K1504788-009	SDU-04-COR-01-003-250um	Sediment	5/4/15 1539		A	HP	HP	HP	H	HP	H		A		
K1504788-010	SDU-04-COR-02-001	Sediment	5/4/15 1552	A								A	A		A
K1504788-011	SDU-04-COR-02-001-2mm	Sediment	5/4/15 1552		A	HP		HP	H	HP	H		A	HP	
K1504788-012	SDU-04-COR-02-001-250um	Sediment	5/4/15 1552		A	HP	HP	HP	H	HP	H		A		
K1504788-013	SDU-04-COR-02-002	Sediment	5/4/15 1556	A								A	A		A
K1504788-014	SDU-04-COR-02-002-2mm	Sediment	5/4/15 1556		A	HP		HP	H	HP	H		A	HP	

				Sieve Sieve
K1504788-001	SDU-04-COR-01-001	Sediment	5/ 4/15 1535	A
K1504788-002	SDU-04-COR-01-001-2mm	Sediment	5/ 4/15 1535	A
K1504788-003	SDU-04-COR-01-001-250um	Sediment	5/ 4/15 1535	
K1504788-004	SDU-04-COR-01-002	Sediment	5/ 4/15 1537	A
K1504788-005	SDU-04-COR-01-002-2mm	Sediment	5/ 4/15 1537	A
K1504788-006	SDU-04-COR-01-002-250um	Sediment	5/ 4/15 1537	
K1504788-007	SDU-04-COR-01-003	Sediment	5/ 4/15 1539	A
K1504788-008	SDU-04-COR-01-003-2mm	Sediment	5/ 4/15 1539	A
K1504788-009	SDU-04-COR-01-003-250um	Sediment	5/ 4/15 1539	
K1504788-010	SDU-04-COR-02-001	Sediment	5/ 4/15 1552	A
K1504788-011	SDU-04-COR-02-001-2mm	Sediment	5/ 4/15 1552	A
K1504788-012	SDU-04-COR-02-001-250um	Sediment	5/ 4/15 1552	
K1504788-013	SDU-04-COR-02-002	Sediment	5/ 4/15 1556	A
K1504788-014	SDU-04-COR-02-002-2mm	Sediment	5/ 4/15 1556	A

				160.3 Modified TS	160.3 Modified TS-Air Dried	6010C Metals T	6020A IVBA Metals T	6020A Metals T	7062 As T	7471B Hg	7742 Se T	9045D pH	Archive Archive 4C	ASTM D4129-05 Modified TOC	PSEP PS PSEP PartSizeCB
K1504788-015	SDU-04-COR-02-002-250um	Sediment	5/4/15 1556		A	HP	HP	HP	H	HP	H		A		
K1504788-016	SDU-04-COR-02-003	Sediment	5/4/15 1558	A								A	A		A
K1504788-017	SDU-04-COR-02-003-2mm	Sediment	5/4/15 1558		A	HP		HP	H	HP	H		A	HP	
K1504788-018	SDU-04-COR-02-003-250um	Sediment	5/4/15 1558		A	HP	HP	HP	H	HP	H		A		
K1504788-019	SDU-04-COR-03-001	Sediment	5/4/15 1609	A								A	A		A
K1504788-020	SDU-04-COR-03-001-2mm	Sediment	5/4/15 1609		A	HP		HP	H	HP	H		A	HP	
K1504788-021	SDU-04-COR-03-001-250um	Sediment	5/4/15 1609		A	HP	HP	HP	H	HP	H		A		
K1504788-022	SDU-04-COR-03-002	Sediment	5/4/15 1611	A								A	A		A
K1504788-023	SDU-04-COR-03-002-2mm	Sediment	5/4/15 1611		A	HP		HP	H	HP	H		A	HP	
K1504788-024	SDU-04-COR-03-002-250um	Sediment	5/4/15 1611		A	HP	HP	HP	H	HP	H		A		
K1504788-025	SDU-04-COR-03-003	Sediment	5/4/15 1613	A								A	A		A
K1504788-026	SDU-04-COR-03-003-2mm	Sediment	5/4/15 1613		A	HP		HP	H	HP	H		A	HP	
K1504788-027	SDU-04-COR-03-003-250um	Sediment	5/4/15 1613		A	HP	HP	HP	H	HP	H		A		
K1504788-028	BOSS-012	Sediment	5/4/15 1539	A								A	A		A

				Sieve Sieve
K1504788-015	SDU-04-COR-02-002-250um	Sediment	5/ 4/15 1556	
K1504788-016	SDU-04-COR-02-003	Sediment	5/ 4/15 1558	A
K1504788-017	SDU-04-COR-02-003-2mm	Sediment	5/ 4/15 1558	A
K1504788-018	SDU-04-COR-02-003-250um	Sediment	5/ 4/15 1558	
K1504788-019	SDU-04-COR-03-001	Sediment	5/ 4/15 1609	A
K1504788-020	SDU-04-COR-03-001-2mm	Sediment	5/ 4/15 1609	A
K1504788-021	SDU-04-COR-03-001-250um	Sediment	5/ 4/15 1609	
K1504788-022	SDU-04-COR-03-002	Sediment	5/ 4/15 1611	A
K1504788-023	SDU-04-COR-03-002-2mm	Sediment	5/ 4/15 1611	A
K1504788-024	SDU-04-COR-03-002-250um	Sediment	5/ 4/15 1611	
K1504788-025	SDU-04-COR-03-003	Sediment	5/ 4/15 1613	A
K1504788-026	SDU-04-COR-03-003-2mm	Sediment	5/ 4/15 1613	A
K1504788-027	SDU-04-COR-03-003-250um	Sediment	5/ 4/15 1613	
K1504788-028	BOSS-012	Sediment	5/ 4/15 1539	A

				160.3 Modified TS	160.3 Modified TS-Air Dried	6010C Metals T	6020A IVBA Metals T	6020A Metals T	7062 As T	7471B Hg	7742 Se T	9045D pH	Archive Archive 4C	ASTM D4129-05 Modified TOC	PSEP PS PSEP PartSizeCB
K1504788-029	BOSS-012-2mm	Sediment	5/4/15 1539		A	HP		HP	H	HP	H		A	HP	
K1504788-030	BOSS-012-250um	Sediment	5/4/15 1539		A	HP	HP	HP	H	HP	H		A		

Test Comments:

Group	Test/Method	Samples	Comments
Metals	7742/Se T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	(1) Analysis performed if Se < 6020 MRL.
Metals	7062/As T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	(1) Analysis performed if As < 6020 MRL.
GenChem	Sieve/Sieve	1-2, 4-5, 7-8, 10-11, 13-14, 16-17, 19-20, 22-23, 25	(1) Sieving of 2 mm fraction from ISM to generate a 250 um fraction.
SMO	Archive/Archive 4C	1-30	(1) Archive charges start 30 days after release of analytical report. (2) Charge is \$3/container/month. If 5 gallon buckets are archived, charge is \$14/bucket/month.
Metals	6010C/Metals T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	Ca, Mg, Fe, K, Na
Metals	6020A/Metals T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	Al, Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Mn, Ni, Se, Ag, Tl, V, Zn
Metals	7471B/Hg	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	Hg
Metals	6020A/IVBA Metals T	3, 6, 9, 12, 15, 18, 21, 24, 27, 30	(1) As & Pb.

K1504788-029	BOSS-012-2mm	Sediment	5/ 4/15 1539	A
K1504788-030	BOSS-012-250um	Sediment	5/ 4/15 1539	
				Sieve Sieve



Confirmation of Sample Receipt

To:	Dave Enos	From:	Jeff Christian
Email:	dave.enos@teck.com	Email:	Jeff.Christian@alsglobal.com
Fax:	509-459-4400	Fax:	360-636-1068
Phone:	509-623-4505	Phone:	360-577-7222 x3316

Samples for analysis have been received by ALS Environmental on 5/ 6 - 09/15 and assigned our Service Request number **K1504790**. **Please verify the following information and notify me of any corrections as soon as possible.**

The estimated completion date for this work is: 6/3/15

Client: Teck American Incorporated
Project: Bossburg Soil/Sediment

PO Number: UCR-CAS-D21-14

EDD Required: No

Tier: V

Report To: Dave Enos
Teck American Incorporated
501 North Riverpoint Blvd., Suite 300
Spokane, WA 99202

Billing Address: Kris McCaig
Teck American Incorporated
501 North Riverpoint Blvd., Suite 300
Spokane, WA 99202

Comments:

Thank you for your business!

A - Test is Authorized

H - Test is On Hold

HP - Test is On Hold
Pending InputP - Test is Authorized for
Prep Only

C - Test has been Cancelled

* - Test has assigned QC

				6010C Metals T	6020A Metals T	7470A Hg T	Archive Archive RT
K1504790-001	SDU-07-ER-B-20150504	Aqueous Equip Blank	5/ 4/15 1527	A	A	A	A
K1504790-002	SDU-04-ER-A-20150504	Aqueous Equip Blank	5/ 4/15 1800	A	A	A	A
K1504790-003	SDU-04-ER-D-20150504	Aqueous Equip Blank	5/ 4/15 1805	A	A	A	A
K1504790-004	SDU-08-ER-A-20150505	Aqueous Equip Blank	5/ 5/15 1730	A	A	A	A
K1504790-005	UDU-06-ER-A-20150506	Aqueous Equip Blank	5/ 6/15 1735	A	A	A	A
K1504790-006	SDU-07-ER-C-20150506	Aqueous Equip Blank	5/ 6/15 1740	A	A	A	A
K1504790-007	SDU-08-ER-D-20150506	Aqueous Equip Blank	5/ 6/15 1745	A	A	A	A
K1504790-008	UDU-06-ER-B-20150507	Aqueous Equip Blank	5/ 7/15 1304	A	A	A	A
K1504790-009	UDU-06-ER-A-20150507	Aqueous Equip Blank	5/ 7/15 1700	A	A	A	A
K1504790-010	UDU-06-ER-C-20150507	Aqueous Equip Blank	5/ 7/15 1705	A	A	A	A

Test Comments:

Group	Test/Method	Samples	Comments
Metals	7470A/Hg T	1-10	Hg
Metals	6010C/Metals T	1-10	Ca,Mg,Fe,K,Na
Metals	6020A/Metals T	1-10	Al,Sb,As,Ba,Be,Cd,Cr,Co,Cu,Pb,Mn,Ni,Se,Ag,Tl,V,Zn



Confirmation of Sample Receipt

To:	Dave Enos	From:	Jeff Christian
Email:	dave.enos@teck.com	Email:	Jeff.Christian@alsglobal.com
Fax:	509-459-4400	Fax:	360-636-1068
Phone:	509-623-4505	Phone:	360-577-7222 x3316

Samples for analysis have been received by ALS Environmental on 5/ 7 - 18/15 and assigned our Service Request number **K1504895**. **Please verify the following information and notify me of any corrections as soon as possible.**

The estimated completion date for this work is: 6/4/15

Client: Teck American Incorporated
Project: Bossburg Rinsate Blanks

PO Number: UCR-CAS-D21-14

EDD Required: No

Tier: V

Report To: Dave Enos
 Teck American Incorporated
 501 North Riverpoint Blvd., Suite 300
 Spokane, WA 99202

Billing Address: Kris McCaig
 Teck American Incorporated
 501 North Riverpoint Blvd., Suite 300
 Spokane, WA 99202

Comments:

Thank you for your business!

A - Test is Authorized

H - Test is On Hold

HP - Test is On Hold
Pending InputP - Test is Authorized for
Prep Only

C - Test has been Cancelled

* - Test has assigned QC

				6010C Metals T	6020A Metals T	7470A Hg T	Archive Archive RT
K1504895-001	Experimental Blank-2mm-05072015	Aqueous Equip Blank	5/ 7/15	A	A	A	A
K1504895-002	Experimental Blank-150um-05072015	Aqueous Equip Blank	5/ 7/15	A	A	A	A
K1504895-003	Experimental Blank-250um-05072015	Aqueous Equip Blank	5/ 7/15	A	A	A	A
K1504895-004	Experimental Blank-2mm-05082015	Aqueous Equip Blank	5/ 8/15	A	A	A	A
K1504895-005	Experimental Blank-250um-05082015	Aqueous Equip Blank	5/ 8/15	A	A	A	A
K1504895-006	Experimental Blank-2mm-05112015	Aqueous Equip Blank	5/11/15	A	A	A	A
K1504895-007	Experimental Blank-150um-05112015	Aqueous Equip Blank	5/11/15	A	A	A	A
K1504895-008	Experimental Blank-150um-05122015	Aqueous Equip Blank	5/12/15	A	A	A	A
K1504895-009	Experimental Blank-2mm-05122015	Aqueous Equip Blank	5/12/15	A	A	A	A
K1504895-010	Experimental Blank-2mm-05132015	Aqueous Equip Blank	5/13/15	A	A	A	A
K1504895-011	Experimental Blank-250um-05132015	Aqueous Equip Blank	5/13/15	A	A	A	A
K1504895-012	Experimental Blank-2mm-05142015	Aqueous Equip Blank	5/14/15	A	A	A	A
K1504895-013	Experimental Blank-250um-05142015	Aqueous Equip Blank	5/14/15	A	A	A	A
K1504895-014	Experimental Blank-2mm-05152015	Aqueous Equip Blank	5/15/15	A	A	A	A

				6010C Metals T	6020A Metals T	7470A Hg T	Archive Archive RT
K1504895-015	Experimental Blank-250um-05152015	Aqueous Equip Blank	5/15/15	A	A	A	A
K1504895-016	Experimental Blank-150um-05182015	Aqueous Equip Blank	5/18/15	A	A	A	A
K1504895-017	Experimental Blank-2mm-05182015	Aqueous Equip Blank	5/18/15	A	A	A	A

Test Comments:

Group	Test/Method	Samples	Comments
Metals	7470A/Hg T	1-17	Hg
Metals	6010C/Metals T	1-17	Ca,Mg,Fe,K,Na
Metals	6020A/Metals T	1-17	Al,Sb,As,Ba,Be,Cd,Cr,Co,Cu,Pb,Mn,Ni,Se,Ag,Tl,V,Zn



Confirmation of Sample Receipt

To:	Dave Enos	From:	Jeff Christian
Email:	dave.enos@teck.com	Email:	Jeff.Christian@alsglobal.com
Fax:	509-459-4400	Fax:	360-636-1068
Phone:	509-623-4505	Phone:	360-577-7222 x3316

Samples for analysis have been received by ALS Environmental on 5/ 8/15 and assigned our Service Request number **K1504923**. **Please verify the following information and notify me of any corrections as soon as possible.**

The estimated completion date for this work is: **6/5/15**

Client: Teck American Incorporated
Project: Bossburg Soil/Sediment

PO Number: UCR-CAS-D21-14

EDD Required: No

Tier: V

Report To: Dave Enos
Teck American Incorporated
501 North Riverpoint Blvd., Suite 300
Spokane, WA 99202

Billing Address: Kris McCaig
Teck American Incorporated
501 North Riverpoint Blvd., Suite 300
Spokane, WA 99202

Comments: (1) Samples -013 and -019 are EPA Splits. (2) Sample -025 is a Field Split to create -028 (BOSS-019). Note that the split will be done on the air dried sample.

Thank you for your business!

A - Test is Authorized

H - Test is On Hold

HP - Test is On Hold
Pending InputP - Test is Authorized for
Prep Only

C - Test has been Cancelled

* - Test has assigned QC

				160.3 Modified TS	160.3 Modified TS-Air Dried	6010C Metals T	6020A IVBA Metals T	6020A Metals T	7062 As T	7471B Hg	7742 Se T	9045D pH	Archive Archive 4C	ASTM D4129-05 Modified TOC	PSEP PS PSEP PartSizeCB
K1504923-001	SDU-08-COR-01-001	Sediment	5/6/15 1200	A								A	A		A
K1504923-002	SDU-08-COR-01-001-2mm	Sediment	5/6/15 1200		A	HP		HP	H	HP	H		A	HP	
K1504923-003	SDU-08-COR-01-001-250um	Sediment	5/6/15 1200		A	HP	HP	HP	H	HP	H		A		
K1504923-004	SDU-08-COR-01-002	Sediment	5/6/15 1205	A								A	A		A
K1504923-005	SDU-08-COR-01-002-2mm	Sediment	5/6/15 1205		A	HP		HP	H	HP	H		A	HP	
K1504923-006	SDU-08-COR-01-002-250um	Sediment	5/6/15 1205		A	HP	HP	HP	H	HP	H		A		
K1504923-007	SDU-08-COR-01-003	Sediment	5/6/15 1210	A								A	A		A
K1504923-008	SDU-08-COR-01-003-2mm	Sediment	5/6/15 1210		A	HP		HP	H	HP	H		A	HP	
K1504923-009	SDU-08-COR-01-003-250um	Sediment	5/6/15 1210		A	HP	HP	HP	H	HP	H		A		
K1504923-010	SDU-08-COR-02-001	Sediment	5/6/15 1340	A								A	A		A
K1504923-011	SDU-08-COR-02-001-2mm	Sediment	5/6/15 1340		A	HP		HP	H	HP	H		A	HP	
K1504923-012	SDU-08-COR-02-001-250um	Sediment	5/6/15 1340		A	HP	HP	HP	H	HP	H		A		
K1504923-013	SDU-08-COR-02-002	Sediment	5/6/15 1345	A								A	A		A
K1504923-014	SDU-08-COR-02-002-2mm	Sediment	5/6/15 1345		A	HP		HP	H	HP	H		A	HP	

				Sieve Sieve
K1504923-001	SDU-08-COR-01-001	Sediment	5/ 6/15 1200	A
K1504923-002	SDU-08-COR-01-001-2mm	Sediment	5/ 6/15 1200	A
K1504923-003	SDU-08-COR-01-001-250um	Sediment	5/ 6/15 1200	
K1504923-004	SDU-08-COR-01-002	Sediment	5/ 6/15 1205	A
K1504923-005	SDU-08-COR-01-002-2mm	Sediment	5/ 6/15 1205	A
K1504923-006	SDU-08-COR-01-002-250um	Sediment	5/ 6/15 1205	
K1504923-007	SDU-08-COR-01-003	Sediment	5/ 6/15 1210	A
K1504923-008	SDU-08-COR-01-003-2mm	Sediment	5/ 6/15 1210	A
K1504923-009	SDU-08-COR-01-003-250um	Sediment	5/ 6/15 1210	
K1504923-010	SDU-08-COR-02-001	Sediment	5/ 6/15 1340	A
K1504923-011	SDU-08-COR-02-001-2mm	Sediment	5/ 6/15 1340	A
K1504923-012	SDU-08-COR-02-001-250um	Sediment	5/ 6/15 1340	
K1504923-013	SDU-08-COR-02-002	Sediment	5/ 6/15 1345	A
K1504923-014	SDU-08-COR-02-002-2mm	Sediment	5/ 6/15 1345	A

				160.3 Modified TS	160.3 Modified TS-Air Dried	6010C Metals T	6020A IVBA Metals T	6020A Metals T	7062 As T	7471B Hg	7742 Se T	9045D pH	Archive Archive 4C	ASTM D4129-05 Modified TOC	PSEP PS PSEP PartSizeCB
K1504923-015	SDU-08-COR-02-002-250um	Sediment	5/6/15 1345		A	HP	HP	HP	H	HP	H		A		
K1504923-016	SDU-08-COR-02-003	Sediment	5/6/15 1350	A								A	A		A
K1504923-017	SDU-08-COR-02-003-2mm	Sediment	5/6/15 1350		A	HP		HP	H	HP	H		A	HP	
K1504923-018	SDU-08-COR-02-003-250um	Sediment	5/6/15 1350		A	HP	HP	HP	H	HP	H		A		
K1504923-019	SDU-08-COR-03-001	Sediment	5/6/15 1305	A								A	A		A
K1504923-020	SDU-08-COR-03-001-2mm	Sediment	5/6/15 1305		A	HP		HP	H	HP	H		A	HP	
K1504923-021	SDU-08-COR-03-001-250um	Sediment	5/6/15 1305		A	HP	HP	HP	H	HP	H		A		
K1504923-022	SDU-08-COR-03-002	Sediment	5/6/15 1310	A								A	A		A
K1504923-023	SDU-08-COR-03-002-2mm	Sediment	5/6/15 1310		A	HP		HP	H	HP	H		A	HP	
K1504923-024	SDU-08-COR-03-002-250um	Sediment	5/6/15 1310		A	HP	HP	HP	H	HP	H		A		
K1504923-025	SDU-08-COR-03-003	Sediment	5/6/15 1315	A								A	A		A
K1504923-026	SDU-08-COR-03-003-2mm	Sediment	5/6/15 1315		A	HP		HP	H	HP	H		A	HP	
K1504923-027	SDU-08-COR-03-003-250um	Sediment	5/6/15 1315		A	HP	HP	HP	H	HP	H		A		
K1504923-028	BOSS-019	Sediment	5/6/15 1315	A									A		A

				Sieve Sieve
K1504923-015	SDU-08-COR-02-002-250um	Sediment	5/ 6/15 1345	
K1504923-016	SDU-08-COR-02-003	Sediment	5/ 6/15 1350	A
K1504923-017	SDU-08-COR-02-003-2mm	Sediment	5/ 6/15 1350	A
K1504923-018	SDU-08-COR-02-003-250um	Sediment	5/ 6/15 1350	
K1504923-019	SDU-08-COR-03-001	Sediment	5/ 6/15 1305	A
K1504923-020	SDU-08-COR-03-001-2mm	Sediment	5/ 6/15 1305	A
K1504923-021	SDU-08-COR-03-001-250um	Sediment	5/ 6/15 1305	
K1504923-022	SDU-08-COR-03-002	Sediment	5/ 6/15 1310	A
K1504923-023	SDU-08-COR-03-002-2mm	Sediment	5/ 6/15 1310	A
K1504923-024	SDU-08-COR-03-002-250um	Sediment	5/ 6/15 1310	
K1504923-025	SDU-08-COR-03-003	Sediment	5/ 6/15 1315	A
K1504923-026	SDU-08-COR-03-003-2mm	Sediment	5/ 6/15 1315	A
K1504923-027	SDU-08-COR-03-003-250um	Sediment	5/ 6/15 1315	
K1504923-028	BOSS-019	Sediment	5/ 6/15 1315	A

				160.3 Modified TS	160.3 Modified TS-Air Dried	6010C Metals T	6020A IVBA Metals T	6020A Metals T	7062 As T	7471B Hg	7742 Se T	9045D pH	Archive Archive 4C	ASTM D4129-05 Modified TOC	PSEP PS PSEP PartSizeCB
K1504923-029	BOSS-019-2mm	Sediment	5/6/15 1315		A	HP		HP	H	HP	H		A	HP	
K1504923-030	BOSS-019-250um	Sediment	5/6/15 1315		A	HP	HP	HP	H	HP	H		A		

Test Comments:

Group	Test/Method	Samples	Comments
Metals	7742/Se T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	(1) Analysis performed if Se < 6020 MRL.
Metals	7062/As T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	(1) Analysis performed if As < 6020 MRL.
GenChem	Sieve/Sieve	1-2, 4-5, 7-8, 10-11, 13-14, 16-17, 19-20, 22-23, 25	(1) Sieving of 2 mm fraction from ISM to generate a 250 um fraction.
SMO	Archive/Archive 4C	1-30	(1) Archive charges start 30 days after release of analytical report. (2) Charge is \$3/container/month. If 5 gallon buckets are archived, charge is \$14/bucket/month.
Metals	6010C/Metals T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	Ca, Mg, Fe, K, Na
Metals	6020A/Metals T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	Al, Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Mn, Ni, Se, Ag, Tl, V, Zn
Metals	7471B/Hg	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	Hg
Metals	6020A/IVBA Metals T	3, 6, 9, 12, 15, 18, 21, 24, 27, 30	(1) As & Pb.

K1504923-029	BOSS-019-2mm	Sediment	5/ 6/15 1315	A
K1504923-030	BOSS-019-250um	Sediment	5/ 6/15 1315	
				Sieve Sieve



Confirmation of Sample Receipt

To:	Dave Enos	From:	Jeff Christian
Email:	dave.enos@teck.com	Email:	Jeff.Christian@alsglobal.com
Fax:	509-459-4400	Fax:	360-636-1068
Phone:	509-623-4505	Phone:	360-577-7222 x3316

Samples for analysis have been received by ALS Environmental on 5/ 8/15 and assigned our Service Request number **K1504927**. **Please verify the following information and notify me of any corrections as soon as possible.**

The estimated completion date for this work is: **6/5/15**

Client: Teck American Incorporated
Project: Bossburg Soil/Sediment

PO Number: UCR-CAS-D21-14

EDD Required: No

Tier: V

Report To: Dave Enos
 Teck American Incorporated
 501 North Riverpoint Blvd., Suite 300
 Spokane, WA 99202

Billing Address: Kris McCaig
 Teck American Incorporated
 501 North Riverpoint Blvd., Suite 300
 Spokane, WA 99202

Comments: Samples -004 and -025 are EPA Splits and sample -022 is a Field Split to create -028 (BOSS-013).

Thank you for your business!

A - Test is Authorized

H - Test is On Hold

HP - Test is On Hold
Pending Input

P - Test is Authorized for
Prep Only

C - Test has been Cancelled

* - Test has assigned QC

				160.3 Modified TS	160.3 Modified TS-Air Dried	6010C Metals T	6020A IVBA Metals T	6020A Metals T	7062 As T	7471B Hg	7742 Se T	9045D pH	Archive Archive 4C	ASTM D4129-05 Modified TOC	PSEP PS PSEP PartSizeCB
K1504927-001	SDU-07-COR-01-001	Sediment	5/6/15 1006	A								A	A		A
K1504927-002	SDU-07-COR-01-001-2mm	Sediment	5/6/15 1006		A	HP		HP	H	HP	H		A	HP	
K1504927-003	SDU-07-COR-01-001-250um	Sediment	5/6/15 1006		A	HP	HP	HP	H	HP	H		A		
K1504927-004	SDU-07-COR-01-002	Sediment	5/6/15 1011	A								A	A		A
K1504927-005	SDU-07-COR-01-002-2mm	Sediment	5/6/15 1011		A	HP		HP	H	HP	H		A	HP	
K1504927-006	SDU-07-COR-01-002-250um	Sediment	5/6/15 1011		A	HP	HP	HP	H	HP	H		A		
K1504927-007	SDU-07-COR-01-003	Sediment	5/6/15 1017	A								A	A		A
K1504927-008	SDU-07-COR-01-003-2mm	Sediment	5/6/15 1017		A	HP		HP	H	HP	H		A	HP	
K1504927-009	SDU-07-COR-01-003-250um	Sediment	5/6/15 1017		A	HP	HP	HP	H	HP	H		A		
K1504927-010	SDU-07-COR-02-001	Sediment	5/6/15 1136	A								A	A		A
K1504927-011	SDU-07-COR-02-001-2mm	Sediment	5/6/15 1136		A	HP		HP	H	HP	H		A	HP	
K1504927-012	SDU-07-COR-02-001-250um	Sediment	5/6/15 1136		A	HP	HP	HP	H	HP	H		A		
K1504927-013	SDU-07-COR-02-002	Sediment	5/6/15 1140	A								A	A		A
K1504927-014	SDU-07-COR-02-002-2mm	Sediment	5/6/15 1140		A	HP		HP	H	HP	H		A	HP	

				Sieve Sieve
K1504927-001	SDU-07-COR-01-001	Sediment	5/ 6/15 1006	A
K1504927-002	SDU-07-COR-01-001-2mm	Sediment	5/ 6/15 1006	A
K1504927-003	SDU-07-COR-01-001-250um	Sediment	5/ 6/15 1006	
K1504927-004	SDU-07-COR-01-002	Sediment	5/ 6/15 1011	A
K1504927-005	SDU-07-COR-01-002-2mm	Sediment	5/ 6/15 1011	A
K1504927-006	SDU-07-COR-01-002-250um	Sediment	5/ 6/15 1011	
K1504927-007	SDU-07-COR-01-003	Sediment	5/ 6/15 1017	A
K1504927-008	SDU-07-COR-01-003-2mm	Sediment	5/ 6/15 1017	A
K1504927-009	SDU-07-COR-01-003-250um	Sediment	5/ 6/15 1017	
K1504927-010	SDU-07-COR-02-001	Sediment	5/ 6/15 1136	A
K1504927-011	SDU-07-COR-02-001-2mm	Sediment	5/ 6/15 1136	A
K1504927-012	SDU-07-COR-02-001-250um	Sediment	5/ 6/15 1136	
K1504927-013	SDU-07-COR-02-002	Sediment	5/ 6/15 1140	A
K1504927-014	SDU-07-COR-02-002-2mm	Sediment	5/ 6/15 1140	A

				160.3 Modified TS	160.3 Modified TS-Air Dried	6010C Metals T	6020A IVBA Metals T	6020A Metals T	7062 As T	7471B Hg	7742 Se T	9045D pH	Archive Archive 4C	ASTM D4129-05 Modified TOC	PSEP PS PSEP PartSizeCB
K1504927-015	SDU-07-COR-02-002-250um	Sediment	5/6/15 1140		A	HP	HP	HP	H	HP	H		A		
K1504927-016	SDU-07-COR-02-003	Sediment	5/6/15 1144	A								A	A		A
K1504927-017	SDU-07-COR-02-003-2mm	Sediment	5/6/15 1144		A	HP		HP	H	HP	H		A	HP	
K1504927-018	SDU-07-COR-02-003-250um	Sediment	5/6/15 1144		A	HP	HP	HP	H	HP	H		A		
K1504927-019	SDU-07-COR-03-001	Sediment	5/6/15 1059	A								A	A		A
K1504927-020	SDU-07-COR-03-001-2mm	Sediment	5/6/15 1059		A	HP		HP	H	HP	H		A	HP	
K1504927-021	SDU-07-COR-03-001-250um	Sediment	5/6/15 1059		A	HP	HP	HP	H	HP	H		A		
K1504927-022	SDU-07-COR-03-002	Sediment	5/6/15 1102	A								A	A		A
K1504927-023	SDU-07-COR-03-002-2mm	Sediment	5/6/15 1102		A	HP		HP	H	HP	H		A	HP	
K1504927-024	SDU-07-COR-03-002-250um	Sediment	5/6/15 1102		A	HP	HP	HP	H	HP	H		A		
K1504927-025	SDU-07-COR-03-003	Sediment	5/6/15 1110	A								A	A		A
K1504927-026	SDU-07-COR-03-003-2mm	Sediment	5/6/15 1110		A	HP		HP	H	HP	H		A	HP	
K1504927-027	SDU-07-COR-03-003-250um	Sediment	5/6/15 1110		A	HP	HP	HP	H	HP	H		A		
K1504927-028	BOSS-013	Sediment	5/6/15 1102	A								A	A		A

				Sieve Sieve
K1504927-015	SDU-07-COR-02-002-250um	Sediment	5/ 6/15 1140	
K1504927-016	SDU-07-COR-02-003	Sediment	5/ 6/15 1144	A
K1504927-017	SDU-07-COR-02-003-2mm	Sediment	5/ 6/15 1144	A
K1504927-018	SDU-07-COR-02-003-250um	Sediment	5/ 6/15 1144	
K1504927-019	SDU-07-COR-03-001	Sediment	5/ 6/15 1059	A
K1504927-020	SDU-07-COR-03-001-2mm	Sediment	5/ 6/15 1059	A
K1504927-021	SDU-07-COR-03-001-250um	Sediment	5/ 6/15 1059	
K1504927-022	SDU-07-COR-03-002	Sediment	5/ 6/15 1102	A
K1504927-023	SDU-07-COR-03-002-2mm	Sediment	5/ 6/15 1102	A
K1504927-024	SDU-07-COR-03-002-250um	Sediment	5/ 6/15 1102	
K1504927-025	SDU-07-COR-03-003	Sediment	5/ 6/15 1110	A
K1504927-026	SDU-07-COR-03-003-2mm	Sediment	5/ 6/15 1110	A
K1504927-027	SDU-07-COR-03-003-250um	Sediment	5/ 6/15 1110	
K1504927-028	BOSS-013	Sediment	5/ 6/15 1102	A

				160.3 Modified TS											
				160.3 Modified TS-Air Dried											
				6010C Metals T											
				6020A IVBA Metals T											
				6020A Metals T											
				7062 As T											
				7471B Hg											
				7742 Se T											
				9045D pH											
				Archive Archive 4C											
				ASTM D4129-05 Modified TOC											
				PSEP PS PSEP PartSizeCB											
K1504927-029	BOSS-013-2mm	Sediment	5/6/15 1102		A	HP		HP	H	HP	H		A	HP	
K1504927-030	BOSS-013-250um	Sediment	5/6/15 1102		A	HP	HP	HP	H	HP	H		A		

Test Comments:

Group	Test/Method	Samples	Comments
Metals	7742/Se T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	(1) Analysis performed if Se < 6020 MRL.
Metals	7062/As T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	(1) Analysis performed if As < 6020 MRL.
GenChem	Sieve/Sieve	1-2, 4-5, 7-8, 10-11, 13-14, 16-17, 19-20, 22-23, 25	(1) Sieving of 2 mm fraction from ISM to generate a 250 um fraction.
SMO	Archive/Archive 4C	1-30	(1) Archive charges start 30 days after release of analytical report. (2) Charge is \$3/container/month. If 5 gallon buckets are archived, charge is \$14/bucket/month.
Metals	6010C/Metals T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	Ca, Mg, Fe, K, Na
Metals	6020A/Metals T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	Al, Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Mn, Ni, Se, Ag, Tl, V, Zn
Metals	7471B/Hg	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26	Hg
Metals	6020A/IVBA Metals T	3, 6, 9, 12, 15, 18, 21, 24, 27, 30	(1) As & Pb.

K1504927-029	BOSS-013-2mm	Sediment	5/ 6/15 1102	A
K1504927-030	BOSS-013-250um	Sediment	5/ 6/15 1102	
				Sieve Sieve



Confirmation of Sample Receipt

To:	Dave Enos	From:	Jeff Christian
Email:	dave.enos@teck.com	Email:	Jeff.Christian@alsglobal.com
Fax:	509-459-4400	Fax:	360-636-1068
Phone:	509-623-4505	Phone:	360-577-7222 x3316

Samples for analysis have been received by ALS Environmental on 5/ 8/15 and assigned our Service Request number **K1504933**. **Please verify the following information and notify me of any corrections as soon as possible.**

The estimated completion date for this work is: **6/5/15**

Client: Teck American Incorporated
Project: Bossburg Soil/Sediment

PO Number: UCR-CAS-D21-14

EDD Required: No

Tier: V

Report To: Dave Enos
 Teck American Incorporated
 501 North Riverpoint Blvd., Suite 300
 Spokane, WA 99202

Billing Address: Kris McCaig
 Teck American Incorporated
 501 North Riverpoint Blvd., Suite 300
 Spokane, WA 99202

Comments:

Thank you for your business!

A - Test is Authorized

H - Test is On Hold

HP - Test is On Hold
Pending Input

P - Test is Authorized for
Prep Only

C - Test has been Cancelled

* - Test has assigned QC

				160.3 Modified TS	160.3 Modified TS-Air Dried	6010C Metals T	6020A IVBA Metals T	6020A Metals T	7062 As T	7471B Hg	7742 Se T	9045D pH	Archive Archive 4C	ASTM D4129-05 Modified TOC	ISM Sieve ISM Sieve
K1504933-001	SDU-07-ICS-C	Sediment	5/ 7/15 0803	A								A	A		A
K1504933-002	SDU-07-ICS-C-2mm	Sediment	5/ 7/15 0803		A	HP		HP	H	HP	H		A	HP	
K1504933-003	SDU-07-ICS-C-250um	Sediment	5/ 7/15 0803		A	HP	HP	HP	H	HP	H		A		
K1504933-004	SDU-08-ICS	Sediment	5/ 7/15 0826	A								A	A		A
K1504933-005	SDU-08-ICS-2mm	Sediment	5/ 7/15 0826		A	HP		HP	H	HP	H		A	HP	
K1504933-006	SDU-08-ICS-250um	Sediment	5/ 7/15 0826		A	HP	HP	HP	H	HP	H		A		

Test Comments:

Group	Test/Method	Samples	Comments
Metals	7742/Se T	2-3, 5-6	(1) Analysis performed if Se < 6020 MRL.
Metals	7062/As T	2-3, 5-6	(1) Analysis performed if As < 6020 MRL.
GenChem	Sieve/Sieve	1-2, 4-5	(1) Sieving of 2 mm fraction from ISM to generate a 250 um fraction.
SMO	Archive/Archive 4C	1-6	(1) Archive charges start 30 days after release of analytical report. (2) Charge is \$3/container/month. If 5 gallon buckets are archived, charge is \$14/bucket/month.
Metals	6010C/Metals T	2-3, 5-6	Ca, Mg, Fe, K, Na
Metals	6020A/Metals T	2-3, 5-6	Al, Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Mn, Ni, Se, Ag, Tl, V, Zn
Metals	7471B/Hg	2-3, 5-6	Hg
Metals	6020A/IVBA Metals T	3, 6	(1) As & Pb.

				ISM Subsample ISM Subsample	PSEP PS PSEP PartSizeCB	Sieve Sieve
K1504933-001	SDU-07-ICS-C	Sediment	5/ 7/15 0803	A	A	A
K1504933-002	SDU-07-ICS-C-2mm	Sediment	5/ 7/15 0803			A
K1504933-003	SDU-07-ICS-C-250um	Sediment	5/ 7/15 0803			
K1504933-004	SDU-08-ICS	Sediment	5/ 7/15 0826	A	A	A
K1504933-005	SDU-08-ICS-2mm	Sediment	5/ 7/15 0826			A
K1504933-006	SDU-08-ICS-250um	Sediment	5/ 7/15 0826			



Confirmation of Sample Receipt

To:	Dave Enos	From:	Jeff Christian
Email:	dave.enos@teck.com	Email:	Jeff.Christian@alsglobal.com
Fax:	509-459-4400	Fax:	360-636-1068
Phone:	509-623-4505	Phone:	360-577-7222 x3316

Samples for analysis have been received by ALS Environmental on 5/ 9/15 and assigned our Service Request number **K1504985**. **Please verify the following information and notify me of any corrections as soon as possible.**

The estimated completion date for this work is: **6/6/15**

Client: Teck American Incorporated
Project: Bossburg Soil/Sediment

PO Number: UCR-CAS-D21-14

EDD Required: Yes

Tier: V

Report To: Dave Enos
Teck American Incorporated
501 North Riverpoint Blvd., Suite 300
Spokane, WA 99202

Billing Address: Kris McCaig
Teck American Incorporated
501 North Riverpoint Blvd., Suite 300
Spokane, WA 99202

Comments: Sample -001 is an EPA Split. Samples -016,-019 and -025 are Field Splits to create -028 (BOSS-014), -031 (BOSS-015), and -034 (BOSS-016) respectively.

Thank you for your business!

A - Test is Authorized

H - Test is On Hold

HP - Test is On Hold Pending Input

P - Test is Authorized for Prep Only

C - Test has been Cancelled

* - Test has assigned QC

				160.3 Modified TS	160.3 Modified TS-Air Dried	6010C Metals T	6020A IVBA Metals T	6020A Metals T	7062 As T	7471B Hg	7742 Se T	9045D pH	9080 NH3 CEC	Archive Archive 4C	ASTM D4129-05 Modified TOC
K1504985-001	UDU-06-COR-01-001	Soil	5/ 7/15 1445	A								A		A	
K1504985-002	UDU-06-COR-01-001-2mm	Soil	5/ 7/15 1445		A	HP		HP	H	HP	H		HP	A	HP
K1504985-003	UDU-06-COR-01-001-150um	Soil	5/ 7/15 1445		A	HP	HP	HP	H	HP	H			A	
K1504985-004	UDU-06-COR-01-002	Soil	5/ 7/15 1450	A								A		A	
K1504985-005	UDU-06-COR-01-002-2mm	Soil	5/ 7/15 1450		A	HP		HP	H	HP	H		HP	A	HP
K1504985-006	UDU-06-COR-01-002-150um	Soil	5/ 7/15 1450		A	HP	HP	HP	H	HP	H			A	
K1504985-007	UDU-06-COR-01-003	Soil	5/ 7/15 1455	A								A		A	
K1504985-008	UDU-06-COR-01-003-2mm	Soil	5/ 7/15 1455		A	HP		HP	H	HP	H		HP	A	HP
K1504985-009	UDU-06-COR-01-003-150um	Soil	5/ 7/15 1455		A	HP	HP	HP	H	HP	H			A	
K1504985-010	UDU-06-COR-02-001	Soil	5/ 7/15 1505	A								A		A	
K1504985-011	UDU-06-COR-02-001-2mm	Soil	5/ 7/15 1505		A	HP		HP	H	HP	H		HP	A	HP
K1504985-012	UDU-06-COR-02-001-150um	Soil	5/ 7/15 1505		A	HP	HP	HP	H	HP	H			A	
K1504985-013	UDU-06-COR-02-002	Soil	5/ 7/15 1510	A								A		A	
K1504985-014	UDU-06-COR-02-002-2mm	Soil	5/ 7/15 1510		A	HP		HP	H	HP	H		HP	A	HP

				PSEP PS PSEP PartSizeCB	Sieve Sieve
K1504985-001	UDU-06-COR-01-001	Soil	5/ 7/15 1445	A	A
K1504985-002	UDU-06-COR-01-001-2mm	Soil	5/ 7/15 1445		A
K1504985-003	UDU-06-COR-01-001-150um	Soil	5/ 7/15 1445		A
K1504985-004	UDU-06-COR-01-002	Soil	5/ 7/15 1450	A	A
K1504985-005	UDU-06-COR-01-002-2mm	Soil	5/ 7/15 1450		A
K1504985-006	UDU-06-COR-01-002-150um	Soil	5/ 7/15 1450		A
K1504985-007	UDU-06-COR-01-003	Soil	5/ 7/15 1455	A	A
K1504985-008	UDU-06-COR-01-003-2mm	Soil	5/ 7/15 1455		A
K1504985-009	UDU-06-COR-01-003-150um	Soil	5/ 7/15 1455		A
K1504985-010	UDU-06-COR-02-001	Soil	5/ 7/15 1505	A	A
K1504985-011	UDU-06-COR-02-001-2mm	Soil	5/ 7/15 1505		A
K1504985-012	UDU-06-COR-02-001-150um	Soil	5/ 7/15 1505		A
K1504985-013	UDU-06-COR-02-002	Soil	5/ 7/15 1510	A	A
K1504985-014	UDU-06-COR-02-002-2mm	Soil	5/ 7/15 1510		A

				160.3 Modified TS	160.3 Modified TS-Air Dried	6010C Metals T	6020A IVBA Metals T	6020A Metals T	7062 As T	7471B Hg	7742 Se T	9045D pH	9080 NH3 CEC	Archive Archive 4C	ASTM D4129-05 Modified TOC
K1504985-015	UDU-06-COR-02-002-150um	Soil	5/ 7/15 1510		A	HP	HP	HP	H	HP	H			A	
K1504985-016	UDU-06-COR-02-003	Soil	5/ 7/15 1515	A								A		A	
K1504985-017	UDU-06-COR-02-003-2mm	Soil	5/ 7/15 1515		A	HP		HP	H	HP	H		HP	A	HP
K1504985-018	UDU-06-COR-02-003-150um	Soil	5/ 7/15 1515		A	HP	HP	HP	H	HP	H			A	
K1504985-019	UDU-06-COR-03-001	Soil	5/ 7/15 1530	A								A		A	
K1504985-020	UDU-06-COR-03-001-2mm	Soil	5/ 7/15 1530		A	HP		HP	H	HP	H		HP	A	HP
K1504985-021	UDU-06-COR-03-001-150um	Soil	5/ 7/15 1530		A	HP	HP	HP	H	HP	H			A	
K1504985-022	UDU-06-COR-03-002	Soil	5/ 7/15 1535	A								A		A	
K1504985-023	UDU-06-COR-03-002-2mm	Soil	5/ 7/15 1535		A	HP		HP	H	HP	H		HP	A	HP
K1504985-024	UDU-06-COR-03-002-150um	Soil	5/ 7/15 1535		A	HP	HP	HP	H	HP	H			A	
K1504985-025	UDU-06-COR-03-003	Soil	5/ 7/15 1540	A								A		A	
K1504985-026	UDU-06-COR-03-003-2mm	Soil	5/ 7/15 1540		A	HP		HP	H	HP	H		HP	A	HP
K1504985-027	UDU-06-COR-03-003-150um	Soil	5/ 7/15 1540		A	HP	HP	HP	H	HP	H			A	
K1504985-028	BOSS-014	Soil	5/ 7/15 1515	A								A		A	

				PSEP PS PSEP PartSizeCB	Sieve Sieve
K1504985-015	UDU-06-COR-02-002-150um	Soil	5/ 7/15 1510		A
K1504985-016	UDU-06-COR-02-003	Soil	5/ 7/15 1515	A	A
K1504985-017	UDU-06-COR-02-003-2mm	Soil	5/ 7/15 1515		A
K1504985-018	UDU-06-COR-02-003-150um	Soil	5/ 7/15 1515		A
K1504985-019	UDU-06-COR-03-001	Soil	5/ 7/15 1530	A	A
K1504985-020	UDU-06-COR-03-001-2mm	Soil	5/ 7/15 1530		A
K1504985-021	UDU-06-COR-03-001-150um	Soil	5/ 7/15 1530		A
K1504985-022	UDU-06-COR-03-002	Soil	5/ 7/15 1535	A	A
K1504985-023	UDU-06-COR-03-002-2mm	Soil	5/ 7/15 1535		A
K1504985-024	UDU-06-COR-03-002-150um	Soil	5/ 7/15 1535		A
K1504985-025	UDU-06-COR-03-003	Soil	5/ 7/15 1540	A	A
K1504985-026	UDU-06-COR-03-003-2mm	Soil	5/ 7/15 1540		A
K1504985-027	UDU-06-COR-03-003-150um	Soil	5/ 7/15 1540		A
K1504985-028	BOSS-014	Soil	5/ 7/15 1515	A	A

				160.3 Modified TS	160.3 Modified TS-Air Dried	6010C Metals T	6020A IVBA Metals T	6020A Metals T	7062 As T	7471B Hg	7742 Se T	9045D pH	9080 NH3 CEC	Archive Archive 4C	ASTM D4129-05 Modified TOC
K1504985-029	BOSS-014-2mm	Soil	5/ 7/15 1515		A	HP		HP	H	HP	H		HP	A	HP
K1504985-030	BOSS-014-150um	Soil	5/ 7/15 1515		A	HP	HP	HP	H	HP	H			A	
K1504985-031	BOSS-015	Soil	5/ 7/15 1530	A								A		A	
K1504985-032	BOSS-015-2mm	Soil	5/ 7/15 1530		A	HP		HP	H	HP	H		HP	A	HP
K1504985-033	BOSS-015-150um	Soil	5/ 7/15 1530		A	HP	HP	HP	H	HP	H			A	
K1504985-034	BOSS-016	Soil	5/ 7/15 1540	A								A		A	
K1504985-035	BOSS-016-2mm	Soil	5/ 7/15 1540		A	HP		HP	H	HP	H		HP	A	HP
K1504985-036	BOSS-016-150um	Soil	5/ 7/15 1540		A	HP	HP	HP	H	HP	H			A	

Test Comments:

Group	Test/Method	Samples	Comments
Metals	7742/Se T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26-	(1) Analysis performed if Se < 6020 MRL.
Metals	7062/As T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26-	(1) Analysis performed if As < 6020 MRL.
GenChem	Sieve/Sieve	1-36	(1) Sieving of 2 mm fraction from ISM to generate a 150 um fraction.
SMO	Archive/Archive 4C	1-36	(1) Archive charges start 30 days after release of analytical report. (2) Charge is \$3/container/month. If 5 gallon buckets are archived, charge is \$14/bucket/month.
Metals	6010C/Metals T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26-	Ca,Fe,Mg,K,Na
Metals	6020A/Metals T	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26-	Al,Sb,As,Ba,Be,Cd,Cr,Co,Cu,Pb,Mn,Ni,Se,Ag,Tl,V,Zn
Metals	7471B/Hg	2-3, 5-6, 8-9, 11-12, 14-15, 17-18, 20-21, 23-24, 26-	Hg
Metals	6020A/IVBA Metals T	3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36	(1) Pb & As only.

				PSEP PS PSEP PartSizeCB	Sieve Sieve
K1504985-029	BOSS-014-2mm	Soil	5/ 7/15 1515		A
K1504985-030	BOSS-014-150um	Soil	5/ 7/15 1515		A
K1504985-031	BOSS-015	Soil	5/ 7/15 1530	A	A
K1504985-032	BOSS-015-2mm	Soil	5/ 7/15 1530		A
K1504985-033	BOSS-015-150um	Soil	5/ 7/15 1530		A
K1504985-034	BOSS-016	Soil	5/ 7/15 1540	A	A
K1504985-035	BOSS-016-2mm	Soil	5/ 7/15 1540		A
K1504985-036	BOSS-016-150um	Soil	5/ 7/15 1540		A



Confirmation of Sample Receipt

To:	Dave Enos	From:	Jeff Christian
Email:	dave.enos@teck.com	Email:	Jeff.Christian@alsglobal.com
Fax:	509-459-4400	Fax:	360-636-1068
Phone:	509-623-4505	Phone:	360-577-7222 x3316

Samples for analysis have been received by ALS Environmental on 5/ 9/15 and assigned our Service Request number **K1505000**. **Please verify the following information and notify me of any corrections as soon as possible.**

The estimated completion date for this work is: 5/22/15

Client: Teck American Incorporated
Project: Bossburg Soil/Sediment

PO Number: UCR-CAS-D21-14

EDD Required: Yes

Tier: II

Report To: Dave Enos
Teck American Incorporated
501 North Riverpoint Blvd., Suite 300
Spokane, WA 99202

Billing Address: Kris McCaig
Teck American Incorporated
501 North Riverpoint Blvd., Suite 300
Spokane, WA 99202

Comments:

Thank you for your business!

A - Test is Authorized

H - Test is On Hold

HP - Test is On Hold
Pending Input

P - Test is Authorized for
Prep Only

C - Test has been Cancelled

* - Test has assigned QC

				6010C Metals T	6010C Metals TCLP	7470A Hg T	7470A Hg TCLP	EPA 1311 TCLP
K1505000-001	IDW Soil/Sed	Soil	5/ 8/15 0746		A		A	A
K1505000-002	IDW Water	Water	5/ 8/15 0805	A		A		

Test Comments:

Group	Test/Method	Samples	Comments
Metals	6010C/Metals T	2	As,Ag,Ba,Cd,Cr,Pb,Se
Metals	6010C/Metals TCLP	1	As,Ag,Ba,Cd,Cr,Pb,Se

Appendix F
XRF Field Reports
(Field Laboratory and In Situ Samples)

Table F-1
Field Laboratory XRF Results
Bossburg Flat Beach Refined Sediment and Soil Study

Station Id	Date Analyzed	Set	Run	Lead (ppm)	Average (ppm)	% Difference	Comments
SDU-01-XRF-01	2015-Apr-21	1	1	199		4.01%	
SDU-01-XRF-01	2015-Apr-21	1	2	185		-3.31%	
SDU-01-XRF-01	2015-Apr-21	1	3	190	191	-0.697%	
SDU-01-XRF-02	2015-Apr-21	1	1	206		-1.25%	
SDU-01-XRF-02	2015-Apr-21	1	2	175		-16.2%	
SDU-01-XRF-02	2015-Apr-21	1	3	245	209	17.4%	
SDU-01-XRF-03	2015-Apr-21	1	1	282		5.35%	
SDU-01-XRF-03	2015-Apr-21	1	2	250		-6.60%	
SDU-01-XRF-03	2015-Apr-21	1	3	271	268	1.25%	
SDU-01-XRF-04	2015-Apr-21	1	1	296		-7.02%	
SDU-01-XRF-04	2015-Apr-21	1	2	337		5.86%	
SDU-01-XRF-04	2015-Apr-21	1	3	322	318	1.15%	
SDU-01-XRF-05	2015-Apr-21	1	1	330		9.39%	
SDU-01-XRF-05	2015-Apr-21	1	2	307		1.77%	
SDU-01-XRF-05	2015-Apr-21	1	3	268	302	-11.2%	
SDU-01-XRF-06	2015-Apr-21	1	1	317		-3.06%	
SDU-01-XRF-06	2015-Apr-21	1	2	322		-1.53%	
SDU-01-XRF-06	2015-Apr-21	1	3	342	327	4.59%	
SDU-01-XRF-07	2015-Apr-21	1	1	448		-0.223%	
SDU-01-XRF-07	2015-Apr-21	1	2	479		6.68%	
SDU-01-XRF-07	2015-Apr-21	1	3	420	449	-6.46%	
SDU-01-XRF-08	2015-Apr-22	1	1	384		-3.19%	
SDU-01-XRF-08	2015-Apr-22	1	2	384		-3.19%	
SDU-01-XRF-08	2015-Apr-22	1	3	422	397	6.39%	
SDU-01-XRF-09	2015-Apr-22	1	1	445		1.37%	
SDU-01-XRF-09	2015-Apr-22	1	2	471		7.29%	
SDU-01-XRF-09	2015-Apr-22	1	3	401	439	-8.66%	
SDU-02-XRF-01	2015-Apr-22	1	1	350		10.4%	
SDU-02-XRF-01	2015-Apr-22	1	2	315		-0.631%	
SDU-02-XRF-01	2015-Apr-22	1	3	286	317	-9.78%	
SDU-02-XRF-02	2015-Apr-22	1	1	338		-11.9%	
SDU-02-XRF-02	2015-Apr-22	1	2	401		4.52%	
SDU-02-XRF-02	2015-Apr-22	1	3	412	384	7.38%	
SDU-02-XRF-03	2015-Apr-22	1	1	366		-2.40%	
SDU-02-XRF-03	2015-Apr-22	1	2	399		6.40%	
SDU-02-XRF-03	2015-Apr-22	1	3	360	375	-4.00%	
SDU-02-XRF-04	2015-Apr-22	1	1	431		4.53%	
SDU-02-XRF-04	2015-Apr-22	1	2	427		3.56%	
SDU-02-XRF-04	2015-Apr-22	1	3	379	412	-8.08%	
SDU-02-XRF-05	2015-Apr-22	1	1	372		-4.70%	

initial 20 samples sent to lab

additional samples sent to lab for confirmation

% Difference = (Lead - Average)/Average

% Difference exceeds criterion of 35%

ppm - parts per million

Table F-1
Field Laboratory XRF Results
Bossburg Flat Beach Refined Sediment and Soil Study

Station Id	Date Analyzed	Set	Run	Lead (ppm)	Average (ppm)	% Difference	Comments
SDU-02-XRF-05	2015-Apr-22	1	2	399		2.22%	
SDU-02-XRF-05	2015-Apr-22	1	3	400	390	2.48%	
SDU-02-XRF-06	2015-Apr-22	1	1	416		-13.5%	
SDU-02-XRF-06	2015-Apr-22	1	2	440		-8.52%	
SDU-02-XRF-06	2015-Apr-22	1	3	587	481	22.0%	
SDU-02-XRF-07	2015-Apr-22	1	1	423		-2.53%	
SDU-02-XRF-07	2015-Apr-22	1	2	454		4.61%	
SDU-02-XRF-07	2015-Apr-22	1	3	425	434	-2.07%	
SDU-02-XRF-08	2015-Apr-22	1	1	611		-0.435%	
SDU-02-XRF-08	2015-Apr-22	1	2	600		-2.23%	
SDU-02-XRF-08	2015-Apr-22	1	3	630	614	2.66%	
SDU-03-XRF-01	2015-Apr-22	1	1	247		-2.50%	
SDU-03-XRF-01	2015-Apr-22	1	2	243		-4.08%	
SDU-03-XRF-01	2015-Apr-22	1	3	270	253	6.58%	
SDU-03-XRF-02	2015-Apr-22	1	1	87.4		-1.91%	
SDU-03-XRF-02	2015-Apr-22	1	2	91.2		2.36%	
SDU-03-XRF-02	2015-Apr-22	1	3	88.7	89.1	-0.449%	
SDU-03-XRF-03	2015-Apr-22	1	1	15.6		-5.07%	
SDU-03-XRF-03	2015-Apr-22	1	2	19.0		15.6%	
SDU-03-XRF-03	2015-Apr-22	1	3	14.7	16.4	-10.5%	
SDU-03-XRF-04	2015-Apr-22	1	1	41.5		-9.78%	
SDU-03-XRF-04	2015-Apr-22	1	2	44.2		-3.91%	
SDU-03-XRF-04	2015-Apr-22	1	3	52.3	46.0	13.7%	
SDU-04-XRF-01	2015-May-02	1	1	29.0		-1.81%	
SDU-04-XRF-01	2015-May-02	1	2	29.3		-0.790%	
SDU-04-XRF-01	2015-May-02	1	3	30.3	29.5	2.60%	
SDU-04-XRF-02	2015-May-02	1	1	53.6		17.1%	
SDU-04-XRF-02	2015-May-02	1	2	47.3		3.35%	
SDU-04-XRF-02	2015-May-02	1	3	36.4	45.8	-20.5%	
SDU-04-XRF-03	2015-May-02	1	1	28.1		-4.20%	
SDU-04-XRF-03	2015-May-02	1	2	35.1		19.7%	
SDU-04-XRF-03	2015-May-02	1	3	24.8	29.3	-15.5%	
SDU-04-XRF-04	2015-May-02	1	1	98.1		-13.1%	
SDU-04-XRF-04	2015-May-02	1	2	103		-8.59%	
SDU-04-XRF-04	2015-May-02	1	3	137	113	21.7%	
SDU-05-XRF-01	2015-Apr-28	1	1	536		30.7%	
SDU-05-XRF-01	2015-Apr-28	1	2	345		-15.9%	
SDU-05-XRF-01	2015-Apr-28	1	3	349	410	-14.9%	
SDU-05-XRF-02	2015-Apr-27	1	1	330		-4.62%	
SDU-05-XRF-02	2015-Apr-27	1	2	339		-2.02%	

initial 20 samples sent to lab

additional samples sent to lab for confirmation

% Difference = (Lead - Average)/Average

% Difference exceeds criterion of 35%

ppm - parts per million

Table F-1
Field Laboratory XRF Results
Bossburg Flat Beach Refined Sediment and Soil Study

Station Id	Date Analyzed	Set	Run	Lead (ppm)	Average (ppm)	% Difference	Comments
SDU-05-XRF-02	2015-Apr-27	1	3	369	346	6.65%	
SDU-05-XRF-03	2015-Apr-28	1	1	343		-8.94%	
SDU-05-XRF-03	2015-Apr-28	1	2	419		11.2%	
SDU-05-XRF-03	2015-Apr-28	1	3	368	377	-2.30%	
SDU-05-XRF-04	2015-Apr-27	1	1	431		5.04%	
SDU-05-XRF-04	2015-Apr-27	1	2	408		-0.569%	
SDU-05-XRF-04	2015-Apr-27	1	3	392	410	-4.47%	
SDU-05-XRF-05	2015-Apr-27	1	1	333		2.88%	
SDU-05-XRF-05	2015-Apr-27	1	2	298		-7.93%	
SDU-05-XRF-05	2015-Apr-27	1	3	340	324	5.05%	
SDU-05-XRF-06	2015-Apr-27	1	1	325		-2.69%	
SDU-05-XRF-06	2015-Apr-27	1	2	327		-2.10%	
SDU-05-XRF-06	2015-Apr-27	1	3	350	334	4.79%	
SDU-05-XRF-08	2015-Apr-27	1	1	201		-2.58%	
SDU-05-XRF-08	2015-Apr-27	1	2	220		6.62%	
SDU-05-XRF-08	2015-Apr-27	1	3	198	206	-4.04%	
SDU-05-XRF-09	2015-Apr-27	1	1	442		-0.971%	
SDU-05-XRF-09	2015-Apr-27	1	2	460		3.06%	
SDU-05-XRF-09	2015-Apr-27	1	3	437	446	-2.09%	
SDU-05-XRF-R03	2015-Apr-28	1	1	331		-3.87%	Reserve location for SDU-05-XRF-07
SDU-05-XRF-R03	2015-Apr-28	1	2	363		5.42%	Reserve location for SDU-05-XRF-07
SDU-05-XRF-R03	2015-Apr-28	1	3	339	344	-1.55%	Reserve location for SDU-05-XRF-07
SDU-06-XRF-01	2015-Apr-29	1	1	24.1		-3.34%	
SDU-06-XRF-01	2015-Apr-29	1	2	25.1		0.668%	
SDU-06-XRF-01	2015-Apr-29	1	3	25.6	24.9	2.67%	
SDU-06-XRF-02	2015-Apr-29	1	1	23.3		-7.54%	
SDU-06-XRF-02	2015-Apr-29	1	2	27.0		7.14%	
SDU-06-XRF-02	2015-Apr-29	1	3	25.3	25.2	0.397%	
SDU-06-XRF-04	2015-Apr-29	1	1	19.9		7.37%	
SDU-06-XRF-04	2015-Apr-29	1	2	17.5		-5.58%	
SDU-06-XRF-04	2015-Apr-29	1	3	18.2	18.5	-1.80%	
SDU-06-XRF-05	2015-Apr-29	1	1	30.9		-6.08%	
SDU-06-XRF-05	2015-Apr-29	1	2	33.5		1.82%	
SDU-06-XRF-05	2015-Apr-29	1	3	34.3	32.9	4.26%	
SDU-06-XRF-R02	2015-Apr-29	1	1	13.2		-9.17%	Reserve location for SDU-06-XRF-03
SDU-06-XRF-R02	2015-Apr-29	1	2	13.5		-7.11%	Reserve location for SDU-06-XRF-03
SDU-06-XRF-R02	2015-Apr-29	1	3	16.9	14.5	16.3%	Reserve location for SDU-06-XRF-03
SDU-07-XRF-01	2015-May-04	1	1	508		0.727%	
SDU-07-XRF-01	2015-May-04	1	2	511		1.32%	
SDU-07-XRF-01	2015-May-04	1	3	494	504	-2.05%	

initial 20 samples sent to lab
 additional samples sent to lab for confirmation

% Difference = (Lead - Average)/Average

% Difference exceeds criterion of 35%

ppm - parts per million

Table F-1
Field Laboratory XRF Results
Bossburg Flat Beach Refined Sediment and Soil Study

Station Id	Date Analyzed	Set	Run	Lead (ppm)	Average (ppm)	% Difference	Comments
SDU-07-XRF-02	2015-May-04	1	1	103		23.3%	
SDU-07-XRF-02	2015-May-04	1	2	69.7		-16.9%	
SDU-07-XRF-02	2015-May-04	1	3	78.5	83.9	-6.40%	
SDU-07-XRF-03	2015-May-04	1	1	386		-3.50%	
SDU-07-XRF-03	2015-May-04	1	2	403		0.750%	
SDU-07-XRF-03	2015-May-04	1	3	411	400	2.75%	
SDU-07-XRF-04	2015-May-04	1	1	464		-5.69%	
SDU-07-XRF-04	2015-May-04	1	2	452		-8.13%	
SDU-07-XRF-04	2015-May-04	1	3	560	492	13.8%	
SDU-08-XRF-01	2015-May-02	1	1	338		-0.686%	
SDU-08-XRF-01	2015-May-02	1	2	346		1.67%	
SDU-08-XRF-01	2015-May-02	1	3	337	340	-0.979%	
SDU-08-XRF-02	2015-May-02	1	1	201		26.1%	
SDU-08-XRF-02	2015-May-02	1	2	142		-10.8%	
SDU-08-XRF-02	2015-May-02	1	3	135	159	-15.3%	
SDU-08-XRF-04	2015-May-02	1	1	525		-9.95%	
SDU-08-XRF-04	2015-May-02	1	2	603		3.43%	
SDU-08-XRF-04	2015-May-02	1	3	621	583	6.52%	
SDU-08-XRF-R03	2015-May-02	1	1	243		-5.45%	Reserve location for SDU-08-XRF-03
SDU-08-XRF-R03	2015-May-02	1	2	279		8.56%	Reserve location for SDU-08-XRF-03
SDU-08-XRF-R03	2015-May-02	1	3	249	257	-3.11%	Reserve location for SDU-08-XRF-03
SDU-09-XRF-01	2015-Apr-28	1	1	10.8		-12.2%	
SDU-09-XRF-01	2015-Apr-28	1	2	12.9		4.88%	
SDU-09-XRF-01	2015-Apr-28	1	3	13.2	12.3	7.32%	
SDU-09-XRF-02	2015-Apr-28	1	1	73.8		-8.55%	
SDU-09-XRF-02	2015-Apr-28	1	2	85.9		6.44%	
SDU-09-XRF-02	2015-Apr-28	1	3	82.4	80.7	2.11%	
SDU-09-XRF-03	2015-Apr-28	1	1	137		2.09%	
SDU-09-XRF-03	2015-Apr-28	1	2	137		2.61%	
SDU-09-XRF-03	2015-Apr-28	1	3	128	134	-4.71%	
SDU-09-XRF-04	2015-Apr-28	1	1	115		7.62%	
SDU-09-XRF-04	2015-Apr-28	1	2	104		-2.74%	
SDU-09-XRF-04	2015-Apr-28	1	3	102	107	-4.88%	
SDU-10-XRF-01	2015-Apr-28	1	1	76.8		-3.88%	
SDU-10-XRF-01	2015-Apr-28	1	2	76.5		-4.26%	
SDU-10-XRF-01	2015-Apr-28	1	3	86.4	79.9	8.14%	
SDU-10-XRF-02	2015-Apr-28	1	1	91.4		0.550%	
SDU-10-XRF-02	2015-Apr-28	1	2	93.3		2.64%	
SDU-10-XRF-02	2015-Apr-28	1	3	88.0	90.9	-3.19%	
SDU-10-XRF-03	2015-Apr-28	1	1	99.2		0.677%	

initial 20 samples sent to lab
 additional samples sent to lab for confirmation

% Difference = (Lead - Average)/Average

% Difference exceeds criterion of 35%

ppm - parts per million

Table F-1
Field Laboratory XRF Results
Bossburg Flat Beach Refined Sediment and Soil Study

Station Id	Date Analyzed	Set	Run	Lead (ppm)	Average (ppm)	% Difference	Comments
SDU-10-XRF-03	2015-Apr-28	1	2	107		8.49%	
SDU-10-XRF-03	2015-Apr-28	1	3	89.5	98.5	-9.17%	
SDU-10-XRF-04	2015-Apr-28	1	1	247		-18.9%	
SDU-10-XRF-04	2015-Apr-28	1	2	349		14.6%	
SDU-10-XRF-04	2015-Apr-28	1	3	318	305	4.38%	
UDU-01-XRF-01	2015-Apr-16	1	1	103		-16.5%	
UDU-01-XRF-01	2015-Apr-16	1	2	155		25.9%	
UDU-01-XRF-01	2015-Apr-16	1	3	112	123	-9.32%	
UDU-01-XRF-02	2015-Apr-16	1	1	131		15.9%	
UDU-01-XRF-02	2015-Apr-16	1	2	103		-9.29%	
UDU-01-XRF-02	2015-Apr-16	1	3	106	113	-6.56%	
UDU-01-XRF-03	2015-Apr-16	1	1	66.5		13.0%	
UDU-01-XRF-03	2015-Apr-16	1	2	54.1		-8.05%	
UDU-01-XRF-03	2015-Apr-16	1	3	55.9	58.8	-4.99%	
UDU-01-XRF-04	2015-Apr-16	1	1	190		14.2%	
UDU-01-XRF-04	2015-Apr-16	1	2	163		-1.79%	
UDU-01-XRF-04	2015-Apr-16	1	3	146	166	-12.4%	
UDU-01-XRF-05	2015-Apr-16	1	1	51.6		-7.64%	
UDU-01-XRF-05	2015-Apr-16	1	2	58.3		4.36%	
UDU-01-XRF-05	2015-Apr-16	1	3	57.7	55.9	3.28%	
UDU-01-XRF-06	2015-Apr-16	1	1	66.4		-2.73%	
UDU-01-XRF-06	2015-Apr-16	1	2	69.8		2.25%	
UDU-01-XRF-06	2015-Apr-16	1	3	68.6	68.3	0.488%	
UDU-01-XRF-07	2015-Apr-16	1	1	79.1		5.51%	
UDU-01-XRF-07	2015-Apr-16	1	2	71.9		-4.09%	
UDU-01-XRF-07	2015-Apr-16	1	3	73.9	75.0	-1.42%	
UDU-02-XRF-01	2015-Apr-17	1	1	296		-5.13%	
UDU-02-XRF-01	2015-Apr-17	1	2	327		4.81%	
UDU-02-XRF-01	2015-Apr-17	1	3	313	312	0.321%	
UDU-02-XRF-02	2015-Apr-17	1	1	254		-8.41%	
UDU-02-XRF-02	2015-Apr-17	1	2	348		25.5%	
UDU-02-XRF-02	2015-Apr-17	1	3	230	277	-17.1%	
UDU-02-XRF-03	2015-Apr-17	1	1	61.7		-2.17%	
UDU-02-XRF-03	2015-Apr-17	1	2	56.4		-10.6%	
UDU-02-XRF-03	2015-Apr-17	1	3	71.1	63.1	12.7%	
UDU-02-XRF-04	2015-Apr-18	1	1	101		-8.68%	
UDU-02-XRF-04	2015-Apr-18	1	2	97.3		-12.3%	
UDU-02-XRF-04	2015-Apr-18	1	3	134	111	21.0%	
UDU-02-XRF-05	2015-Apr-17	1	1	99.8		-1.58%	
UDU-02-XRF-05	2015-Apr-17	1	2	103		1.68%	

initial 20 samples sent to lab
 additional samples sent to lab for confirmation

% Difference = (Lead - Average)/Average

% Difference exceeds criterion of 35%

ppm - parts per million

Table F-1
Field Laboratory XRF Results
Bossburg Flat Beach Refined Sediment and Soil Study

Station Id	Date Analyzed	Set	Run	Lead (ppm)	Average (ppm)	% Difference	Comments
UDU-02-XRF-05	2015-Apr-17	1	3	101	101	-0.0986%	
UDU-02-XRF-06	2015-Apr-17	1	1	101		1.07%	
UDU-02-XRF-06	2015-Apr-17	1	2	98.9		-1.03%	
UDU-02-XRF-06	2015-Apr-17	1	3	99.9	99.9	-0.0334%	
UDU-03-XRF-01	2015-Apr-18	1	1	168		-4.70%	
UDU-03-XRF-01	2015-Apr-18	1	2	210		18.8%	
UDU-03-XRF-01	2015-Apr-18	1	3	152	177	-14.1%	
UDU-03-XRF-02	2015-Apr-18	1	1	154		45.7%	%D exceeded 35%, sample reanalyzed
UDU-03-XRF-02	2015-Apr-18	1	2	93.8		-11.5%	
UDU-03-XRF-02	2015-Apr-18	1	3	69.8	106	-34.2%	
UDU-03-XRF-02	2015-Apr-18	2	1	98.8		13.8%	
UDU-03-XRF-02	2015-Apr-18	2	2	92.1		6.11%	
UDU-03-XRF-02	2015-Apr-18	2	3	69.5	86.8	-19.9%	
UDU-03-XRF-03	2015-Apr-18	1	1	299		-5.78%	
UDU-03-XRF-03	2015-Apr-18	1	2	324		2.10%	
UDU-03-XRF-03	2015-Apr-18	1	3	329	317	3.68%	
UDU-03-XRF-04	2015-Apr-18	1	1	188		-2.93%	
UDU-03-XRF-04	2015-Apr-18	1	2	188		-2.57%	
UDU-03-XRF-04	2015-Apr-18	1	3	204	193	5.50%	
UDU-03-XRF-05	2015-Apr-18	1	1	148		5.20%	
UDU-03-XRF-05	2015-Apr-18	1	2	138		-1.82%	
UDU-03-XRF-05	2015-Apr-18	1	3	136	141	-3.38%	
UDU-03-XRF-06	2015-Apr-18	1	1	112		0.602%	
UDU-03-XRF-06	2015-Apr-18	1	2	113		2.23%	
UDU-03-XRF-06	2015-Apr-18	1	3	108	111	-2.83%	
UDU-03-XRF-07	2015-Apr-18	1	1	297		-16.3%	
UDU-03-XRF-07	2015-Apr-18	1	2	322		-9.21%	
UDU-03-XRF-07	2015-Apr-18	1	3	445	355	25.5%	
UDU-03-XRF-08	2015-Apr-18	1	1	91.4		9.24%	
UDU-03-XRF-08	2015-Apr-18	1	2	75.4		-9.88%	
UDU-03-XRF-08	2015-Apr-18	1	3	84.2	83.7	0.637%	
UDU-04-XRF-02	2015-Apr-20	1	1	760		-22.0%	
UDU-04-XRF-02	2015-Apr-20	1	2	991		1.68%	
UDU-04-XRF-02	2015-Apr-20	1	3	1170	975	20.3%	
UDU-04-XRF-03	2015-Apr-20	1	1	274		-3.29%	
UDU-04-XRF-03	2015-Apr-20	1	2	280		-1.18%	
UDU-04-XRF-03	2015-Apr-20	1	3	296	283	4.47%	
UDU-04-XRF-04	2015-Apr-20	1	1	706		52.4%	%D exceeded 35%, sample reanalyzed
UDU-04-XRF-04	2015-Apr-20	1	2	343		-26.0%	
UDU-04-XRF-04	2015-Apr-20	1	3	341	463	-26.4%	

initial 20 samples sent to lab
 additional samples sent to lab for confirmation

% Difference = (Lead - Average)/Average

% Difference exceeds criterion of 35%

ppm - parts per million

Table F-1
Field Laboratory XRF Results
Bossburg Flat Beach Refined Sediment and Soil Study

Station Id	Date Analyzed	Set	Run	Lead (ppm)	Average (ppm)	% Difference	Comments
UDU-04-XRF-04	2015-Apr-20	2	1	416		-8.77%	
UDU-04-XRF-04	2015-Apr-20	2	2	491		7.68%	
UDU-04-XRF-04	2015-Apr-20	2	3	461	456	1.10%	
UDU-04-XRF-05	2015-Apr-20	1	1	641		-1.54%	
UDU-04-XRF-05	2015-Apr-20	1	2	547		-16.0%	
UDU-04-XRF-05	2015-Apr-20	1	3	765	651	17.5%	
UDU-04-XRF-R01	2015-Apr-20	1	1	1590		15.1%	Reserve location for UDU-04-XRF-01
UDU-04-XRF-R01	2015-Apr-20	1	2	1320		-4.84%	Reserve location for UDU-04-XRF-01
UDU-04-XRF-R01	2015-Apr-20	1	3	1240	1380	-10.3%	Reserve location for UDU-04-XRF-01
UDU-05-XRF-01	2015-Apr-30	1	1	22.9		9.57%	
UDU-05-XRF-01	2015-Apr-30	1	2	21.2		1.44%	
UDU-05-XRF-01	2015-Apr-30	1	3	18.6	20.9	-11.0%	
UDU-05-XRF-02	2015-Apr-30	1	1	23.0		-6.88%	
UDU-05-XRF-02	2015-Apr-30	1	2	25.3		2.43%	
UDU-05-XRF-02	2015-Apr-30	1	3	25.8	24.7	4.45%	
UDU-05-XRF-03	2015-Apr-30	1	1	19.4		18.8%	
UDU-05-XRF-03	2015-Apr-30	1	2	14.7		-10.0%	
UDU-05-XRF-03	2015-Apr-30	1	3	14.9	16.3	-8.78%	
UDU-05-XRF-04	2015-Apr-30	1	1	65.8		8.70%	
UDU-05-XRF-04	2015-Apr-30	1	2	49.6		-18.1%	
UDU-05-XRF-04	2015-Apr-30	1	3	66.2	60.5	9.36%	
UDU-05-XRF-05	2015-Apr-30	1	1	30.3		-2.36%	
UDU-05-XRF-05	2015-Apr-30	1	2	33.6		8.27%	
UDU-05-XRF-05	2015-Apr-30	1	3	29.2	31.0	-5.91%	
UDU-05-XRF-06	2015-Apr-30	1	1	21.5		5.56%	
UDU-05-XRF-06	2015-Apr-30	1	2	18.0		-11.6%	
UDU-05-XRF-06	2015-Apr-30	1	3	21.6	20.4	6.06%	
UDU-05-XRF-07	2015-Apr-30	1	1	190		0.176%	
UDU-05-XRF-07	2015-Apr-30	1	2	160		-15.6%	
UDU-05-XRF-07	2015-Apr-30	1	3	219	190	15.5%	
UDU-05-XRF-08	2015-Apr-30	1	1	128		10.9%	
UDU-05-XRF-08	2015-Apr-30	1	2	118		2.23%	
UDU-05-XRF-08	2015-Apr-30	1	3	100	115	-13.1%	
UDU-05-XRF-09	2015-Apr-30	1	1	127		-19.6%	
UDU-05-XRF-09	2015-Apr-30	1	2	161		2.15%	
UDU-05-XRF-09	2015-Apr-30	1	3	185	158	17.4%	
UDU-05-XRF-10	2015-Apr-30	1	1	13.9		-17.4%	
UDU-05-XRF-10	2015-Apr-30	1	2	19.2		14.1%	
UDU-05-XRF-10	2015-Apr-30	1	3	17.4	16.8	3.37%	
UDU-05-XRF-11	2015-Apr-30	1	1	21.2		-32.3%	

initial 20 samples sent to lab

additional samples sent to lab for confirmation

% Difference = (Lead - Average)/Average

% Difference exceeds criterion of 35%

ppm - parts per million

Table F-1
Field Laboratory XRF Results
Bossburg Flat Beach Refined Sediment and Soil Study

Station Id	Date Analyzed	Set	Run	Lead (ppm)	Average (ppm)	% Difference	Comments
UDU-05-XRF-11	2015-Apr-30	1	2	52.5		67.6%	%D exceeded 35%, sample reanalyzed
UDU-05-XRF-11	2015-Apr-30	1	3	20.3	31.3	-35.2%	%D exceeded 35%, sample reanalyzed
UDU-05-XRF-11	2015-Apr-30	2	1	18.5		-21.8%	
UDU-05-XRF-11	2015-Apr-30	2	2	18.3		-22.7%	
UDU-05-XRF-11	2015-Apr-30	2	3	34.2	23.7	44.5%	%D exceeded 35%, sample reanalyzed
UDU-05-XRF-11	2015-Apr-30	3	1	18.5		2.59%	
UDU-05-XRF-11	2015-Apr-30	3	2	17.6		-2.40%	
UDU-05-XRF-11	2015-Apr-30	3	3	18.0	18.0	-0.185%	
UDU-05-XRF-12	2015-Apr-30	1	1	1160		11.5%	
UDU-05-XRF-12	2015-Apr-30	1	2	954		-7.89%	
UDU-05-XRF-12	2015-Apr-30	1	3	998	1040	-3.64%	
UDU-05-XRF-13	2015-Apr-30	1	1	38.3		-0.347%	
UDU-05-XRF-13	2015-Apr-30	1	2	39.2		1.99%	
UDU-05-XRF-13	2015-Apr-30	1	3	37.8	38.4	-1.65%	
UDU-06-XRF-01	2015-May-07	1	1	66.6		2.36%	
UDU-06-XRF-01	2015-May-07	1	2	62.3		-4.25%	
UDU-06-XRF-01	2015-May-07	1	3	66.3	65.1	1.90%	
UDU-06-XRF-02	2015-May-07	1	1	70.2		15.9%	
UDU-06-XRF-02	2015-May-07	1	2	54.2		-10.5%	
UDU-06-XRF-02	2015-May-07	1	3	57.3	60.6	-5.39%	
UDU-06-XRF-03	2015-May-07	1	1	60.4		-0.440%	
UDU-06-XRF-03	2015-May-07	1	2	59.4		-2.09%	
UDU-06-XRF-03	2015-May-07	1	3	62.2	60.7	2.53%	
UDU-06-XRF-04	2015-May-07	1	1	42.5		0.315%	
UDU-06-XRF-04	2015-May-07	1	2	41.1		-2.99%	
UDU-06-XRF-04	2015-May-07	1	3	43.5	42.4	2.68%	
UDU-06-XRF-05	2015-May-07	1	1	19.6		-8.27%	
UDU-06-XRF-05	2015-May-07	1	2	22.6		5.77%	
UDU-06-XRF-05	2015-May-07	1	3	21.9	21.4	2.50%	

initial 20 samples sent to lab

additional samples sent to lab for confirmation

% Difference = (Lead - Average)/Average

% Difference exceeds criterion of 35%

ppm - parts per million

Table F-2
XRF Run Log
Bossburg Flat Beach Refined Sediment and Soil Study

Sample	Analysis Date/Time	Set	Run	Lead (ppm)	Initials	Reading Type	Comments
XRF QC readings	2015-Apr-16 13:19			0	ALD	Energy Calibration Check	failed
XRF QC readings	2015-Apr-16 13:20			1	ALD	Energy Calibration Check	passed
XRF QC readings	2015-Apr-16 13:24			0	ALD	Blank	SiO2 <1.7
XRF QC readings	2015-Apr-16 13:29			12.4	ALD	Calibration Verification Check	NIST 2709a, true value = 17.3 ppm. 71.7%R
XRF QC readings	2015-Apr-16 13:32			1317	ALD	Calibration Verification Check	NIST 2711a, true value = 1400 ppm. 94.1%R
UDU-01-XRF-01	2015-Apr-16 13:39	1	1	102.7	ALD	Normal Reading	
UDU-01-XRF-01	2015-Apr-16 13:41	1	2	154.9	ALD	Normal Reading	
UDU-01-XRF-01	2015-Apr-16 13:44	1	3	111.6	ALD	Normal Reading	
UDU-01-XRF-04	2015-Apr-16 13:51	1	1	189.8	ALD	Normal Reading	
UDU-01-XRF-04	2015-Apr-16 13:53	1	2	163.2	ALD	Normal Reading	
UDU-01-XRF-04	2015-Apr-16 13:56	1	3	145.5	ALD	Normal Reading	
UDU-01-XRF-07	2015-Apr-16 14:00	1	1	79.1	ALD	Normal Reading	
UDU-01-XRF-07	2015-Apr-16 14:02	1	2	71.9	ALD	Normal Reading	
UDU-01-XRF-07	2015-Apr-16 14:05	1	3	73.9	ALD	Normal Reading	
UDU-01-XRF-02	2015-Apr-16 15:09	1	1	131.3	ALD	Normal Reading	
UDU-01-XRF-02	2015-Apr-16 15:12	1	2	102.8	ALD	Normal Reading	
UDU-01-XRF-02	2015-Apr-16 15:14	1	3	105.9	ALD	Normal Reading	
XRF QC readings	2015-Apr-16 15:20			110.2	ALD	Precision Calibration Check	UDU-01-XRF-02
XRF QC readings	2015-Apr-16 15:23			142.4	ALD	Precision Calibration Check	UDU-01-XRF-02
XRF QC readings	2015-Apr-16 15:26			106.9	ALD	Precision Calibration Check	UDU-01-XRF-02
XRF QC readings	2015-Apr-16 15:30			113	ALD	Precision Calibration Check	UDU-01-XRF-02; RSD = 12.8%
UDU-01-XRF-03	2015-Apr-16 15:50	1	1	66.5	ALD	Normal Reading	
UDU-01-XRF-03	2015-Apr-16 15:53	1	2	54.1	ALD	Normal Reading	
UDU-01-XRF-03	2015-Apr-16 15:56	1	3	55.9	ALD	Normal Reading	
UDU-01-XRF-06	2015-Apr-16 16:01	1	1	66.4	ALD	Normal Reading	
UDU-01-XRF-06	2015-Apr-16 16:03	1	2	69.8	ALD	Normal Reading	
UDU-01-XRF-06	2015-Apr-16 16:06	1	3	68.6	ALD	Normal Reading	
UDU-01-XRF-05	2015-Apr-16 16:10	1	1	51.6	ALD	Normal Reading	
UDU-01-XRF-05	2015-Apr-16 16:12	1	2	58.3	ALD	Normal Reading	
UDU-01-XRF-05	2015-Apr-16 16:15	1	3	57.7	ALD	Normal Reading	

Table F-2
XRF Run Log
Bosburg Flat Beach Refined Sediment and Soil Study

Sample	Analysis Date/Time	Set	Run	Lead (ppm)	Initials	Reading Type	Comments
XRF QC readings	2015-Apr-16 16:19			0	ALD	Blank	SiO2 <1.8
XRF QC readings	2015-Apr-16 16:21			1332	ALD	Calibration Verification Check	NIST 2711a, true value = 1400 ppm. 95.1%R
XRF QC readings	2015-Apr-16 16:25			1	ALD	Energy Calibration Check	passed
XRF QC 20150417	2015-Apr-17 11:19			1	ALD	Energy Calibration Check	passed
XRF QC 20150417	2015-Apr-17 11:22			0	ALD	Blank	SiO2 <1.7
XRF QC 20150417	2015-Apr-17 11:26			12.3	ALD	Calibration Verification Check	NIST 2709a, true value = 17.3 ppm. 71.1%R
XRF QC 20150417	2015-Apr-17 11:31			4989	ALD	Calibration Verification Check	NIST 2780, true value = 5770 ppm. 86.5%R
UDU-02-XRF-06	2015-Apr-17 11:35	1	1	101	ALD	Normal Reading	
UDU-02-XRF-06	2015-Apr-17 11:38	1	2	98.9	ALD	Normal Reading	
UDU-02-XRF-06	2015-Apr-17 11:40	1	3	99.9	ALD	Normal Reading	
UDU-02-XRF-02	2015-Apr-17 11:44	1	1	254	ALD	Normal Reading	
UDU-02-XRF-02	2015-Apr-17 11:46	1	2	348	ALD	Normal Reading	
UDU-02-XRF-02	2015-Apr-17 11:49	1	3	230	ALD	Normal Reading	
UDU-02-XRF-01	2015-Apr-17 15:28	1	1	296	ALD	Normal Reading	
UDU-02-XRF-01	2015-Apr-17 15:30	1	2	327	ALD	Normal Reading	
UDU-02-XRF-01	2015-Apr-17 15:32	1	3	313	ALD	Normal Reading	
UDU-02-XRF-03	2015-Apr-17 15:36	1	1	61.7	ALD	Normal Reading	
UDU-02-XRF-03	2015-Apr-17 15:40	1	2	56.4	ALD	Normal Reading	
UDU-02-XRF-03	2015-Apr-17 15:42	1	3	71.1	ALD	Normal Reading	
UDU-02-XRF-05	2015-Apr-17 15:45	1	1	99.8	ALD	Normal Reading	
UDU-02-XRF-05	2015-Apr-17 15:48	1	2	103.1	ALD	Normal Reading	
UDU-02-XRF-05	2015-Apr-17 15:50	1	3	101.3	ALD	Normal Reading	
XRF QC 20150417	2015-Apr-17 16:04			0	ALD	Blank	SiO2 <1.8
XRF QC 20150417	2015-Apr-17 16:07			99.7	ALD	Precision Calibration Check	UDU-02-XRF-05
XRF QC 20150417	2015-Apr-17 16:09			101.9	ALD	Precision Calibration Check	UDU-02-XRF-05
XRF QC 20150417	2015-Apr-17 16:13			99	ALD	Precision Calibration Check	UDU-02-XRF-05
XRF QC 20150417	2015-Apr-17 16:16			96.7	ALD	Precision Calibration Check	UDU-02-XRF-05; RSD = 2.1%
XRF QC 20150417	2015-Apr-17 16:20			5015	ALD	Calibration Verification Check	NIST 2780, true value = 5770 ppm. 86.9%R
XRF QC 20150417	2015-Apr-17 16:24			1	ALD	Energy Calibration Check	passed
XRF QC 20150418	2015-Apr-18 8:49			1	ALD	Energy Calibration Check	passed

Table F-2
XRF Run Log
Bossburg Flat Beach Refined Sediment and Soil Study

Sample	Analysis Date/Time	Set	Run	Lead (ppm)	Initials	Reading Type	Comments
XRF QC 20150418	2015-Apr-18 8:55			0	ALD	Blank	SiO2 <1.8
XRF QC 20150418	2015-Apr-18 8:59			12.4	ALD	Calibration Verification Check	NIST 2709a, true value = 17.3 ppm. 71.7%R
XRF QC 20150418	2015-Apr-18 9:01			1320	ALD	Calibration Verification Check	NIST 2711a, true value = 1400 ppm. 94.3%R
UDU-03-XRF-01	2015-Apr-18 9:19	1	1	168.4	ALD	Normal Reading	
UDU-03-XRF-01	2015-Apr-18 9:26	1	2	210	ALD	Normal Reading	
UDU-03-XRF-01	2015-Apr-18 9:29	1	3	151.7	ALD	Normal Reading	
UDU-03-XRF-02	2015-Apr-18 9:33	1	3	69.8	ALD	Normal Reading	
UDU-03-XRF-02	2015-Apr-18 9:33	1	1	154.5	ALD	Normal Reading	%D exceeded 35%, sample reanalyzed
UDU-03-XRF-02	2015-Apr-18 9:35	1	2	93.8	ALD	Normal Reading	
UDU-03-XRF-02	2015-Apr-18 9:41	2	1	98.8	ALD	Normal Reading	
UDU-03-XRF-02	2015-Apr-18 9:43	2	2	92.1	ALD	Normal Reading	
UDU-03-XRF-02	2015-Apr-18 9:46	2	3	69.5	ALD	Normal Reading	
UDU-03-XRF-03	2015-Apr-18 9:50	1	1	299	ALD	Normal Reading	
UDU-03-XRF-03	2015-Apr-18 9:53	1	2	324	ALD	Normal Reading	
UDU-03-XRF-03	2015-Apr-18 9:55	1	3	329	ALD	Normal Reading	
UDU-03-XRF-04	2015-Apr-18 9:58	1	1	187.7	ALD	Normal Reading	
UDU-03-XRF-04	2015-Apr-18 10:00	1	2	188.4	ALD	Normal Reading	
UDU-03-XRF-04	2015-Apr-18 10:03	1	3	204	ALD	Normal Reading	
UDU-03-XRF-05	2015-Apr-18 10:06	1	1	148.4	ALD	Normal Reading	
UDU-03-XRF-05	2015-Apr-18 10:09	1	2	138.5	ALD	Normal Reading	
UDU-03-XRF-05	2015-Apr-18 10:12	1	3	136.3	ALD	Normal Reading	
UDU-03-XRF-06	2015-Apr-18 10:15	1	1	111.5	ALD	Normal Reading	
UDU-03-XRF-06	2015-Apr-18 10:17	1	2	113.3	ALD	Normal Reading	
UDU-03-XRF-06	2015-Apr-18 10:20	1	3	107.7	ALD	Normal Reading	
UDU-02-XRF-04	2015-Apr-18 13:42	1	1	101.3	ALD	Normal Reading	
UDU-02-XRF-04	2015-Apr-18 13:45	1	2	97.3	ALD	Normal Reading	
UDU-02-XRF-04	2015-Apr-18 13:47	1	3	134.2	ALD	Normal Reading	
UDU-03-XRF-08	2015-Apr-18 13:55	1	1	91.4	ALD	Normal Reading	
UDU-03-XRF-08	2015-Apr-18 13:58	1	2	75.4	ALD	Normal Reading	
UDU-03-XRF-08	2015-Apr-18 14:00	1	3	84.2	ALD	Normal Reading	

Table F-2
XRF Run Log
Bosburg Flat Beach Refined Sediment and Soil Study

Sample	Analysis Date/Time	Set	Run	Lead (ppm)	Initials	Reading Type	Comments
XRF QC 20150418	2015-Apr-18 14:06			85.7	ALD	Precision Calibration Check	UDU-03-XRF-08
XRF QC 20150418	2015-Apr-18 14:08			85.3	ALD	Precision Calibration Check	UDU-03-XRF-08
XRF QC 20150418	2015-Apr-18 14:10			81.6	ALD	Precision Calibration Check	UDU-03-XRF-08
XRF QC 20150418	2015-Apr-18 14:13			99.3	ALD	Precision Calibration Check	UDU-03-XRF-08; RSD = 8.8%
UDU-03-XRF-07	2015-Apr-18 14:15	1	1	297	ALD	Normal Reading	
UDU-03-XRF-07	2015-Apr-18 14:20	1	2	322	ALD	Normal Reading	
UDU-03-XRF-07	2015-Apr-18 14:23	1	3	445	ALD	Normal Reading	
XRF QC 20150418	2015-Apr-18 14:28			0	ALD	Blank	SiO2 <1.8
XRF QC 20150418	2015-Apr-18 14:30			1312	ALD	Calibration Verification Check	NIST 2711a, true value = 1400 ppm. 93.7%R
XRF QC 20150418	2015-Apr-18 14:31			1	ALD	Energy Calibration Check	passed
XRF QC 20150420	2015-Apr-20 10:27			1	ALD	Energy Calibration Check	passed
XRF QC 20150420	2015-Apr-20 10:30			0	ALD	Blank	SiO2 <1.8
XRF QC 20150420	2015-Apr-20 10:32			14.6	ALD	Calibration Verification Check	NIST 2709a, true value = 17.3 ppm. 84.4%R
XRF QC 20150420	2015-Apr-20 10:35			4900	ALD	Calibration Verification Check	NIST 2780, true value 5770 ppm. 84.9%R
UDU-04-XRF-02	2015-Apr-20 10:39	1	1	760	ALD	Normal Reading	
UDU-04-XRF-02	2015-Apr-20 10:41	1	2	991	ALD	Normal Reading	
UDU-04-XRF-02	2015-Apr-20 10:44	1	3	1173	ALD	Normal Reading	
UDU-04-XRF-04	2015-Apr-20 10:49	1	1	706	ALD	Normal Reading	%D exceeded 35%, sample reanalyzed
UDU-04-XRF-04	2015-Apr-20 10:51	1	2	343	ALD	Normal Reading	
UDU-04-XRF-04	2015-Apr-20 10:54	1	3	341	ALD	Normal Reading	
UDU-04-XRF-04	2015-Apr-20 10:58	2	1	416	ALD	Normal Reading	
UDU-04-XRF-04	2015-Apr-20 11:00	2	2	491	ALD	Normal Reading	
UDU-04-XRF-04	2015-Apr-20 11:02	2	3	461	ALD	Normal Reading	
UDU-04-XRF-05	2015-Apr-20 11:05	1	1	641	ALD	Normal Reading	
UDU-04-XRF-05	2015-Apr-20 11:08	1	2	547	ALD	Normal Reading	
UDU-04-XRF-05	2015-Apr-20 11:10	1	3	765	ALD	Normal Reading	
XRF QC 20150420	2015-Apr-20 11:12			594	ALD	Precision Calibration Check	UDU-04-XRF-05
XRF QC 20150420	2015-Apr-20 11:15			607	ALD	Precision Calibration Check	UDU-04-XRF-05
XRF QC 20150420	2015-Apr-20 11:17			511	ALD	Precision Calibration Check	UDU-04-XRF-05
XRF QC 20150420	2015-Apr-20 11:20			777	ALD	Precision Calibration Check	UDU-04-XRF-05; RSD = 16.1%

Table F-2
XRF Run Log
Bossburg Flat Beach Refined Sediment and Soil Study

Sample	Analysis Date/Time	Set	Run	Lead (ppm)	Initials	Reading Type	Comments
UDU-04-XRF-R01	2015-Apr-20 12:43	1	1	1593	ALD	Normal Reading	Reserve location for UDU-04-XRF-01
UDU-04-XRF-R01	2015-Apr-20 12:45	1	2	1317	ALD	Normal Reading	Reserve location for UDU-04-XRF-01
UDU-04-XRF-R01	2015-Apr-20 12:48	1	3	1242	ALD	Normal Reading	Reserve location for UDU-04-XRF-01
UDU-04-XRF-03	2015-Apr-20 12:51	1	1	274	ALD	Normal Reading	
UDU-04-XRF-03	2015-Apr-20 12:54	1	2	280	ALD	Normal Reading	
UDU-04-XRF-03	2015-Apr-20 12:57	1	3	296	ALD	Normal Reading	
XRF QC 20150420	2015-Apr-20 13:00			0	ALD	Blank	SiO2 <1.8
XRF QC 20150420	2015-Apr-20 13:02			4930	ALD	Calibration Verification Check	NIST 2780, true value = 5770 ppm. 85.4%R
XRF QC 20150420	2015-Apr-20 13:03			1	ALD	Energy Calibration Check	passed
XRF QC 20150421	2015-Apr-21 10:11			0	ALD	Energy Calibration Check	failed
XRF QC 20150421	2015-Apr-21 10:11			1	ALD	Energy Calibration Check	passed
XRF QC 20150421	2015-Apr-21 10:15			0	ALD	Blank	SiO2 <1.8
XRF QC 20150421	2015-Apr-21 10:19			11.6	ALD	Calibration Verification Check	NIST 2709a, true value = 17.3 ppm. 67.1%R - lower than normal for this standard.
XRF QC 20150421	2015-Apr-21 10:22			12.1	ALD	Calibration Verification Check	NIST 2709a, true value = 17.3 ppm. 69.9%R
XRF QC 20150421	2015-Apr-21 10:24			0	ALD	Normal Reading	abort - test of air for safety demonstration
XRF QC 20150421	2015-Apr-21 10:26			1248	ALD	Calibration Verification Check	NIST 2711a, true value = 1400 ppm. 89.1%R
XRF QC 20150421	2015-Apr-21 10:28			1	ALD	Energy Calibration Check	passed
SDU-01-XRF-02	2015-Apr-21 12:07	1	1	206	ALD	Normal Reading	
SDU-01-XRF-02	2015-Apr-21 12:09	1	2	174.8	ALD	Normal Reading	
SDU-01-XRF-02	2015-Apr-21 12:12	1	3	245	ALD	Normal Reading	
SDU-01-XRF-04	2015-Apr-21 13:24	1	1	296	ALD	Normal Reading	
SDU-01-XRF-04	2015-Apr-21 13:26	1	2	337	ALD	Normal Reading	
SDU-01-XRF-04	2015-Apr-21 13:28	1	3	322	ALD	Normal Reading	
SDU-01-XRF-05	2015-Apr-21 15:19	1	1	330	ALD	Normal Reading	
SDU-01-XRF-05	2015-Apr-21 15:21	1	2	307	ALD	Normal Reading	
SDU-01-XRF-05	2015-Apr-21 15:24	1	3	268	ALD	Normal Reading	
SDU-01-XRF-06	2015-Apr-21 15:41	1	3	342	ALD	Normal Reading	
XRF QC 20150421	2015-Apr-21 15:43			0	ALD	Normal Reading	SDU-01-XRF-06, original run 2 was aborted because instrument fell over

Table F-2
XRF Run Log
Bosburg Flat Beach Refined Sediment and Soil Study

Sample	Analysis Date/Time	Set	Run	Lead (ppm)	Initials	Reading Type	Comments
SDU-01-XRF-06	2015-Apr-21 15:45	1	2	322	ALD	Normal Reading	
SDU-01-XRF-06	2015-Apr-21 15:47	1	1	317	ALD	Normal Reading	
SDU-01-XRF-01	2015-Apr-21 16:12	1	1	199	ALD	Normal Reading	
SDU-01-XRF-01	2015-Apr-21 16:14	1	2	185	ALD	Normal Reading	
SDU-01-XRF-01	2015-Apr-21 16:17	1	3	190	ALD	Normal Reading	
SDU-01-XRF-03	2015-Apr-21 16:35	1	1	282	ALD	Normal Reading	
SDU-01-XRF-03	2015-Apr-21 16:37	1	2	250	ALD	Normal Reading	
SDU-01-XRF-03	2015-Apr-21 16:40	1	3	271	ALD	Normal Reading	
SDU-01-XRF-07	2015-Apr-21 16:43	1	1	448	ALD	Normal Reading	
SDU-01-XRF-07	2015-Apr-21 16:46	1	2	479	ALD	Normal Reading	
SDU-01-XRF-07	2015-Apr-21 16:48	1	3	420	ALD	Normal Reading	
XRF QC 20150421	2015-Apr-21 16:52			450	ALD	Precision Calibration Check	SDU-01-XRF-07
XRF QC 20150421	2015-Apr-21 16:53			431	ALD	Precision Calibration Check	SDU-01-XRF-07
XRF QC 20150421	2015-Apr-21 16:55			469	ALD	Precision Calibration Check	SDU-01-XRF-07
XRF QC 20150421	2015-Apr-21 16:58			478	ALD	Precision Calibration Check	SDU-01-XRF-07; RSD = 5.1%
XRF QC 20150421	2015-Apr-21 17:03			0	ALD	Blank	SiO2 <1.8
XRF QC 20150421	2015-Apr-21 17:06			1351	ALD	Calibration Verification Check	NIST 2711a, true value = 1400 ppm. 96.5%R
XRF QC 20150421	2015-Apr-21 17:08			1	ALD	Energy Calibration Check	passed
XRF QC 20150422	2015-Apr-22 8:23			1	ALD	Energy Calibration Check	passed
XRF QC 20150422	2015-Apr-22 8:28			0	ALD	Blank	SiO2 <1.8
XRF QC 20150422	2015-Apr-22 8:31			13.9	ALD	Calibration Verification Check	NIST 2709a, true value = 17.3 ppm. 80.3%R
XRF QC 20150422	2015-Apr-22 8:34			5048	ALD	Calibration Verification Check	NIST 2780, true value = 5770 ppm. 87.5%R
SDU-03-XRF-01	2015-Apr-22 8:37	1	1	247	ALD	Normal Reading	
SDU-03-XRF-01	2015-Apr-22 8:39	1	2	243	ALD	Normal Reading	
SDU-03-XRF-01	2015-Apr-22 8:42	1	3	270	ALD	Normal Reading	
SDU-03-XRF-02	2015-Apr-22 8:58	1	1	87.4	ALD	Normal Reading	
SDU-03-XRF-02	2015-Apr-22 9:00	1	2	91.2	ALD	Normal Reading	
SDU-03-XRF-02	2015-Apr-22 9:02	1	3	88.7	ALD	Normal Reading	
SDU-03-XRF-03	2015-Apr-22 9:06	1	1	15.6	ALD	Normal Reading	
SDU-03-XRF-03	2015-Apr-22 9:08	1	2	19	ALD	Normal Reading	

Table F-2
XRF Run Log
Bossburg Flat Beach Refined Sediment and Soil Study

Sample	Analysis Date/Time	Set	Run	Lead (ppm)	Initials	Reading Type	Comments
SDU-03-XRF-03	2015-Apr-22 9:11	1	3	14.7	ALD	Normal Reading	
SDU-03-XRF-04	2015-Apr-22 9:18	1	1	41.5	ALD	Normal Reading	
SDU-03-XRF-04	2015-Apr-22 9:21	1	2	44.2	ALD	Normal Reading	
SDU-03-XRF-04	2015-Apr-22 9:23	1	3	52.3	ALD	Normal Reading	
SDU-01-XRF-08	2015-Apr-22 10:02	1	1	384	ALD	Normal Reading	
SDU-01-XRF-08	2015-Apr-22 10:04	1	2	384	ALD	Normal Reading	
SDU-01-XRF-08	2015-Apr-22 10:06	1	3	422	ALD	Normal Reading	
SDU-01-XRF-09	2015-Apr-22 10:10	1	1	445	ALD	Normal Reading	
SDU-01-XRF-09	2015-Apr-22 10:12	1	2	471	ALD	Normal Reading	
SDU-01-XRF-09	2015-Apr-22 10:15	1	3	401	ALD	Normal Reading	
SDU-02-XRF-01	2015-Apr-22 13:12	1	1	350	ALD	Normal Reading	
SDU-02-XRF-01	2015-Apr-22 13:14	1	2	315	ALD	Normal Reading	
SDU-02-XRF-01	2015-Apr-22 13:16	1	3	286	ALD	Normal Reading	
SDU-02-XRF-03	2015-Apr-22 15:26	1	1	366	ALD	Normal Reading	
XRF QC 20150422	2015-Apr-22 15:26			1	ALD	Energy Calibration Check	instrument required charging followed by energy calibration check - passed
SDU-02-XRF-03	2015-Apr-22 15:28	1	2	399	ALD	Normal Reading	
SDU-02-XRF-03	2015-Apr-22 15:31	1	3	360	ALD	Normal Reading	
SDU-02-XRF-04	2015-Apr-22 15:34	1	1	431	ALD	Normal Reading	
SDU-02-XRF-04	2015-Apr-22 15:36	1	2	427	ALD	Normal Reading	
SDU-02-XRF-04	2015-Apr-22 15:39	1	3	379	ALD	Normal Reading	
SDU-02-XRF-06	2015-Apr-22 15:44	1	1	416	ALD	Normal Reading	
SDU-02-XRF-06	2015-Apr-22 15:47	1	2	440	ALD	Normal Reading	
SDU-02-XRF-06	2015-Apr-22 15:49	1	3	587	ALD	Normal Reading	
XRF QC 20150422	2015-Apr-22 16:30			1	ALD	Energy Calibration Check	instrument required charging followed by energy calibration check - passed
SDU-02-XRF-02	2015-Apr-22 16:33	1	1	338	ALD	Normal Reading	
SDU-02-XRF-02	2015-Apr-22 16:36	1	2	401	ALD	Normal Reading	
SDU-02-XRF-02	2015-Apr-22 16:38	1	3	412	ALD	Normal Reading	
SDU-02-XRF-05	2015-Apr-22 16:40	1	1	372	ALD	Normal Reading	

Table F-2
XRF Run Log
Bosburg Flat Beach Refined Sediment and Soil Study

Sample	Analysis Date/Time	Set	Run	Lead (ppm)	Initials	Reading Type	Comments
SDU-02-XRF-05	2015-Apr-22 16:43	1	2	399	ALD	Normal Reading	
SDU-02-XRF-05	2015-Apr-22 16:45	1	3	400	ALD	Normal Reading	
SDU-02-XRF-07	2015-Apr-22 16:48	1	1	423	ALD	Normal Reading	
SDU-02-XRF-07	2015-Apr-22 16:50	1	2	454	ALD	Normal Reading	
SDU-02-XRF-07	2015-Apr-22 16:52	1	3	425	ALD	Normal Reading	
SDU-02-XRF-08	2015-Apr-22 16:55	1	1	611	ALD	Normal Reading	
SDU-02-XRF-08	2015-Apr-22 16:57	1	2	600	ALD	Normal Reading	
SDU-02-XRF-08	2015-Apr-22 16:59	1	3	630	ALD	Normal Reading	
XRF QC 20150422	2015-Apr-22 17:01			570	ALD	Precision Calibration Check	SDU-02-XRF-08
XRF QC 20150422	2015-Apr-22 17:04			582	ALD	Precision Calibration Check	SDU-02-XRF-08
XRF QC 20150422	2015-Apr-22 17:06			621	ALD	Precision Calibration Check	SDU-02-XRF-08
XRF QC 20150422	2015-Apr-22 17:08			560	ALD	Precision Calibration Check	SDU-02-XRF-08; RSD = 4.4%
XRF QC 20150422	2015-Apr-22 17:11			0	ALD	Blank	SiO2 < 1.8
XRF QC 20150422	2015-Apr-22 17:14			5045	ALD	Calibration Verification Check	NIST 2780, true value = 5770 ppm. 87.4%R
XRF QC 20150422	2015-Apr-22 17:16			1	ALD	Energy Calibration Check	passed
XRF QC 20150427	2015-Apr-27 14:44			1	ALD	Energy Calibration Check	passed
XRF QC 20150427	2015-Apr-27 14:47			0	ALD	Blank	SiO2 <1.8
XRF QC 20150427	2015-Apr-27 14:49			12.4	ALD	Calibration Verification Check	NIST 2709a, true value = 17.3 ppm. 71.7%R
XRF QC 20150427	2015-Apr-27 14:54			1322	ALD	Calibration Verification Check	NIST 2711a, true value = 1400 ppm. 94.4%R
SDU-05-XRF-04	2015-Apr-27 14:59	1	1	431	ALD	Normal Reading	
SDU-05-XRF-04	2015-Apr-27 15:02	1	2	408	ALD	Normal Reading	
SDU-05-XRF-04	2015-Apr-27 15:04	1	3	392	ALD	Normal Reading	
SDU-05-XRF-05	2015-Apr-27 15:13	1	1	333	ALD	Normal Reading	
SDU-05-XRF-05	2015-Apr-27 15:18	1	2	298	ALD	Normal Reading	
SDU-05-XRF-05	2015-Apr-27 15:23	1	3	340	ALD	Normal Reading	
SDU-05-XRF-06	2015-Apr-27 15:28	1	1	325	ALD	Normal Reading	
SDU-05-XRF-06	2015-Apr-27 15:30	1	2	327	ALD	Normal Reading	
SDU-05-XRF-06	2015-Apr-27 15:33	1	3	350	ALD	Normal Reading	
SDU-05-XRF-08	2015-Apr-27 16:17	1	1	201	ALD	Normal Reading	
SDU-05-XRF-08	2015-Apr-27 16:19	1	2	220	ALD	Normal Reading	

**Table F-2
XRF Run Log
Bossburg Flat Beach Refined Sediment and Soil Study**

Sample	Analysis Date/Time	Set	Run	Lead (ppm)	Initials	Reading Type	Comments
SDU-05-XRF-08	2015-Apr-27 16:22	1	3	198	ALD	Normal Reading	
SDU-05-XRF-09	2015-Apr-27 16:26	1	1	442	ALD	Normal Reading	
SDU-05-XRF-09	2015-Apr-27 16:28	1	2	460	ALD	Normal Reading	
SDU-05-XRF-09	2015-Apr-27 16:30	1	3	437	ALD	Normal Reading	
SDU-05-XRF-02	2015-Apr-27 16:38	1	1	330	ALD	Normal Reading	
SDU-05-XRF-02	2015-Apr-27 16:40	1	2	339	ALD	Normal Reading	
SDU-05-XRF-02	2015-Apr-27 16:42	1	3	369	ALD	Normal Reading	
XRF QC 20150427	2015-Apr-27 17:25			329	ALD	Precision Calibration Check	SDU-05-XRF-02
XRF QC 20150427	2015-Apr-27 17:28			347	ALD	Precision Calibration Check	SDU-05-XRF-02
XRF QC 20150427	2015-Apr-27 17:30			342	ALD	Precision Calibration Check	SDU-05-XRF-02
XRF QC 20150427	2015-Apr-27 17:32			348	ALD	Precision Calibration Check	SDU-05-XRF-02; RSD = 3.9%
XRF QC 20150427	2015-Apr-27 17:36			0	ALD	Blank	SiO2 < 1.9
XRF QC 20150427	2015-Apr-27 17:38			1300	ALD	Calibration Verification Check	NIST 2711a, true value = 1400 ppm. 92.9%R
XRF QC 20150427	2015-Apr-27 17:40			1	ALD	Energy Calibration Check	passed
XRF QC readings	2015-Apr-28 9:39			1	ALD	Energy Calibration Check	passed
XRF QC readings	2015-Apr-28 9:42			0	ALD	Blank	SiO2 < 1.8
XRF QC readings	2015-Apr-28 9:44			12.4	ALD	Calibration Verification Check	NIST 2709a, true value 17.3 ppm. 71.7%R
XRF QC readings	2015-Apr-28 9:46			4977	ALD	Calibration Verification Check	NIST 2780, true value 5770 ppm. 86.3%R
SDU-05-XRF-01	2015-Apr-28 11:54	1	1	536	ALD	Normal Reading	
SDU-05-XRF-01	2015-Apr-28 11:56	1	2	345	ALD	Normal Reading	
SDU-05-XRF-01	2015-Apr-28 11:59	1	3	349	ALD	Normal Reading	
SDU-05-XRF-03	2015-Apr-28 12:01	1	1	343	ALD	Normal Reading	
SDU-05-XRF-03	2015-Apr-28 12:03	1	2	419	ALD	Normal Reading	
SDU-05-XRF-03	2015-Apr-28 12:06	1	3	368	ALD	Normal Reading	
SDU-05-XRF-R03	2015-Apr-28 12:08	1	1	331	ALD	Normal Reading	Reserve location for SDU-05-XRF-07
SDU-05-XRF-R03	2015-Apr-28 12:10	1	2	363	ALD	Normal Reading	Reserve location for SDU-05-XRF-07
SDU-05-XRF-R03	2015-Apr-28 12:13	1	3	339	ALD	Normal Reading	Reserve location for SDU-05-XRF-07
SDU-09-XRF-01	2015-Apr-28 13:20	1	1	10.8	ALD	Normal Reading	
SDU-09-XRF-01	2015-Apr-28 13:22	1	2	12.9	ALD	Normal Reading	
SDU-09-XRF-01	2015-Apr-28 13:25	1	3	13.2	ALD	Normal Reading	

**Table F-2
XRF Run Log
Bossburg Flat Beach Refined Sediment and Soil Study**

Sample	Analysis Date/Time	Set	Run	Lead (ppm)	Initials	Reading Type	Comments
SDU-09-XRF-02	2015-Apr-28 13:29	1	1	73.8	ALD	Normal Reading	
SDU-09-XRF-02	2015-Apr-28 13:31	1	2	85.9	ALD	Normal Reading	
SDU-09-XRF-02	2015-Apr-28 13:34	1	3	82.4	ALD	Normal Reading	
SDU-09-XRF-03	2015-Apr-28 13:37	1	1	136.7	ALD	Normal Reading	
SDU-09-XRF-03	2015-Apr-28 13:39	1	2	137.4	ALD	Normal Reading	
SDU-09-XRF-03	2015-Apr-28 13:42	1	3	127.6	ALD	Normal Reading	
SDU-09-XRF-04	2015-Apr-28 13:45	1	1	115.4	ALD	Normal Reading	
SDU-09-XRF-04	2015-Apr-28 13:47	1	2	104.3	ALD	Normal Reading	
SDU-09-XRF-04	2015-Apr-28 13:50	1	3	102	ALD	Normal Reading	
SDU-10-XRF-01	2015-Apr-28 13:54	1	1	76.8	ALD	Normal Reading	
SDU-10-XRF-01	2015-Apr-28 13:56	1	2	76.5	ALD	Normal Reading	
SDU-10-XRF-01	2015-Apr-28 13:59	1	3	86.4	ALD	Normal Reading	
SDU-10-XRF-02	2015-Apr-28 14:03	1	1	91.4	ALD	Normal Reading	
SDU-10-XRF-02	2015-Apr-28 14:06	1	2	93.3	ALD	Normal Reading	
SDU-10-XRF-02	2015-Apr-28 14:09	1	3	88	ALD	Normal Reading	
SDU-10-XRF-03	2015-Apr-28 14:13	1	1	99.2	ALD	Normal Reading	
SDU-10-XRF-03	2015-Apr-28 14:15	1	2	106.9	ALD	Normal Reading	
SDU-10-XRF-03	2015-Apr-28 14:17	1	3	89.5	ALD	Normal Reading	
SDU-10-XRF-04	2015-Apr-28 14:46	1	1	247	ALD	Normal Reading	
SDU-10-XRF-04	2015-Apr-28 14:48	1	2	349	ALD	Normal Reading	
SDU-10-XRF-04	2015-Apr-28 14:50	1	3	318	ALD	Normal Reading	
XRF QC readings	2015-Apr-28 14:53			261	ALD	Precision Calibration Check	SDU-10-XRF-04
XRF QC readings	2015-Apr-28 14:55			292	ALD	Precision Calibration Check	SDU-10-XRF-04
XRF QC readings	2015-Apr-28 14:58			255	ALD	Precision Calibration Check	SDU-10-XRF-04
XRF QC readings	2015-Apr-28 15:00			258	ALD	Precision Calibration Check	SDU-10-XRF-04; RSD = 13.6%
XRF QC readings	2015-Apr-28 15:04			0	ALD	Blank	SiO2 <1.8
XRF QC readings	2015-Apr-28 15:06			4997	ALD	Calibration Verification Check	NIST 2780 true value 5770 ppm. 86.6%R
XRF QC readings	2015-Apr-28 15:08			1	ALD	Energy Calibration Check	passed
XRF QC readings	2015-Apr-29 8:25			1	ALD	Energy Calibration Check	passed
XRF QC readings	2015-Apr-29 8:28			0	ALD	Blank	SiO2 <1.8

**Table F-2
XRF Run Log
Bossburg Flat Beach Refined Sediment and Soil Study**

Sample	Analysis Date/Time	Set	Run	Lead (ppm)	Initials	Reading Type	Comments
XRF QC readings	2015-Apr-29 8:30			13.2	ALD	Calibration Verification Check	NIST 2709a, true value 17.3 ppm. 76.3%R
XRF QC readings	2015-Apr-29 8:36			1296	ALD	Calibration Verification Check	NIST 2711a, true value 1400 ppm. 92.6%R
SDU-06-XRF-01	2015-Apr-29 8:40	1	1	24.1	ALD	Normal Reading	
SDU-06-XRF-01	2015-Apr-29 8:42	1	2	25.1	ALD	Normal Reading	
SDU-06-XRF-01	2015-Apr-29 8:44	1	3	25.6	ALD	Normal Reading	
SDU-06-XRF-02	2015-Apr-29 8:46	1	1	23.3	ALD	Normal Reading	
SDU-06-XRF-02	2015-Apr-29 8:49	1	2	27	ALD	Normal Reading	
SDU-06-XRF-02	2015-Apr-29 8:51	1	3	25.3	ALD	Normal Reading	
SDU-06-XRF-04	2015-Apr-29 8:54	1	1	19.9	ALD	Normal Reading	
SDU-06-XRF-04	2015-Apr-29 8:56	1	2	17.5	ALD	Normal Reading	
SDU-06-XRF-04	2015-Apr-29 8:58	1	3	18.2	ALD	Normal Reading	
SDU-06-XRF-05	2015-Apr-29 9:03	1	1	30.9	ALD	Normal Reading	
SDU-06-XRF-05	2015-Apr-29 9:06	1	2	33.5	ALD	Normal Reading	
SDU-06-XRF-05	2015-Apr-29 9:08	1	3	34.3	ALD	Normal Reading	
SDU-06-XRF-R02	2015-Apr-29 9:11	1	1	13.2	ALD	Normal Reading	Reserve location for SDU-06-XRF-03
SDU-06-XRF-R02	2015-Apr-29 9:13	1	2	13.5	ALD	Normal Reading	Reserve location for SDU-06-XRF-03
SDU-06-XRF-R02	2015-Apr-29 9:15	1	3	16.9	ALD	Normal Reading	Reserve location for SDU-06-XRF-03
XRF QC readings	2015-Apr-29 9:18			30.9	ALD	Precision Calibration Check	SDU-06-XRF-R02; result jumped up from previous 3 readings.
XRF QC readings	2015-Apr-29 9:20			31.3	ALD	Precision Calibration Check	SDU-06-XRF-R02
XRF QC readings	2015-Apr-29 9:23			29.6	ALD	Precision Calibration Check	SDU-06-XRF-R02
XRF QC readings	2015-Apr-29 9:26			30.3	ALD	Precision Calibration Check	SDU-06-XRF-R02
XRF QC readings	2015-Apr-29 9:29			8.3	ALD	Blank	SiO ₂ ; detected higher than normal
XRF QC readings	2015-Apr-29 9:33			9.3	ALD	Blank	SiO ₂ ; higher than normal
XRF QC readings	2015-Apr-29 9:36			24.3	ALD	Calibration Verification Check	NIST 2709a, true value 17.3 ppm. 140%R - higher recovery than normal for this standard.
XRF QC readings	2015-Apr-29 9:39			1331	ALD	Calibration Verification Check	NIST 2711a, true value 1400 ppm. 95.1%R - within normal recovery of this standard.
XRF QC readings	2015-Apr-29 9:40			1	ALD	Energy Calibration Check	passed

Table F-2
XRF Run Log
Bossburg Flat Beach Refined Sediment and Soil Study

Sample	Analysis Date/Time	Set	Run	Lead (ppm)	Initials	Reading Type	Comments
XRF QC readings	2015-Apr-29 9:44			0	ALD	Blank	SiO2 < 1.8. Response appears back to normal now. All results back to 4th reading of precision sample are suspect and should not be used.
XRF QC readings	2015-Apr-29 9:52			12.1	ALD	Calibration Verification Check	NIST 2709a, true value 17.3 ppm. 69.9%R - typical recovery for this low level standard.
XRF QC readings	2015-Apr-29 9:57			16.2	ALD	Precision Calibration Check	SDU-06-XRF-R02
XRF QC readings	2015-Apr-29 9:59			16.1	ALD	Precision Calibration Check	SDU-06-XRF-R02
XRF QC readings	2015-Apr-29 10:01			15.1	ALD	Precision Calibration Check	SDU-06-XRF-R02
XRF QC readings	2015-Apr-29 10:04			13.1	ALD	Precision Calibration Check	SDU-06-XRF-R02; RSD = 10.7%
XRF QC readings	2015-Apr-29 10:09			35.9	ALD	Normal Reading	recheck of SDU-06-XRF-05 confirms previous results; not necessary to rerun other samples analyzed prior to equipment malfunction.
XRF QC readings	2015-Apr-29 10:12			1302	ALD	Calibration Verification Check	NIST 2711a, true value 1400 ppm. 93%R
XRF QC readings	2015-Apr-29 10:13			1	ALD	Energy Calibration Check	passed
XRF QC readings	2015-Apr-29 10:14			0	ALD	Blank	SiO2 <1.8
UDU-05-XRF-08	2015-Apr-30 11:35	1	1	127.7	ALD	Normal Reading	
UDU-05-XRF-08	2015-Apr-30 11:37	1	2	117.7	ALD	Normal Reading	
UDU-05-XRF-08	2015-Apr-30 11:39	1	3	100	ALD	Normal Reading	
UDU-05-XRF-09	2015-Apr-30 11:47	1	1	127	ALD	Normal Reading	
UDU-05-XRF-09	2015-Apr-30 11:50	1	2	161.3	ALD	Normal Reading	
UDU-05-XRF-09	2015-Apr-30 11:52	1	3	185.4	ALD	Normal Reading	
UDU-05-XRF-10	2015-Apr-30 11:55	1	1	13.9	ALD	Normal Reading	
UDU-05-XRF-10	2015-Apr-30 11:57	1	2	19.2	ALD	Normal Reading	
UDU-05-XRF-10	2015-Apr-30 11:59	1	3	17.4	ALD	Normal Reading	
UDU-05-XRF-11	2015-Apr-30 12:54	1	1	21.2	ALD	Normal Reading	
UDU-05-XRF-11	2015-Apr-30 12:59	1	2	52.5	ALD	Normal Reading	%D exceeded 35%, sample reanalyzed
UDU-05-XRF-11	2015-Apr-30 13:01	1	3	20.3	ALD	Normal Reading	%D exceeded 35%, sample reanalyzed
UDU-05-XRF-11	2015-Apr-30 13:04	2	1	18.5	ALD	Normal Reading	
UDU-05-XRF-11	2015-Apr-30 13:06	2	2	18.3	ALD	Normal Reading	
UDU-05-XRF-11	2015-Apr-30 13:09	2	3	34.2	ALD	Normal Reading	%D exceeded 35%, sample reanalyzed
UDU-05-XRF-11	2015-Apr-30 13:17	3	1	18.5	ALD	Normal Reading	

Table F-2
XRF Run Log
Bossburg Flat Beach Refined Sediment and Soil Study

Sample	Analysis Date/Time	Set	Run	Lead (ppm)	Initials	Reading Type	Comments
UDU-05-XRF-11	2015-Apr-30 13:19	3	2	17.6	ALD	Normal Reading	
UDU-05-XRF-11	2015-Apr-30 13:22	3	3	18	ALD	Normal Reading	
UDU-05-XRF-12	2015-Apr-30 13:25	1	1	1155	ALD	Normal Reading	
UDU-05-XRF-12	2015-Apr-30 13:27	1	2	954	ALD	Normal Reading	
UDU-05-XRF-12	2015-Apr-30 13:29	1	3	998	ALD	Normal Reading	
UDU-05-XRF-13	2015-Apr-30 13:32	1	1	38.3	ALD	Normal Reading	
UDU-05-XRF-13	2015-Apr-30 13:34	1	2	39.2	ALD	Normal Reading	
UDU-05-XRF-13	2015-Apr-30 13:36	1	3	37.8	ALD	Normal Reading	
UDU-05-XRF-01	2015-Apr-30 15:18	1	1	22.9	ALD	Normal Reading	
UDU-05-XRF-01	2015-Apr-30 15:20	1	2	21.2	ALD	Normal Reading	
UDU-05-XRF-01	2015-Apr-30 15:23	1	3	18.6	ALD	Normal Reading	
UDU-05-XRF-03	2015-Apr-30 15:26	1	1	19.4	ALD	Normal Reading	
UDU-05-XRF-03	2015-Apr-30 15:28	1	2	14.7	ALD	Normal Reading	
UDU-05-XRF-03	2015-Apr-30 15:30	1	3	14.9	ALD	Normal Reading	
UDU-05-XRF-04	2015-Apr-30 15:35	1	1	65.8	ALD	Normal Reading	
UDU-05-XRF-04	2015-Apr-30 15:37	1	2	49.6	ALD	Normal Reading	
UDU-05-XRF-04	2015-Apr-30 15:39	1	3	66.2	ALD	Normal Reading	
UDU-05-XRF-02	2015-Apr-30 16:30	1	1	23	ALD	Normal Reading	
UDU-05-XRF-02	2015-Apr-30 16:32	1	2	25.3	ALD	Normal Reading	
UDU-05-XRF-02	2015-Apr-30 16:35	1	3	25.8	ALD	Normal Reading	
UDU-05-XRF-05	2015-Apr-30 16:42	1	1	30.3	ALD	Normal Reading	
UDU-05-XRF-05	2015-Apr-30 16:44	1	2	33.6	ALD	Normal Reading	
UDU-05-XRF-05	2015-Apr-30 16:46	1	3	29.2	ALD	Normal Reading	
UDU-05-XRF-06	2015-Apr-30 16:47	1	1	21.5	ALD	Normal Reading	
UDU-05-XRF-06	2015-Apr-30 16:49	1	2	18	ALD	Normal Reading	
UDU-05-XRF-06	2015-Apr-30 16:51	1	3	21.6	ALD	Normal Reading	
UDU-05-XRF-07	2015-Apr-30 16:57	1	1	190	ALD	Normal Reading	
UDU-05-XRF-07	2015-Apr-30 17:00	1	2	160	ALD	Normal Reading	
UDU-05-XRF-07	2015-Apr-30 17:02	1	3	219	ALD	Normal Reading	
XRF QC readings	2015-May-02 14:28			1	ALD	Energy Calibration Check	Passed

Table F-2
XRF Run Log
Bosburg Flat Beach Refined Sediment and Soil Study

Sample	Analysis Date/Time	Set	Run	Lead (ppm)	Initials	Reading Type	Comments
XRF QC readings	2015-May-02 14:30			0	ALD	Blank	SiO2 < 1.8
XRF QC readings	2015-May-02 14:32			13.4	ALD	Calibration Verification Check	NIST 2709a, true value = 17.3. 77.5%R
XRF QC readings	2015-May-02 14:34			1317	ALD	Calibration Verification Check	NIST 2711a, true value = 1400. 94.1%R
SDU-04-XRF-01	2015-May-02 14:44	1	1	29	ALD	Normal Reading	
SDU-04-XRF-01	2015-May-02 14:48	1	2	29.3	ALD	Normal Reading	
SDU-04-XRF-01	2015-May-02 14:51	1	3	30.3	ALD	Normal Reading	
SDU-04-XRF-02	2015-May-02 14:54	1	1	53.6	ALD	Normal Reading	
SDU-04-XRF-02	2015-May-02 14:56	1	2	47.3	ALD	Normal Reading	
SDU-04-XRF-02	2015-May-02 14:59	1	3	36.4	ALD	Normal Reading	
SDU-04-XRF-03	2015-May-02 15:02	1	1	28.1	ALD	Normal Reading	
SDU-04-XRF-03	2015-May-02 15:04	1	2	35.1	ALD	Normal Reading	
SDU-04-XRF-03	2015-May-02 15:06	1	3	24.8	ALD	Normal Reading	
SDU-04-XRF-04	2015-May-02 15:45	1	1	98.1	ALD	Normal Reading	
SDU-04-XRF-04	2015-May-02 15:47	1	2	103.2	ALD	Normal Reading	
SDU-04-XRF-04	2015-May-02 15:49	1	3	137.4	ALD	Normal Reading	
SDU-08-XRF-02	2015-May-02 15:56	1	1	201	ALD	Normal Reading	
SDU-08-XRF-02	2015-May-02 15:58	1	2	142.1	ALD	Normal Reading	
SDU-08-XRF-02	2015-May-02 16:00	1	3	135	ALD	Normal Reading	
SDU-08-XRF-04	2015-May-02 16:04	1	1	525	ALD	Normal Reading	
SDU-08-XRF-04	2015-May-02 16:06	1	2	603	ALD	Normal Reading	
SDU-08-XRF-04	2015-May-02 16:08	1	3	621	ALD	Normal Reading	
SDU-08-XRF-R03	2015-May-02 16:30	1	1	243	ALD	Normal Reading	Reserve location for SDU-08-XRF-03
SDU-08-XRF-R03	2015-May-02 16:32	1	2	279	ALD	Normal Reading	Reserve location for SDU-08-XRF-03
SDU-08-XRF-R03	2015-May-02 16:34	1	3	249	ALD	Normal Reading	Reserve location for SDU-08-XRF-03
XRF QC readings	2015-May-02 16:36			245	ALD	Precision Calibration Check	SDU-08-XRF-R03
XRF QC readings	2015-May-02 16:38			257	ALD	Precision Calibration Check	SDU-08-XRF-R03
XRF QC readings	2015-May-02 16:40			249	ALD	Precision Calibration Check	SDU-08-XRF-R03
XRF QC readings	2015-May-02 16:42			280	ALD	Precision Calibration Check	SDU-08-XRF-R03; RSD = 6.1%
SDU-08-XRF-01	2015-May-02 16:59	1	1	338	ALD	Normal Reading	
SDU-08-XRF-01	2015-May-02 17:01	1	2	346	ALD	Normal Reading	

Table F-2
XRF Run Log
Bosburg Flat Beach Refined Sediment and Soil Study

Sample	Analysis Date/Time	Set	Run	Lead (ppm)	Initials	Reading Type	Comments
SDU-08-XRF-01	2015-May-02 17:03	1	3	337	ALD	Normal Reading	
XRF QC readings	2015-May-02 17:07			0	ALD	Blank	SiO2 < 1.9
XRF QC readings	2015-May-02 17:09			1325	ALD	Calibration Verification Check	NIST 2711a, true value = 1400. 94.6%R
XRF QC readings	2015-May-02 17:10			1	ALD	Energy Calibration Check	passed
XRF QC 20150504	2015-May-04 11:39			1	ALD	Energy Calibration Check	passed
XRF QC 20150504	2015-May-04 11:42			0	ALD	Blank	SiO2 <1.8
XRF QC 20150504	2015-May-04 11:49			13	ALD	Calibration Verification Check	NIST 2709a, true value = 17.3 ppm. 75.1%R
XRF QC 20150504	2015-May-04 11:52			4984	ALD	Calibration Verification Check	NIST 2780, true value = 5770 ppm. 86.4%R
SDU-07-XRF-02	2015-May-04 11:55	1	1	103.4	ALD	Normal Reading	
SDU-07-XRF-02	2015-May-04 11:58	1	2	69.7	ALD	Normal Reading	
SDU-07-XRF-02	2015-May-04 12:01	1	3	78.5	ALD	Normal Reading	
SDU-07-XRF-04	2015-May-04 13:02	1	1	464	ALD	Normal Reading	
SDU-07-XRF-04	2015-May-04 13:05	1	2	452	ALD	Normal Reading	
SDU-07-XRF-04	2015-May-04 13:07	1	3	560	ALD	Normal Reading	
SDU-07-XRF-01	2015-May-04 13:55	1	1	508	ALD	Normal Reading	
SDU-07-XRF-01	2015-May-04 13:58	1	2	511	ALD	Normal Reading	
SDU-07-XRF-01	2015-May-04 14:01	1	3	494	ALD	Normal Reading	
SDU-07-XRF-03	2015-May-04 14:05	1	1	386	ALD	Normal Reading	
SDU-07-XRF-03	2015-May-04 14:07	1	2	403	ALD	Normal Reading	
SDU-07-XRF-03	2015-May-04 14:09	1	3	411	ALD	Normal Reading	
XRF QC 20150504	2015-May-04 14:12			453	ALD	Precision Calibration Check	SDU-07-XRF-03
XRF QC 20150504	2015-May-04 14:15			464	ALD	Precision Calibration Check	SDU-07-XRF-03
XRF QC 20150504	2015-May-04 14:17			438	ALD	Precision Calibration Check	SDU-07-XRF-03
XRF QC 20150504	2015-May-04 14:22			378	ALD	Precision Calibration Check	SDU-07-XRF-03; RSD = 7.9% RSD
XRF QC 20150504	2015-May-04 14:27			0	ALD	Blank	SiO2 <1.8
XRF QC 20150504	2015-May-04 14:34			4964	ALD	Calibration Verification Check	NIST 2780, true value = 5770 ppm. 86.0%R
XRF QC 20150504	2015-May-04 14:35			1	ALD	Energy Calibration Check	passed
XRF QC 20150505	2015-May-05 12:23			1	ALD	Energy Calibration Check	passed
XRF QC 20150505	2015-May-05 12:27			0	ALD	Blank	SiO2 <1.8
XRF QC 20150505	2015-May-05 12:30			15.8	ALD	Calibration Verification Check	NIST 2709a, true value = 17.3 ppm; 91.3%R

Table F-2
XRF Run Log
Bossburg Flat Beach Refined Sediment and Soil Study

Sample	Analysis Date/Time	Set	Run	Lead (ppm)	Initials	Reading Type	Comments
XRF QC 20150505	2015-May-05 12:34			1353	ALD	Calibration Verification Check	NIST 2711a, true value = 1400 ppm; 96.6%R
XRF QC 20150505	2015-May-05 12:38			0	ALD	In Situ Reading	aborted, tilted instrument
SDU-07-F-XRF-01	2015-May-05 12:41	1	1	59.3	ALD	In Situ Reading	
SDU-07-F-XRF-02	2015-May-05 12:47	1	1	51.2	ALD	In Situ Reading	
SDU-07-F-XRF-03	2015-May-05 12:53	1	1	49.9	ALD	In Situ Reading	
SDU-07-F-XRF-04	2015-May-05 12:58	1	1	65	ALD	In Situ Reading	
SDU-07-F-XRF-05	2015-May-05 13:02	1	1	67.4	ALD	In Situ Reading	
SDU-07-F-XRF-06	2015-May-05 13:07	1	1	54.3	ALD	In Situ Reading	
SDU-07-F-XRF-07	2015-May-05 13:11	1	1	68.1	ALD	In Situ Reading	
SDU-07-F-XRF-08	2015-May-05 13:15	1	1	66.7	ALD	In Situ Reading	
SDU-07-F-XRF-09	2015-May-05 13:18	1	1	56.2	ALD	In Situ Reading	
SDU-07-F-XRF-10	2015-May-05 13:22	1	1	52.9	ALD	In Situ Reading	
XRF QC 20150505	2015-May-05 13:24			51	ALD	In Situ Reading	duplicate reading of SDU-07-F-XRF-10; RPD = 3.7%
XRF QC 20150505	2015-May-05 13:28			0	ALD	Blank	SiO ₂ , <1.8
SDU-07-F-XRF-11	2015-May-05 13:31	1	1	53.8	ALD	In Situ Reading	
SDU-07-F-XRF-12	2015-May-05 13:35	1	1	55.7	ALD	In Situ Reading	
SDU-07-F-XRF-13	2015-May-05 13:38	1	1	59.4	ALD	In Situ Reading	
SDU-07-F-XRF-14	2015-May-05 13:43	1	1	69.2	ALD	In Situ Reading	
SDU-07-F-XRF-15	2015-May-05 13:46	1	1	65.7	ALD	In Situ Reading	
SDU-07-F-XRF-16	2015-May-05 13:50	1	1	64.6	ALD	In Situ Reading	
SDU-07-F-XRF-17	2015-May-05 13:54	1	1	57.6	ALD	In Situ Reading	
XRF QC 20150505	2015-May-05 13:56			0	ALD	In Situ Reading	aborted
SDU-07-F-XRF-18	2015-May-05 14:00	1	1	126	ALD	In Situ Reading	
SDU-07-F-XRF-19	2015-May-05 14:07	1	1	217	ALD	In Situ Reading	
SDU-07-F-XRF-20	2015-May-05 14:10	1	1	89.5	ALD	In Situ Reading	
XRF QC 20150505	2015-May-05 14:34			13.3	ALD	Calibration Verification Check	NIST 2709a, true value = 17.3 ppm; 76.9%R
SDU-07-F-XRF-21	2015-May-05 14:38	1	1	47.9	ALD	In Situ Reading	
SDU-07-F-XRF-22	2015-May-05 14:44	1	1	58.3	ALD	In Situ Reading	
SDU-07-F-XRF-23	2015-May-05 14:48	1	1	46.9	ALD	In Situ Reading	
XRF QC 20150505	2015-May-05 14:56			63.6	ALD	In Situ Reading	duplicate reading of SDU-07-F-XRF-20; RPD = 33.8%

Table F-2
XRF Run Log
Bossburg Flat Beach Refined Sediment and Soil Study

Sample	Analysis Date/Time	Set	Run	Lead (ppm)	Initials	Reading Type	Comments
SDU-07-F-XRF-24	2015-May-05 15:03	1	1	24.8	ALD	In Situ Reading	
SDU-07-F-XRF-25	2015-May-05 15:07	1	1	53.3	ALD	In Situ Reading	
SDU-07-F-XRF-26	2015-May-05 15:10	1	1	57.7	ALD	In Situ Reading	
SDU-07-F-XRF-27	2015-May-05 15:14	1	1	108.8	ALD	In Situ Reading	
SDU-07-F-XRF-28	2015-May-05 15:17	1	1	63.3	ALD	In Situ Reading	
SDU-07-F-XRF-29	2015-May-05 15:22	1	1	45.1	ALD	In Situ Reading	
SDU-07-F-XRF-30	2015-May-05 15:26	1	1	82.3	ALD	In Situ Reading	
XRF QC 20150505	2015-May-05 15:29			59.8	ALD	In Situ Reading	duplicate of SDU-07-F-XRF-30; RPD = 31.7%
SDU-07-F-XRF-31	2015-May-05 15:33	1	1	76.8	ALD	In Situ Reading	
SDU-07-F-XRF-32	2015-May-05 15:38	1	1	74.7	ALD	In Situ Reading	
SDU-07-F-XRF-33	2015-May-05 15:42	1	1	66.4	ALD	In Situ Reading	
SDU-07-F-XRF-34	2015-May-05 15:46	1	1	114.7	ALD	In Situ Reading	
SDU-07-F-XRF-35	2015-May-05 15:51	1	1	74.7	ALD	In Situ Reading	
XRF QC 20150505	2015-May-05 15:52			0	ALD	In Situ Reading	abort - tilted
SDU-07-F-XRF-36	2015-May-05 15:56	1	1	67	ALD	In Situ Reading	
SDU-07-F-XRF-37	2015-May-05 16:00	1	1	92.2	ALD	In Situ Reading	
SDU-07-F-XRF-38	2015-May-05 16:06	1	1	68.9	ALD	In Situ Reading	
SDU-07-F-XRF-39	2015-May-05 16:09	1	1	64.4	ALD	In Situ Reading	
XRF QC 20150505	2015-May-05 16:12			67.7	ALD	In Situ Reading	duplicate of SDU-07-F-XRF-39; RPD = 5.0%
XRF QC 20150505	2015-May-05 16:17			0	ALD	Blank	SiO ₂ , <1.8
XRF QC 20150505	2015-May-05 16:20			1276	ALD	In Situ Reading	NIST 2711a, true value = 1400 ppm; 91.1%R
XRF QC 20150505	2015-May-05 16:21			0	ALD	Energy Calibration Check	abort trying to analyze stainless steel coupon
XRF QC 20150505	2015-May-05 16:22			1	ALD	Energy Calibration Check	passed
XRF QC 20150505	2015-May-05 16:28			67	ALD	Precision Calibration Check	SDU-07-F-XRF-39
XRF QC 20150505	2015-May-05 16:30			41.2	ALD	Precision Calibration Check	SDU-07-F-XRF-39
XRF QC 20150505	2015-May-05 16:33			68.4	ALD	Precision Calibration Check	SDU-07-F-XRF-39
XRF QC 20150505	2015-May-05 16:35			0	ALD	Precision Calibration Check	aborted - tilted
XRF QC 20150505	2015-May-05 16:38			58.7	ALD	Precision Calibration Check	SDU-07-F-XRF-39
XRF QC 20150505	2015-May-05 16:42			70.9	ALD	Precision Calibration Check	SDU-07-F-XRF-39; RSD = 16.3%
XRF QC 20150505	2015-May-05 16:44			1	ALD	Energy Calibration Check	passed

Table F-2
XRF Run Log
Bossburg Flat Beach Refined Sediment and Soil Study

Sample	Analysis Date/Time	Set	Run	Lead (ppm)	Initials	Reading Type	Comments
XRF QC 20150506	2015-May-06 12:39			1	ALD	Energy Calibration Check	passed
XRF QC 20150506	2015-May-06 12:42			0	ALD	Blank	SiO ₂ , <1.9
XRF QC 20150506	2015-May-06 12:45			13	ALD	Calibration Verification Check	NIST 2709a, true value = 17.3 ppm; 75.1%R
XRF QC 20150506	2015-May-06 12:48			5001	ALD	Calibration Verification Check	NIST 2780, true value = 5770 ppm; 86.7%R
SDU-09A-05	2015-May-06 13:02	1	1	57	ALD	In Situ Reading	
SDU-09A-17	2015-May-06 13:08	1	1	91.6	ALD	In Situ Reading	
SDU-09A-R02	2015-May-06 13:12	1	1	58.7	ALD	In Situ Reading	
SDU-09A-14	2015-May-06 13:16	1	1	68.2	ALD	In Situ Reading	
SDU-09A-R03	2015-May-06 13:20	1	1	62.1	ALD	In Situ Reading	
SDU-09A-03	2015-May-06 13:24	1	1	62.4	ALD	In Situ Reading	
SDU-09A-13	2015-May-06 13:27	1	1	44	ALD	In Situ Reading	
SDU-09A-12	2015-May-06 13:30	1	1	70	ALD	In Situ Reading	
SDU-09A-26	2015-May-06 13:34	1	1	98	ALD	In Situ Reading	
SDU-09A-10	2015-May-06 13:38	1	1	60.9	ALD	In Situ Reading	
XRF QC 20150506	2015-May-06 13:41			71.2	ALD	In Situ Reading	duplicate of SDU-09A-10; RPD = 15.6%
SDU-09A-R04	2015-May-06 13:45	1	1	54.9	ALD	In Situ Reading	
SDU-09A-23	2015-May-06 13:48	1	1	55.7	ALD	In Situ Reading	
SDU-09A-29	2015-May-06 13:52	1	1	73.9	ALD	In Situ Reading	
SDU-09A-19	2015-May-06 13:55	1	1	68.2	ALD	In Situ Reading	
SDU-09A-06	2015-May-06 13:58	1	1	41.6	ALD	In Situ Reading	
SDU-09A-28	2015-May-06 14:02	1	1	79.6	ALD	In Situ Reading	
SDU-09A-22	2015-May-06 14:05	1	1	85.1	ALD	In Situ Reading	
SDU-09A-25	2015-May-06 14:09	1	1	20.7	ALD	In Situ Reading	
SDU-09A-16	2015-May-06 14:13	1	1	80.3	ALD	In Situ Reading	
SDU-09A-01	2015-May-06 14:18	1	1	120	ALD	In Situ Reading	
XRF QC 20150506	2015-May-06 14:20			0	ALD	In Situ Reading	abort - tilted
SDU-09A-27	2015-May-06 14:22	1	1	109.4	ALD	In Situ Reading	
XRF QC 20150506	2015-May-06 14:26			121.6	ALD	In Situ Reading	duplicate of SDU-09A-01; RPD = 1.32%
SDU-09A-08	2015-May-06 14:29	1	1	19.5	ALD	In Situ Reading	
SDU-09A-20	2015-May-06 14:33	1	1	57.7	ALD	In Situ Reading	

Table F-2
XRF Run Log
Bossburg Flat Beach Refined Sediment and Soil Study

Sample	Analysis Date/Time	Set	Run	Lead (ppm)	Initials	Reading Type	Comments
SDU-09A-04	2015-May-06 14:37	1	1	111	ALD	In Situ Reading	
SDU-09A-07	2015-May-06 14:41	1	1	60.1	ALD	In Situ Reading	
XRF QC 20150506	2015-May-06 14:56			5057	ALD	Calibration Verification Check	NIST 2780, true value = 5770 ppm; 87.6%R
XRF QC 20150506	2015-May-06 15:00			0	ALD	Blank	SiO ₂ , <1.8
XRF QC 20150506	2015-May-06 15:01			1	ALD	Energy Calibration Check	passed
XRF QC 20150506	2015-May-06 15:04			1	ALD	Energy Calibration Check	passed
XRF QC 20150506	2015-May-06 15:06			0	ALD	Blank	SiO ₂ , <1.8
XRF QC 20150506	2015-May-06 15:09			5019	ALD	Calibration Verification Check	NIST 2780, true value = 5770 ppm; 87.0%R
SDU-09A-02	2015-May-06 15:15	1	1	21.3	ALD	In Situ Reading	
SDU-09A-R06	2015-May-06 15:19	1	1	63.8	ALD	In Situ Reading	
SDU-09A-24	2015-May-06 15:23	1	1	132.8	ALD	In Situ Reading	
SDU-09A-11	2015-May-06 15:26	1	1	179	ALD	In Situ Reading	
SDU-09A-15	2015-May-06 15:31	1	1	74.8	ALD	In Situ Reading	
XRF QC 20150506	2015-May-06 15:32			0	ALD	In Situ Reading	abort - cord in way
XRF QC 20150506	2015-May-06 15:34			88.4	ALD	In Situ Reading	duplicate of SDU-09A-15; RPD = 16.7%
XRF QC 20150506	2015-May-06 15:39			0	ALD	Blank	SiO ₂ , <1.8
XRF QC 20150506	2015-May-06 15:42			5160	ALD	Calibration Verification Check	NIST 2780, true value = 5770 ppm; 89.4%R
XRF QC 20150506	2015-May-06 15:45			12.5	ALD	Calibration Verification Check	NIST 2709a, true value = 17.3 ppm; 72.3%R
XRF QC 20150506	2015-May-06 15:50			131.5	ALD	Precision Calibration Check	SDU-09A-01
XRF QC 20150506	2015-May-06 15:53			129.2	ALD	Precision Calibration Check	SDU-09A-01
XRF QC 20150506	2015-May-06 15:56			137	ALD	Precision Calibration Check	SDU-09A-01
XRF QC 20150506	2015-May-06 15:58			61.7	ALD	Precision Calibration Check	SDU-09A-01
XRF QC 20150506	2015-May-06 16:01			117.3	ALD	Precision Calibration Check	SDU-09A-01; RSD = 21.7%
XRF QC 20150506	2015-May-06 16:05			1	ALD	Energy Calibration Check	passed
XRF QC 20150507	2015-May-07 11:42			1	ALD	Energy Calibration Check	passed
XRF QC 20150507	2015-May-07 11:46			0	ALD	Blank	SiO ₂ <1.9
XRF QC 20150507	2015-May-07 11:50			11.6	ALD	Calibration Verification Check	NIST 2709a, true value = 17.3 ppm. 67.1%R
XRF QC 20150507	2015-May-07 12:01			1317	ALD	Calibration Verification Check	NIST 2711a, true value = 1400 ppm. 94.1%R
UDU-06-XRF-05	2015-May-07 12:05	1	1	19.6	ALD	Normal Reading	
UDU-06-XRF-05	2015-May-07 12:08	1	2	22.6	ALD	Normal Reading	

Table F-2
XRF Run Log
Bosburg Flat Beach Refined Sediment and Soil Study

Sample	Analysis Date/Time	Set	Run	Lead (ppm)	Initials	Reading Type	Comments
UDU-06-XRF-05	2015-May-07 12:11	1	3	21.9	ALD	Normal Reading	
UDU-06-XRF-01	2015-May-07 12:28	1	1	66.6	ALD	Normal Reading	
UDU-06-XRF-01	2015-May-07 12:34	1	2	62.3	ALD	Normal Reading	
UDU-06-XRF-01	2015-May-07 12:37	1	3	66.3	ALD	Normal Reading	
UDU-06-XRF-02	2015-May-07 12:39	1	1	70.2	ALD	Normal Reading	
UDU-06-XRF-02	2015-May-07 12:42	1	2	54.2	ALD	Normal Reading	
UDU-06-XRF-02	2015-May-07 12:44	1	3	57.3	ALD	Normal Reading	
UDU-06-XRF-03	2015-May-07 13:32	1	1	60.4	ALD	Normal Reading	
UDU-06-XRF-03	2015-May-07 13:35	1	2	59.4	ALD	Normal Reading	
UDU-06-XRF-03	2015-May-07 13:37	1	3	62.2	ALD	Normal Reading	
UDU-06-XRF-04	2015-May-07 13:40	1	1	42.5	ALD	Normal Reading	
UDU-06-XRF-04	2015-May-07 13:43	1	2	41.1	ALD	Normal Reading	
UDU-06-XRF-04	2015-May-07 13:45	1	3	43.5	ALD	Normal Reading	
XRF QC 20150507	2015-May-07 13:52			41.8	ALD	Precision Calibration Check	UDU-06-XRF-04
XRF QC 20150507	2015-May-07 13:54			39.5	ALD	Precision Calibration Check	UDU-06-XRF-04
XRF QC 20150507	2015-May-07 13:56			43.9	ALD	Precision Calibration Check	UDU-06-XRF-04
XRF QC 20150507	2015-May-07 13:59			41.2	ALD	Precision Calibration Check	UDU-06-XRF-04; RSD = 3.6%
XRF QC 20150507	2015-May-07 14:01			0	ALD	Blank	SiO2 <1.8
XRF QC 20150507	2015-May-07 14:05			1304	ALD	Calibration Verification Check	NIST 2711a, true value = 1400 ppm. 93.1%R
XRF QC 20150507	2015-May-07 14:06			1	ALD	Energy Calibration Check	passed
XRF QC 20150508	2015-May-08 11:16			1	ALD	Energy Calibration Check	passed
XRF QC 20150508	2015-May-08 11:19			0	ALD	Blank	SiO2, <1.8
XRF QC 20150508	2015-May-08 11:22			13.6	ALD	Calibration Verification Check	NIST 2709a, true value = 17.3 ppm; 78.6%R
XRF QC 20150508	2015-May-08 11:25			1365	ALD	Calibration Verification Check	NIST 2711a, true value = 1400 ppm; 97.5%R
SDU-10-24	2015-May-08 11:33	1	1	81.9	ALD	In Situ Reading	
SDU-10-R02	2015-May-08 11:36	1	1	51	ALD	In Situ Reading	
SDU-10-02	2015-May-08 11:38	1	1	67.5	ALD	In Situ Reading	
SDU-10-29	2015-May-08 11:42	1	1	52.9	ALD	In Situ Reading	
SDU-10-15	2015-May-08 11:46	1	1	103.3	ALD	In Situ Reading	
SDU-10-07	2015-May-08 11:49	1	1	143.3	ALD	In Situ Reading	

**Table F-2
XRF Run Log
Bossburg Flat Beach Refined Sediment and Soil Study**

Sample	Analysis Date/Time	Set	Run	Lead (ppm)	Initials	Reading Type	Comments
SDU-10-14	2015-May-08 11:52	1	1	59.7	ALD	In Situ Reading	
SDU-10-28	2015-May-08 11:54	1	1	153	ALD	In Situ Reading	
SDU-10-16	2015-May-08 11:58	1	1	71.3	ALD	In Situ Reading	
SDU-10-22	2015-May-08 12:02	1	1	63	ALD	In Situ Reading	
XRF QC 20150508	2015-May-08 12:04			67.6	ALD	In Situ Reading	duplicate of SDU-10-22; RPD = 7.0%
SDU-10-25	2015-May-08 12:11	1	1	73.4	ALD	In Situ Reading	
SDU-10-13	2015-May-08 12:14	1	1	99.7	ALD	In Situ Reading	
SDU-10-26	2015-May-08 12:17	1	1	138.9	ALD	In Situ Reading	
SDU-10-20	2015-May-08 12:20	1	1	73.1	ALD	In Situ Reading	
SDU-10-11	2015-May-08 12:23	1	1	55.2	ALD	In Situ Reading	
SDU-10-23	2015-May-08 12:27	1	1	77.8	ALD	In Situ Reading	
SDU-10-12	2015-May-08 12:31	1	1	59.1	ALD	In Situ Reading	
SDU-10-30	2015-May-08 12:34	1	1	60.9	ALD	In Situ Reading	
SDU-10-27	2015-May-08 12:38	1	1	105.6	ALD	In Situ Reading	
SDU-10-01	2015-May-08 12:41	1	1	35.7	ALD	In Situ Reading	
XRF QC 20150508	2015-May-08 12:42			51.6	ALD	In Situ Reading	duplicate of SDU-10-01; RPD = 36.4%
SDU-10-10	2015-May-08 12:46	1	1	42	ALD	In Situ Reading	
SDU-10-R06	2015-May-08 12:49	1	1	123.2	ALD	In Situ Reading	crust
XRF QC 20150508	2015-May-08 13:02			0	ALD	Blank	SiO ₂ , <1.9
XRF QC 20150508	2015-May-08 13:05			0	ALD	In Situ Reading	abort
SDU-10-18	2015-May-08 13:07	1	1	182	ALD	In Situ Reading	crust
SDU-10-17	2015-May-08 13:13	1	1	36.1	ALD	In Situ Reading	
SDU-10-R04	2015-May-08 13:16	1	1	47	ALD	In Situ Reading	
SDU-10-03	2015-May-08 13:19	1	1	67.2	ALD	In Situ Reading	
SDU-10-19	2015-May-08 13:23	1	1	192	ALD	In Situ Reading	crust; Two in situ XRF results (192.0 ppm and 161.3 ppm) were collected for this increment approximately 15 feet apart. It is unclear which XRF location represents the ICS sample location. The RPD between the two results is 17.4%.
XRF QC 20150508	2015-May-08 13:26			161.3	ALD	In Situ Reading	second flag identified as SDU-10-19 about 15 feet from first flag, could be original/intended location.

Table F-2
XRF Run Log
Bossburg Flat Beach Refined Sediment and Soil Study

Sample	Analysis Date/Time	Set	Run	Lead (ppm)	Initials	Reading Type	Comments
SDU-10-21	2015-May-08 13:29	1	1	130.4	ALD	In Situ Reading	crust
SDU-10-06	2015-May-08 13:40	1	1	47.3	ALD	In Situ Reading	
XRF QC 20150508	2015-May-08 13:43			65.3	ALD	Precision Calibration Check	SDU-10-06
XRF QC 20150508	2015-May-08 13:45			43.7	ALD	Precision Calibration Check	SDU-10-06
XRF QC 20150508	2015-May-08 13:48			44.7	ALD	Precision Calibration Check	SDU-10-06
XRF QC 20150508	2015-May-08 13:50			46.3	ALD	Precision Calibration Check	SDU-10-06
XRF QC 20150508	2015-May-08 13:52			48.5	ALD	Precision Calibration Check	SDU-10-06
XRF QC 20150508	2015-May-08 13:54			50.1	ALD	Precision Calibration Check	SDU-10-06; RSD = 14.8%
XRF QC 20150508	2015-May-08 13:59			0	ALD	Blank	SiO ₂ , <1.8
XRF QC 20150508	2015-May-08 14:02			11.8	ALD	Calibration Verification Check	NIST 2709a, true value = 17.3 ppm; 68.2%R
XRF QC 20150508	2015-May-08 14:05			1343	ALD	Calibration Verification Check	NIST 2711a, true value = 1400 ppm; 95.9%R
XRF QC 20150508	2015-May-08 14:06			1	ALD	Energy Calibration Check	passed
SDU-10-R05	2015-Jun-22 15:22	1	1	0		Normal Reading	No in situ XRF analysis performed at this location.

Table F-3
In Situ XRF Results
Bossburg Flat Beach Refined Sediment and Soil Study

Sediment Decision Unit 7			
Station Id	Date Analyzed	Lead (ppm)	Comments
SDU-07-F-XRF-01	2015-May-05	59.3	
SDU-07-F-XRF-02	2015-May-05	51.2	
SDU-07-F-XRF-03	2015-May-05	49.9	
SDU-07-F-XRF-04	2015-May-05	65.0	
SDU-07-F-XRF-05	2015-May-05	67.4	
SDU-07-F-XRF-06	2015-May-05	54.3	
SDU-07-F-XRF-07	2015-May-05	68.1	
SDU-07-F-XRF-08	2015-May-05	66.7	
SDU-07-F-XRF-09	2015-May-05	56.2	
SDU-07-F-XRF-10	2015-May-05	52.9	
SDU-07-F-XRF-11	2015-May-05	53.8	
SDU-07-F-XRF-12	2015-May-05	55.7	
SDU-07-F-XRF-13	2015-May-05	59.4	
SDU-07-F-XRF-14	2015-May-05	69.2	
SDU-07-F-XRF-15	2015-May-05	65.7	
SDU-07-F-XRF-16	2015-May-05	64.6	
SDU-07-F-XRF-17	2015-May-05	57.6	
SDU-07-F-XRF-18	2015-May-05	126	
SDU-07-F-XRF-19	2015-May-05	217	
SDU-07-F-XRF-20	2015-May-05	89.5	
SDU-07-F-XRF-21	2015-May-05	47.9	
SDU-07-F-XRF-22	2015-May-05	58.3	
SDU-07-F-XRF-23	2015-May-05	46.9	
SDU-07-F-XRF-24	2015-May-05	24.8	
SDU-07-F-XRF-25	2015-May-05	53.3	
SDU-07-F-XRF-26	2015-May-05	57.7	
SDU-07-F-XRF-27	2015-May-05	109	
SDU-07-F-XRF-28	2015-May-05	63.3	
SDU-07-F-XRF-29	2015-May-05	45.1	
SDU-07-F-XRF-30	2015-May-05	82.3	
SDU-07-F-XRF-31	2015-May-05	76.8	
SDU-07-F-XRF-32	2015-May-05	74.7	
SDU-07-F-XRF-33	2015-May-05	66.4	
SDU-07-F-XRF-34	2015-May-05	115	
SDU-07-F-XRF-35	2015-May-05	74.7	
SDU-07-F-XRF-36	2015-May-05	67.0	
SDU-07-F-XRF-37	2015-May-05	92.2	
SDU-07-F-XRF-38	2015-May-05	68.9	
SDU-07-F-XRF-39	2015-May-05	64.4	

ppm - parts per million

Table F-3
In Situ XRF Results
Bosburg Flat Beach Refined Sediment and Soil Study

Sediment Decision Unit 9			
Station Id	Date Analyzed	Lead (ppm)	Comments
SDU-09A-01	2015-May-06	120	
SDU-09A-02	2015-May-06	21.3	
SDU-09A-03	2015-May-06	62.4	
SDU-09A-04	2015-May-06	111	
SDU-09A-05	2015-May-06	57.0	
SDU-09A-06	2015-May-06	41.6	
SDU-09A-07	2015-May-06	60.1	
SDU-09A-08	2015-May-06	19.5	
SDU-09A-10	2015-May-06	60.9	
SDU-09A-11	2015-May-06	179	
SDU-09A-12	2015-May-06	70.0	
SDU-09A-13	2015-May-06	44.0	
SDU-09A-14	2015-May-06	68.2	
SDU-09A-15	2015-May-06	74.8	
SDU-09A-16	2015-May-06	80.3	
SDU-09A-17	2015-May-06	91.6	
SDU-09A-19	2015-May-06	68.2	
SDU-09A-20	2015-May-06	57.7	
SDU-09A-22	2015-May-06	85.1	
SDU-09A-23	2015-May-06	55.7	
SDU-09A-24	2015-May-06	133	
SDU-09A-25	2015-May-06	20.7	
SDU-09A-26	2015-May-06	98.0	
SDU-09A-27	2015-May-06	109	
SDU-09A-28	2015-May-06	79.6	
SDU-09A-29	2015-May-06	73.9	
SDU-09A-R02	2015-May-06	58.7	
SDU-09A-R03	2015-May-06	62.1	
SDU-09A-R04	2015-May-06	54.9	
SDU-09A-R06	2015-May-06	63.8	

**Table F-3
In Situ XRF Results
Bossburg Flat Beach Refined Sediment and Soil Study**

Sediment Decision Unit 10			
Station Id	Date Analyzed	Lead (ppm)	Comments
SDU-10-01	2015-May-08	35.7	
SDU-10-02	2015-May-08	67.5	
SDU-10-03	2015-May-08	67.2	
SDU-10-06	2015-May-08	47.3	
SDU-10-07	2015-May-08	143	
SDU-10-10	2015-May-08	42.0	
SDU-10-11	2015-May-08	55.2	
SDU-10-12	2015-May-08	59.1	
SDU-10-13	2015-May-08	99.7	
SDU-10-14	2015-May-08	59.7	
SDU-10-15	2015-May-08	103	
SDU-10-16	2015-May-08	71.3	
SDU-10-17	2015-May-08	36.1	
SDU-10-18	2015-May-08	182	crust
SDU-10-19	2015-May-08	192	crust; Two in situ XRF results (192.0 ppm and 161.3 ppm) were collected f
SDU-10-20	2015-May-08	73.1	
SDU-10-21	2015-May-08	130	crust
SDU-10-22	2015-May-08	63.0	
SDU-10-23	2015-May-08	77.8	
SDU-10-24	2015-May-08	81.9	
SDU-10-25	2015-May-08	73.4	
SDU-10-26	2015-May-08	139	
SDU-10-27	2015-May-08	106	
SDU-10-28	2015-May-08	153	
SDU-10-29	2015-May-08	52.9	
SDU-10-30	2015-May-08	60.9	
SDU-10-R02	2015-May-08	51.0	
SDU-10-R04	2015-May-08	47.0	
SDU-10-R06	2015-May-08	123	crust

Table F-4
Soil/Sediment Mass Run Log
Bossburg Flat Beach Refined Sediment and Soil Study

Sample	Analysis Date/Time	Initials	Mass Type	Mass (g)
SDU-01-XRF-01	2015-Apr-21 7:23	ALD	Tray	12.0
SDU-01-XRF-01	2015-Apr-21 7:23	ALD	Tray + Wet Sample	329.5
SDU-01-XRF-01	2015-Apr-21 10:01	ALD	Tray + Dried Sample	259.5
SDU-01-XRF-01	2015-Apr-21 10:34	ALD	Tray + Dried Sample	249.5
SDU-01-XRF-01	2015-Apr-21 11:13	ALD	Tray + Dried Sample	240.0
SDU-01-XRF-01	2015-Apr-21 11:35	ALD	Tray + Dried Sample	236.5
SDU-01-XRF-01	2015-Apr-21 11:43	ALD	Tray + Dried Sample	235.5
SDU-01-XRF-01	2015-Apr-21 12:39	ALD	Tray + Dried Sample	219.0
SDU-01-XRF-01	2015-Apr-21 13:11	ALD	Tray + Dried Sample	211.0
SDU-01-XRF-01	2015-Apr-21 13:55	ALD	Tray + Dried Sample	205.0
SDU-01-XRF-01	2015-Apr-21 15:06	ALD	Tray + Dried Sample	202.5
SDU-01-XRF-01	2015-Apr-21 15:54	ALD	Tray + Dried Sample	202.5
SDU-01-XRF-02	2015-Apr-21 7:24	ALD	Tray	12.0
SDU-01-XRF-02	2015-Apr-21 7:24	ALD	Tray + Wet Sample	265.0
SDU-01-XRF-02	2015-Apr-21 10:02	ALD	Tray + Dried Sample	220.0
SDU-01-XRF-02	2015-Apr-21 10:34	ALD	Tray + Dried Sample	215.0
SDU-01-XRF-02	2015-Apr-21 11:13	ALD	Tray + Dried Sample	209.0
SDU-01-XRF-02	2015-Apr-21 11:35	ALD	Tray + Dried Sample	207.5
SDU-01-XRF-03	2015-Apr-21 7:25	ALD	Tray	12.0
SDU-01-XRF-03	2015-Apr-21 7:25	ALD	Tray + Wet Sample	333.0
SDU-01-XRF-03	2015-Apr-21 10:00	ALD	Tray + Dried Sample	275.0
SDU-01-XRF-03	2015-Apr-21 10:36	ALD	Tray + Dried Sample	266.5
SDU-01-XRF-03	2015-Apr-21 11:14	ALD	Tray + Dried Sample	256.0
SDU-01-XRF-03	2015-Apr-21 11:37	ALD	Tray + Dried Sample	252.0
SDU-01-XRF-03	2015-Apr-21 12:35	ALD	Tray + Dried Sample	241.0
SDU-01-XRF-03	2015-Apr-21 13:04	ALD	Tray + Dried Sample	236.5
SDU-01-XRF-03	2015-Apr-21 13:56	ALD	Tray + Dried Sample	224.0
SDU-01-XRF-03	2015-Apr-21 15:07	ALD	Tray + Dried Sample	217.0
SDU-01-XRF-03	2015-Apr-21 15:56	ALD	Tray + Dried Sample	216.5
SDU-01-XRF-04	2015-Apr-21 7:26	ALD	Tray	12.0
SDU-01-XRF-04	2015-Apr-21 7:26	ALD	Tray + Wet Sample	299.0
SDU-01-XRF-04	2015-Apr-21 10:03	ALD	Tray + Dried Sample	220.0
SDU-01-XRF-04	2015-Apr-21 10:36	ALD	Tray + Dried Sample	210.5
SDU-01-XRF-04	2015-Apr-21 11:09	ALD	Tray + Dried Sample	206.0
SDU-01-XRF-04	2015-Apr-21 11:39	ALD	Tray + Dried Sample	203.0
SDU-01-XRF-04	2015-Apr-21 12:36	ALD	Tray + Dried Sample	196.0
SDU-01-XRF-04	2015-Apr-21 13:05	ALD	Tray + Dried Sample	195.5
SDU-01-XRF-05	2015-Apr-21 7:27	ALD	Tray	12.0
SDU-01-XRF-05	2015-Apr-21 7:28	ALD	Tray + Wet Sample	344.0
SDU-01-XRF-05	2015-Apr-21 10:03	ALD	Tray + Dried Sample	262.5
SDU-01-XRF-05	2015-Apr-21 10:38	ALD	Tray + Dried Sample	253.0

Table F-4
Soil/Sediment Mass Run Log
Bossburg Flat Beach Refined Sediment and Soil Study

Sample	Analysis Date/Time	Initials	Mass Type	Mass (g)
SDU-01-XRF-05	2015-Apr-21 11:11	ALD	Tray + Dried Sample	244.0
SDU-01-XRF-05	2015-Apr-21 11:40	ALD	Tray + Dried Sample	240.5
SDU-01-XRF-05	2015-Apr-21 12:37	ALD	Tray + Dried Sample	232.5
SDU-01-XRF-05	2015-Apr-21 13:12	ALD	Tray + Dried Sample	229.0
SDU-01-XRF-05	2015-Apr-21 13:58	ALD	Tray + Dried Sample	226.5
SDU-01-XRF-05	2015-Apr-21 15:08	ALD	Tray + Dried Sample	226.5
SDU-01-XRF-06	2015-Apr-21 7:28	ALD	Tray	12.0
SDU-01-XRF-06	2015-Apr-21 7:28	ALD	Tray + Wet Sample	282.0
SDU-01-XRF-06	2015-Apr-21 9:22	ALD	Tray + Dried Sample	229.0
SDU-01-XRF-06	2015-Apr-21 10:01	ALD	Tray + Dried Sample	211.5
SDU-01-XRF-06	2015-Apr-21 10:38	ALD	Tray + Dried Sample	201.0
SDU-01-XRF-06	2015-Apr-21 11:14	ALD	Tray + Dried Sample	191.0
SDU-01-XRF-06	2015-Apr-21 11:41	ALD	Tray + Dried Sample	187.0
SDU-01-XRF-06	2015-Apr-21 12:38	ALD	Tray + Dried Sample	176.5
SDU-01-XRF-06	2015-Apr-21 13:13	ALD	Tray + Dried Sample	172.0
SDU-01-XRF-06	2015-Apr-21 13:59	ALD	Tray + Dried Sample	167.0
SDU-01-XRF-06	2015-Apr-21 15:08	ALD	Tray + Dried Sample	166.5
SDU-01-XRF-07	2015-Apr-21 10:06	ALD	Tray	12.0
SDU-01-XRF-07	2015-Apr-21 10:06	ALD	Tray + Wet Sample	358.5
SDU-01-XRF-07	2015-Apr-21 12:38	ALD	Tray + Dried Sample	229.0
SDU-01-XRF-07	2015-Apr-21 13:06	ALD	Tray + Dried Sample	225.0
SDU-01-XRF-07	2015-Apr-21 13:58	ALD	Tray + Dried Sample	219.5
SDU-01-XRF-07	2015-Apr-21 15:10	ALD	Tray + Dried Sample	217.0
SDU-01-XRF-07	2015-Apr-21 15:56	ALD	Tray + Dried Sample	217.0
SDU-01-XRF-08	2015-Apr-21 16:15	ALD	Tray	12.0
SDU-01-XRF-08	2015-Apr-21 16:15	ALD	Tray + Wet Sample	331.5
SDU-01-XRF-08	2015-Apr-22 7:23	ALD	Tray + Dried Sample	233.5
SDU-01-XRF-08	2015-Apr-22 8:10	ALD	Tray + Dried Sample	226.0
SDU-01-XRF-08	2015-Apr-22 8:48	ALD	Tray + Dried Sample	219.5
SDU-01-XRF-08	2015-Apr-22 9:15	ALD	Tray + Dried Sample	217.0
SDU-01-XRF-08	2015-Apr-22 9:40	ALD	Tray + Dried Sample	215.5
SDU-01-XRF-09	2015-Apr-21 16:18	ALD	Tray	12.0
SDU-01-XRF-09	2015-Apr-21 16:18	ALD	Tray + Wet Sample	445.0
SDU-01-XRF-09	2015-Apr-22 7:24	ALD	Tray + Dried Sample	379.0
SDU-01-XRF-09	2015-Apr-22 8:11	ALD	Tray + Dried Sample	375.0
SDU-01-XRF-09	2015-Apr-22 8:49	ALD	Tray + Dried Sample	374.0
SDU-02-XRF-01	2015-Apr-22 9:20	ALD	Tray	12.0
SDU-02-XRF-01	2015-Apr-22 9:20	ALD	Tray + Wet Sample	347.0
SDU-02-XRF-01	2015-Apr-22 11:23	ALD	Tray + Dried Sample	301.5
SDU-02-XRF-01	2015-Apr-22 12:23	ALD	Tray + Dried Sample	298.5
SDU-02-XRF-01	2015-Apr-22 13:00	ALD	Tray + Dried Sample	297.5

Table F-4
Soil/Sediment Mass Run Log
Bossburg Flat Beach Refined Sediment and Soil Study

Sample	Analysis Date/Time	Initials	Mass Type	Mass (g)
SDU-02-XRF-02	2015-Apr-22 9:21	ALD	Tray	12.0
SDU-02-XRF-02	2015-Apr-22 9:21	ALD	Tray + Wet Sample	286.5
SDU-02-XRF-02	2015-Apr-22 11:24	ALD	Tray + Dried Sample	231.0
SDU-02-XRF-02	2015-Apr-22 13:02	ALD	Tray + Dried Sample	215.0
SDU-02-XRF-02	2015-Apr-22 13:42	ALD	Tray + Dried Sample	211.5
SDU-02-XRF-02	2015-Apr-22 14:36	ALD	Tray + Dried Sample	209.0
SDU-02-XRF-02	2015-Apr-22 15:37	ALD	Tray + Dried Sample	208.0
SDU-02-XRF-03	2015-Apr-22 9:22	ALD	Tray	12.0
SDU-02-XRF-03	2015-Apr-22 9:22	ALD	Tray + Wet Sample	306.0
SDU-02-XRF-03	2015-Apr-22 11:25	ALD	Tray + Dried Sample	261.5
SDU-02-XRF-03	2015-Apr-22 13:02	ALD	Tray + Dried Sample	249.5
SDU-02-XRF-03	2015-Apr-22 13:43	ALD	Tray + Dried Sample	246.5
SDU-02-XRF-03	2015-Apr-22 14:37	ALD	Tray + Dried Sample	246.0
SDU-02-XRF-04	2015-Apr-22 9:23	ALD	Tray	12.0
SDU-02-XRF-04	2015-Apr-22 9:23	ALD	Tray + Wet Sample	258.0
SDU-02-XRF-04	2015-Apr-22 11:28	ALD	Tray + Dried Sample	211.0
SDU-02-XRF-04	2015-Apr-22 13:03	ALD	Tray + Dried Sample	188.5
SDU-02-XRF-04	2015-Apr-22 13:44	ALD	Tray + Dried Sample	186.5
SDU-02-XRF-04	2015-Apr-22 14:38	ALD	Tray + Dried Sample	185.5
SDU-02-XRF-05	2015-Apr-22 9:24	ALD	Tray	12.0
SDU-02-XRF-05	2015-Apr-22 9:24	ALD	Tray + Wet Sample	318.0
SDU-02-XRF-05	2015-Apr-22 11:28	ALD	Tray + Dried Sample	255.5
SDU-02-XRF-05	2015-Apr-22 13:04	ALD	Tray + Dried Sample	222.5
SDU-02-XRF-05	2015-Apr-22 13:46	ALD	Tray + Dried Sample	216.0
SDU-02-XRF-05	2015-Apr-22 14:39	ALD	Tray + Dried Sample	211.5
SDU-02-XRF-05	2015-Apr-22 15:38	ALD	Tray + Dried Sample	211.0
SDU-02-XRF-06	2015-Apr-22 9:26	ALD	Tray	12.0
SDU-02-XRF-06	2015-Apr-22 9:26	ALD	Tray + Wet Sample	289.5
SDU-02-XRF-06	2015-Apr-22 11:29	ALD	Tray + Dried Sample	228.5
SDU-02-XRF-06	2015-Apr-22 13:04	ALD	Tray + Dried Sample	204.0
SDU-02-XRF-06	2015-Apr-22 13:46	ALD	Tray + Dried Sample	201.0
SDU-02-XRF-06	2015-Apr-22 14:39	ALD	Tray + Dried Sample	201.5
SDU-02-XRF-07	2015-Apr-22 11:32	ALD	Tray	12.0
SDU-02-XRF-07	2015-Apr-22 11:33	ALD	Tray + Wet Sample	318.0
SDU-02-XRF-07	2015-Apr-22 13:39	ALD	Tray + Dried Sample	234.0
SDU-02-XRF-07	2015-Apr-22 14:41	ALD	Tray + Dried Sample	231.5
SDU-02-XRF-07	2015-Apr-22 15:40	ALD	Tray + Dried Sample	232.0
SDU-02-XRF-08	2015-Apr-22 11:34	ALD	Tray	12.0
SDU-02-XRF-08	2015-Apr-22 11:34	ALD	Tray + Wet Sample	338.5
SDU-02-XRF-08	2015-Apr-22 13:39	ALD	Tray + Dried Sample	232.5
SDU-02-XRF-08	2015-Apr-22 14:41	ALD	Tray + Dried Sample	232.5

Table F-4
Soil/Sediment Mass Run Log
Bossburg Flat Beach Refined Sediment and Soil Study

Sample	Analysis Date/Time	Initials	Mass Type	Mass (g)
SDU-03-XRF-01	2015-Apr-21 16:20	ALD	Tray	12.0
SDU-03-XRF-01	2015-Apr-21 16:20	ALD	Tray + Wet Sample	325.5
SDU-03-XRF-01	2015-Apr-22 7:25	ALD	Tray + Dried Sample	294.5
SDU-03-XRF-01	2015-Apr-22 8:06	ALD	Tray + Dried Sample	293.5
SDU-03-XRF-02	2015-Apr-21 16:22	ALD	Tray	12.0
SDU-03-XRF-02	2015-Apr-21 16:22	ALD	Tray + Wet Sample	228.0
SDU-03-XRF-02	2015-Apr-22 7:27	ALD	Tray + Dried Sample	211.0
SDU-03-XRF-02	2015-Apr-22 8:14	ALD	Tray + Dried Sample	210.5
SDU-03-XRF-03	2015-Apr-21 16:24	ALD	Tray	12.0
SDU-03-XRF-03	2015-Apr-21 16:24	ALD	Tray + Wet Sample	340.0
SDU-03-XRF-03	2015-Apr-22 7:29	ALD	Tray + Dried Sample	295.0
SDU-03-XRF-03	2015-Apr-22 8:15	ALD	Tray + Dried Sample	294.0
SDU-03-XRF-04	2015-Apr-21 16:27	ALD	Tray	12.0
SDU-03-XRF-04	2015-Apr-21 16:27	ALD	Tray + Wet Sample	380.5
SDU-03-XRF-04	2015-Apr-22 7:29	ALD	Tray + Dried Sample	336.0
SDU-03-XRF-04	2015-Apr-22 8:15	ALD	Tray + Dried Sample	334.0
SDU-04-XRF-01	2015-May-02 11:31	ALD	Tray	12.0
SDU-04-XRF-01	2015-May-02 11:31	ALD	Tray + Wet Sample	314.0
SDU-04-XRF-01	2015-May-02 13:42	ALD	Tray + Dried Sample	293.0
SDU-04-XRF-01	2015-May-02 14:21	ALD	Tray + Dried Sample	292.5
SDU-04-XRF-02	2015-May-02 11:33	ALD	Tray	12.0
SDU-04-XRF-02	2015-May-02 11:33	ALD	Tray + Wet Sample	408.5
SDU-04-XRF-02	2015-May-02 13:42	ALD	Tray + Dried Sample	403.5
SDU-04-XRF-02	2015-May-02 14:22	ALD	Tray + Dried Sample	403.5
SDU-04-XRF-03	2015-May-02 11:35	ALD	Tray	12.0
SDU-04-XRF-03	2015-May-02 11:35	ALD	Tray + Wet Sample	471.0
SDU-04-XRF-03	2015-May-02 13:43	ALD	Tray + Dried Sample	444.5
SDU-04-XRF-03	2015-May-02 14:22	ALD	Tray + Dried Sample	444.5
SDU-04-XRF-04	2015-May-02 11:36	ALD	Tray	12.0
SDU-04-XRF-04	2015-May-02 11:36	ALD	Tray + Wet Sample	305.0
SDU-04-XRF-04	2015-May-02 13:43	ALD	Tray + Dried Sample	266.5
SDU-04-XRF-04	2015-May-02 14:23	ALD	Tray + Dried Sample	266.5
SDU-05-XRF-01	2015-Apr-27 14:29	ALD	Tray	12.0
SDU-05-XRF-01	2015-Apr-27 14:29	ALD	Tray + Wet Sample	359.0
SDU-05-XRF-01	2015-Apr-28 7:25	ALD	Tray + Dried Sample	259.0
SDU-05-XRF-01	2015-Apr-28 8:12	ALD	Tray + Dried Sample	255.5
SDU-05-XRF-01	2015-Apr-28 9:23	ALD	Tray + Dried Sample	254.5
SDU-05-XRF-02	2015-Apr-27 7:54	ALD	Tray	12.0
SDU-05-XRF-02	2015-Apr-27 7:54	ALD	Tray + Wet Sample	483.5
SDU-05-XRF-02	2015-Apr-27 13:41	ALD	Tray + Dried Sample	305.0
SDU-05-XRF-02	2015-Apr-27 14:20	ALD	Tray + Dried Sample	302.0

Table F-4
Soil/Sediment Mass Run Log
Bossburg Flat Beach Refined Sediment and Soil Study

Sample	Analysis Date/Time	Initials	Mass Type	Mass (g)
SDU-05-XRF-02	2015-Apr-27 15:29	ALD	Tray + Dried Sample	300.5
SDU-05-XRF-03	2015-Apr-27 14:32	ALD	Tray	12.0
SDU-05-XRF-03	2015-Apr-27 14:32	ALD	Tray + Wet Sample	427.5
SDU-05-XRF-03	2015-Apr-28 7:25	ALD	Tray + Dried Sample	359.5
SDU-05-XRF-03	2015-Apr-28 8:15	ALD	Tray + Dried Sample	358.5
SDU-05-XRF-04	2015-Apr-27 7:56	ALD	Tray	12.0
SDU-05-XRF-04	2015-Apr-27 7:56	ALD	Tray + Wet Sample	464.5
SDU-05-XRF-04	2015-Apr-27 13:40	ALD	Tray + Dried Sample	344.0
SDU-05-XRF-04	2015-Apr-27 14:20	ALD	Tray + Dried Sample	343.0
SDU-05-XRF-05	2015-Apr-27 7:56	ALD	Tray	12.0
SDU-05-XRF-05	2015-Apr-27 7:56	ALD	Tray + Wet Sample	476.0
SDU-05-XRF-05	2015-Apr-27 13:39	ALD	Tray + Dried Sample	429.5
SDU-05-XRF-05	2015-Apr-27 14:22	ALD	Tray + Dried Sample	429.0
SDU-05-XRF-06	2015-Apr-27 7:58	ALD	Tray	12.0
SDU-05-XRF-06	2015-Apr-27 7:58	ALD	Tray + Wet Sample	403.0
SDU-05-XRF-06	2015-Apr-27 13:38	ALD	Tray + Dried Sample	316.5
SDU-05-XRF-06	2015-Apr-27 14:24	ALD	Tray + Dried Sample	316.0
SDU-05-XRF-08	2015-Apr-27 7:59	ALD	Tray	12.0
SDU-05-XRF-08	2015-Apr-27 7:59	ALD	Tray + Wet Sample	410.5
SDU-05-XRF-08	2015-Apr-27 13:37	ALD	Tray + Dried Sample	270.5
SDU-05-XRF-08	2015-Apr-27 14:25	ALD	Tray + Dried Sample	269.5
SDU-05-XRF-09	2015-Apr-27 7:58	ALD	Tray	12.0
SDU-05-XRF-09	2015-Apr-27 7:58	ALD	Tray + Wet Sample	371.5
SDU-05-XRF-09	2015-Apr-27 13:35	ALD	Tray + Dried Sample	270.5
SDU-05-XRF-09	2015-Apr-27 14:26	ALD	Tray + Dried Sample	270.5
SDU-05-XRF-R03	2015-Apr-27 14:35	ALD	Tray	12.0
SDU-05-XRF-R03	2015-Apr-27 14:35	ALD	Tray + Wet Sample	378.0
SDU-05-XRF-R03	2015-Apr-28 7:24	ALD	Tray + Dried Sample	299.5
SDU-05-XRF-R03	2015-Apr-28 8:16	ALD	Tray + Dried Sample	298.0
SDU-06-XRF-01	2015-Apr-28 12:55	ALD	Tray	12.0
SDU-06-XRF-01	2015-Apr-28 12:55	ALD	Tray + Wet Sample	437.5
SDU-06-XRF-01	2015-Apr-29 7:20	ALD	Tray + Dried Sample	421.0
SDU-06-XRF-01	2015-Apr-29 8:12	ALD	Tray + Dried Sample	421.0
SDU-06-XRF-02	2015-Apr-28 12:55	ALD	Tray	12.0
SDU-06-XRF-02	2015-Apr-28 12:56	ALD	Tray + Wet Sample	418.0
SDU-06-XRF-02	2015-Apr-29 7:25	ALD	Tray + Dried Sample	401.5
SDU-06-XRF-02	2015-Apr-29 8:14	ALD	Tray + Dried Sample	401.0
SDU-06-XRF-04	2015-Apr-28 12:58	ALD	Tray	12.0
SDU-06-XRF-04	2015-Apr-28 12:58	ALD	Tray + Wet Sample	379.5
SDU-06-XRF-04	2015-Apr-29 7:26	ALD	Tray + Dried Sample	347.0
SDU-06-XRF-04	2015-Apr-29 8:16	ALD	Tray + Dried Sample	346.5

Table F-4
Soil/Sediment Mass Run Log
Bossburg Flat Beach Refined Sediment and Soil Study

Sample	Analysis Date/Time	Initials	Mass Type	Mass (g)
SDU-06-XRF-05	2015-Apr-28 13:00	ALD	Tray	12.0
SDU-06-XRF-05	2015-Apr-28 13:02	ALD	Tray + Wet Sample	388.5
SDU-06-XRF-05	2015-Apr-29 7:27	ALD	Tray + Dried Sample	374.0
SDU-06-XRF-05	2015-Apr-29 8:18	ALD	Tray + Dried Sample	373.5
SDU-06-XRF-R02	2015-Apr-28 13:02	ALD	Tray	12.0
SDU-06-XRF-R02	2015-Apr-28 13:02	ALD	Tray + Wet Sample	491.5
SDU-06-XRF-R02	2015-Apr-29 7:28	ALD	Tray + Dried Sample	440.5
SDU-06-XRF-R02	2015-Apr-29 8:19	ALD	Tray + Dried Sample	440.0
SDU-07-XRF-01	2015-May-04 7:24	ALD	Tray	12.0
SDU-07-XRF-01	2015-May-04 7:24	ALD	Tray + Wet Sample	370.5
SDU-07-XRF-01	2015-May-04 10:25	ALD	Tray + Dried Sample	239.0
SDU-07-XRF-01	2015-May-04 11:34	ALD	Tray + Dried Sample	217.0
SDU-07-XRF-01	2015-May-04 12:46	ALD	Tray + Dried Sample	210.5
SDU-07-XRF-01	2015-May-04 13:36	ALD	Tray + Dried Sample	210.5
SDU-07-XRF-02	2015-May-04 7:25	ALD	Tray	12.0
SDU-07-XRF-02	2015-May-04 7:25	ALD	Tray + Wet Sample	364.0
SDU-07-XRF-02	2015-May-04 10:25	ALD	Tray + Dried Sample	346.5
SDU-07-XRF-02	2015-May-04 11:34	ALD	Tray + Dried Sample	346.5
SDU-07-XRF-03	2015-May-04 7:26	ALD	Tray	12.0
SDU-07-XRF-03	2015-May-04 7:26	ALD	Tray + Wet Sample	397.0
SDU-07-XRF-03	2015-May-04 10:26	ALD	Tray + Dried Sample	254.5
SDU-07-XRF-03	2015-May-04 11:34	ALD	Tray + Dried Sample	228.0
SDU-07-XRF-03	2015-May-04 12:46	ALD	Tray + Dried Sample	223.5
SDU-07-XRF-03	2015-May-04 13:36	ALD	Tray + Dried Sample	222.5
SDU-07-XRF-04	2015-May-04 7:27	ALD	Tray	12.0
SDU-07-XRF-04	2015-May-04 7:27	ALD	Tray + Wet Sample	411.5
SDU-07-XRF-04	2015-May-04 10:25	ALD	Tray + Dried Sample	298.0
SDU-07-XRF-04	2015-May-04 11:35	ALD	Tray + Dried Sample	292.0
SDU-07-XRF-04	2015-May-04 12:47	ALD	Tray + Dried Sample	292.0
SDU-08-XRF-01	2015-May-02 11:41	ALD	Tray	12.0
SDU-08-XRF-01	2015-May-02 11:41	ALD	Tray + Wet Sample	477.5
SDU-08-XRF-01	2015-May-02 14:25	ALD	Tray + Dried Sample	361.5
SDU-08-XRF-01	2015-May-02 15:14	ALD	Tray + Dried Sample	343.0
SDU-08-XRF-01	2015-May-02 16:05	ALD	Tray + Dried Sample	334.5
SDU-08-XRF-01	2015-May-02 16:25	ALD	Tray + Dried Sample	334.5
SDU-08-XRF-02	2015-May-02 11:43	ALD	Tray	12.0
SDU-08-XRF-02	2015-May-02 11:43	ALD	Tray + Wet Sample	269.5
SDU-08-XRF-02	2015-May-02 13:44	ALD	Tray + Dried Sample	221.5
SDU-08-XRF-02	2015-May-02 14:23	ALD	Tray + Dried Sample	222.0
SDU-08-XRF-04	2015-May-02 11:46	ALD	Tray	12.0
SDU-08-XRF-04	2015-May-02 11:46	ALD	Tray + Wet Sample	269.5

Table F-4
Soil/Sediment Mass Run Log
Bossburg Flat Beach Refined Sediment and Soil Study

Sample	Analysis Date/Time	Initials	Mass Type	Mass (g)
SDU-08-XRF-04	2015-May-02 13:44	ALD	Tray + Dried Sample	201.5
SDU-08-XRF-04	2015-May-02 14:24	ALD	Tray + Dried Sample	201.5
SDU-08-XRF-R03	2015-May-02 11:51	ALD	Tray	12.0
SDU-08-XRF-R03	2015-May-02 11:51	ALD	Tray + Wet Sample	383.0
SDU-08-XRF-R03	2015-May-02 13:44	ALD	Tray + Dried Sample	233.5
SDU-08-XRF-R03	2015-May-02 14:24	ALD	Tray + Dried Sample	233.5
SDU-09-XRF-01	2015-Apr-28 7:28	ALD	Tray	12.0
SDU-09-XRF-01	2015-Apr-28 7:28	ALD	Tray + Wet Sample	543.0
SDU-09-XRF-01	2015-Apr-28 9:50	ALD	Tray + Dried Sample	508.0
SDU-09-XRF-01	2015-Apr-28 11:02	ALD	Tray + Dried Sample	508.0
SDU-09-XRF-02	2015-Apr-28 7:29	ALD	Tray	12.0
SDU-09-XRF-02	2015-Apr-28 7:29	ALD	Tray + Wet Sample	412.5
SDU-09-XRF-02	2015-Apr-28 9:50	ALD	Tray + Dried Sample	369.5
SDU-09-XRF-02	2015-Apr-28 11:02	ALD	Tray + Dried Sample	369.0
SDU-09-XRF-03	2015-Apr-28 7:30	ALD	Tray	12.0
SDU-09-XRF-03	2015-Apr-28 7:30	ALD	Tray + Wet Sample	434.0
SDU-09-XRF-03	2015-Apr-28 9:51	ALD	Tray + Dried Sample	383.5
SDU-09-XRF-03	2015-Apr-28 11:04	ALD	Tray + Dried Sample	377.5
SDU-09-XRF-03	2015-Apr-28 11:47	ALD	Tray + Dried Sample	377.5
SDU-09-XRF-04	2015-Apr-28 7:33	ALD	Tray	12.0
SDU-09-XRF-04	2015-Apr-28 7:33	ALD	Tray + Wet Sample	453.5
SDU-09-XRF-04	2015-Apr-28 9:51	ALD	Tray + Dried Sample	388.5
SDU-09-XRF-04	2015-Apr-28 11:06	ALD	Tray + Dried Sample	388.5
SDU-10-XRF-01	2015-Apr-28 9:32	ALD	Tray	12.0
SDU-10-XRF-01	2015-Apr-28 9:32	ALD	Tray + Wet Sample	453.5
SDU-10-XRF-01	2015-Apr-28 12:09	ALD	Tray + Dried Sample	418.0
SDU-10-XRF-01	2015-Apr-28 12:44	ALD	Tray + Dried Sample	416.5
SDU-10-XRF-02	2015-Apr-28 9:33	ALD	Tray	12.0
SDU-10-XRF-02	2015-Apr-28 9:33	ALD	Tray + Wet Sample	427.5
SDU-10-XRF-02	2015-Apr-28 12:09	ALD	Tray + Dried Sample	395.0
SDU-10-XRF-02	2015-Apr-28 12:46	ALD	Tray + Dried Sample	395.0
SDU-10-XRF-03	2015-Apr-28 9:33	ALD	Tray	12.0
SDU-10-XRF-03	2015-Apr-28 9:33	ALD	Tray + Wet Sample	437.5
SDU-10-XRF-03	2015-Apr-28 12:10	ALD	Tray + Dried Sample	403.0
SDU-10-XRF-03	2015-Apr-28 12:47	ALD	Tray + Dried Sample	402.5
SDU-10-XRF-04	2015-Apr-28 9:35	ALD	Tray	12.0
SDU-10-XRF-04	2015-Apr-28 9:35	ALD	Tray + Wet Sample	461.5
SDU-10-XRF-04	2015-Apr-28 12:11	ALD	Tray + Dried Sample	362.5
SDU-10-XRF-04	2015-Apr-28 12:48	ALD	Tray + Dried Sample	361.5
UDU-01-XRF-01	2015-Apr-16 7:50	ALD	Tray	12.0
UDU-01-XRF-01	2015-Apr-16 7:53	ALD	Tray + Wet Sample	236.5

Table F-4
Soil/Sediment Mass Run Log
Bossburg Flat Beach Refined Sediment and Soil Study

Sample	Analysis Date/Time	Initials	Mass Type	Mass (g)
UDU-01-XRF-01	2015-Apr-16 10:33	ALD	Tray + Dried Sample	228.5
UDU-01-XRF-01	2015-Apr-16 10:53	ALD	Tray + Dried Sample	228.5
UDU-01-XRF-02	2015-Apr-16 7:55	ALD	Tray	12.0
UDU-01-XRF-02	2015-Apr-16 7:58	ALD	Tray + Wet Sample	361.0
UDU-01-XRF-02	2015-Apr-16 10:34	ALD	Tray + Dried Sample	337.0
UDU-01-XRF-02	2015-Apr-16 10:53	ALD	Tray + Dried Sample	336.5
UDU-01-XRF-03	2015-Apr-16 8:00	ALD	Tray	12.0
UDU-01-XRF-03	2015-Apr-16 8:03	ALD	Tray + Wet Sample	416.0
UDU-01-XRF-03	2015-Apr-16 10:33	ALD	Tray + Dried Sample	381.0
UDU-01-XRF-03	2015-Apr-16 10:53	ALD	Tray + Dried Sample	379.5
UDU-01-XRF-03	2015-Apr-16 11:33	ALD	Tray + Dried Sample	376.5
UDU-01-XRF-03	2015-Apr-16 12:02	ALD	Tray + Dried Sample	375.0
UDU-01-XRF-04	2015-Apr-16 8:04	ALD	Tray	12.0
UDU-01-XRF-04	2015-Apr-16 8:05	ALD	Tray + Wet Sample	517.0
UDU-01-XRF-04	2015-Apr-16 10:33	ALD	Tray + Dried Sample	482.0
UDU-01-XRF-04	2015-Apr-16 10:53	ALD	Tray + Dried Sample	478.5
UDU-01-XRF-04	2015-Apr-16 12:03	ALD	Tray + Dried Sample	470.0
UDU-01-XRF-04	2015-Apr-16 12:55	ALD	Tray + Dried Sample	463.0
UDU-01-XRF-04	2015-Apr-16 13:32	ALD	Tray + Dried Sample	461.0
UDU-01-XRF-05	2015-Apr-16 8:07	ALD	Tray	12.0
UDU-01-XRF-05	2015-Apr-16 8:08	ALD	Tray + Wet Sample	436.5
UDU-01-XRF-05	2015-Apr-16 12:50	ALD	Tray + Dried Sample	400.0
UDU-01-XRF-05	2015-Apr-16 13:54	ALD	Tray + Dried Sample	389.0
UDU-01-XRF-05	2015-Apr-16 15:25	ALD	Tray + Dried Sample	386.5
UDU-01-XRF-06	2015-Apr-16 8:12	ALD	Tray	12.0
UDU-01-XRF-06	2015-Apr-16 8:13	ALD	Tray + Wet Sample	414.5
UDU-01-XRF-06	2015-Apr-16 12:05	ALD	Tray + Dried Sample	378.0
UDU-01-XRF-06	2015-Apr-16 12:55	ALD	Tray + Dried Sample	372.0
UDU-01-XRF-06	2015-Apr-16 13:55	ALD	Tray + Dried Sample	367.0
UDU-01-XRF-06	2015-Apr-16 15:42	ALD	Tray + Dried Sample	367.5
UDU-01-XRF-07	2015-Apr-16 8:14	ALD	Tray	12.0
UDU-01-XRF-07	2015-Apr-16 8:15	ALD	Tray + Wet Sample	243.0
UDU-01-XRF-07	2015-Apr-16 12:04	ALD	Tray + Dried Sample	222.5
UDU-01-XRF-07	2015-Apr-16 12:38	ALD	Tray + Dried Sample	222.5
UDU-02-XRF-01	2015-Apr-17 7:44	ALD	Tray	12.0
UDU-02-XRF-01	2015-Apr-17 7:44	ALD	Tray + Wet Sample	394.5
UDU-02-XRF-01	2015-Apr-17 9:57	ALD	Tray + Dried Sample	364.0
UDU-02-XRF-01	2015-Apr-17 12:00	ALD	Tray + Dried Sample	357.0
UDU-02-XRF-01	2015-Apr-17 13:05	ALD	Tray + Dried Sample	356.5
UDU-02-XRF-02	2015-Apr-17 7:48	ALD	Tray	12.0
UDU-02-XRF-02	2015-Apr-17 7:48	ALD	Tray + Wet Sample	480.0

Table F-4
Soil/Sediment Mass Run Log
Bossburg Flat Beach Refined Sediment and Soil Study

Sample	Analysis Date/Time	Initials	Mass Type	Mass (g)
UDU-02-XRF-02	2015-Apr-17 9:53	ALD	Tray + Dried Sample	431.5
UDU-02-XRF-02	2015-Apr-17 11:01	ALD	Tray + Dried Sample	420.5
UDU-02-XRF-02	2015-Apr-17 11:24	ALD	Tray + Dried Sample	420.5
UDU-02-XRF-03	2015-Apr-17 7:50	ALD	Tray	12.0
UDU-02-XRF-03	2015-Apr-17 7:50	ALD	Tray + Wet Sample	506.5
UDU-02-XRF-03	2015-Apr-17 9:58	ALD	Tray + Dried Sample	471.5
UDU-02-XRF-03	2015-Apr-17 12:02	ALD	Tray + Dried Sample	454.0
UDU-02-XRF-03	2015-Apr-17 13:06	ALD	Tray + Dried Sample	453.5
UDU-02-XRF-04	2015-Apr-18 8:57	KY	Tray + Wet Sample	390.5
UDU-02-XRF-04	2015-Apr-18 8:57	KY	Tray	12.0
UDU-02-XRF-04	2015-Apr-18 11:30	ALD	Tray + Dried Sample	345.0
UDU-02-XRF-04	2015-Apr-18 13:26	ALD	Tray + Dried Sample	344.0
UDU-02-XRF-05	2015-Apr-17 7:54	ALD	Tray + Wet Sample	473.0
UDU-02-XRF-05	2015-Apr-17 7:54	ALD	Tray	12.5
UDU-02-XRF-05	2015-Apr-17 13:45	ALD	Tray + Dried Sample	428.5
UDU-02-XRF-05	2015-Apr-17 15:08	ALD	Tray + Dried Sample	428.5
UDU-02-XRF-06	2015-Apr-17 7:56	ALD	Tray	11.5
UDU-02-XRF-06	2015-Apr-17 7:56	ALD	Tray + Wet Sample	452.5
UDU-02-XRF-06	2015-Apr-17 9:55	ALD	Tray + Dried Sample	403.5
UDU-02-XRF-06	2015-Apr-17 11:02	ALD	Tray + Dried Sample	401.0
UDU-03-XRF-01	2015-Apr-17 15:04	ALD	Tray	12.0
UDU-03-XRF-01	2015-Apr-17 15:06	ALD	Tray + Wet Sample	455.5
UDU-03-XRF-01	2015-Apr-17 16:44	ALD	Tray + Dried Sample	419.0
UDU-03-XRF-01	2015-Apr-18 7:34	ALD	Tray + Dried Sample	401.0
UDU-03-XRF-01	2015-Apr-18 8:37	ALD	Tray + Dried Sample	400.0
UDU-03-XRF-02	2015-Apr-17 15:08	ALD	Tray	12.5
UDU-03-XRF-02	2015-Apr-17 15:09	ALD	Tray + Wet Sample	340.0
UDU-03-XRF-02	2015-Apr-17 16:43	ALD	Tray + Dried Sample	317.0
UDU-03-XRF-02	2015-Apr-18 7:35	ALD	Tray + Dried Sample	313.5
UDU-03-XRF-02	2015-Apr-18 8:17	ALD	Tray + Dried Sample	313.5
UDU-03-XRF-03	2015-Apr-17 15:11	ALD	Tray	12.0
UDU-03-XRF-03	2015-Apr-17 15:13	ALD	Tray + Wet Sample	378.5
UDU-03-XRF-03	2015-Apr-17 16:42	ALD	Tray + Dried Sample	351.5
UDU-03-XRF-03	2015-Apr-18 7:32	ALD	Tray + Dried Sample	341.5
UDU-03-XRF-03	2015-Apr-18 8:43	ALD	Tray + Dried Sample	341.0
UDU-03-XRF-04	2015-Apr-17 15:16	ALD	Tray	12.0
UDU-03-XRF-04	2015-Apr-17 15:19	ALD	Tray + Wet Sample	439.0
UDU-03-XRF-04	2015-Apr-17 16:46	ALD	Tray + Dried Sample	412.5
UDU-03-XRF-04	2015-Apr-18 7:37	ALD	Tray + Dried Sample	407.0
UDU-03-XRF-04	2015-Apr-18 9:15	ALD	Tray + Dried Sample	407.0
UDU-03-XRF-05	2015-Apr-17 15:20	ALD	Tray	12.0

Table F-4
Soil/Sediment Mass Run Log
Bossburg Flat Beach Refined Sediment and Soil Study

Sample	Analysis Date/Time	Initials	Mass Type	Mass (g)
UDU-03-XRF-05	2015-Apr-17 15:21	ALD	Tray + Wet Sample	278.0
UDU-03-XRF-05	2015-Apr-17 16:47	ALD	Tray + Dried Sample	252.0
UDU-03-XRF-05	2015-Apr-18 7:38	ALD	Tray + Dried Sample	251.0
UDU-03-XRF-06	2015-Apr-17 15:22	ALD	Tray	12.0
UDU-03-XRF-06	2015-Apr-17 15:22	ALD	Tray + Wet Sample	606.0
UDU-03-XRF-06	2015-Apr-17 16:45	ALD	Tray + Dried Sample	581.0
UDU-03-XRF-06	2015-Apr-18 7:36	ALD	Tray + Dried Sample	573.0
UDU-03-XRF-06	2015-Apr-18 9:17	ALD	Tray + Dried Sample	572.0
UDU-03-XRF-07	2015-Apr-18 9:03	ALD	Tray	12.0
UDU-03-XRF-07	2015-Apr-18 9:03	ALD	Tray + Wet Sample	479.5
UDU-03-XRF-07	2015-Apr-18 11:28	ALD	Tray + Dried Sample	428.5
UDU-03-XRF-07	2015-Apr-18 13:24	ALD	Tray + Dried Sample	418.5
UDU-03-XRF-07	2015-Apr-18 13:56	ALD	Tray + Dried Sample	419.0
UDU-03-XRF-08	2015-Apr-18 9:00	ALD	Tray	12.0
UDU-03-XRF-08	2015-Apr-18 9:00	ALD	Tray + Wet Sample	456.5
UDU-03-XRF-08	2015-Apr-18 11:26	ALD	Tray + Dried Sample	419.0
UDU-03-XRF-08	2015-Apr-18 13:24	ALD	Tray + Dried Sample	418.5
UDU-04-XRF-02	2015-Apr-20 7:36	ALD	Tray	12.0
UDU-04-XRF-02	2015-Apr-20 7:36	ALD	Tray + Wet Sample	174.5
UDU-04-XRF-02	2015-Apr-20 9:47	ALD	Tray + Dried Sample	150.5
UDU-04-XRF-02	2015-Apr-20 10:20	ALD	Tray + Dried Sample	149.0
UDU-04-XRF-03	2015-Apr-20 7:38	ALD	Tray	12.0
UDU-04-XRF-03	2015-Apr-20 7:38	ALD	Tray + Wet Sample	302.5
UDU-04-XRF-03	2015-Apr-20 9:48	ALD	Tray + Dried Sample	266.5
UDU-04-XRF-03	2015-Apr-20 10:20	ALD	Tray + Dried Sample	262.5
UDU-04-XRF-03	2015-Apr-20 11:16	ALD	Tray + Dried Sample	259.5
UDU-04-XRF-03	2015-Apr-20 12:12	ALD	Tray + Dried Sample	258.5
UDU-04-XRF-04	2015-Apr-20 7:40	ALD	Tray	12.0
UDU-04-XRF-04	2015-Apr-20 7:40	ALD	Tray + Wet Sample	456.0
UDU-04-XRF-04	2015-Apr-20 9:50	ALD	Tray + Dried Sample	424.0
UDU-04-XRF-04	2015-Apr-20 10:22	ALD	Tray + Dried Sample	424.5
UDU-04-XRF-05	2015-Apr-20 7:41	ALD	Tray	12.0
UDU-04-XRF-05	2015-Apr-20 7:42	ALD	Tray + Wet Sample	399.0
UDU-04-XRF-05	2015-Apr-20 9:50	ALD	Tray + Dried Sample	359.5
UDU-04-XRF-05	2015-Apr-20 10:21	ALD	Tray + Dried Sample	359.5
UDU-04-XRF-R01	2015-Apr-20 7:33	ALD	Tray	12.0
UDU-04-XRF-R01	2015-Apr-20 7:33	ALD	Tray + Wet Sample	310.5
UDU-04-XRF-R01	2015-Apr-20 9:46	ALD	Tray + Dried Sample	267.5
UDU-04-XRF-R01	2015-Apr-20 10:19	ALD	Tray + Dried Sample	262.5
UDU-04-XRF-R01	2015-Apr-20 11:16	ALD	Tray + Dried Sample	255.5
UDU-04-XRF-R01	2015-Apr-20 12:11	ALD	Tray + Dried Sample	252.5

Table F-4
Soil/Sediment Mass Run Log
Bossburg Flat Beach Refined Sediment and Soil Study

Sample	Analysis Date/Time	Initials	Mass Type	Mass (g)
UDU-05-XRF-01	2015-Apr-30 12:40	ALD	Tray	12.0
UDU-05-XRF-01	2015-Apr-30 12:40	ALD	Tray + Wet Sample	357.0
UDU-05-XRF-01	2015-Apr-30 14:40	ALD	Tray + Dried Sample	334.5
UDU-05-XRF-01	2015-Apr-30 15:00	ALD	Tray + Dried Sample	334.5
UDU-05-XRF-02	2015-Apr-30 12:43	ALD	Tray	12.0
UDU-05-XRF-02	2015-Apr-30 12:43	ALD	Tray + Wet Sample	370.5
UDU-05-XRF-02	2015-Apr-30 14:42	ALD	Tray + Dried Sample	326.0
UDU-05-XRF-02	2015-Apr-30 15:02	ALD	Tray + Dried Sample	322.5
UDU-05-XRF-02	2015-Apr-30 15:42	ALD	Tray + Dried Sample	319.5
UDU-05-XRF-02	2015-Apr-30 16:08	ALD	Tray + Dried Sample	319.0
UDU-05-XRF-03	2015-Apr-30 12:46	ALD	Tray	12.0
UDU-05-XRF-03	2015-Apr-30 12:46	ALD	Tray + Wet Sample	410.0
UDU-05-XRF-03	2015-Apr-30 14:43	ALD	Tray + Dried Sample	394.5
UDU-05-XRF-03	2015-Apr-30 15:03	ALD	Tray + Dried Sample	394.5
UDU-05-XRF-04	2015-Apr-30 12:47	ALD	Tray	12.0
UDU-05-XRF-04	2015-Apr-30 12:49	ALD	Tray + Wet Sample	410.0
UDU-05-XRF-04	2015-Apr-30 14:44	ALD	Tray + Dried Sample	384.0
UDU-05-XRF-04	2015-Apr-30 15:03	ALD	Tray + Dried Sample	384.5
UDU-05-XRF-05	2015-Apr-30 12:50	ALD	Tray	12.0
UDU-05-XRF-05	2015-Apr-30 12:50	ALD	Tray + Wet Sample	285.0
UDU-05-XRF-05	2015-Apr-30 14:45	ALD	Tray + Dried Sample	265.5
UDU-05-XRF-05	2015-Apr-30 15:05	ALD	Tray + Dried Sample	266.0
UDU-05-XRF-06	2015-Apr-30 12:51	ALD	Tray	12.0
UDU-05-XRF-06	2015-Apr-30 12:52	ALD	Tray + Wet Sample	349.5
UDU-05-XRF-06	2015-Apr-30 14:46	ALD	Tray + Dried Sample	296.5
UDU-05-XRF-06	2015-Apr-30 15:10	ALD	Tray + Dried Sample	292.0
UDU-05-XRF-06	2015-Apr-30 15:45	ALD	Tray + Dried Sample	288.5
UDU-05-XRF-06	2015-Apr-30 16:11	ALD	Tray + Dried Sample	287.0
UDU-05-XRF-07	2015-Apr-30 13:56	ALD	Tray	12.0
UDU-05-XRF-07	2015-Apr-30 13:56	ALD	Tray + Wet Sample	250.0
UDU-05-XRF-07	2015-Apr-30 15:46	ALD	Tray + Dried Sample	220.0
UDU-05-XRF-07	2015-Apr-30 16:12	ALD	Tray + Dried Sample	220.0
UDU-05-XRF-08	2015-Apr-30 7:17	ALD	Tray	12.0
UDU-05-XRF-08	2015-Apr-30 7:17	ALD	Tray + Wet Sample	405.5
UDU-05-XRF-08	2015-Apr-30 10:41	ALD	Tray + Dried Sample	386.5
UDU-05-XRF-08	2015-Apr-30 11:16	ALD	Tray + Dried Sample	386.0
UDU-05-XRF-09	2015-Apr-30 7:19	ALD	Tray	12.0
UDU-05-XRF-09	2015-Apr-30 7:19	ALD	Tray + Wet Sample	369.5
UDU-05-XRF-09	2015-Apr-30 10:43	ALD	Tray + Dried Sample	349.5
UDU-05-XRF-09	2015-Apr-30 11:16	ALD	Tray + Dried Sample	349.0
UDU-05-XRF-10	2015-Apr-30 7:20	ALD	Tray	12.0

Table F-4
Soil/Sediment Mass Run Log
Bossburg Flat Beach Refined Sediment and Soil Study

Sample	Analysis Date/Time	Initials	Mass Type	Mass (g)
UDU-05-XRF-10	2015-Apr-30 7:20	ALD	Tray + Wet Sample	392.5
UDU-05-XRF-10	2015-Apr-30 10:43	ALD	Tray + Dried Sample	374.5
UDU-05-XRF-10	2015-Apr-30 11:17	ALD	Tray + Dried Sample	374.5
UDU-05-XRF-11	2015-Apr-30 7:21	ALD	Tray	12.0
UDU-05-XRF-11	2015-Apr-30 7:21	ALD	Tray + Wet Sample	378.5
UDU-05-XRF-11	2015-Apr-30 10:44	ALD	Tray + Dried Sample	355.0
UDU-05-XRF-11	2015-Apr-30 11:19	ALD	Tray + Dried Sample	355.0
UDU-05-XRF-12	2015-Apr-30 7:21	ALD	Tray	12.0
UDU-05-XRF-12	2015-Apr-30 7:21	ALD	Tray + Wet Sample	178.0
UDU-05-XRF-12	2015-Apr-30 10:44	ALD	Tray + Dried Sample	135.5
UDU-05-XRF-12	2015-Apr-30 11:20	ALD	Tray + Dried Sample	136.0
UDU-05-XRF-13	2015-Apr-30 7:23	ALD	Tray	12.0
UDU-05-XRF-13	2015-Apr-30 7:23	ALD	Tray + Wet Sample	313.5
UDU-05-XRF-13	2015-Apr-30 10:45	ALD	Tray + Dried Sample	299.5
UDU-05-XRF-13	2015-Apr-30 11:20	ALD	Tray + Dried Sample	299.5
UDU-06-XRF-01	2015-May-07 7:33	ALD	Tray	12.0
UDU-06-XRF-01	2015-May-07 7:33	ALD	Tray + Wet Sample	342.0
UDU-06-XRF-01	2015-May-07 9:55	ALD	Tray + Dried Sample	277.5
UDU-06-XRF-01	2015-May-07 10:46	ALD	Tray + Dried Sample	270.0
UDU-06-XRF-01	2015-May-07 11:35	ALD	Tray + Dried Sample	269.0
UDU-06-XRF-02	2015-May-07 7:35	ALD	Tray	12.0
UDU-06-XRF-02	2015-May-07 7:35	ALD	Tray + Wet Sample	414.5
UDU-06-XRF-02	2015-May-07 9:55	ALD	Tray + Dried Sample	341.0
UDU-06-XRF-02	2015-May-07 10:47	ALD	Tray + Dried Sample	331.5
UDU-06-XRF-02	2015-May-07 11:35	ALD	Tray + Dried Sample	327.5
UDU-06-XRF-02	2015-May-07 12:18	ALD	Tray + Dried Sample	327.5
UDU-06-XRF-03	2015-May-07 7:36	ALD	Tray	12.0
UDU-06-XRF-03	2015-May-07 7:36	ALD	Tray + Wet Sample	420.0
UDU-06-XRF-03	2015-May-07 9:56	ALD	Tray + Dried Sample	355.0
UDU-06-XRF-03	2015-May-07 10:47	ALD	Tray + Dried Sample	337.5
UDU-06-XRF-03	2015-May-07 11:36	ALD	Tray + Dried Sample	327.5
UDU-06-XRF-03	2015-May-07 12:20	ALD	Tray + Dried Sample	320.5
UDU-06-XRF-03	2015-May-07 12:40	ALD	Tray + Dried Sample	320.0
UDU-06-XRF-04	2015-May-07 7:36	ALD	Tray	12.0
UDU-06-XRF-04	2015-May-07 7:36	ALD	Tray + Wet Sample	369.0
UDU-06-XRF-04	2015-May-07 9:58	ALD	Tray + Dried Sample	317.0
UDU-06-XRF-04	2015-May-07 10:48	ALD	Tray + Dried Sample	307.5
UDU-06-XRF-04	2015-May-07 11:36	ALD	Tray + Dried Sample	303.5
UDU-06-XRF-04	2015-May-07 12:20	ALD	Tray + Dried Sample	302.0
UDU-06-XRF-05	2015-May-07 7:37	ALD	Tray	12.0
UDU-06-XRF-05	2015-May-07 7:37	ALD	Tray + Wet Sample	318.0

Table F-4
Soil/Sediment Mass Run Log
Bossburg Flat Beach Refined Sediment and Soil Study

Sample	Analysis Date/Time	Initials	Mass Type	Mass (g)
UDU-06-XRF-05	2015-May-07 9:59	ALD	Tray + Dried Sample	266.5
UDU-06-XRF-05	2015-May-07 10:49	ALD	Tray + Dried Sample	265.0

**Table F-5
Percent Solids**

Bossburg Flat Beach Refined Sediment and Soil Study

Sample	Analysis Date/Time	Tray Mass (g)	Tray + Wet Mass (g)	Tray + Penultimate Dried Mass (g)	Tray + Ultimate Dried Mass (g)	Percent Solids
SDU-01-XRF-01	2015-Apr-21	12.0	329.5	202.5	202.5	60.0%
SDU-01-XRF-02	2015-Apr-21	12.0	265.0	209.0	207.5	77.3%
SDU-01-XRF-03	2015-Apr-21	12.0	333.0	217.0	216.5	63.7%
SDU-01-XRF-04	2015-Apr-21	12.0	299.0	196.0	195.5	63.9%
SDU-01-XRF-05	2015-Apr-21	12.0	344.0	226.5	226.5	64.6%
SDU-01-XRF-06	2015-Apr-21	12.0	282.0	167.0	166.5	57.2%
SDU-01-XRF-07	2015-Apr-21	12.0	358.5	217.0	217.0	59.2%
SDU-01-XRF-08	2015-Apr-21	12.0	331.5	217.0	215.5	63.7%
SDU-01-XRF-09	2015-Apr-21	12.0	445.0	375.0	374.0	83.6%
SDU-02-XRF-01	2015-Apr-22	12.0	347.0	298.5	297.5	85.2%
SDU-02-XRF-02	2015-Apr-22	12.0	286.5	209.0	208.0	71.4%
SDU-02-XRF-03	2015-Apr-22	12.0	306.0	246.5	246.0	79.6%
SDU-02-XRF-04	2015-Apr-22	12.0	258.0	186.5	185.5	70.5%
SDU-02-XRF-05	2015-Apr-22	12.0	318.0	211.5	211.0	65.0%
SDU-02-XRF-06	2015-Apr-22	12.0	289.5	201.0	201.5	68.3%
SDU-02-XRF-07	2015-Apr-22	12.0	318.0	231.5	232.0	71.9%
SDU-02-XRF-08	2015-Apr-22	12.0	338.5	232.5	232.5	67.5%
SDU-03-XRF-01	2015-Apr-21	12.0	325.5	294.5	293.5	89.8%
SDU-03-XRF-02	2015-Apr-21	12.0	228.0	211.0	210.5	91.9%
SDU-03-XRF-03	2015-Apr-21	12.0	340.0	295.0	294.0	86.0%
SDU-03-XRF-04	2015-Apr-21	12.0	380.5	336.0	334.0	87.4%
SDU-04-XRF-01	2015-May-02	12.0	314.0	293.0	292.5	92.9%
SDU-04-XRF-02	2015-May-02	12.0	408.5	403.5	403.5	98.7%
SDU-04-XRF-03	2015-May-02	12.0	471.0	444.5	444.5	94.2%
SDU-04-XRF-04	2015-May-02	12.0	305.0	266.5	266.5	86.9%
SDU-05-XRF-01	2015-Apr-27	12.0	359.0	255.5	254.5	69.9%
SDU-05-XRF-02	2015-Apr-27	12.0	483.5	302.0	300.5	61.2%
SDU-05-XRF-03	2015-Apr-27	12.0	427.5	359.5	358.5	83.4%
SDU-05-XRF-04	2015-Apr-27	12.0	464.5	344.0	343.0	73.1%
SDU-05-XRF-05	2015-Apr-27	12.0	476.0	429.5	429.0	89.9%
SDU-05-XRF-06	2015-Apr-27	12.0	403.0	316.5	316.0	77.7%
SDU-05-XRF-08	2015-Apr-27	12.0	410.5	270.5	269.5	64.6%
SDU-05-XRF-09	2015-Apr-27	12.0	371.5	270.5	270.5	71.9%
SDU-05-XRF-R03	2015-Apr-27	12.0	378.0	299.5	298.0	78.1%
SDU-06-XRF-01	2015-Apr-28	12.0	437.5	421.0	421.0	96.1%
SDU-06-XRF-02	2015-Apr-28	12.0	418.0	401.5	401.0	95.8%
SDU-06-XRF-04	2015-Apr-28	12.0	379.5	347.0	346.5	91.0%
SDU-06-XRF-05	2015-Apr-28	12.0	388.5	374.0	373.5	96.0%
SDU-06-XRF-R02	2015-Apr-28	12.0	491.5	440.5	440.0	89.3%

% Solids = $\frac{([\text{Tray} + \text{Ultimate Dried Mass}] - [\text{Tray Mass}])}{([\text{Tray} + \text{Wet Mass}] - [\text{Tray Mass}])} * 100$

Table F-5
Percent Solids
Bosburg Flat Beach Refined Sediment and Soil Study

Sample	Analysis Date/Time	Tray Mass (g)	Tray + Wet Mass (g)	Tray + Penultimate Dried Mass (g)	Tray + Ultimate Dried Mass (g)	Percent Solids
SDU-07-XRF-01	2015-May-04	12.0	370.5	210.5	210.5	55.4%
SDU-07-XRF-02	2015-May-04	12.0	364.0	346.5	346.5	95.0%
SDU-07-XRF-03	2015-May-04	12.0	397.0	223.5	222.5	54.7%
SDU-07-XRF-04	2015-May-04	12.0	411.5	292.0	292.0	70.1%
SDU-08-XRF-01	2015-May-02	12.0	477.5	334.5	334.5	69.3%
SDU-08-XRF-02	2015-May-02	12.0	269.5	221.5	222.0	81.6%
SDU-08-XRF-04	2015-May-02	12.0	269.5	201.5	201.5	73.6%
SDU-08-XRF-R03	2015-May-02	12.0	383.0	233.5	233.5	59.7%
SDU-09-XRF-01	2015-Apr-28	12.0	543.0	508.0	508.0	93.4%
SDU-09-XRF-02	2015-Apr-28	12.0	412.5	369.5	369.0	89.1%
SDU-09-XRF-03	2015-Apr-28	12.0	434.0	377.5	377.5	86.6%
SDU-09-XRF-04	2015-Apr-28	12.0	453.5	388.5	388.5	85.3%
SDU-10-XRF-01	2015-Apr-28	12.0	453.5	418.0	416.5	91.6%
SDU-10-XRF-02	2015-Apr-28	12.0	427.5	395.0	395.0	92.2%
SDU-10-XRF-03	2015-Apr-28	12.0	437.5	403.0	402.5	91.8%
SDU-10-XRF-04	2015-Apr-28	12.0	461.5	362.5	361.5	77.8%
UDU-01-XRF-01	2015-Apr-16	12.0	236.5	228.5	228.5	96.4%
UDU-01-XRF-02	2015-Apr-16	12.0	361.0	337.0	336.5	93.0%
UDU-01-XRF-03	2015-Apr-16	12.0	416.0	376.5	375.0	89.9%
UDU-01-XRF-04	2015-Apr-16	12.0	517.0	463.0	461.0	88.9%
UDU-01-XRF-05	2015-Apr-16	12.0	436.5	389.0	386.5	88.2%
UDU-01-XRF-06	2015-Apr-16	12.0	414.5	367.0	367.5	88.3%
UDU-01-XRF-07	2015-Apr-16	12.0	243.0	222.5	222.5	91.1%
UDU-02-XRF-01	2015-Apr-17	12.0	394.5	357.0	356.5	90.1%
UDU-02-XRF-02	2015-Apr-17	12.0	480.0	420.5	420.5	87.3%
UDU-02-XRF-03	2015-Apr-17	12.0	506.5	454.0	453.5	89.3%
UDU-02-XRF-04	2015-Apr-18	12.0	390.5	345.0	344.0	87.7%
UDU-02-XRF-05	2015-Apr-17	12.5	473.0	428.5	428.5	90.3%
UDU-02-XRF-06	2015-Apr-17	11.5	452.5	403.5	401.0	88.3%
UDU-03-XRF-01	2015-Apr-17	12.0	455.5	401.0	400.0	87.5%
UDU-03-XRF-02	2015-Apr-17	12.5	340.0	313.5	313.5	91.9%
UDU-03-XRF-03	2015-Apr-17	12.0	378.5	341.5	341.0	89.8%
UDU-03-XRF-04	2015-Apr-17	12.0	439.0	407.0	407.0	92.5%
UDU-03-XRF-05	2015-Apr-17	12.0	278.0	252.0	251.0	89.8%
UDU-03-XRF-06	2015-Apr-17	12.0	606.0	573.0	572.0	94.3%
UDU-03-XRF-07	2015-Apr-18	12.0	479.5	418.5	419.0	87.1%
UDU-03-XRF-08	2015-Apr-18	12.0	456.5	419.0	418.5	91.5%
UDU-04-XRF-02	2015-Apr-20	12.0	174.5	150.5	149.0	84.3%
UDU-04-XRF-03	2015-Apr-20	12.0	302.5	259.5	258.5	84.9%

$$\% \text{ Solids} = \frac{([\text{Tray} + \text{Ultimate Dried Mass}] - [\text{Tray Mass}])}{([\text{Tray} + \text{Wet Mass}] - [\text{Tray Mass}])} * 100$$

Table F-5
Percent Solids
Bossburg Flat Beach Refined Sediment and Soil Study

Sample	Analysis Date/Time	Tray Mass (g)	Tray + Wet Mass (g)	Tray + Penultimate Dried Mass (g)	Tray + Ultimate Dried Mass (g)	Percent Solids
UDU-04-XRF-04	2015-Apr-20	12.0	456.0	424.0	424.5	92.9%
UDU-04-XRF-05	2015-Apr-20	12.0	399.0	359.5	359.5	89.8%
UDU-04-XRF-R01	2015-Apr-20	12.0	310.5	255.5	252.5	80.6%
UDU-05-XRF-01	2015-Apr-30	12.0	357.0	334.5	334.5	93.5%
UDU-05-XRF-02	2015-Apr-30	12.0	370.5	319.5	319.0	85.6%
UDU-05-XRF-03	2015-Apr-30	12.0	410.0	394.5	394.5	96.1%
UDU-05-XRF-04	2015-Apr-30	12.0	410.0	384.0	384.5	93.6%
UDU-05-XRF-05	2015-Apr-30	12.0	285.0	265.5	266.0	93.0%
UDU-05-XRF-06	2015-Apr-30	12.0	349.5	288.5	287.0	81.5%
UDU-05-XRF-07	2015-Apr-30	12.0	250.0	220.0	220.0	87.4%
UDU-05-XRF-08	2015-Apr-30	12.0	405.5	386.5	386.0	95.0%
UDU-05-XRF-09	2015-Apr-30	12.0	369.5	349.5	349.0	94.3%
UDU-05-XRF-10	2015-Apr-30	12.0	392.5	374.5	374.5	95.3%
UDU-05-XRF-11	2015-Apr-30	12.0	378.5	355.0	355.0	93.6%
UDU-05-XRF-12	2015-Apr-30	12.0	178.0	135.5	136.0	74.7%
UDU-05-XRF-13	2015-Apr-30	12.0	313.5	299.5	299.5	95.4%
UDU-06-XRF-01	2015-May-07	12.0	342.0	270.0	269.0	77.9%
UDU-06-XRF-02	2015-May-07	12.0	414.5	327.5	327.5	78.4%
UDU-06-XRF-03	2015-May-07	12.0	420.0	320.5	320.0	75.5%
UDU-06-XRF-04	2015-May-07	12.0	369.0	303.5	302.0	81.2%
UDU-06-XRF-05	2015-May-07	12.0	318.0	266.5	265.0	82.7%

$$\% \text{ Solids} = ([\text{Tray} + \text{Ultimate Dried Mass}] - [\text{Tray Mass}]) / ([\text{Tray} + \text{Wet Mass}] - [\text{Tray Mass}]) * 100$$

Appendix G
Daily Tailgate H&S Meeting Attendance Forms



710 2nd Ave, Suite 1000
Seattle, WA 98104

Daily Tailgate H&S Meeting Attendance Sheet

AECOM Project No.: 33765144

Client Site No.: Bossburg Sed/Soil

Project Name: Bossburg

Project Activities: Soil & Sediment Sampling

Presented By: MARK VETTER

Date: 4.15.2015

- Topics Discussed:**
- Contents of Site HASP
 - Review JSAs/JLAs
 - Stop Work Authority
 - Site Safety Officer: Tony Palmieri

- Topics Discussed:**
- Incidents need to be reported as soon as possible.
- STF
RADIOS HUNTING

Required PPE:

- Steel Toe Boots
- Hard Hat
- Traffic Vest
- Safety Glasses
- Nitrile Gloves
- Hearing Protection
- Long Sleeves
- Long Pants
- Knee Pads
- Other:

- Emergency Procedures:**
- Meeting Location: Vehicle
- Nearest Hospital: Colville (Columbia River side)
- Safety Equipment Locations:**
- First Aid Kit:
 - Eye Wash Station:
 - Fire Extinguisher:
- Driving:**
- Accidents are costly
 - Back up safely
 - Cell phone use not permitted
 - All Onsite Equipment / Vehicles Inspected Prior to Work

- General Housekeeping:**
- Clean as We Go
 - Location to Store Drums:
- Weather:** CLEAR
30FAM 45 PM
- Boat Safety:**
- PFD's
 - Communication
 - Other
- Physical Hazards:**
- Slips, Trips and Falls
 - Safe Lifting Technique
 - Pinch Points
 - Biological
 - Other:

- Contaminants of Concern:**
- Metals (lead)
 - Other:

Topics Covered: FROST - SLIPS TRIPS + FALLS
WIND - car doors, dehydration
Hunting Season - Turkey - Vests
Driving - Animals, Ice - Keep back of car ^{near} car in fr
Dehydration - stay hydrated.

Attendees:

Name

Signature

Company

MARK VETTER
 Eric Weatherman
 JOSH WEATHERMAN
 Ken Young
 Eric Lillywhite
 Jim Edwards
 William White
 Meghan Lyons
 DAVE LEWIS
 Monica Tonel
 Susan Ellis
 Cameron Foyine
 Oliver Paul
 Tony Palmieri
 Demetrio Gonzalez
 PATTY D KNOBLOTT
 Anna Dahl
 Michelle Steynor

[Handwritten signatures corresponding to the names in the 'Name' column]

AECOM
 CNI
 HECOM
 AECOM
 NPS
 NPS
 NPS
 AECOM
 USEPA
 CCT
 CH2M HILL
 AECOM
 AECOM
 AECOM
 AECOM
 AECOM
 AECOM



710 2nd Ave, Suite 1000
Seattle, WA 98104

Daily Tailgate H&S Meeting Attendance Sheet

AECOM Project No.: 33765144

Client Site No.: Bossburg Sed/Soil

Project Name: Bossburg

Project Activities: Soil & Sediment Sampling

Presented By: MARK VETTER

Date: 4/16/15

- Topics Discussed:**
- Contents of Site HASP
 - Review JSAs/JLAs
 - Stop Work Authority
 - Site Safety Officer:

- Topics Discussed:**
- Incidents need to be reported as soon as possible.

Required PPE:

- Steel Toe Boots
- Hard Hat
- Traffic Vest
- Safety Glasses
- Nitrile Gloves
- Hearing Protection
- Long Sleeves
- Long Pants
- Knee Pads
- Other:

Emergency Procedures:
Meeting Location:

Nearest Hospital:
MT CARMEL

- Safety Equipment Locations:**
- First Aid Kit: CARS
 - Eye Wash Station: CARS
 - Fire Extinguisher: CARS

- Driving:**
- Accidents are costly
 - Back up safely
 - Cell phone use not permitted
 - All Onsite Equipment / Vehicles Inspected Prior to Work

General Housekeeping:

- Clean as We Go
- Location to Store Drums:

Weather: CLEAR
35F am 70 PM

- Boat Safety:**
- PFD's
 - Communication
 - Other

- Contaminants of Concern:**
- Metals (lead)
 - Other:

- Physical Hazards:**
- Slips, Trips and Falls
 - Safe Lifting Technique
 - Pinch Points
 - Biological
 - Other:

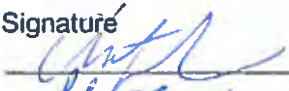
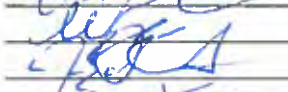
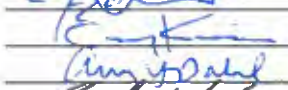
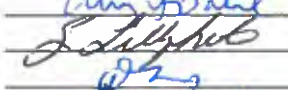
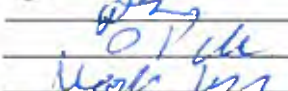
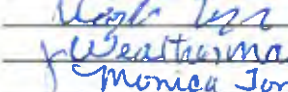
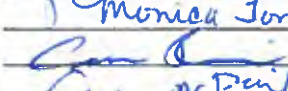
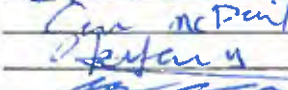
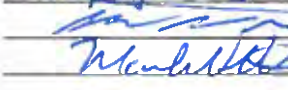
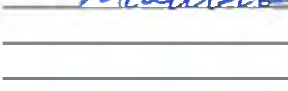






Topics Covered: STF - Pine needles
House keep - keep tools out of work area when not in use + out of traffic lanes
Wildlife - turkeys + deer
Dust - safety glasses + minimize speed on dirt road

Attendees:

Name

Signature

Company

Name	Signature	Company
Anthony Palmieri		Aecom
Michelle Stegner		AECOM
Sara Edwards		NPS
CARY KINDBERG		AECOM
Amy Dahl		AECOM
Eric Lillywhite		AECOM
Dave Lewis		Aecom
Oliver Patch		Aecom
Meghan Lyons		UPS
Michelle Williams		CWT
Monica Jones		USEPA
Cameron Irvine		CH2M HILL
Sarah McDermott		AECOM
Ken Young		AECOM
Demetrio Cabanillas		AECOM
MARK UETTER		AECOM



710 2nd Ave, Suite 1000
Seattle, WA 98104

Daily Tailgate H&S Meeting Attendance Sheet

AECOM Project No.: 33765144

Client Site No.: Bossburg Sed/Soil

Project Name: Bossburg

Project Activities: Soil & Sediment Sampling

Presented By: MARK VETTER

Date: 4/16/15
17

Topics Discussed:

<input type="checkbox"/> Contents of Site HASP
<input type="checkbox"/> Review JSAs/JLAs
<input type="checkbox"/> Stop Work Authority
<input type="checkbox"/> Site Safety Officer: <u>Tony Palmieri</u>

Topics Discussed:

<input checked="" type="checkbox"/> Incidents need to be reported as soon as possible.
--

Required PPE:

- Steel Toe Boots
- Hard Hat
- Traffic Vest
- Safety Glasses
- Nitrile Gloves
- Hearing Protection
- Long Sleeves
- Long Pants
- Knee Pads
- Other:

- Contaminants of Concern:**
- Metals (lead)
 - Other:

Emergency Procedures:
Meeting Location:

Nearest Hospital:

- Safety Equipment Locations:**
- First Aid Kit:
 - Eye Wash Station:
 - Fire Extinguisher:

- Driving:**
- Accidents are costly
 - Back up safely
 - Cell phone use not permitted
 - All Onsite Equipment / Vehicles Inspected Prior to Work

General Housekeeping:

- Clean as We Go
- Location to Store Drums:

Weather:




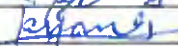



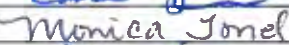





- Boat Safety:**
- PFD's
 - Communication
 - Other

- Physical Hazards:**
- Slips, Trips and Falls
 - Safe Lifting Technique
 - Pinch Points
 - Biological
 - Other:

- Topics Covered: Working near bluffs - steep, unstable, barbed wire fence, fence along edge that has fallen over.
- Barbed wire - flag wires on ground; choose safe path around.
- Always be wearing safety glasses. They are required PPE.
 - Cool mornings; warm afternoons dress in layers.
 - Driving - other drivers are distracted. Pay attention to oncoming traffic.
 - Move decon area from back of truck to an area out of the way. Secure lift gate at end of day.

Attendees:

Name
 MARK VETTER
 Meghan Lyons
 Amy Dabel
 Jan Edwards
 Ken Young
 Michelle Stegner
 Oliver Pabich
 Demetrio Cabanillas
 Cam Irvine
 Monica Tonel
 DAVE LEWIS
 Eric Lillywhite
 Tony Palmieri
 Susan Ellis

Signature









 Monica Tonel





Company
 AECOM
 NPS
 AECOM
 NPS
 AECOM
 AECOM
 AECOM
 AECOM
 CH2MHILL
 USEPA
 AECOM
 AECOM
 AECOM
 CCT



710 2nd Ave, Suite 1000
Seattle, WA 98104

Daily Tailgate H&S Meeting Attendance Sheet

AECOM Project No.: 33765144

Client Site No.: Bossburg Sed/Soil

Project Name: Bossburg

Project Activities: Soil & Sediment Sampling

Presented By: MARK VETTER

Date: 4/18/15

Topics Discussed:

Contents of Site HASP

Review JSAs/JLAs

Stop Work Authority

Site Safety Officer: TONY PALMIERI

Topics Discussed:

Incidents need to be reported as soon as possible.

Required PPE:

Steel Toe Boots

Hard Hat

Traffic Vest

Safety Glasses

Nitrile Gloves

Hearing Protection

Long Sleeves

Long Pants

Knee Pads

Other:

Contaminants of Concern:

Metals (lead)

Other:

Emergency Procedures:

Meeting Location:

VEHICLES

Nearest Hospital:

MT CARMEL

Safety Equipment Locations:

First Aid Kit: Vehicle/lab

Eye Wash Station: Vehicle/lab

Fire Extinguisher: Vehicle/lab

Driving:

Accidents are costly

Back up safely

Cell phone use not permitted

All Onsite Equipment /
Vehicles Inspected Prior to Work

General Housekeeping:

Clean as We Go

Location to Store Drums:

Weather: CLEAR

38 AM 70 PM

Boat Safety:

PFD's

Communication

Other

Physical Hazards:

Slips, Trips and Falls

Safe Lifting Technique

Pinch Points

Biological

Other:














Topics Covered:

Hospital is MT CARMEL - reviewed directions
SNAKES ARE out; Watch where you step + sit.
Working on top of bluffs - stay clear of edges.

Attendees:
Name

MARK VETTER
Meghan Lyons
WILLIAM WHITE
Monica Tonel
Cam Irvine
Eric Lillywhite
Olivier Nahul
Dorothea Cobeniller
DAVE LEWIS
Susan Ellis
Michelle Stegner
Amy Dahl
Tamy Papamicon
Ken Young

Signature




Monica Tonel











Company

AECOM
NPS
NPS
USEPA
CH2M HILL
AECOM
AECOM
AECOM
AECOM
CCT
AECOM
AECOM
AECOM
AECOM



710 2nd Ave, Suite 1000
Seattle, WA 98104

Daily Tailgate H&S Meeting Attendance Sheet

AECOM Project No.: 33765144

Client Site No.: Bossburg Sed/Soil

Project Name: Bossburg

Project Activities: Soil & Sediment Sampling

Presented By: MARK VETTER

Date: 4/20/15

Topics Discussed:

- Contents of Site HASP
- Review JSAs/JLAs
- Stop Work Authority
- Site Safety Officer:

Topics Discussed:

- Incidents need to be reported as soon as possible. TO FIELD TEAM LEADS
- WHO WILL COMMUNICATE TO FIELD SUPERVISOR

Required PPE:

- Steel Toe Boots
- Hard Hat
- Traffic Vest
- Safety Glasses
- Nitrile Gloves / LEATHER
- Hearing Protection
- Long Sleeves
- Long Pants
- Knee Pads
- Other:

Emergency Procedures:

- Meeting Location: CARS AT PRESSURE / TRAILER AT SHOP
- Nearest Hospital: MT CARMEL

General Housekeeping:

- Clean as We Go
- Location to Store Drums:

Weather:

34F AM 73F PM

Safety Equipment Locations:

- First Aid Kit: Vehicle
- Eye Wash Station: Vehicle
- Fire Extinguisher: Vehicle

Boat Safety:

- PFD's
- Communication
- Other

Contaminants of Concern:

- Metals (lead)
- Other:

Driving:

- Accidents are costly
- Back up safely
- Cell phone use not permitted
- All Onsite Equipment / Vehicles Inspected Prior to Work

Physical Hazards:

- Slips, Trips and Falls
- Safe Lifting Technique
- Pinch Points
- Biological
- Other:

Topics Covered:

Everyone has the ability to stop the job; wear the required PPE; METALS (Pb) at UDU-4 possible
Slips trips & falls are real hazards at UDU-4; use two people to carry a cooler if needed. Snakes, hornets & ticks are out. Drink plenty of fluids - some team members experiencing calf cramps at night - add electrolytes to water.

Attendees:

Name	Signature	Company
MARK VETTER	<i>[Handwritten Signature]</i>	AECOM
William White	<i>[Handwritten Signature]</i>	NPS
Ken Yang	<i>[Handwritten Signature]</i>	AECOM
Meghan Lyons	<i>[Handwritten Signature]</i>	NPS
Oliver Pabel	<i>[Handwritten Signature]</i>	AECOM
Demetrio Cabanilla	<i>[Handwritten Signature]</i>	AECOM
DAVE LEWIS	<i>[Handwritten Signature]</i>	AECOM
Tom Palavicini	<i>[Handwritten Signature]</i>	AECOM
Eric Willyhik	<i>[Handwritten Signature]</i>	AECOM
Michelle Stegner	<i>[Handwritten Signature]</i>	AECOM
Susan Ellis	<i>[Handwritten Signature]</i>	CCT
Amy Dahl	<i>[Handwritten Signature]</i>	AECOM
Eric Weatherman	<i>[Handwritten Signature]</i>	CNI
JOE WEATHERMAN	<i>[Handwritten Signature]</i>	CNI
MARK ENDR	<i>[Handwritten Signature]</i>	CH2M HILL
R. Matthew Wilkey	<i>[Handwritten Signature]</i>	EPA



710 2nd Ave, Suite 1000
Seattle, WA 98104

Daily Tailgate H&S Meeting Attendance Sheet

AECOM Project No.: 33765144

Client Site No.: Bossburg Sed/Soil

Project Name: Bossburg

Project Activities: Soil & Sediment Sampling

Presented By: MARK VETTER

Date: 4/21/15

Topics Discussed:

Contents of Site HASP

Review JSAs/JLAs

Stop Work Authority

Site Safety Officer: TEAM LEADS

Topics Discussed:

Incidents need to be reported as soon as possible.

Required PPE:

Steel Toe Boots

Hard Hat

Traffic Vest

Safety Glasses

Nitrile Gloves

Hearing Protection

Long Sleeves

Long Pants

Knee Pads

Other:

Contaminants of Concern:

Metals (lead)

Other:

Emergency Procedures:

Meeting Location:

Nearest Hospital:

MT CARMEL

Safety Equipment Locations:

First Aid Kit: Vehicle

Eye Wash Station: Vehicle

Fire Extinguisher: Vehicle

Driving:

Accidents are costly

Back up safely

Cell phone use not permitted

All Onsite Equipment /
Vehicles Inspected Prior to Work

General Housekeeping:

Clean as We Go

Location to Store Drums:

Weather:

38F AM 74 PM

Boat Safety:

PFD's

Communication

Other

Physical Hazards:

Slips, Trips and Falls

Safe Lifting Technique

Pinch Points

Biological

Other:

Topics Covered:

PPE Incident reporting, STF,
Dehydration - mud flats are hot dry and
windy. Dust - bring eyewashes with you

Housekeeping - keep work areas neat in field,
office + lab.

Attendees:

Name
R Matthew Wilkerson
Jan Edwards
William White
Ken Young
MARK ENO
Demetrio Capenillas
Oliver Patch
Michelle Stegner
Amy Dahl
Eric Lillywhite
Tomy Palmieri
DAVE LEWIS
MARK VETER

Signature
R Matthew Wilkerson
Jan Edwards
William White
Ken Young
Mark Eno
Demetrio Capenillas
Oliver Patch
Michelle Stegner
Amy Dahl
Eric Lillywhite
Tomy Palmieri
DAVE LEWIS
MARK VETER

Company
EPA
NPS
NPS
AECOM
CH2M HILL
AECOM
AECOM
AECOM
AECOM
AECOM
AECOM
AECOM



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Daily Tailgate H&S Meeting Attendance Sheet

AECOM Project No.: 33765144

Client Site No.: Bossburg Sed/Soil

Project Name: Bossburg

Project Activities: Soil & Sediment Sampling

Presented By: MARK VETTER

Date: 4/22/15

Topics Discussed:

- Contents of Site HASP
- Review JSAs/JLAs
- Stop Work Authority
- Site Safety Officer:

Topics Discussed:

- Incidents need to be reported as soon as possible.

Muscle strain (slight) reported by Eric L.

Required PPE:

- Steel Toe Boots
- Hard Hat
- Traffic Vest
- Safety Glasses
- Nitrile Gloves /Leather
- Hearing Protection
- Long Sleeves
- Long Pants
- Knee Pads
- Other:

Emergency Procedures:

Meeting Location: OFFICE - Eric's Trailer
Field - Vehicle Parking area

Nearest Hospital:

Safety Equipment Locations:

- First Aid Kit: Vehicles
- Eye Wash Station: Vehicles
- Fire Extinguisher: Vehicles

Driving:

- Accidents are costly
- Back up safely
- Cell phone use not permitted
- All Onsite Equipment / Vehicles Inspected Prior to Work

General Housekeeping:

- Clean as We Go
- Location to Store Drums:

Weather:

51 - 61

Boat Safety:

- PFD's
- Communication
- Other

Physical Hazards:

- Slips, Trips and Falls
- Safe Lifting Technique
- Pinch Points
- Biological
- Other:

Contaminants of Concern:

- Metals (lead)
- Other:

Topics Covered: All team members have stop work authority PPE, report all incidents as soon as possible. Eric reported slight muscle strain he felt when he woke up today. Share the load and lift properly; be aware of wasps, hornets, ticks, pinch points - be sure to use leather gloves when handling drum rings. Clean as you go.





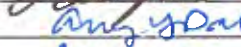


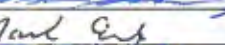



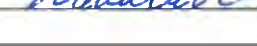


Attendees:

Name

Signature

Company

Ken Yang
DAVE LEWIS
Susan Ellis
Tony Robinson
Eric Lybushko
Amy Dahl
Michelle Stegner
Oliver Pahl
Demetra Cabral
MARK ENDO
R. Matthew Wilcox
Josh WERTSCHERMAN
Jon Edwards
MARK VETTER

AECOM
aecom
CCT
Aecom
AECOM
AECOM
Aecom
AECOM
CH2M HILL
EPA
CWT
NPS



710 2nd Ave, Suite 1000
Seattle, WA 98104

Daily Tailgate H&S Meeting Attendance Sheet

AECOM Project No.: 33765144

Client Site No.: Bossburg Sed/Soil

Project Name: Bossburg

Project Activities: Soil & Sediment Sampling

Presented By: MARK VETTER

Date: 4/23/15

Topics Discussed:	Topics Discussed:
<input type="checkbox"/> Contents of Site HASP	<input checked="" type="checkbox"/> Incidents need to be reported as soon as possible.
<input type="checkbox"/> Review JSAs/JLAs	
<input checked="" type="checkbox"/> Stop Work Authority	
<input checked="" type="checkbox"/> Site Safety Officer: <u>Field - Tony Pomeroy</u> <u>OFFICE - MARK VETTER</u>	

Required PPE:	Emergency Procedures:	General Housekeeping:
<input checked="" type="checkbox"/> Steel Toe Boots	Meeting Location: <u>OFFICE - TRAIL</u> <u>FIELD - Vehicles</u>	<input checked="" type="checkbox"/> Clean as We Go
<input type="checkbox"/> Hard Hat	Nearest Hospital: <u>MT Carmel</u>	<input type="checkbox"/> Location to Store Drums:
<input checked="" type="checkbox"/> Traffic Vest	Safety Equipment Locations:	Weather: <u>Cloudy 35F AM 57F PM</u>
<input checked="" type="checkbox"/> Safety Glasses	<input checked="" type="checkbox"/> First Aid Kit: <u>Vehicles</u>	Boat Safety:
<input checked="" type="checkbox"/> Nitrile Gloves	<input checked="" type="checkbox"/> Eye Wash Station: <u>Vehicles</u>	<input type="checkbox"/> PFD's
<input type="checkbox"/> Hearing Protection	<input checked="" type="checkbox"/> Fire Extinguisher: <u>Vehicles</u>	<input type="checkbox"/> Communication
<input type="checkbox"/> Long Sleeves	Driving:	<input type="checkbox"/> Other
<input checked="" type="checkbox"/> Long Pants	<input checked="" type="checkbox"/> Accidents are costly	Physical Hazards:
<input type="checkbox"/> Knee Pads <u>if warranted</u>	<input checked="" type="checkbox"/> Back up safely <u>360</u>	<input checked="" type="checkbox"/> Slips, Trips and Falls
<input type="checkbox"/> Other:	<input checked="" type="checkbox"/> Cell phone use not permitted	<input checked="" type="checkbox"/> Safe Lifting Technique
Contaminants of Concern:	<input type="checkbox"/> All Onsite Equipment / Vehicles Inspected Prior to Work	<input checked="" type="checkbox"/> Pinch Points
<input checked="" type="checkbox"/> Metals (lead)		<input checked="" type="checkbox"/> Biological
<input type="checkbox"/> Other:		<input type="checkbox"/> Other:

Topics Covered: FIELD SAFETY OFFICERS, INCIDENT REPORTING
PPE, LINE OF FIRE SAFETY CONCERNS, RALLY SPOTS
HOSPITAL LOCATION. DRIVING SAFETY. ~~ASSET TAG~~ USE
FRONT SEAT SPOTTERS IMPLEMENT 360° inspection. STF
cobbles will be slick if we have any rain. Share the load.
Biologics - snakes, hornets, wasps. Pinch points.

Attendees:
Name

Signature

Company

Attendees: Name	Signature	Company
DAVE LEWIS	<i>[Signature]</i>	AECOM
JOSH WEATHERMAN	<i>[Signature]</i>	ENR
Dean Kinnear	<i>[Signature]</i>	AECOM
Anthony Polomieri	<i>[Signature]</i>	AECOM
Eric Lillywhite	<i>[Signature]</i>	AECOM
Ann O'Neil	<i>[Signature]</i>	AECOM
Michelle Stegner	<i>[Signature]</i>	AECOM
Ken Yang	<i>[Signature]</i>	AECOM
Glenn Palski	<i>[Signature]</i>	AECOM
R. Matthew Wilkemy	<i>[Signature]</i>	EPA
Susan Ellis	<i>[Signature]</i>	CCT
MARK ENDO	<i>[Signature]</i>	CH2M HILL
Jana Edwards	<i>[Signature]</i>	NPS
Meghan Lyons	<i>[Signature]</i>	NPS
Bill Tedlock	<i>[Signature]</i>	AECOM
Sally Miller	<i>[Signature]</i>	AECOM
MARK VETER	<i>[Signature]</i>	AECOM.



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Seattle, WA 98104

Daily Tailgate H&S Meeting Attendance Sheet

AECOM Project No.: 33765144

Client Site No.: Bossburg Sed/Soil

Project Name: Bossburg

Project Activities: Soil & Sediment Sampling

Presented By: MARK VETTER

Date: 4/24/15

Topics Discussed:	Topics Discussed:
<input type="checkbox"/> Contents of Site HASP	<input checked="" type="checkbox"/> Incidents need to be reported as soon as possible.
<input type="checkbox"/> Review JSAs/JLAs	
<input checked="" type="checkbox"/> Stop Work Authority	
<input checked="" type="checkbox"/> Site Safety Officer: <u>Field / Tony P. Overall / Mark U</u>	

Required PPE:

- Steel Toe Boots
- Hard Hat
- Traffic Vest
- Safety Glasses
- Nitrile Gloves / LEATHER
- Hearing Protection
- Long Sleeves
- Long Pants
- Knee Pads
- Other:

Emergency Procedures:
Meeting Location: SDU-05 - low water boney OFFICE - TRAILER

Nearest Hospital: MT CARMEL - Colville

- Safety Equipment Locations:**
- First Aid Kit: take in field
 - Eye Wash Station: take in field
 - Fire Extinguisher: vehicles

- Driving:**
- Accidents are costly
 - Back up safely 360
 - Cell phone use not permitted
 - All Onsite Equipment / Vehicles Inspected Prior to Work

General Housekeeping:

- Clean as We Go
- Location to Store Drums:

Weather: Partly Cloudy Cool 42°F AM 60 PM

- Boat Safety:**
- PFD's
 - Communication
 - Other

- Contaminants of Concern:**
- Metals (lead)
 - Other:

- Physical Hazards:**
- Slips, Trips and Falls
 - Safe Lifting Technique
 - Pinch Points
 - Biological
 - Other:

Topics Covered: Covered PPE, rally spots hospital, STF due to rain overnight, driving to new area, watch for speed + campers at campground at Evens. Line of fire - S tunnel back from sample work due to possible metal + rock fragments, watch for sharp objects in samples. Tick reported by NPS found on thumb after lunch break - conduct tick check after lunch or after sitting for a break. Sharps in sample.

Attendees:

Name

Signature

Company

R. Matthew Wilkey
MARK ENDO
JOSH WEATHERMAN
Jon Edwards
William White
Ken Yang
Oliver Pakel
Michelle Stegner
Amy Dahl
Susan Ellis
Anthony Palmieri
Dennis Kinney
DAVE LEWIS
MARK VETTER

R. Matthew Wilkey
Mark Endo
jweatherman
Jon Edwards
W. White
Ken Yang
Oliver Pakel
Michelle Stegner
Amy Dahl
Susan Ellis
Anthony Palmieri
Dennis Kinney
Dave Lewis
Mark Vetter

EPA
CH2M HILL
CWE
NPS
NPS
AECOM
Aecom
AECOM
AECOM
ACT
Aecom
AECOM
Aecom
AECOM



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Daily Tailgate H&S Meeting Attendance Sheet

AECOM Project No.: 33765144

Client Site No.: Bossburg Sed/Soil

Project Name: Bossburg

Project Activities: Soil & Sediment Sampling

Presented By: MARR VETTER

Date: 4/25/15

Topics Discussed:

- Contents of Site HASP
- Review JSAs/JLAs
- Stop Work Authority
- Site Safety Officer: Palmieri Vetter

Topics Discussed:

- Incidents need to be reported as soon as possible.

Required PPE:

- Steel Toe Boots
- Hard Hat
- Traffic Vest
- Safety Glasses
- Nitrile Gloves Leather
- Hearing Protection
- Long Sleeves
- Long Pants
- Knee Pads
- Other:

Emergency Procedures:

Meeting Location: Vehicles

Nearest Hospital: MT Carmel

Safety Equipment Locations:

First Aid Kit: take to field

Eye Wash Station: take to field

Fire Extinguisher: Vehicles

Driving:

Accidents are costly

Back up safely 360

Cell phone use not permitted

All Onsite Equipment / Vehicles Inspected Prior to Work

General Housekeeping:

- Clean as We Go
- Location to Store Drums:

Weather: RAIN FORECASTED

Boat Safety:

- PFD's
- Communication
- Other

Physical Hazards:

- Slips, Trips and Falls
- Safe Lifting Technique
- Pinch Points
- Biological
- Other:

Contaminants of Concern:

- Metals (lead)
- Other:

Topics Covered: PPE, STF, new field team leader for Team B.
Take first aid kits + eyewash stations tomorrow.
Driving safety. Share the load, lift properly. Watch
for ticks - frequent checks. Watch for barbed wire.
Fit for duty

Attendees:

Name

Signature

Company

R. Mathew Wilkeny
MARK ENDO
Ken Young
Oliver Fakh
DAVE REWIS
Anthony Palmieri
Susan Ellis
Dean Kloman
Jan Edwards
Meghan Lyons
Mark Vetter

R. Mathew Wilkeny
Mark Endo
Ken Young
Oliver Fakh
DAVE REWIS
Anthony Palmieri
Susan Ellis
Dean Kloman
Jan Edwards
Meghan Lyons
Mark Vetter

EPA
CH2M HILL
AECOM
AECOM
AECOM
AECOM
CCT
AECOM
NPS
NPS
AECOM



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Seattle, WA 98104

Daily Tailgate H&S Meeting Attendance Sheet

AECOM Project No.: 33765144 Client Site No.: Bossburg Sed/Soil
 Project Name: Bossburg Project Activities: Soil & Sediment Sampling
 Presented By: MARK VETTER Date: 4/27/15

Topics Discussed:	Topics Discussed:
<input checked="" type="checkbox"/> Contents of Site HASP - <u>in field to office</u>	<input checked="" type="checkbox"/> Incidents need to be reported as soon as possible.
<input checked="" type="checkbox"/> Review JSAs/JLAs - <u>review for new red ball</u>	<u>FIT FOR DUTY</u>
<input checked="" type="checkbox"/> Stop Work Authority - <u>everyones responsibility</u>	
<input checked="" type="checkbox"/> Site Safety Officer: <u>TONY FIELD</u> <u>MARK V - overall</u>	

Required PPE:

- Steel Toe Boots
- Hard Hat
- Traffic Vest
- Safety Glasses
- Nitrile Gloves / LEATHER
- Hearing Protection
- Long Sleeves
- Long Pants
- Knee Pads
- Other:

- Contaminants of Concern:**
- Metals (lead)
 - Other:

- Emergency Procedures:**
- Meeting Location:
FIELD - BOAT
OFFICE - TRAILER
- Nearest Hospital:
MT CARMEL
- Safety Equipment Locations:**
- First Aid Kit: to field
 - Eye Wash Station: to field
 - Fire Extinguisher: vehicles
- Driving:**
- Accidents are costly
 - Back up safely
 - Cell phone use not permitted
 - All Onsite Equipment / Vehicles Inspected Prior to Work

- General Housekeeping:**
- Clean as We Go
 - Location to Store Drums:
- Weather:** 32 F AM 60 PM
CLEAR SUNNY to Ptly Cloudy
- Boat Safety:**
- PFD's
 - Communication
 - Other
- Physical Hazards:**
- Slips, Trips and Falls
 - Safe Lifting Technique
 - Pinch Points
 - Biological
 - Other:

Topics Covered: REVIEW HASP IF YOU HAVE QUESTIONS COPIES IN FIELD AND OFFICE. F.S. Has Master JSAs review for old + new tasks. Stop work authority is everyones responsibility, PPE, Contaminants, Fit for duty,

MT Carmel Hospital - current route is detoured. Pay attention to detour signs. Share the load watch pinch points, Incident reporting is H&S
Biologics - Tick, hornets, wasps, bees. Boating safety - by Josh Weatherman. House keeping - clean as we go. use front seat
Spotters - watch for deer + turkeys. Communications - use marine band radios or cell phones.

Attendees:

Name

Signature

Company

JOSH WEATHERMAN
ANDREA LATIER
NICOLE BADON
WILLIAM WHITE
MEGHAN LYONS
DAN KINNEN
ANTHONY PALANCA
OLIVER PATSCH
MICHELLE STEGNER
SUSAN ELLIOTT
DAVE LEWIS
KEN YANG
DEMETRIO CASMILLO
AMY DAKEL
MARK VETER

[Handwritten signatures]
Weatherman
Andrea Latier
Nicole Badon
William White
Meghan Lyons
Dan Kinnen
Anthony Palanca
Oliver Patzsch
Michelle Stegner
Susan Elliott
Dave Lewis
Ken Yang
Demetrio Casmillo
Amy Dakel
Mark Veter

CWI
EPA
CH2M
NPS
NPS
AECOM
AECOM
AECOM
AECOM
CCT
AECOM
AECOM
AECOM
AECOM



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Seattle, WA 98104

Daily Tailgate H&S Meeting Attendance Sheet

AECOM Project No.: 33765144

Client Site No.: Bossburg Sed/Soil

Project Name: Bossburg

Project Activities: Soil & Sediment Sampling

Presented By: _____

Date: 4/28/15

Topics Discussed:

- Contents of Site HASP
- Review JSAs/JLAs
- Stop Work Authority
- Site Safety Officer: *Pulmieri - Field Vetter Overall*

Topics Discussed:

- Incidents need to be reported as soon as possible.

Required PPE:

- Steel Toe Boots
- Hard Hat
- Traffic Vest
- Safety Glasses
- Nitrile Gloves / Leather
- Hearing Protection
- Long Sleeves
- Long Pants
- Knee Pads
- Other:

Contaminants of Concern:

- Metals (lead)
- Other: *WISHA LEAD STANDARD APPENDICES A+B*

Emergency Procedures:

- Meeting Location: *EVANS - CARS TRAILER FOR OFFICE*
- Nearest Hospital: *MT Carmel - watch for detour*
- Safety Equipment Locations:**
 - First Aid Kit: *Vehicles*
 - Eye Wash Station: *Vehicles*
 - Fire Extinguisher: *Cars*

Driving:

- Accidents are costly
- Back up safely
- Cell phone use not permitted
- All Onsite Equipment / Vehicles Inspected Prior to Work

General Housekeeping:

- Clean as We Go
- Location to Store Drums:
- Weather: *MOSTLY SUNNY 37A 72 PM*

Boat Safety:
















- PFD's
- Communication
- Other

Physical Hazards:

- Slips, Trips and Falls
- Safe Lifting Technique
- Pinch Points
- Biological
- Other:

Topics Covered: *Lead max conc in soil so far 1593. Dust exp limit is 7.8 mg/m³ - lead concentration is 0.025 mg/m³ less than the action limit of 0.025 mg/m³ half the TLV - If dust storm occurs we will demob from area until it subsides. Spoggles should be here today. Covered PPE, Physical hazards, emergency procedures, weather. Dean mention field folks should walk around bulkhead at Evans campground instead of stepping off.*

Attendees:

Name	Signature	Company
Josh Weatherman		CNI
Dana Kingen		AECOM
Demetrio Caballero		AECOM
Ken Yang		AECOM
Amy Dahl		AECOM
Anthony Palmieri		AECOM
DAVE LEWIS		AECOM
Michelle Stegner		AECOM
Oliver Patch		AECOM
Susan Ellis		CCT
Eric Weatherman		CNI
Jon Edwards		NPS
William WHITE		NPS
Nicole Badon		CH2M
Andrea LaTier		EPA



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Daily Tailgate H&S Meeting Attendance Sheet

AECOM Project No.: 33765144

Client Site No.: Bossburg Sed/Soil

Project Name: Bossburg

Project Activities: Soil & Sediment Sampling

Presented By: MARK VETTER

Date: 4/29/15

Topics Discussed:	Topics Discussed:
<input checked="" type="checkbox"/> Contents of Site HASP	<input checked="" type="checkbox"/> Incidents need to be reported as soon as possible.
<input checked="" type="checkbox"/> Review JSAs/JLAs	
<input checked="" type="checkbox"/> Stop Work Authority	
<input checked="" type="checkbox"/> Site Safety Officer: <u>Tony - Field</u> <u>MARK - OVERALL</u>	

Required PPE:

- Steel Toe Boots
- Hard Hat
- Traffic Vest
- Safety Glasses
- Nitrile Gloves LEATHER
- Hearing Protection
- Long Sleeves
- Long Pants
- Knee Pads
- Other:

- Emergency Procedures:**
- Meeting Location: SDU-01 or 2 in field
Trailer at office
- Nearest Hospital: MT CARMEL
- Safety Equipment Locations:**
- First Aid Kit: in field
 - Eye Wash Station: in field
 - Fire Extinguisher: vehicle

- General Housekeeping:**
- Clean as We Go
 - Location to Store Drums:
- Weather:** Breezy Ptly Cloudy
55 AM / 70 PM

- Boat Safety:**
- PFD's
 - Communication
 - Other Columbia Navigation Safety Plan

Contaminants of Concern:

- Metals (lead)
- Other:

- Driving:**
- Accidents are costly
 - Back up safely 360
 - Cell phone use not permitted
 - All Onsite Equipment / Vehicles Inspected Prior to Work

- Physical Hazards:**
- Slips, Trips and Falls - slip +5
 - Safe Lifting Technique
 - Pinch Points
 - Biological
 - Other:

Topics Covered: Review HASP location / JSA within HASP.
Stop Work authoring, lead in soil + sediment, incident reporting
driving safety - 360 vehicle review, front seat spotters, no cell phone
use by driver. Housekeeping, PFD's, Marine band radios - channel 5.
STF - working on slopes today - have sturdy boots, carry minimum
gear, rotate personnel in and out as need. one team at UOU-5. 2 pe
core sample team at SDUs - 1 + 2 to assist. Share the load, long
walk today, watch for ticks at UOU-5.

Attendees:

Name
Josh Weatherman
Joa Edwards
Ken Yang
Anthony Palmieri
Amy Dahl
Susan Ellis
Michelle Stegner
Oliver Pabst
Demetrio Cabral
DAVE LEWIS
William White
Nicole Badon
Andrea LaTier
Dean Kennedy
Mark Uetter

Signature
jweatherman
Joa
Ken Yang
Anthony Palmieri
Amy Dahl
Susan Ellis
Michelle Stegner
Oliver Pabst
Demetrio Cabral
DAVE LEWIS
William White
Nicole Badon
Andrea LaTier
Dean Kennedy
MARK UETTER

Company
CWE
NPS
HECOM
Aecom
AECOM
CCT
AECOM
Aecom
Aecom
AECOM
AECOM
NPS
CH2M
EPA
AECOM
AECOM.



710 2nd Ave, Suite 1000
Seattle, WA 98104

Daily Tailgate H&S Meeting Attendance Sheet

AECOM Project No.: 33765144

Client Site No.: Bossburg Sed/Soil

Project Name: Bossburg

Project Activities: Soil & Sediment Sampling

Presented By: MARK VETTER

Date: 4/30/15

Topics Discussed:

- Contents of Site HASP - location
- Review JSAs/JLAs
- Stop Work Authority
- Site Safety Officer:

Topics Discussed:

- Incidents need to be reported as soon as possible.

Required PPE:

- Steel Toe Boots
- Hard Hat
- Traffic Vest
- Safety Glasses / SPOGGLES
- Nitrile Gloves / LEATHER
- Hearing Protection
- Long Sleeves
- Long Pants
- Knee Pads
- Other:

Contaminants of Concern:

- Metals (lead)
- Other:

Emergency Procedures:

Meeting Location: FIELD - BOAT - BASE OF WDU-05; OFFICE TRAILER
Nearest Hospital: MT CARMEL

Safety Equipment Locations:

- First Aid Kit: take to field
- Eye Wash Station: take to field
- Fire Extinguisher: vehicles/boat

Driving:

- Accidents are costly
- Back up safely
- Cell phone use not permitted
- All Onsite Equipment / Vehicles Inspected Prior to Work

General Housekeeping:

- Clean as We Go
- Location to Store Drums:

Weather:

SUNNY 35 FA 70° AM

Boat Safety:


















- PFD's
- Communication
- Other

Physical Hazards:

- Slips, Trips and Falls
- Safe Lifting Technique
- Pinch Points
- Biological
- Other:

Topics Covered: rocks @ WDU-05 do not stand below someone on slope - STF. Dean relayed his slip yesterday. Discussed work scope for today. Distributed spoggles to AECOM. Vacate DUs when dust storms come up.

Attendees:

Name	Signature	Company
Dean Kinney		AECOM
Susan Ellis		CCI
Ken Yang		AECOM
DAVE LEWIS		AECOM
Demetria Czbanik		AECOM
Amy Dahl		AECOM
Tony Palmieri		AECOM
Michelle Stegner		AECOM
Oliver Patch		AECOM
Danica Rameyn		NPS
Jen Edwards		NPS
Andree LaTief		EPA
Nicole Badon		CH2M
REUBEN GREER		CH2M HILL
Josh Weatherman		CNI
ERIC WEATHERMAN		CNI
MARK VETER		AECOM



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Daily Tailgate H&S Meeting Attendance Sheet

AECOM Project No.: 33765144

Client Site No.: Bossburg Sed/Soil

Project Name: Bossburg

Project Activities: Soil & Sediment Sampling

Presented By: MARK VETTER

Date: 5/1/15

Topics Discussed:

Contents of Site HASP

Review JSAs/JLAs

Stop Work Authority

Site Safety Officer: PALMERI TEAM A
LEWIS TEAM B VETTER

Topics Discussed:

Incidents need to be reported as soon as possible.

Required PPE:

Steel Toe Boots

Hard Hat

Traffic Vest

Safety Glasses

Nitrile Gloves LEATHER

Hearing Protection

Long Sleeves

Long Pants

Knee Pads

Other:

Contaminants of Concern:

Metals (lead)

Other:

Emergency Procedures:

Meeting Location: Field a boat landings office - trailer

Nearest Hospital:

Safety Equipment Locations:

First Aid Kit: trailer to field

Eye Wash Station: trailer to field

Fire Extinguisher: vehicles

Driving:

Accidents are costly

Back up safely

Cell phone use not permitted

All Onsite Equipment / Vehicles Inspected Prior to Work

General Housekeeping:

Clean as We Go

Location to Store Drums:

Weather:

Boat Safety:

PFD's

Communication

Other Columbia Navigation

Physical Hazards:

Slips, Trips and Falls

Safe Lifting Technique

Pinch Points

Biological

Other:

Topics Covered:

Distracted driving, possible may day protests
- work up wind of sources silty locations to avoid
dust. When working on slopes stay @ do not
stand below people above you. Be aware of the
location of personnel on slopes



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Daily Tailgate H&S Meeting Attendance Sheet

AECOM Project No.: 33765144

Client Site No.: Bossburg Sed/Soil

Project Name: Bossburg

Project Activities: Soil & Sediment Sampling

Presented By: MARK VETTER

Date: 5/2/15

Topics Discussed:	Topics Discussed:
<input checked="" type="checkbox"/> Contents of Site HASP	<input checked="" type="checkbox"/> Incidents need to be reported as soon as possible.
<input checked="" type="checkbox"/> Review JSAs/JLAs	
<input checked="" type="checkbox"/> Stop Work Authority	
<input checked="" type="checkbox"/> Site Safety Officer:	

Required PPE:

- Steel Toe Boots
- Hard Hat
- Traffic Vest
- Safety Glasses
- Nitrile Gloves / LEATHER
- Hearing Protection
- Long Sleeves
- Long Pants
- Knee Pads
- Other:

Contaminants of Concern:

- Metals (lead)
- Other:

- Emergency Procedures:**
- Meeting Location: BOATS FOR THOSE TEAMS OFFICE - FAMILIAR
- Nearest Hospital: MT CARMEL
- Safety Equipment Locations:**
- First Aid Kit:
 - Eye Wash Station:
 - Fire Extinguisher:
- Driving:**
- Accidents are costly
 - Back up safely 360°
 - Cell phone use not permitted
 - All Onsite Equipment / Vehicles Inspected Prior to Work

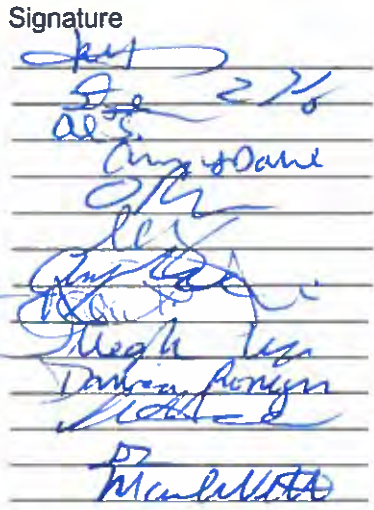
- General Housekeeping:**
- Clean as We Go
 - Location to Store Drums:
- Weather:**
- 52° F AM 70° F PM
- Boat Safety:**
- PFD's
 - Communication
 - Other Columbia Navigation
- Physical Hazards:**
- Slips, Trips and Falls
 - Safe Lifting Technique
 - Pinch Points
 - Biological
 - Other:

Topics Covered: Reviewed HASP + JSAs location + AI has road HASP. Discussed incident reporting, stop work authority, PPE, Rally spots, Hospital location, first aid kits, eye washes + fire extinguisher, driving safety, Weather + dressing in layers, beaches are better than upland areas, STF safe lifting, pinchpoints + bio hazards. - NPS monitor Danica mention she had a rash on her arms but has been wearing long sleeves the entire time. No report of presence of poisoning at locations + they have been on beach the entire time.

FS will have AI Thatcher sign HASP indicating his review + concurrence.

Attendees:

Name
 Ken Yang
 Dean Kinney
 Al Thatcher
 Amy Dahl
 Oliver Patch
 Michelle Stegner
 Anthony Palmisano
 Andrew Latier
 Meghan Lyons
 Danica Bomeyn
 REUBEN GREER
 DAVE LEWIS
 MARK VETTER

Signature


Company
 AECOM
 AECOM
 AECOM
 AECOM
 Aecom
 AECOM
 Aecom
 EDA
 NPS
 NPS
 CUZMHIIL
 AECOM
 AECOM



710 2nd Ave, Suite 1000
Seattle, WA 98104

Daily Tailgate H&S Meeting Attendance Sheet

AECOM Project No.: 33765144 Client Site No.: Bossburg Sed/Soil
 Project Name: Bossburg Project Activities: Soil & Sediment Sampling
 Presented By: MARK VETTER Date: 5/4/15

Topics Discussed:	Topics Discussed:
<input checked="" type="checkbox"/> Contents of Site HASP	<input checked="" type="checkbox"/> Incidents need to be reported as soon as possible.
<input checked="" type="checkbox"/> Review JSAs/JLAs	
<input checked="" type="checkbox"/> Stop Work Authority	
<input checked="" type="checkbox"/> Site Safety Officer:	

Required PPE:

- Steel Toe Boots
- Hard Hat
- Traffic Vest
- Safety Glasses
- Nitrile Gloves / LEATHER
- Hearing Protection
- Long Sleeves
- Long Pants
- Knee Pads
- Other: Life vests @ SDU-04

- Contaminants of Concern:**
- Metals (lead)
 - Other:

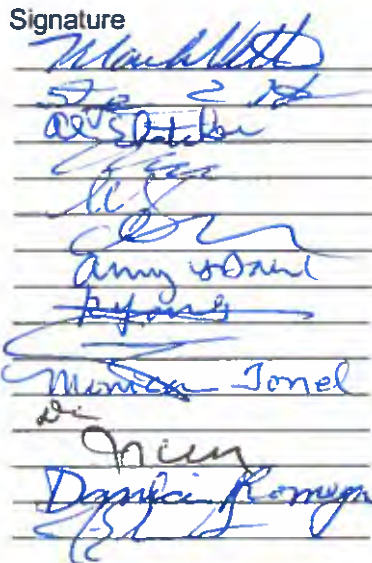
- Emergency Procedures:**
- Meeting Location: OFFICE - TRUCK
FIELD VEHICLES OR BOAT
- Nearest Hospital:
MT CARMEL
- Safety Equipment Locations:**
- First Aid Kit: TAKE TO FIELD
 - Eye Wash Station: TAKE TO FIELD
 - Fire Extinguisher: VEHICLES
- Driving:**
- Accidents are costly
 - Back up safely
 - Cell phone use not permitted
 - All Onsite Equipment / Vehicles Inspected Prior to Work

- General Housekeeping:**
- Clean as We Go
 - Location to Store Drums:
- Weather:** SUNNY
36°E AM 75F PM
- Boat Safety:**
- PFD's
 - Communication
 - Other: COLUMBIA NAV. SAFETY RULE
- Physical Hazards:**
- Slips, Trips and Falls
 - Safe Lifting Technique
 - Pinch Points
 - Biological
 - Other:

Topics Covered: SIT, working on slopes - do not stand below people above you, use benches to navigate to vicinity of ICS + then access accordingly. Use life jackets on SDU-04, no different than being on a dock with the exception of rocks.

Attendees:

Name
 MARK VETTER
 Dean Kiarney
 Al Thatcher
 Anthony Palmieri
 Michelle Stegner
 Oliver Tabb
 Amy Dahl
 Ken Yang
 Susan Ellis
 Monica Tonel
 DAVE LEWIS
 JOHN CULLEY
 Danica Romagn
 Jan Edwards

Signature


Company
 AECOM
 AECOM
 AECOM
 AECOM
 AECOM
 AECOM
 AECOM
 CCT
 USEPA
 AECOM
 CALM
 NPS
 NPS



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Daily Tailgate H&S Meeting Attendance Sheet

AECOM Project No.: 33765144

Client Site No.: Bossburg Sed/Soil

Project Name: Bossburg

Project Activities: Soil & Sediment Sampling

Presented By: MARK VEITER

Date: 5/5/15

Topics Discussed:

- Contents of Site HASP w/field teams + office
- Review JSAs/JLAs HNSP
- Stop Work Authority All
- Site Safety Officer:

Topics Discussed:

- Incidents need to be reported as soon as possible. Team leads to report to F.S.

Required PPE:

- Steel Toe Boots
- Hard Hat
- Traffic Vest
- Safety Glasses /SPOGGLES
- Nitrile Gloves /LEATHER
- Hearing Protection
- Long Sleeves
- Long Pants
- Knee Pads
- Other:

Emergency Procedures:
Meeting Location: OFFICE-TRAILER
FIELD BOAT LANDING

Nearest Hospital:
MT CARMEL

- Safety Equipment Locations:**
- First Aid Kit: take to field
 - Eye Wash Station: take to field
 - Fire Extinguisher: vehicles

- Driving:**
- Accidents are costly
 - Back up safely
 - Cell phone use not permitted
 - All Onsite Equipment / Vehicles Inspected Prior to Work

General Housekeeping:

- Clean as We Go
- Location to Store Drums:

Weather:
45F-SUNNY - 65F

- Boat Safety:**
- PFD's
 - Communication
 - Other COLUMBIA NAVIGATION SAFETY

Contaminants of Concern:

- Metals (lead)
- Other:

- Physical Hazards:**
- Slips, Trips and Falls
 - Safe Lifting Technique
 - Pinch Points
 - Biological
 - Other:

Topics Covered: Fit for duty, line of fire, complacency, bring tent shelter to field possible dust today, bring spoggles. STF - rocks at SDU-06 mud @ SDU-07.

Share the load, watch for pinchpoints in field + let "bee" aware. Practice good housekeeping; observe Columbia Navigation safety rules.



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Daily Tailgate H&S Meeting Attendance Sheet

AECOM Project No.: 33765144

Client Site No.: Bossburg Sed/Soil

Project Name: Bossburg

Project Activities: Soil & Sediment Sampling

Presented By: MARK VETTER

Date: 5/6/15

Topics Discussed:

Contents of Site HASP

Review JSAs/JLAs

Stop Work Authority

Site Safety Officer: PALMIERI / STEGNER FIELD VETTER OVERALL

Topics Discussed:

Incidents need to be reported as soon as possible.

Required PPE:

- Steel Toe Boots
- Hard Hat
- Traffic Vest
- Safety Glasses
- Nitrile Gloves / leather
- Hearing Protection
- Long Sleeves
- Long Pants
- Knee Pads
- Other:

Contaminants of Concern:

- Metals (lead)
- Other:

Emergency Procedures:

Meeting Location: FIELD - BOAT Landings, OFFICE - TRAIL

Nearest Hospital: MT CARMEL

Safety Equipment Locations:

- First Aid Kit: take to field
- Eye Wash Station: take to field
- Fire Extinguisher: vehicles

Driving:

- Accidents are costly
- Back up safely
- Cell phone use not permitted
- All Onsite Equipment / Vehicles Inspected Prior to Work

General Housekeeping:

- Clean as We Go
- Location to Store Drums:

Weather: Chance of a T storm in PM
32 AM 45 PM

Boat Safety:

- PFD's
- Communication
- Other: Columbia Navigation Rules

Physical Hazards:

- Slips, Trips and Falls
- Safe Lifting Technique
- Pinch Points
- Biological
- Other:

Topics Covered: Poison Ivy, STF, complacency, fit for duty, sun. Complacency. wear long sleeves if feeling effects of sun + sunscreen not working. Weather. Share the load.



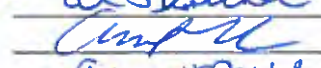
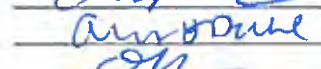


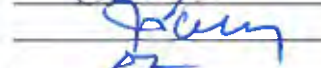
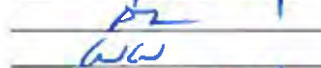
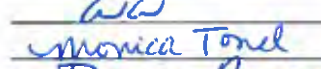
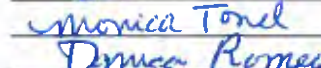
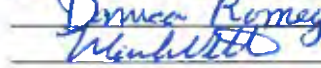
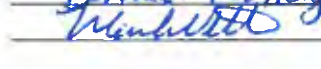
Attendees:

Name

Signature

Company

GARY PANTHICK
Al Thatcher
Tony Palmieri
Amy Dahl
Oliver Patch
Michelle Stegner
JOHN CULLEN
DAVE VENIS
William White
Monica Tonel
Danica Barmann
MARK VETTER

AECOM
AECOM
AECOM
AECOM
AECOM
AECOM
CH2M
AECOM
NPS
USEPA
NPS
AECOM



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Daily Tailgate H&S Meeting Attendance Sheet

AECOM Project No.: 33765144

Client Site No.: Bossburg Sed/Soil

Project Name: Bossburg

Project Activities: Soil & Sediment Sampling

Presented By: MARK JETTER

Date: 5/7/15

Topics Discussed:	Topics Discussed:
<input type="checkbox"/> Contents of Site HASP	<input checked="" type="checkbox"/> Incidents need to be reported as soon as possible.
<input type="checkbox"/> Review JSAs/JLAs	
<input type="checkbox"/> Stop Work Authority	
<input type="checkbox"/> Site Safety Officer:	

Required PPE:

- Steel Toe Boots
- Hard Hat
- Traffic Vest
- Safety Glasses
- Nitrile Gloves / LEATHER
- Hearing Protection
- Long Sleeves
- Long Pants
- Knee Pads
- Other:

- #### Contaminants of Concern:
- Metals (lead)
 - Other:

- #### Emergency Procedures:
- Meeting Location: BOAT LANDING - FIELD.
- Nearest Hospital: MT CARMEL
- #### Safety Equipment Locations:
- First Aid Kit: to field
 - Eye Wash Station: to field
 - Fire Extinguisher: vehicles
- #### Driving:
- Accidents are costly
 - Back up safely
 - Cell phone use not permitted
 - All Onsite Equipment / Vehicles Inspected Prior to Work

- #### General Housekeeping:
- Clean as We Go
 - Location to Store Drums:
- Weather: SUNNY
3:30 AM 7:5 PM
- #### Boat Safety:
- PFD's
 - Communication
 - Other Columbia Navigation Safety rules
- #### Physical Hazards:
- Slips, Trips and Falls
 - Safe Lifting Technique
 - Pinch Points
 - Biological
 - Other:

Topics Covered: Poison Ivy, poison oak, poison sumac - Tyvek, Tech available. Complacency, Fit for duty. Watch for ground bees + hornets nests in trees, watch for loose rocks + vegetation; test tree limbs before ^{grab}bing them when accessing steep slopes. Both teams will work near each other today due to being one man down.

At Thatcher

@ATH to assist field lab today. Field Supervisor to fill in field as needed.

Wear leather gloves on slopes. Be aware of people behind you when moving through brush + avoid snapping branches back at them. Today is the most challenging day yet. Work slow + steady. Treat today like Day 1.




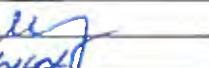
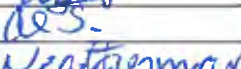
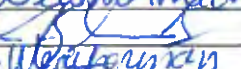
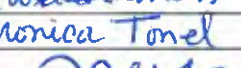
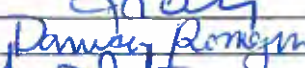








Attendees:

Name

Signature

Company

MARK VETER
Tony Palmieri
Amy Dahl
DAVE LEWIS
Oliver Patch
Michelle Stegner
William Sabala
Al Thatcher
J Weatherman
Jon Edwards
Eric Weatherman
Monica Tanel
JOHN CULLY
Danica Romoyn
GARY PANTHER
Julian Ellis

AECOM
Aecom
AECOM
AECOM
Aecom
AECOM
NPS
AECOM
CWI
NPS
CNI
USEPA
CH2M
NPS
AECOM
CCT



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Seattle, WA 98104

Daily Tailgate H&S Meeting Attendance Sheet

AECOM Project No.: 33765144

Client Site No.: Bossburg Sed/Soil

Project Name: Bossburg

Project Activities: Soil & Sediment Sampling

Presented By: MARK VETER

Date: 5/8/15

Topics Discussed:

- Contents of Site HASP
- Review JSAs/JLAs
- Stop Work Authority
- Site Safety Officer: MARK VETER

Topics Discussed:

- Incidents need to be reported as soon as possible.

Required PPE:

- Steel Toe Boots
- Hard Hat
- Traffic Vest FIELD
- Safety Glasses
- Nitrile Gloves LEATHER
- Hearing Protection
- Long Sleeves
- Long Pants
- Knee Pads
- Other:

Emergency Procedures:
Meeting Location: Boat landing TRAILER at (office) (FIELD)

Nearest Hospital:

Safety Equipment Locations:

- First Aid Kit: to field
- Eye Wash Station: to field
- Fire Extinguisher: Vehicle

Driving:

- Accidents are costly
- Back up safely
- Cell phone use not permitted
- All Onsite Equipment / Vehicles Inspected Prior to Work

General Housekeeping:

- Clean as We Go
- Location to Store Drums:

Weather: CLEAR 35FAM

Boat Safety:

- PFD's
- Communication
- Other COLUMBIA NAVIGATION SAFETY

Physical Hazards:

- Slips, Trips and Falls
- Safe Lifting Technique
- Pinch Points
- Biological
- Other:

Contaminants of Concern:

- Metals (lead)
- Other:

Topics Covered: Complimentary - at end of the job; be follow same safety procedures when demobbing office. Pay attention when driving home for animals, other drivers, do not use cell phones while driving. If we go to field today we will follow all field H&S requirements

Appendix H

Daily Logbook Entries

4

Location Seattle, WA to Spokane to Colville Date 4/13/15
 Project / Client Teck Bossburg

- 0600 Tony Palmeri + Demetrio Caniballas pick up Amy Dahl + travel to Paul McCullough's home to pick up box truck in North Bend.
- 0630 Arrive in North Bend.
- 0635 Tony + Amy drive box truck to Spokane while Demetrio drives separately.
- 1045 ~~TA~~ Arrive at ABC Storage and meet Becky of Teck + Mark Vetter. Pick up supplies from Teck.
- 1200 Arrive Teck office. Take lunch.
- 1300 Meeting with AECOM + Teck.
- 1500 Depart Spokane
- 1700 Arrive Colville. Pick up generator at Sun Rental
- 1715 Arrive Comfort Inn

AND
4/13/15

5

Location Colville/Kettle Falls WA Date 4/14/15
 Project / Client Teck Bossburg

- 0830 Meeting - Kickoff with AECOM, EPA, Parks, and Columbia Navigation
- 1100 Return to hotel to sort equipment
- 1200 Lunch
- 1230 Meet all at Columbia Navigation in Kettle Falls and prepare, decom, + split equipment between 2 teams
- 1415 Team A+B depart to UDU-1 while Ken + Amy organize box truck.
- 1730 Ken tests scale.
- 1735 Teams A+B arrive back to Kettle Falls. ICE samples + secure samples
- 1815 ^{AED} Collect rinsate blank UDU-01-ER-A
- 1830 Depart Kettle Falls

AND
4/14/15

6

Location BOSSBURG/TAI OFFICE Date 4/13/15Project / Client BOSSBURG REFINEDSEDIMENT + SOIL STUDY/TAI

0715 - left Gold Creek for Spokan

1045 - arrived at storage locker

+ met Becky Henseler, Tony Palmieri and Amy Dahl.

- loaded equipment for project.

1130 - departed for TAI's office + lunch

1300 - met at TAI's office for

a get to know you meeting where

we introduced ourselves to TAI +

each other. Discussed safety,

TAI expectations + role of

CCT/NPS/EPA + Columbia Navigation.

1500 - departed TAI office for

Colville.

1645 - arrived at Comfort in and

got settled. Team to meet for

breakfast + depart hotel for

the Hub by 0815.

Mark

/ / / /

7

Location BOSSBURG - the Hub Date 4/14/15Project / Client BOSSBURG REFINEDSEDIMENT + SOIL STUDY / TAI

- @ Hub @ 0815 set up meeting room.

0830 - Mark Uetter initiated the kickoff meeting with a Safety Moment - Slips Trips + Falls, then reviewed the HASP plan for all - stressed safety leadership is everyone's responsibility - walk the talk + Safety is TAI's + AECOM's #1 core value. Everyone has the responsibility + authority to stop the job. Safety is a team and individual responsibility. MV then reviewed the HASP in more detail.

0915 - took break after safety presentation

0930 - Sarah McDaniel gave CR presentation - good overview of CCT + area history.

CR monitor needs to clear sample area (2m) before sample.

- No cores in SDU 10 due to CR issues. Done @ 1010.

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Location UDU-01 Date 4.14.2015
 Project / Client Boschung-Teck Sunny, 50°

1538 Arrive e UDU-01. Enter
 term, Camerón, Maricao, John (EPRI
 NPS). Phu today is work as
 one to train on GPS + digital
 sampling form

@ UDU-01-24
 GPS → 423061.05
 → 5400897.51

@ UDU-01-15
GPS Coordinates
 4230 34.338
 5400890.418

Camera crashes computer when
 saving.

1712 Offsite. Collected UDU-01-15 +
 UDU-01-24 today.

4

Location Seattle, WA to Spokane to Colville Date 4/13/15
 Project / Client Teck Bossburg

- 0600 Tony Palmeri + Demetrio Caniballas pick up Amy Dahl + travel to Paul McCullough's home to pick up box truck in North Bend.
- 0630 Arrive in North Bend.
- 0635 Tony + Amy drive box truck to Spokane while Demetrio drives separately.
- 1045 ~~TA~~ Arrive at ABC Storage and meet Becky of Teck + Mark Vetter. Pick up supplies from Teck.
- 1200 Arrive Teck office. Take lunch.
- 1300 Meeting with AECOM + Teck.
- 1500 Depart Spokane
- 1700 Arrive Colville. Pick up generator at Sun Rental
- 1715 Arrive Comfort Inn

AND
4/13/15

5

Location Colville/Kettle Falls WA Date 4/14/15
 Project / Client Teck Bossburg

- 0830 Meeting - Kickoff with AECOM, EPA, Parks, and Columbia Navigation
- 1100 Return to hotel to sort equipment
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- 1730 Ken tests scale.
- 1735 Teams A+B arrive back to Kettle Falls. ICE samples + secure samples
- 1815 ^{AED} Collect rinsate blank UDU-01-ER-A
- 1830 Depart Kettle Falls

AND
4/14/15

6

Location BOSSBURG/TAI OFFICE Date 4/13/15Project / Client BOSSBURG REFINEDSEDIMENT + SOIL STUDY/TAI

0715 - left Gold Creek for Spokan

1045 - arrived at storage locker

+ met Becky Henseler, Tony Palmieri and Amy Dahl.

- loaded equipment for project.

1130 - departed for TAI's office + lunch

1300 - met at TAI's office for

a get to know you meeting where

we introduced ourselves to TAI +

each other. Discussed safety,

TAI expectations + role of

CCT/NPS/EPA + Columbia Navigation.

1500 - departed TAI office for

Colville.

1645 - arrived at Comfort in and

got settled. Team to meet for

breakfast + depart hotel for

the Hub by 0815.

Mark

/ / / /

7

Location BOSSBURG - the Hub Date 4/14/15Project / Client BOSSBURG REFINEDSEDIMENT + SOIL STUDY/TAI

- @ Hub @ 0815 set up meeting room.

0830 - Mark Uetter initiated the kickoff meeting with a Safety Moment - Slips Trips + Falls, then reviewed the HASP plan for all - stressed safety leadership is everyone's responsibility - walk the talk + Safety is TAI's + AECOM's #1 core value. Everyone has the responsibility + authority to stop the job. Safety is a team and individual responsibility. MV then reviewed the HASP in more detail.

0915 - took break after safety presentation

0930 - Sarah McDaniel gave CR presentation - good overview of CCT + area history.

CR monitor needs to clear sample area (2m) before sample.

- No cores in SDU 10 due to CR issues. Done @ 1010.

Location Bossburg The Hub Date 4/14/15
Project / Client in Cilville, Bossburg
Refined Sediment + Soil Study / TAI

Tony, Amy + Cary gave download of data collection tool + including sample info, xrf etc.

1025- Eric gave additional info on local safety concerns related to truck traffic, animals on HWY 25. If you have to stop be sure you are far enough off road.

- Turkey hunting season opens tomorrow. Hunters will be on the road. Road hunting is common.
 - parking off road - watch out for dry grass
 - ~~thru~~ is an issue. Not a good idea to leave truck @ bossburg or Snag Cove overnight. Evans OK. MW to check with TAI if ok to leave at a local residents property if Eric IDS a resident.
 - Open range
- 1100 departed the Hub; reconvene

Location THE HUB Date 4/14/15
Project / Client BOSSBURG REFINED
SEDIMENT + SOIL / TAI

at Eric's shop @ 1230 MW to follow up with Paul M + Client on working lab in box truck at Eric's.

- 4/14 11:22 called Paul - discussed staying at Eric's. OK by him.
- Dean Kinney on standby for Kidder.
- Josh out Saturday
- Eric limited on 4/15.
- full boat crews on 4/20.
- my recon to include an access review
- Kris wants frequent conversations need to set some times for conversation in AM + PM.
- 4:00 PM @ Eric's for CC.
- 1146 - wrapped up call. Grabbed gear + headed to Kettle Falls.
- 1230 - at Eric Shop Organized equipment + decanned.
- ★ - Tony asked for clarification on decision at onset of rain

Location Bossburg A@ Date 4/14/15
 Project / Client BOSSBURG REFINED SEDIMENT
+ SOIL STUDY / TA1

1- Do we need equipment blank of core device if DU not completed in one day?

* What about between cores in on DU - Per QAPP we need to decon between core stations

- need a couple of drums.

1455 - left Eric's shop + proceeded to Bossburg. A + B

1520 - arrived at Bossburg + went to UDU + team working on GPS connections + off to UDU to start sampling.

1600 - conference call with Krs McCraig + Paul.

- discussed Cam Irvine's question about changing dabubam

* coordinating with Joe Wickman

- change request needed for any deviations to sampling including collecting ~~cores~~ sediment samples in ICS mode.

(train @ 1630) going south
 get decision free from
 Cameron on core samples

Location BOSSBURG Date 4/14/15¹¹
 Project / Client BOSSBURG REFINED SEDIMENT
+ SOIL STUDY / TA1

- one per day per type of sample equipment not one per team per equipment

- make sure spray bottles are labeled

- next call at 1600 on 4/15.

- called @ 1655.

- returned to field teams.

1700 - team returned to vehicle collected 2 increments.

- issue w/ camera crashing Surface pro when attempting to take photos of locations.

1730 @ Weatherman's shop + 2-ICS samples turned over to Amy.
 download

- no walking at UDU 1-V while reading GPS.

- Team A hit a pheasant on way back - no damage to vehicle.

- Sally Miller called - arriving 4/22

- on site 4/23 all day.

Location UDU-01 Date 4.15.2015Project / Client Bossburg-Teck SUNNY 330FObservers: Cameron (CH), Morgan (NPS), Murica (EPA)

0807 Arrive @ UDU-01. Plan is for Team A + B to finish ICS sampling in UDU-01 together, then split off for XRF sampling.

Safety observation → turkey in road while driving to site

Train crossing @ Bossburg w/DFOS.

0845 UDU-01-25

GPS Coord

423032.93

5400960.11

0905 @ UDU-01-30

GPS Coord

423032.77

5400892.89

Location UDU-01 Date 4.15.2015Project / Client Bossburg-TeckObservers: Cameron (CH), Morgan (NPS)

0915 @ UDU-01-22

GPS Coord

423045.31

5400902.60

~~0930~~ @ UDU-01-11

GPS Coord

423035.89

5400903.59

0945 @ UDU-01-06

GPS Coord

423017.29

5400912.54

@ 1000 → Cameron offsite for phone call

@ 1020 @ UDU-01-14

GPS Coord

422992.13

5400900.71

1040 @ UDU-01-07

GPS Coord

422984.72

5400905.79

6

Location UDU-01 Date 4.15.15Project / Client Bossburg-TeckObservers: Cameron, ^(CH) Megan ^(NPS)

1100 @ UDU-01-12

GPS Coord.

422974.12

5400894.27

1112 @ UDU-01-16

GPS Coord

422966.31

5400886.82

1126 Cameron back from call. Both teams take lunch.

1230 Keith (NPS) onsite.

1245 Resume sampling

* UDU-01-XR25-05 & 06 are plotted in UDU-01. Will notify Mark.

1250 Keith offsite.

7

Location UDU-01 Date 4.15.15Project / Client Bossburg-TeckObservers: Cameron, Megan

1258 Speak w/ Mark regarding GPS. Call Paul on his behalf.

Let Paul know. Lock in QAPP and confirm that coordinates in QAPP match points in GPS. Paul would like to talk w/ Cam + Monica to discuss. ~~Cam~~ + Cameron suggest that we relocate (manually). Monica indicates that we need to call Paul & go through the QAPP change request.

1344 @ UDU-01-08

GPS Coord

422963.84

5400902.63

1350 Finish call w/ Paul. Plan for XRF samples in UDU-01 is to place them by hand in the best location possible.

Location UDU-01 Date 4.15.15Project / Client Bossburg-TeckObservers: Cameron, Megan

1412 @ UDU-01-01
GPS Coordinates
 422967.34
 5400915.39

1431 @ UDU-01-27
GPS Coord.
 422996.29
 5400925.16

1448 @ UDU-01-17
GPS Coord.
 422989.13
 5400934.05

1505 @ UDU-01-19
GPS Coord.

* Glass found in sample, cultural observer
 (Megan, NPS) consults w/ Sarah (Acum).
 Decide to reject sample. Move 1 meter
 north, new location clear.

GPS Coord.
 422966.59
 5400930.13

Location UDU-01 Date 4.15.15Project / Client Bossburg-TeckObservers: Cameron, Megan

1530 @ UDU-01-28
GPS Coord.
 422960.37
 5400933.13

1545 @ UDU-01-26
GPS Coord.
 422954.63
 5400929.50

1605 @ UDU-01-04
GPS Coord.
 422943.96
 5400925.29

1625 Sun. rise out of battery. Temp
 A wraps up for day.

1730 Offsite, from Bossburg.

1756 Back @ Weatherman's.

1815 Offsite for day.

Location

Kettle Falls

Date

4/15/15

Project / Client

Boysburg

J. Lillywhite

Weather: 35-60° Mostly Sunny

Crew: Lillywhite, Lewis, Stegner

Activity: ICS and XRF Soil Cores UDU-01

Observers: John Edwards (NPS) Susan Ellis (CCT)
Monica Turkel (EPA)

0705 Safety and OPS meeting

0810 Arrive at Boysburg Pkts. Falls

is UDU-01 then move to UDU-02

XRF locations (Team B). Team B
will start on West End.0930 Slight delay with data input, data
entry page needs to be saved
prior to photo link then saved
again1020 UDU-01-23 relocated 2 meters ^{South} ~~East~~
of centroid due to slope1112 UDU-01-21 will be an elite filter this
file was used as a test station during
development.1120 UDU-01-10 and 21 appears to be
in field cobble fill area

1130 Lunch

1205 Afternoon break

1245 ... Team B to UDU-01

Location

Kettle Falls

Date

4/15/15

Project / Client

Boysburg

J. Lillywhite

UDU-01 Sub Sample	Easting Northing	UTM 11N (Meters) Easting
-09	422923.57	5400931.36
-13	422927.24	5400930.99
-23	422927.24	5400930.99
-23	422908.85	5400941.76
-18	422922.28	5400942.95
-21	422926.18	5400944.58
-XRF-01	422949.23	5400905.19
-XRF-02	422931.73	5400940.79
-XRF-03	422966.73	5400940.79
-XRF-04	422981.04	5400905.23
-XRF-05	423001.68	5400876.32
-XRF-01	422896.72	5400940.79
-XRF-06	423038.33	5400872.49

J. Lillywhite
4/15/15

Location Kettle Falls Date 4/15/15Project / Client BassburgS. Lytle

1245 (continued) XRF locations. stations
-05 and -06 at UDU-01-XRF
are outside of Polygon

1300 We have been going through the GIS
and have noticed many locations
in the wrong DU. Anthony has
noticed Mark Vetter. We will
only sample locations within the
DU

1330 Cameron Irvine recommends sampling
using the "intent" of the plan. We
cannot do this, need formal OK
from Teck with agreement from
EPA

1355 John Edwards has been talking to a local,
the local mentioned in the 1930s or so they
had a locust problem and used arsenic and
wood chips to reduce the problem.

1447 Anthony has been able to move
XRF locations inside the UDU XRF-04
will relocate to Reserve XRF-R01, XRF-05
will be located $\approx 75'$ east of UDU-01-R06 and
XRF-06 will be located $\approx 75'$ NE of
UDU-01-R05

Location Kettle Falls Date 4/15/15Project / Client BassburgS. Lytle

1650 Finished for the day. 7 XRF samples
ready for home base crew. Pick
up equipment.

1735 Arrive back in Kettle Falls. Do con
Soil cores

1800 End of Day

S. Lytle
4/15/15

6

Location Kettle Falls, WA Date 4/15/15Project / Client Teck Bossburg

- 0700 Ken Yang + Amy Dahl arrive with team at Columbia Navigation ^(CN) in Kettle Falls for daily tailgate meeting.
- 0745 Teams depart to sampling area while Ken decons coring devices and Amy sets up office.
- 0950 Put visqueen over table secure with duct tape.
- 1000 Set up shaker, oven, + scale in box truck.
- 1015 Test pH of waste water ~ 2 add baking soda to pH 7
- 1030 Dry deconned sieves in oven.
- 1120 Remove sieves from oven + cool.
- 1130 ALDKY collect rinsate blank UDU-01-ER-B of deconned sieve.
- 1315 Ken + Amy lock up samples in box truck + depart to pick up supplies + return generator. Obtained buckets, drum liners, brush for cleaning sieves, 2 gallon baggies, 6 bags ice
- 1445 Arrive back to Kettle Falls.

Location Kettle Falls, WA Date 4/15/15 7Project / Client Teck Bossburg

- 1500 Pre filled FedEx forms
- 1530 Put drum liner + pad into each cooler
- 1600 Print out sample lists
- 1605 Arrange DDW drums with Gary Panther Josh weatherman to pick up drums tomorrow in Colville from North 40 Outfitters
- 1730 Field teams arrive back.
- 1745 Recon core barrels
- 1755 ALD collects rinsate blank UDU-01-ER-A ^{deconned} core barrel
- 1810 ICD new PCS increments from UDU-1
- 1815 All depart site for dinner
- 2030 ^{Tony, Cary, Amy} Return to CN. to sync + change note pads. Sync didn't work so saved 2 folders to office server for Bradley to work on in office tomorrow.
- 2200 Tony, Cary + Amy depart site to hotel

ALD 4/15/15

- 0700 at Columbia Navigator.
- conducted tailgate safety meeting.
- new team members Susan Ellis CCT. Bill White NPS.
- Field work for today
 - TEAM A+B complete UDU-1 ICS; TEAM A XRF from UDU-1
 - Team B XRF samples from UDU-2
- consider getting to Columbia Navigator @ 0630 to load equipment prior to safety meeting as team did not leave for site until 0735.
- after teams left I planned recon trip.
 - Start @ SDU 7 + work our way north at Evens; then proceed North to Bossburg
- called Paul
 - discussed hotels + rooms for Sally
 - starting @ 0630.
 - for recon + which are immediate but 3' A.H @ 1600.

- 0837 - at Bossburg to check on TEAMING
- @ Bossburg ramp. 230' to end of sandy beach. Then 20' drop to water 45° slope very cobble.
- Team B @ UDU-01-09.
- Moved over to Team A working in east end of UDU-01.
- 1010 - left Bossburg for Columbia Navigator
- 1030 at Columbia Navigator
- proceeded to Kettle Falls Marina.
- 1045 @ launch
- conducted safety meeting + departed for SDU-07.
- 1132 @ SDU-07
- SDU-07 is at a shallow bay.
- cruised bay @ 20' from shore in 2-3' of water as possible. Cleared northern ICS and crossed bay to west side.
- outline bay around ICS samples
- encountered very shallow water

Location BOSSBURG / EVANS AREA Date 4/15/15
 Project / Client BOSSBURG REFINED SEDIMENT
+ SOIL STUDY / TAI

- as we folled shore. Proceeded to SDU-05 as ~~SDU~~ SDU 16 above water. Paralled shore - appears all of SDUs 10' off shore - bank is steep to water. Very cobbly. Moving North bank gets to 35'
- Any samples on slope or waters edge will be difficult due to cobbles
- proceeded to SDU-04. Southern most west samples in water.
- northern most two on west side are in water.
10' off steep bank water depth is 7'
- @ 10 am 1252.7 Lake elevation
- SDU-03 is good
- Proceed to ~~SDU~~ SDU-2. Proceeded up shoreline ~ 10' from shore
- several west sample very close to water's edge in cobbles
- Moved to SDU-01
- [Tony called to say XRF samples not in right UDUs based on

Location BOSSBURG Date 4/15/15
 Project / Client BOSSBURG REFINED SEDIMENT
+ SOIL STUDY / TAI

- XRF samples from UDU 1, 2, 4 are mixed based on boundary
- SDU-01 is OK except for steep cobble bank.
- no boat access at SDUs 01 and SDU-02.
- proceeded to SDU-08.
- 25' feet east of shore due to rocks + shallow. Eastern most sample points under water.
- very iffy for boats near shore.
- [Army called - returning generator 1315]
 [Paul called - discussing XRF 1320]
 sample issue with Kris. Met to talk to Cameron.]
- proceeded to SDU-09 North end of bank ~~at~~ silty SDU bank is silty.
- many western locations under water
- SDU-10 like SDU-9 both topograph all and samples under water.
- QAPP 1250 line appears accurate at all locations.

- 1345 - completed recon.
- at desk @ 1415
- back @ Bossburg @ 3:00 1505
- discussed sample relocation with Tony. We will propose the changes in a Change Request + Tony will prepare @ this evening.
- 1538 - had to change Team 3's Surface pro - down to 8%
- *? - can we have one person flag preliminary locations in advance of field team?
- * - need to discuss wasps at daily tailgate safety meeting
- * - need field 110 changing unit.
- Cary worked with Michelle to capture new sample locations
- 1600 - conference call w/ Kris McLeary + Paul.
- Tech will contact MDR about sample issues
- try to do one change request to cover process not individual samples. 1, 1, 1

- document changes after the fact for changed sample.
- look at schedule for changes.
- Will boat be available on Thursday. Scope out boat landing for Kris + Becky.
- 1652 call ended.
- boat access ok to Bossburg
- 1730 departed Bossburg
- @ Columbia Navigation @ 1755.
- team dermed extra core barrels used during day + dropped off samples to field lab
- Amy Dahl informed me they collected a sieve blank today prior to sieving tomorrow.
- 0630 - depart Columbia Navigation

Michelle

Location UDU-01 Date 4-16-2015Project / Client Bossburg

0752 @ Bossburg

Observers: Cameron, Monica, Susan, John,
Megan, Joe Wickman (CCC)

↳ Monica & Megan w/us to start.

0810 @ UDU-01-02

GPS Coord

422955.26

5400946.76

094K @ UDU-01-03

GPS Coord

422945.62

5400955.21

0854 @ UDU-01-29

GPS Coord

422942.22

5400970.97

0907 @ UDU-01-10

GPS Coord

422927.82

5400966.67

Location UDU-01 Date 4-16-2015Project / Client Bossburg - Tech

0921 @ UDU-01-20

GPS Coord

422908.94

5400950.69

0924 Mark + Baby onsite.

0940 @ UDU-01-05

GPS Coord

422895.35

5400941.04

1011 Tony offsite to dump UDU-01
samples @ lab. Demetrio +
Ollie will start XRF
Sampling @ UDU-02.

1020 @ NOV-02-XRF-02

GPS Coord

422966.72

5400870.74

Location UDU-02 Date 4-16-2015Project / Client Bassburg-Teck

1040 @ UDU-02-XRF-01
GPS Coord
 422931.72
 5400870.79

1055 @ UDU-02-XRF-03
GPS Coord
 422949.22
 5400835.79

1105 @ UDU-02-XRF-04
GPS Coord
 422984.22
 5400835.79

1120 @ UDU-02-XRF-06
GPS Coord
 422966.72
 5400800.79

1133 @ UDU-02-XRF-05
GPS Coord
 422931.72
 5400800.79

Location UDU-03 Date 4-16-15Project / Client Bassburg-Teck

1143 Team A breaks for lunch.

1230 Resume work. Start collecting
 XRF samples in UDU-03

1255 @ UDU-03-XRF-02
GPS Coord
 422774.22
 5400835.79

1308 @ UDU-03-XRF-03
GPS Coord
 422809.22
 5400835.79

1325 @ UDU-03-XRF-04
GPS Coord
 422844.22, 5400835.79
 @ ~~UDU-03-XRF-05 MP~~

1339 @ UDU-03-XRF-05
GPS Coord
 422826.72
 5400800.79

Location UDU-03 Date 4.16.15Project / Client Bassburg - Teck

1355 e UDU-03-XRF-06

GPS Coord

422861.72

5400800.79

1410 @ UDU-03-XRF-01

GPS Coord

422879.22

5400765.79

1440 Scope out ICS locations in UDU-03 that are adjacent to river, steep slopes are a concern.

UDU-19 is unsafe, as it lies on a location that is unconsolidated sand and cobbles w/o any vegetation anchoring. Measure slope using inclinometer. Take picture and email to Mark. Slope is 46°. Will use reserve station.

Location UDU-03 Date 4.16.15Project / Client Bassburg - Teck

UDU-03-29 is Accessible

UDU-03-20 is Accessible

1503 e UDU-03-20

GPS Coord

422761.01

5400835.05

1520 e UDU-03-05

GPS Coord

422790.75

5400866.19

1535 e UDU-03-28

GPS Coord

422776.67

5400848.68

1550 @ UDU-03-10

GPS Coord

422806.34

5400858.56

1600 Speak w/ Monica Tanel (EPA)
about using Reserve Station
UDU-03-R03 to replace UDU-03-
19. She agrees.

1607 Navigate to UDU-03-R03. U.U.
use for UDU-03-19
GPS Coord
422818.55
5400827.83

1632 @ UDU-03-XRF-07
GPS
422896.72
5400800.79

1643 Begin demobe.

* Safety observation from earlier,
When driving back from Kettle Falls
to drop off samples South bound
driver was looking @ river and
swerved into my lane.

1650 Offsite for field office
in Kettle Falls.

1719 Backe Weatherman's

1757 Offsite

~~John~~
4.16.15

Location Kettle Falls Date 4/16/15Project / Client BassburgS. Lillywhite

Weather: BS-70 Sunny John Wichmann
 Crew: Lillywhite, Lewis Steger
 Observers: Jon Edwards (NPS) Cameron Irvine
 (CH₂Mhill for EPA) Susan Ellis (CCT)

Activity: ICS Sampling at UDU-2 (complete)
 Minor GPS issues (Blue tooth)

0655 Arrive in Kettle Falls, load up drinking water

0705 Safety and OPS meeting
 • Housekeeping (Slip-trip-fall)
 • Dust Control (Driving)
 • Slippery duct (needles)
 • Front Seat Spotter, Turkeys!!!

0728 Leave for Bassburg

0750 Arrive on-site, gear up

0805 Head for far side of UDU-02 to start Sampling

0910 Becky Henseler (Tech) on-site, walking site with Mark Vetter

0955 Becky and Mark leave w/ CNI for boat check

1015 Water break

1121 Shotgun Pellet (1) found in UDU-02-27

not included in aliquot S. Lillywhite 4/16/15

Location Kettle Falls Date 4/16/15Project / Client BassburgS. Lillywhite

UDU-02-Subsample	UTM 11N (Meters)	
	Easting	Northing
-28	423020.27	5400841.35
-20	423004.22	5400844.00
-22	422974.43	5400855.24
-11	422969.93	5400841.55
-16	422964.12	5400859.33
-15	422968.13	5400866.15
-14	422943.46	5400883.54
-18	422945.10	5400871.44
-13	422921.34	5400860.70
-29	422928.01	5400854.85
-03	422938.05	5400852.22
-06	422930.39	5400841.86
-02	422949.08	5400833.23
-23	422964.85	5400828.58
-08 -27	422966.51	5400798.07
-27-08	422968.00	5400803.32
-07	422950.38	5400812.32
-24	422944.57	5400824.70
-12	422939.32	5400822.38
-04	422912.11	5400837.40
-01	422911.80	5400849.36

S. Lillywhite 4/16/15

S. Lutz

1121 (Carbanel) Cameron Irvine briefly questioned not including the lead pellet in the sample. I remind him this ICS sampling is a composite over a DU. Inclusion of the pellet from outside anthropogenic activities could bias the sample high and this would not be appropriate. He understood and agreed after my explanation. —
NPS collects cultural data for this find.

1130 Becky and Mark have returned from boat recon trip.

1150 Lunch

1230 Resume work

1410 Mark Vetter wants us to attend daily debriefs at end of day starting today

1425 Mark and Becky off-site

Joe Wichmann off-site CCC

1440 Battery dead on tablet, go to truck charge. 1 location left at UDU-02

1520 GPS Receiver down ArcPad not reading receiver even though Bluetooth is working. Waiting for call from Cary Kindborg.

1600 Back to work after call from Cary

S. Lutz

UDU-02-Subsample	UTM 11N (Meters)	
	Easting	Northing
-25	422899.86	5400830.05
-09	422886.32	5400822.87
-21	422913.14	5400819.73
-19	422925.99	5400807.26
-26	422921.44	5400803.63
-30	422935.44	5400801.26
-17	422947.67	5400797.36
-10	422939.00	5400792.11
-05	422927.78	5400787.13

1612 Battery drained again

1630 Packed up, leave site

1656 Arrive back in Kettle Falls, offload and Decon.

1737 Debrief meeting

- New start time 0645

- PPE

- Box Truck Safety - steps

1757 End of Day

S. Lutz
4/16/15

Location Kettle Falls, WA Date 4/16/15
 Project / Client Teck Bossburg

- 0700 Full team meeting at C.N. in Kettle Falls. Distribute electrolytes + backpacks.
- 0730 Teams depart C.N. to collect samples
- 0745 Sort samples + locate XRF samples
- 0750 Weighing XRF samples
- 0815 End weighing + put 1-4 in oven at 105°C. 5-7 air drying.
- 0900 put 7, 6 in oven at 105°C
- 1033 Reweigh 1-4.
- 1053 Reweigh 1-4, 1 + 2 dry
- 1056 Sieve UDU-01-XRF-01
- 1104 Count increments for UDU-01-1CS
- 1115 Sieve UDU-01-XRF-02
- 1118 Decon UDU-01-XRF-01 sieve
- 1125 Decon UDU-01-XRF-02 sieve
- 1204 Sieve UDU-01-XRF-03
- 1242 Sieve UDU-01-XRF-07
- 1212 Decon UDU-01-XRF-03 Sieve
- 1300 Decon UDU-01-XRF-07
- 1305 ASD collect rinseate blank of deconed + dried Sieve → UDU-01-ER-B

Location Kettle Falls, WA Date 4/16/15
 Project / Client Teck Bossburg
grams

Sample	ID	tray	wet tray	dry tray	
UDU-01-1		12.5 ^{XRF} 12.0	236.5	228.5	229.5
	2	11.5 12.0	361.0	337.0	336.5
	3	12.0	416.0	381.0	379.5
	4	11.5 12.0	517.0	482.0	475.5
	5	12.0	436.5	400.0	389.5
	6	12.0	414.5	378	372
	7	12.0	243.0	222.5	222.5

12:00 237.5
 11:33 1376.5
 470 462 461
 1203
 1542
 367.5
 10:52 10:53
 10:52 10:53
 12:05 12:05
 12:04 12:33
 7:50 7:55
 8:00
 8:03
 8:06
 8:12
 8:15

ASD 4/16/15

Location Kettle Falls, WADate 4/16/15Project / Client Teck BossburgXRF Analysis of Lead

1319: Energy calibration check

NO. 1 failed

NO. 2 passed

*3: Blank SiO₂ < 1.7 ppm

True value %R

#4	NIST 2709a	12.4 ppm	17.3 %R
#5	NIST 2711a	1317 ppm	400 %R
#6	UDU-01-XRF-01	- fell over about	
#7	UDU-01-XRF-01	102.7 ppm	
#8	" Run 2	154.9 ppm	
#9	" Run 3	111.6 ppm	
#10	UDU-01-XRF-04 Run 1	189.9 ppm	
#11	" Run 2	163.2 ppm	
#12	" Run 3	145.5 ppm	
#13	UDU-01-XRF-07 Run 1	79.1 ppm	
#14	" Run 2	71.9 ppm	
#15	" Run 3	73.9 ppm	
#16	UDU-01-XRF-02 Run 1	131.3 ppm	
#17	" Run 2	102.8 ppm	
#18	" Run 3	105.9 ppm	
#19	" Run 4	110.2 ppm	
#20	" 5	142.4 ppm	
#21	" 6	106.9 ppm	
#22	" 7	113.0 ppm	

%RSD = 12.8%

Project / Client Teck BossburgDaily Log continued

- 1333 Sieve UDU-01-XRF-04
 1400 Package up samples for FedEx
 1430 Ken takes 2 coolers to FedEx facility in Colville.
 1530 Sieve UDU-01-XRF-05
 1540 Sieve UDU-01-XRF-06
 1625 Concluded XRF analysis
 1650 Team B arrives back to Kettle Falls
 1719 Team A arrives back to Kettle Falls
 1725 ALO collects rinseate blank decontaminated core barrel UDU-02-ER-A
 1745 wrap up meeting
 1900 download data + work to sync data
 1830 Depart site

ALO
4/16/15

Location Kettle Falls, WA Date 4/16/15Project / Client Teck BossburgXRF analyses ^{Lead} continued (ppm)

#23	UDU-01-XRF-03	Run 1	66.5
#24	"	Run 2	94.1
#25	"	Run 3	59.9
#26	UDU-01-XRF-06	Run 1	66.4
#27	"	Run 2	69.8
#28	"	Run 3	68.6
#29	UDU-01-XRF-05	Run 1	51.6
#30	"	Run 2	58.3
#31	"	Run 3	57.7
#32	Blank SiO ₂		< 1.8
#33	NIST 2711a		1332 95.1%R
#34	Energy calibration check		PASS

add
4/16/15

Location Kettle Falls, WA Date 4/17/15Project / Client Teck Bossburg

- 0645 Teams arrive C.N. in Kettle Falls
 0700 Tailgate meeting
 0715 Teams depart for sampling
 0748 KY + AD weigh out XRF samples ¹⁻⁶ ₄₊₅
 + put into oven at 150°C
 0815 KY + AD check 30 increments for
 UDU-02-1CS, ^{add} _{4/17/15}
 0830 KY + AD composite 30 increments
 to create UDU-02-1CS
 0845 KY 1CS sample UDU-02-1CS
 1015 KY leaves to get supplies at Walmart
 1045 KY returns
 1100 Weigh 2 + 6, 6 OK
 1105 Put XRF UDU-02-4 + 5 into oven
 1107 sieve UDU-02-XRF-06
 1115 Start XRF setup
 1127 UDU-02-XRF-02 to constant weight - sieve
 1140 Decon 2 sieved
 1154 Finish XRF of UDU-02 2 + 6 - transfer
 to jars to ship to lab for confirmation
 1210 AD collects rinseate blank of deconed
 sieve - UDU-02-ER-B
 1245 lunch break
 1245 put 8 back UDU-02-XRF-02 R - oh etc

Location BOSSBURG Date 4/16/15
 Project / Client BOSSBURG REFINED SEDIMENT
 + SOIL STUDY

- 070630 at Columbia Navigation
- 0700 conducted safety meeting
- 0720 team departed for Bossburg.
- 0800 left for Bossburg.
- 0820 @ Bossburg field site.
- Susan Ellis on-site missed safety meeting
- Joe Wipham Citizens of Clean Columbia onsite.
- 0855 - Bechy Wipham on site.
- 1000 Bechy + Mark V boarded Columbia Navigation boat + gave safety talk.
- going to SDU-07.
- [Stevens County is closing the road for blasting on 4/20 - 4/23 for blasting of low hanging rock. Will need to coordinate SDU-10 sampling scheduled for 4/23.]
- SDU-07 - water down a little from 4/15, < 1'
- [Josh Wipham up drums + paid. No record of AECOM payment]
- but can tell by wet fringe around con-07. Water in middle of SDU

Location BOSSBURG Date 4/16/15
 Project / Client BOSSBURG REFINED Sediment
 + SOIL STUDY / TAI

- Area to West of ~~UDU~~ SDU-07 is above water by ~ 10' at highest but is very muddy. This does not show on the GAPP.
- left ~~UDU~~ SDU-07 for SDU-05
- SDU-05 - observed steep cobbly shore
- proceeded to SDU-04.
- proceeded to SDU-02 + 01.
- proceeded to SDU-08.
- Returned to Bossburg @ 1130
- 1140 - TEAM A completed XRF locations @ UDU-02. TEAM B AM B has 17 of 30. Lunch Break.
- Visited SDU-04 from Bossburg slopes are steep; sediment
- LIS contacted Army on status of XRF - training conducted + equipment calibrated getting ready to run the 3 samples from UDU-01 that are going to the lab in order to make the shipment at FedEx.
- will meet @ 1500.
- [items for Friday 4/17 safety meeting - working near edge of

- bluff + safety glasses use
clear if sunglasses do not work
with tablets. [Barbed wire]
- Team A collected XRFs from U023
 - Team B wrapping up UDU-02 today
 - 1426 - left Bosbury for Columbia Navigation
 - 1450 at Columbia Navigation shop
with Joe Wichmann, Bechy
Henseler + Cameron Irvine to observe
XRF screening.
 - Amy gave download of what she
is doing and a safety orientation
 - Ben took samples to Fed Ex
 - CAMERON IRVINE asked how soon
XRF data will be available.
 - Tony Palmieri called need to go
to reserve station @ UDU-03-19 due
to sleep ~~unstable~~ unconsolidated.
 - saw conversation w/ Kris + Paul
+ Bechy [Joe Wichmann departed]
 - ★ - schedule by end of Saturday.
 - showing completed work.
 - color coded.
 - ★ - estimated # of CS under

- mark Draft estimate of
ICS + XRF underwriter.
- May have UDU-6 access by ~~tom~~
Friday 4/17. Will need to revise
schedule when ~~the~~ ^{the} access ~~is~~
received.
- 1640 - conference call completed
- ★ - informed by Amy that Joe
Wichmann requests we archive
XRF samples. GAPP says dispose
of as IDW. Will follow up with
Tech.
- 1645 - Cameron Irvine CH. Hill left
- Note 30 samples fill 1.5 2.5 gallon
buckets buckets.
- conducted debrief
- left for hotel @ 1800

[Handwritten signature]

Project / Client Bossburg-TellObservers: Cameron / Megan

0700 H&S meeting @ Weatherman's.

0740 @ Bossburg

Team A plan today is to
finish remaining XRF (1) and
ICS samples in UDU-03.

If we finish UDU-03, we will
move on to UDU-04 Replicate
B.

0800 @ UDU-03-08GPS Coord

422915.29

5400768.97

0813 @ UDU-03-XRF-08GPS Coord

422914.22

5400765.79

Tram passes @ 0820 going N.

0826 @ UDU-03-07GPS Coord

422937.20

5400762.23

Project / Client Bossburg-TellObservers: Cameron / Megan / Susan0836 @ UDU-03-13GPS Coord

422913.68

5400738.37

X move ~1 meter west due to
cultural observation.

0856 @ UDU-03-30GPR Coord

422914.22

5400758.47

0908 @ UDU-03-09GPR Coord

422901.29

5400748.32

0922 @ UDU-03-01GPS Coord

422892.25

5400764.17

Location UDU-03 Date 4.17.15Project / Client Bossgang-Teck

0940 @ UDU-03-18
GPS Coord
 422 894.04
 5400 777.48

0952 @ UDU-03-16
GPS Coord
 422 888.58
 5400 779.57

~~AP 1051~~ @ ~~UDU-03-277P~~
GPS Coord.

1021 - Having problems GPS connection.

1107 GPS fixed

@ UDU-03-27
GPS Coord.
 422 906.27
 5400 078.40

1127 @ UDU-03-14
 GPS: 422 901.65 / 5400 784.74

Location UDU-03 Date 4.17.15Project / Client Bossgang-Teck

1138 @ UDU-03-04
GPS Coord
 422 911.52
 5400 792.36

@ UDU-03-15
GPS Coord.
 422 898.88
 5400 795.70

@ UDU-03-29
GPS Coord
 422 871.61
 5400 801.14

1210 Take lunch.

1242 Back to work.

1245 @ UDU-03-~~27~~^{AP} 21
GPS Coord
 422 871.39
 5400 787.09

Location UDU-03 Date 4.17.15
 Project / Client Bussburg-Teck

1258 @ UDU-03-26
GPS Coord
 422 863.15
 5400 800.88

1310 @ UDU-03-02
GPS Coord
 422 854.89
 5400 796.94

1325 @ UDU-03-24
GPS Coord
 422 859.20
 5400 779.26

1337 @ UDU-03-22
GPS Coord
 422 847.35
 5400 802.19

1357 @ UDU-03-03
GPS Coord
 422 852.39
 5400 816.50

Location UDU-03 Date 4.17.15
 Project / Client Bussburg-Teck

1400 @ UDU-03-12
GPS Coord
 422 838.86
 5400 807.37

1410 @ UDU-03-11
GPS Coord
 422 830.27
 5400 806.12

1423 @ UDU-03-06
GPS Coord
 422 802.50
 5400 821.16

~~1438 @ UDU-03-11^{1P}~~
~~GPS Coord~~

* Need to change tablet. In the interim, Cameron & I scope out core locations. These locations picked out in UDU-01, marked w/ pin flag w/ red sharpie.

1575 It appears that one core sample is in UDU-04, will verify w/ GPS. Also talk w/ Mark, need to recollect XRF sample UDU-02-XRF-04. Plan is to finish UDU-03 and then verify core locations & recollect XRF sample.

1527 @ UDU-03-17

GPS Coord

422788.30

5400817.93

* moved ~ 1 meter south due to refusal on cobble.

1537 @ UDU-03-25

GPS Coord

422786.43

5400823.01

* moved ~ 1.75 meters south due to refusal on cobble

1552 @ UDU-03-23

* move sample is rejected due to cultural observation.

* Sample collected 1.5 meters west of original location.

GPS Coord

422778.83

5400826.70

* Some locations on ARC Pad are showing up as incomplete even though they are done. Sample forms are ok, but will reconcile w/ Gary this evening.

1628 - Verify that EPA core location for UDU-01 are in UDU-04, want to relocate.

Core 3 ^{collected w/ XRF-2} AP on west end of UDU-01
 Core 1 ^{collected w/ XRF-07} ON west side of UDU

Core 3 located w/ ~~XRF-2~~ AP
 Core located w/ XRF-5
 Core 2 located w/ XRF-4

Selected per EPA (Monica + Tony)
 See hand sketch.

Location UDU-03 / UDU-02 Date 4.17.15
 Project / Client Boschung / Teck

1725 Leave Boschung for Westhennans

1750 Back @ Westhennans

[Large handwritten signature]

Location UDU-01 Date 4.18
 Project / Client Boschung - Teck
 Observers: Monica & Megan

0700 @ Westhennans for HR's

0803 @ Boschung. Today we will start with core samples in UDU-01.

~~0815~~ 0815 @ UDU-01-COR-01

0830 Start w/ depth for 001 → 15cm
 Successfully collect request volume (1 L)

GPS Coord

422 983.916073

5400 904.974475

* GPS coordinates for all depth intervals @ COR-01 are as above. Separate points for depths 30 cm & 45 cm were not created in Arc Pad, the cores came from the same bore hole.

0900 Successfully collect 30 cm interval w/ 1 L of samples.

Location Kettle FallsDate 4/17/15Project / Client BossburgJ Lillywhite

Weather 35-75° Sunny, clouds late
 Crew Lillywhite, Lewis, Stegner
 Observers Monica Porel (EPA) Jon Edwards (WPS)
 Susan Ellis (CCT)
 Activity ICS at UDU-04A

0645 Arrive in Kettle Falls, wrap up soil
 cores in foil, radios, etc.

0700 Safety and ops meeting - biggest
 topic was distractions and other
 vehicles on the road.

0718 Leave for Bossburg

0739 Arrive at Bossburg. Gear up to sample
 at UDU-04A. Cameron Iron to
 recon UDU-01 XRF stations to
 guide 18" soil core samples

0803 Move to UDU-04

0933 Battery at 50% after 1.5 hours.
 Started at 100%, put on charger and
 check to see if there are apps
 running in background.

0944 Michelle finds nothing unusual running
 in background. uncles was off. Makes a
 minor adjustment to screen brightness
J Lillywhite

Location Kettle FallsDate 4/17/15Project / Client BossburgJ Lillywhite

UDU-04A -	UTM 11 N (Meters)	
Subsample	Easting	Northing
-30	422944.69	5400893.68
-27	422913.84	5400887.55
-28	422902.23	5400889.33
-29	422905.22	5400855.55
-15	422903.05	5400847.04
-11	422883.04	5400833.87
-01	422886.86	5400820.64
-01	422878.63	5400824.22
-16	422869.78	5400820.64
-14	422862.71	5400825.41
-19	422872.49	5400838.18
-18	422879.85	5400852.17
-09	422885.86	5400846.83
	↳ Abandon, natural resource, metamorphic flake	
-09	422886.20	5400847.41
-22	422883.35	5400860.28
-06	422875.05	5400865.04
-21	422872.15	5400868.43
-05	422862.76	5400857.90
-12	422858.61	5400846.89
-26	422846.05	5400859.89

J Lillywhite 4/17/15

Location Kettle Falls Date 4/17/15Project / Client Bossburg
S. Liffels0952 Battery at 70%, 12% charge
over 19 minutes, return to
UDU-04A-11045 UDU-04A-19 moved 2 meters north
due to refusal (Cobbles)1105 Team A having GPS issues, Michelle
goes to troubleshoot1175 Mark Vetter on-site

1120 Back to work, Team A up and running

1140 UDU-04A-09 has a cultural resource,
metamorphic rock flake at middle of
Centroid, we had tried three times here
twice refused. Move 2 meters north

1205 Lunch

1245 Resume work

1428 UDU-04A-17 is on a $\approx 75^\circ$ slope,
will need to use an alternate preserve
location, Monica Axel agrees

1500 Charge Surface Pro battery, water break

1530 Resume sampling

1625 At UDU-04A-04 we had to move
to the north ≈ 2 meters after 3 attempts at
Centroid due to loose to very loose granitic
sand. Got the sample on 3rd try to northLocation Kettle Falls Date 4/17/15Project / Client Bossburg
S. Liffels

UDU-04A -	UTM 11N (Meters)	
Subsample	Easting	Northing
②-24 26	422837.14	5400862.99
-27 →	$\approx 75^\circ$ slope no sample	
-03	422823.69	5400875.81
-08	422841.72	5400874.93
-13	422862.40	5400879.59
-04 ^{not} USED	422872.16	5400903.81
-04	422872.81	5400903.78
-07	unstable slope no sample options	

UDU-04A-07

4/18/15
② UDU-07 will be moved to a reserve
station due to unstable conditions, Monica agrees

1637 Return to vehicles at cleanup.

- 1705 Return to Kettle Falls

1735 At Kettle Falls, 5-7 minutes
wait at Bossburg due to BNSF
train at crossing.1830 Debrief meeting - Can anyone stay
beyond May 2??, CCT taking time
to look at samples - NPS has final sayS. Liffels 4/17/15

Location Kettle Falls, WA Date 4/16/15Project / Client Teck BossburgXRF analyses ^{Lead} continued (ppm)

#23	UDU-01-XRF-03	Run 1	66.5
#24	"	Run 2	94.1
#25	"	Run 3	59.9
#26	UDU-01-XRF-06	Run 1	66.4
#27	"	Run 2	69.8
#28	"	Run 3	68.6
#29	UDU-01-XRF-05	Run 1	51.6
#30	"	Run 2	58.3
#31	"	Run 3	57.7
#32	Blank SiO ₂		< 1.8
#33	NIST 2711a		1332 95.1%R
#34	Energy calibration check		PASS

add
4/16/15

Location Kettle Falls, WA Date 4/17/15Project / Client Teck Bossburg

- 0645 Teams arrive C.N. in Kettle Falls
 0700 Tailgate meeting
 0715 Teams depart for sampling
 0748 KY + AD weigh out XRF samples ¹⁻⁶ ₄₊₅
 + put into oven at 150°C
 0815 KY + AD check 30 increments for
 UDU-02-1CS, ^{add} _{4/17/15}
 0830 KY + AD composite 30 increments
 to create UDU-02-1CS
 0845 KY 1CS sample UDU-02-1CS
 1015 KY leaves to get supplies at Walmart
 1045 KY returns
 1100 Weigh 2 + 6, 6 OK
 1105 Put XRF UDU-02-4 + 5 into oven
 1107 sieve UDU-02-XRF-06
 1115 Start XRF setup
 1127 UDU-02-XRF-02 to constant weight - sieve
 1140 Decon 2 sieved
 1154 Finish XRF of UDU-02 2 + 6 - transfer
 to jars to ship to lab for confirmation
 1210 AD collects rinseate blank of deconed
 sieve - UDU-02-ER-B
 1245 lunch break
 1245 put 8 back UDU-02-XRF-02 R - oh etc

Location Kettle Falls, WA Date 4/17/15Project / Client Teck Bossburg

Sample ID	Tray	Wet + tray	dry + tray time 10am	Wet + tray 11am	dry + tray 12noon	Wet + tray 13am	dry + tray 14am	Wet + tray 15am	dry + tray 16am	Wet + tray 17am	dry + tray 18am	Wet + tray 19am	dry + tray 20am
20-02-XRF-01	0744	12.0	364.0	394.5	364.0	431.5	430.5 OK	357	356.5 OK	480.0	471.5	453.5 OK	438.5 OK
8	-02	12.0	431.5	480.0	431.5	471.5	453.5 OK	454	438.5	438.5 OK	438.5	438.5 OK	438.5 OK
0	-03	12.0	506.5	506.5	506.5	506.5	506.5	506.5	506.5	506.5	506.5	506.5	506.5
52	-04	12.5	511.5	511.5	511.5	511.5	511.5	511.5	511.5	511.5	511.5	511.5	511.5
54	-05	12.5	473.0	473.0	473.0	473.0	473.0	473.0	473.0	473.0	473.0	473.0	473.0
76	-06	11.5	452.5	452.5	452.5	452.5	452.5	452.5	452.5	452.5	452.5	452.5	452.5
UDU-03-XRF-01	01	13.0	455.5	455.5	455.5	455.5	455.5	455.5	455.5	455.5	455.5	455.5	455.5
-02	02	13.5	340	340	340	340	340	340	340	340	340	340	340
-03	03	12-0	378.5	378.5	378.5	378.5	378.5	378.5	378.5	378.5	378.5	378.5	378.5
-04	04	12	439.0	439.0	439.0	439.0	439.0	439.0	439.0	439.0	439.0	439.0	439.0
-05	05	12	278	278	278	278	278	278	278	278	278	278	278
-06	06	12	600	600	600	600	600	600	600	600	600	600	600

Q200
4/17/15

Location Kettle Falls, WA Date 4/17/15 15Project / Client Teck Bossburg

- 1305 Re dried Weigh XRF Samples
- 1325 Dropped UDU-02-XRF-04 into oven. Sample lost. Cleared oven. Need to use new procedure. Wear gloves on both hands and heatproof hold sample from bottom.
- 1420 Ken left to FedEx
- 1450 Ken returned
- 1500 Weigh XRF → UDU-03-1 to 3 + oven @ 150°C
- 1515 Sieve UDU-02-XRF-05
- 1530 Weigh XRF → UDU-03-4 to 6 + oven @ 150°C
- 1530 XRF UDU-02-XRF-1, 3, 5 + put in contactors, ice.
- 1624 ²⁰⁰ finished XRF + shutdown instrument
- 1640 reweigh dried XRF samples UDU-03-XRF-1 to 6.
- 1650 Set up decon for field equipment Adjusted pH of 1DW water with K₂MSD.
- 1700 Fill new drums with tap water to ensure they don't leak.
- 1705 Export + sync XRF tablet SUCCESS!
- 1735 Team B arrives
- 1755 Team A arrive Decon equipment
- 1815 OL/DC collect ringate blank of decon seal core barrel UDU-03-ER-A

Location Kettle Falls, WA Date 4/17/15Project / Client Teck Bossburg1115 XRF analysis of Pb (ppm)

#1	Energy Calibration check	-passed		
#2	Blank SiO ₂		<1.7	
#3	NIST 2709a	TV=17.3	12.3	72.1%R
#4	NIST 2780	TV=5770	498.9	86.5%R
#5	UDU-02-XRF-06	Run 1	101	
#6	"	Run 2	98.9	
#7	"	Run 3	99.9	
#8	UDU-02-XRF-02	Run 1	254	
#9	"	Run 2	348	Eng wrapped
#10	"	Run 3	230	
#11	UDU-02-XRF-01	Run 1	296	
#12	"	Run 2	327	
#13	"	Run 3	313	
#14	UDU-02-XRF-03	Run 1	61.7	
#15	"	Run 2	56.4	
#16	"	Run 3	71.1	
#17	UDU-02-XRF-05	Run 1	99.8	
#18	"	Run 2	103.1	
#19	"	Run 3	101.3	
#20	Blank SiO ₂		<1.8	
#21	UDU-02-XRF-05	Run 4	99.7	
#22		5	101.9	
#23		6	99.0	
#24		7	96.7	

Project / Client Teck BossburgXRF Analysis of Lead (ppm)#25 ~~NIST 2780~~ 5015 86.9%R

#26 Energy Calibration check - passed

1624 ~~shut down XRF~~

Daily log continued

1630 Debrief

1655 Depart site

240
4/17/15

- 0645 - at Columbia Navigation
- 0700 - conducted safety meeting with full team + all observers
- 0712 - safety meeting completed teams left for field.
- TEAM A - complete UDU-3
- TEAM B - start UDU-4A
- EPA/CH2MHILL will determine core locations today.
- trash pickup on Friday. We can dispose general trash in front of Columbia Navigation
- worked on field notes, schedule + sampling update
- need to enter "Time to now for samples when collect in field. This time to match field book. Communicated to team.
- 1045 - head to Bossburg.
- 1100 - arrived at Bossburg + met with field Teams Team A experiencing a bluetooth issue got resolved.
- 1205 - Lunch

- 1255 - left Bossburg for Columbia Navigation
- 1327 - lab XRF sample UDU-02-XRF-04 was spilled in oven. Will have field team re-collect. Informed Tony Palmieri
- 1530 - Tony called about core sample locations. Thinks one is in UDU-4. Will confirm. Not at XRFs
- 1600 - Call with Paul + Kris
 - communicate blasting to team
 - consider SDUs 3 + 6 for sampling prior to other SDUs with samples in water.
 - No word on UDU-06 access.
 - Saturday cc @ same time.
 - One ~~SDU~~ SDU per day + XRFs per team is my estimate.
- 1630 - ended call w Kris just Paul + I
- ★ by 4/22 - contingency plan
- 1655 - call over.
- Had Ken fill drum 1/3 way to test bottoms

Location BOSSBURG Date 4/17/15Project / Client BOSSBURG REFINED
SEDIMENT + SOIL STUDY

- Team A having GIS issues as completed samples are not showing up as done or complete.
- deanned, collected invertebrate blocks
- 1028 - Debrief
 - if need, past May
 - Tony 5/7
 - Eric ?
 - Ollie ok thru 5/6
 - Demetric til 5/2
 - Dawn 5/8 98% sure
 - Michelle 5/9
 - Ken 5/8
 - Amy 5/8
 - Eric ?
- no documentation to Field books of cultural resources.
- CCT observer inspecting each sample. Need to address the role on NPS land.

Mark W. A. //

Location BOSSBURG Date 4/18/15Project / Client BOSSBURG REFINED SEDIMENT
+ SOIL STUDY.

- 0645 at Field office
- 0700 conducted daily tailgate meeting. Bill White replaced Tom Egan.
- 0715 teams departed for Bossburg.
- Team A - UDU-01 cores
- Team A - UDU-04 XRF
- Team B - complete UDU-04A + start UDU-04B. TEAM A will assist in wrapping up UDU-04B if necessary.
- * - Monica Tanel requested updated schedule for CR purposes.
- * - Cameron Irvine inquired about using a person with a portable GPS to speed things up + what we are going to do about under water samples.
- Monica Tanel had issue about using reserve stations in DUs with replicate sampling. However neither Eric or I understood the issue so we are seeking further clarification.

Location UDU-03 / UDU-02 Date 4.17.15
 Project / Client Boschung / Teck

1725 Leave Boschung for Westhennans

1750 Back @ Westhennans

[Large handwritten signature]

Location UDU-01 Date 4.18
 Project / Client Boschung - Teck
 Observers: Monica & Megan

0700 @ Westhennans for HR's

0803 @ Boschung. Today we will start with core samples in UDU-01.

~~0815~~ 0815 @ UDU-01-COR-01

0830 Start w/ depth for 001 → 15cm
 Successfully collect request volume (1 L)

GPS Coord

422 983.916073

5400 904.974475

* GPS coordinates for all depth intervals @ COR-01 are as above. Separate points for depths 30 cm & 45 cm were not created in Arc Pad, the cores came from the same bore hole.

0900 Successfully collect 30 cm interval w/ 1 L of samples.

Location UDU-01 Date 4.18.15
 Project / Client Bossburg

0908 Successfully collect 45cm sample.
 Decompose Roots encountered
~~2~~ up ~ 10 - 30cm, large gravel
 to 45cm. 30-45cm much higher density.
 Send Demetria to decompose Auger
 bucket + ruler.

0920 @ UDU-01 - COR-02

GPS
 422 931.66069
 5400 916.76589

0917 Successfully collect requisite
 volumes for depths.

COR-001 (15cm) → 1 Liter

COR-002 (30cm) → 2 Liters

COR-003 (45cm) → 1 Liter

GPS: 422 931.6606
 5400 916.76589

1008 Move to UDU-01 - COR-03

COR-001 (15cm) → 2 Litres

COR-002 (30cm) → 1 Litre

COR-003 (45cm) → 1 Litre

1030 Successfully collect requisite
 volumes for depths.

1040 Finish documenting COR-03, Head
 back to car to swap tooling.
 Plan now is to collect XRF
 samples in UDU-04.

Location UDU-04 Date 4.18.15
 Project / Client Bossburg - Tech

Tablet is @ 35% power,
 take break to recharge

1110 Move to UDU-04 - XRF-01

1120 @ UDU-04 - XRF-01

7 attempts within 2m radius
 of location. Will have to
 use Air Reserve Station.
 Refusal due to cobbles. Will
 attempt sample @
 UDU-04 - XRF-1202.

1142 @ UDU-04 - XRF-03
 GPS Coord

422 931.66
 5400 916.76

1154 @ UDU-04 - XRF-1201

GPS Coord
 422 931.66
 5400 916.76

* This point replaces UDU-04 - XRF-01.

Location UDU-04 Date 4.18.15
 Project / Client Bosburg-Teck

1220 @ UDU-04-XRF-02, This location is labelled as that on the hand printed maps, but is labelled UDU-01-XRF-05 on Arc Pad, will document and reconcile w/ Carip.

1237 Need to take charging break, battery @ 10%
 xBill now NPS observer

1325 @ UDU-04-XRF-04
GPS Coord
 422896.72
 5400870.79

1339 @ UDU-04-XRF-05
GPS Coord
 422879.22
 5400835.79

1402

UDU-04C-06 is inaccessible,
 it is on a steep bluff, as is
UDU-04C-23 and UDU-04C-26

Location UDU-04 Date 4.18.15
 Project / Client Bosburg-Teck

1408 @ UDU-04C-14
GPS Coord
 422835.29
 5400875.72

1425 @ UDU-04C-20
GPS Coord
 422840.43
 5400864.85

1438 @ UDU-04C-02
GPS Coord
 422857.21
 5400876.75

@ UDU-04C-25
GPS Coord
 422857.40
 5400890.95

1504 @ UDU-04C-11
GPS Coord
 422865.65
 5400881.94

Location UDU-04 Date 4/18/2015
 Project / Client Bossburg-Teck

7517 @ UDU-04C-04
GPS Coord
 422 870.17
 5400 874.81

1535 @ UDU-04C-24
GPS Coord
 422 882.12
 5400 887.86

1546 @ UDU-04C-27
GPS Coord
 422 862.66
 5400 867.14

1613 @ UDU-04C-07
GPS Coord
 422 871.64
 5400 856.16

1627 @ UDU-04C-12
GPS Coord
 422 860.29
 5400 836.24

Location UDU-04 Date 4/18/15
 Project / Client Bossburg-Teck

1640 Done w/ stripings, walk
 w/ Monica to mark out
 core locations in UDU-02

Core 1 → XRF 1
 Core 2 → XRF 2
 Core 3 → associated w/ depression
 in ground.

1657 UDU-02 Core locations
 passed for Monday.

1703 Leave Bossburg for
 Westhearn's.

1728 Back @ Westhearn's,
 begin demo.

1821 Offsite.

Anthony P. [Signature]

Location Kettle Falls

Date 4/18/15

Project / Client

Bossburg

S. Lillywhite

Weather 40-75° Sunny

Crew Lillywhite, Lewis, Stegner

Observers Susan Ellis (COT), Cameron Emro
(CH2M Hill), Bill White (NPS) Meghan Lyons
(NPS)

Activity

0645 Arrive in Kettle Falls

0700 Safety and OPS meeting, new
item - snakes seen yesterday
no rattlesnakes observed.

0720 Leave for Bossburg

0745 Arrive at Bossburg

0800 Conversation with Monica Tanel regarding
which stations or replicates need
to be occupied when a reserve station
is used. Example if we sample (try)
UDU-04A-17 and it is not able
to be sampled we go to the #1
Reserve. Monica believes that when
we occupy ~~UDU-04A-17~~ UDU-04B-17
we would not sample first and would
go to the #1 B Reserve. - Call
Mark Vetter0809 Cameron has explained the sample design
to Monica, there is no issue the

Location Kettle Falls

Date 4/18/15

Project / Client

Bossburg

S. Lillywhite

UDU-04A-	UTM 11N (Meters)		
Subsample	Time	Easting	Northing
-23	0827	422869.18	5400832.834.67
-R01	0838	422897.00	5400837.28
↳ Replaces UDU-04A-17 from yesterday (slope)			
-R02	0845	422871.43	5400813.95
↳ Replaces UDU-04A-07 from yesterday (unstable)			
-25	0914	422883.24	5400931.66
-20	0938	422904.92	5400900.17
-10	0950	422910.52	5400904.91
-02	0957	422898.33	5400906.70

UDU-04B-	UTM 11N (Meters)		
Subsample	Time	Easting	Northing
-21	1044	422933.24	5400885.71
-18	1055	422921.22	5400899.70
-12	1106	422906.34	5400897.61
-22	1119	422924.23	5400869.45
-08	1129	422895.51	5400868.13
-02	1142	422879.11	5400859.99
-17	1156	422868.38	5400851.77

UDU-04A-02 resampled at 1323

S. Lillywhite 4/18/15

Location Kettle Falls Date 4/18/15Project / Client Bassburg
S. Lillibridge

- 0809 Sample design is different than the Upland Residential Sampling
- 0815 Begin Sampling
- 0838 Sampled UDU-04A-RO1 to replace UDU-04A-17 due to slope observed yesterday
- 0914 UDU-04A-25 is located just above elevation 1290 on opportunistic footpath
- 1010 At vehicle to drop off aliquots and charge battery - used 45% over 1.75 hours
- 1030 Start at UDU-04B stations
- 1205 Lunch, charge battery at 18%
- 1226 Talk to Mark Vetter, need to recontact Sample UDU-04A-02 - Sample accidentally mixed into IDW down, back at Kettle Falls.
- 1310 Changing out core barrel to return to UDU-04A-02 to resample
- 1355 Moved subsample UDU-04B-06 ~ 2 meters north due to insufficient recovery at centrifuge (3 tries)
- S. Lillibridge 4/18/15

Location Kettle Falls Date 4/18/15Project / Client Bassburg
S. Lillibridge

UDU-04B -		UTM 11N (Meters)	
Subsample	Time	Easting	Northing
-25	1345	422857.32	5400844.01
-06	1358	422861.03	5400831.63
-09	1411	422850.13	5400835.97
-10	1427	422836.47	5400849.59
-14	1437	422827.76	5400855.53
-03	1450	422837.21	5400862.35
-24	1543	422852.63	5400868.10
-28	1607	422875.50	5400885.56
-30	1629	422881.51	5400886.71
-23	1649	422879.93	5400892.90

~~S. Lillibridge~~
4/18/15

Location Kettle Falls, WA Date 4/18/15Project / Client Teck Bessburg

- 0645 Samplers arrived at C.N.M Kettle Falls
- 0700 Tailgate meeting w/full group
- 0720 Teams A+B depart to sample
- 0730 Set oven ^{down} to 130°C today for safety
- 0735 Reweigh dry samples
- 0741 Sieve UDU-03-XRF-05
- 0755 Decon UDU-03-XRF-05 sieve
- 0817 Sieve UDU-03-XRF-02
- 0837 Sieve UDU-03-XRF-01
- 0845 Sieve UDU-03-XRF-03
- 0855 Weigh out wet XRF samples
UDU-03-XRF-7+B
UDU-02-XRF-04-resampled
- 0915 Sieve UDU-03-XRF-04
- 0925 A to Z rental called + ^{can} get order stairs for \$150/week or \$250/month with handrail
- 0935 Sieve UDU-03-XRF-06
- 0945 Ken feels burning on face after using 10% nitric acid in squirt bottle for decon. Rinsed with water + feels OK. Use Face shield

Location Kettle Falls, WA Date 4/18/15 19Project / Client Teck Bessburg

XRF analysis of Lead (ppm)

#1	Energy calibration check	passed		
#2	Blank SiO ₂		<1.8	
#3	NIST 2709a	TV=17.3	12.4	71.7%
#4	NIST 2711a	TV=1400	1320	94.3%
#5	UDU-03-XRF-01	Run 1	168.4	
#6	"	Run 2	210.0	
#7	"	Run 3	151.7	
#8	UDU-03-XRF-02	Run 1	154.5	sample has target-sized particles in heterogeneous
#9	"	Run 2	93.8	
#10	"	Run 3	154.5	69.8% ^{avg} _{4/18/15} RSD > 35%
#11	Redo UDU-03-XRF-02	Run 1	98.8	
#12	"	Run 2	92.1	OK OK
#13	"	Run 3	69.5	% D < 35%
#14	UDU-03-XRF-03	Run 1	299	
#15	"	Run 2	324	
#16	"	Run 3	329	
#17	UDU-03-XRF-04	Run 1	187.7	
#18	"	Run 2	188.4	
#19	"	Run 3	204	
#20	UDU-03-XRF-05	Run 1	148.4	
#21	"	Run 2	138.5	
#22	"	Run 3	136.5	136.3 ^{avg}
#23	UDU-03-XRF-06	Run 1	111.5	
#24	"	Run 2	113.5	
#25	"	Run 3	107.7	

Location Kettle Falls, WA Date 4/15/15Project / Client Teck BossburgXRF sample drying for Total Solids

Sample ID	Day	Tray + wet	~1130	~1330	~1355
7 UDU-01-XRF-04	17	300.5	345.0	344.0 - OK	
8 UDU-03-XRF-07	17	456.5	429.5	418.5	419.0 - OK
9 " "	17	456.5	419.0	418.5 - OK	

add
4/18/15

Location Kettle Falls, WA Date 4/18/15 21Project / Client Teck BossburgDaily Log continued

- 1000 Ken checks all 30 increments of UDU-03-ICS + composites into bucket Sample time = 1010
- 1030 ICE sample UDU-03-ICS + finish decon
- 1040 Ken depart to get more ice + look for options for stairs to box truck.
- 1045 Amy ^{app} prints labels + labels sample containers
- 1110 Mark returns to C.N. with remaining ICS samples for UDU-04A and the core samples for UDU-01.
- 1115 Ken returns with ice + photos of step ladders. Mark determines they are not safe enough.
- 1140 Amy + Ken check all 30 increments for UDU-04-ICS-A. UDU-04A-05 + UDU-04A-07 were not collected. These 2 increments were replaced with reserve locations UDU-04A-R01 + UDU-04A-R02.
- 1145 Sample UDU-04-ICS-A composited with 30 increments by KY + AD
- 1155 Increment UDU-04A-02 spilled into waste bucket - need to re-collect

*
add 5/2/15
see page 74
for explanation
for this
change

Location Kettle Falls, WA Date 4/18/15Project / Client Teck, BossburgDaily Log continued

- 1205 Transfer core samples from UDU-01 into 1L bottles.
- 1300 Break for lunch.
- 1320 ALP collects rinseate blank of deconned sieve UDU-03-ER-B
- 1325 Reweigh dry samples
- 1330 Sieve UDU-02-XRF-04
- 1345 Sieve UDU-03-XRF-08
- 1400 Sieve UDU-03-XRF-07
- 1415 Decon sieves + setup decon for field teams
- 1425 closing QC for XRF
- 1432 shut down XRF
- 1438 Ken departs site.
- 1445 Amy exports data + calculates QC for XRF
- 1450 Amy syncs XRF data to her laptop
- 1730 Teams arrive back to C.N.
- 1738 Add movement UDU-04A-02 to UDU-04-ICS-A
- 1750 Synced data from tablets A+B
- 1808 Debrief
- 1825 Amy depart site + teams

Location Kettle Falls, WA Date 4/18/15 23Project / Client Teck, BossburgXRF analysis for Lead (ppm) continued

#26	VDU-02-XRF-04	Run 1	101.3
#27	"	Run 2	97.3
#28	"	Run 3	134.2
#29	VDU-03-XRF-08	Run 1	91.4
#30	"	Run 2	75.4
#31	"	Run 3	84.2
#32	" Precision	Run 4	85.7
#33	"	Run 5	85.3
#34	"	Run 6	81.6
#35	"	Run 7	99.3 RSD=8.8%
#36	VDU-03-XRF-07	Run 1	297
#37	"	Run 2	322 Ave 355
#38	"	Run 3	445
#39	Blank SiO ₂		21.8
#40	NIST 2711a TN=1400	1312	93.7%
#41	Energy calibration check - passed shut down instrument		
1750	DL/DC collect rinseate blank of deconned core barrel UDU-04A-ER-A		
1755	DL/DC collect rinseate blank of deconned hand auger UDU-01-ER-C		

WJB 4/18/15

Location BOSSBURG Date 4/17/15Project / Client BOSSBURG REFINED
SEDIMENT + SOIL STUDY

- Team A having GIS issues as completed samples are not showing up as done or complete.
- deanned, collected invertebrate blocks
- 1028 - Debrief
 - if need, past May
 - Tony 5/7
 - Eric ?
 - Ollie ok thru 5/6
 - Demetric til 5/2
 - Dawn 5/8 98% sure
 - Michelle 5/9
 - Ken 5/8
 - Amy 5/8
 - Eric ?
- no documentation to Field books of cultural resources.
- CCT observer inspecting each sample. Need to address the role on NPS land.

Mark W. A. //

Location BOSSBURG Date 4/18/15Project / Client BOSSBURG REFINED SEDIMENT
+ SOIL STUDY.

- 0645 at Field office
- 0700 conducted daily tailgate meeting. Bill White replaced Tom Egan.
- 0715 teams departed for Bossburg.
- Team A - UDU-01 cores
- Team A - UDU-04 XRF
- Team B - complete UDU-04A + start UDU-04B. TEAM A will assist in wrapping up UDU-04B if necessary.
- * - Monica Tanel requested updated schedule for CR purposes.
- * - Cameron Irvine inquired about using a person with a portable GPS to speed things up + what we are going to do about under water samples.
- Monica Tanel had issue about using reserve stations in DUs with replicate sampling. However neither Eric or I understood the issue so we are seeking further clarification.

Location Bossburg Date 4/18/15Project / Client Bossburg Defined Sediment
+ Soil Study / T&IMonica (EPA)

0811 - ~~Eric~~ called back - Monica understands replicates are independent locations with their own reserves

- Eric called at same time + described the issue has been resolved.

0835 - went to Bossburg to observe core sampling

0917 - at Bossburg. Discussed sketch with Demetrio he would like to go home and have Bill Kinney explain to him. Will coordinate with PM.

- observed sample location

UDU-01-CORE-02

- Cameron Irvine mentioned verbal approval for UDU-06 obtained by no written agreement yet

- spoke with Bill White - he will clear samples + allow CCT to look over after he clears. Expects to get feedback from CCT on this approach.

- 1030 - Team A complete UDU 01 Cores

Location Bossburg Date 4/18/15Project / Client Bossburg Defined Sediment
+ Soil Study / T&I

- took samples from UDU-04A + Cores back to lab with me.
- 045 headed to lab + delivered samples

- Lab accidentally disposed of sample UDU-04A-02. Will have Team B recollect.

1208 - Tony called - NPS + CCT not getting along. CCT wants to observe + have a say on samples. CCT very unprofessional according NPS + Team A of hiding samples from her.

- worked on schedule + Sample summary

1730 - Team A + B returned
Team A completed

UDU-01 cores - 3

UDU-04C - 10

UDU-04 xrf - 5 (CC)

Team B completed

UDU 4A - 7

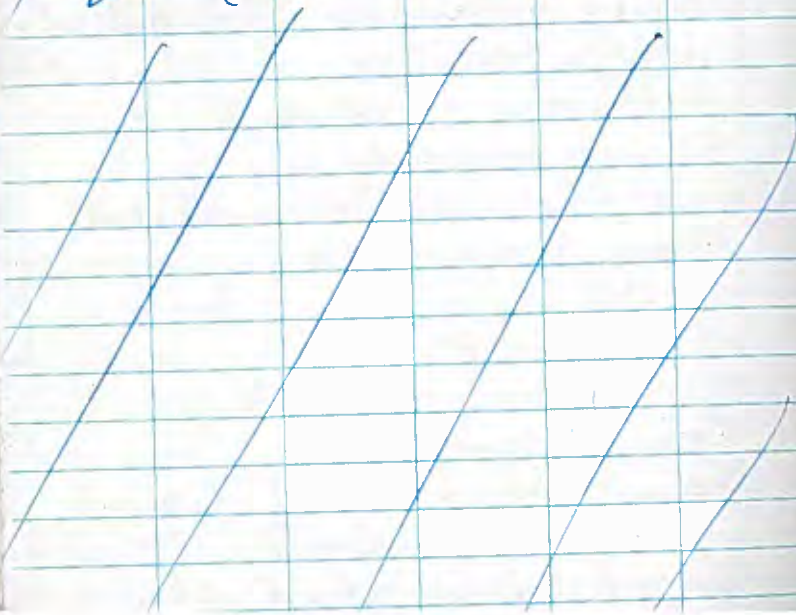
UDU 4B - 17

Debrief - next page

Surface Pro batteries
are draining fast +
they are not recharging
in a reasonable time.

- Need to resolve this issue,
- departed Rattle Falls Field
office @ 1830.

Mark [Signature]



- 1030 - arrived at Evans campground
to recon SDUs 5+6 from shore.
- took 15+ minutes to get surface
pros connected + running.
 - All SDU-06 is on dry ground
at beach. Easy access from
parking lot.
 - SDU-05 - 15 to 20 minute walk
to southern corner. Tony + I
walked perimeter of DU. There
is water + very soft mud in a
portion of the SDU. The following
sample locations are below water
SDU-05-05, 15, XRF-R07, 18, 24, R02
and XRF-04.
 - ~~1320~~ 1200 - left Evans for Bossburg
to recon SDUs - 01, 02 and 03-05.
 - SDU-05 is a 10 minute walk
with no gear from Bossburg parking
area. The DU is very steep + 45/40°
vegetation has grown up. will be
difficult access to all samples.
The following samples are
underwater or on cobble

Location UDU-02 Date 4.20.15
 Project / Client Bossburg-Teck

0645 @ Weatherman's.

Observers: Megan, Susan, Bill White
 MAH Wilkening, Mark Endo (CH2M)

0700 H&S meeting.

0740 @ Bossburg. Will start today
 w/ core locations in UDU-02.
 • UDU-02-COR-01-001 → (2L)

0803 @ UDU-02-COR-01

001 (15cm): Successfully Recover Full
 volume → second borehole for 2L volume.

002 (30cm): Successfully collect
 1 L volume.

003 (45cm): Successfully
 collect 1 L volume.

Begin data entry

0832 TMIN passing through going
 North.

GPS COOR. FOR COR-01
 422 933.907, 54 00871.309

Location UDU-02 Date 4.20.15
 Project / Client Bossburg-Teck

* GPS COOR FOR COR-01 needs to
 be moved 7 meters West of
 location recorded in Arc Pad

0852 Finish up @ COR-01. Move
 to COR-02.

0855 @ COR-02

GPS COOR
 422 966.51
 5400 870.34

COR-02-001

Successfully collect 15cm sample.
 Volume is slightly < 1L due to
 high % organic material.

COR-02-002

Successfully collect 30cm sample.

COR-02-003

Successfully collect 45cm sample
 Begin documentation.

0935

Move to UDU-02-COR-03

001: successfully collect
1 liter

002: successfully collect 1 liter

003: successfully collect 1 liter

Begin documentation.

GPS Coord* entered twice, use ^{South} ~~middle~~ point

422 973.645

5400 848.577

1005

Arc Pad is frozen, need to
reboot tablet. Will change in
the interim.

1015

Arc Pad / tablet restarted.
Begin documentation.

1050

Reboot for UDU-04C ICS
sampling

1100 @ UDU-04C-RO8

* This will replace UDU-04C-06,
which was not sample ~~at~~ up
due to steep terrainGPS Coord

422 875.22

5400 842.68

1117 @ UDU-04C-RO2

* This will replace ICS sample
UDU-04C-26, which was
abandoned due to steep terrain.GPS Coord

422 883.83

5400 865.41

1133 @ UDU-04C-RO4

* This will replace ICS sample
UDU-04C-23, which was abandoned
due to steep terrain.GPS Coord

422 831.85

5400 868.62

Location UDU-04 Date 4.20.15Project / Client Bossburg / Tech

1150 @ UDU-04C-30

GPS Coord

422 826.98

5400 866.96

→ Holiday

1150 Keith (NPS) onsite

1204 Take lunch.

1245 @ UDU-04C-~~22~~^{AP} 07GPS Coord

422 850.88

5400 843.33

1302 @ UDU-04C-08

GPS Coord

422 859.00

5400 826.10

1310 @ UDU-04C-10

GPS Coord

422 867.61

5400 834.83

Location UDU-04 Date 4.20.15Project / Client Bossburg / Tech1323 @ UDU-04C-~~23~~^{AP} 21GPS Coord

422 880.05

5400 848.17

@ UDU-04C-28

GPS Coord

422 902.78

5400 849.75

1353 @ UDU-04C-22

GPS Coord

422 924.21

5400 872.64

1405 @ UDU-04C-17

GPS Coord

422 915.42

5400 881.07

1413 @ UDU-04C-19

GPS Coord

422 907.49

5400 880.44

Location UDU-04 Date 4.20.2015
 Project / Client Bosburg / Teck

1420 Tablet Freezes Again, Reset.

@UDU-04C-15.

GPS Coord

422 925.99

5400 906.80

→ @UDU-04C-03
 & 1442 GPS Coord

422 910.52

5400 916.28

1453 @UDU-04C-16

GPS Coord

422 904.09

5400 921.45

1505 @UDU-04C-01

GPS Coord

422 912.40

5400 905.50

Location UDU-04 Date 4.20.15
 Project / Client Bosburg / Teck

1515 @UDU-04C-29

GPS Coord

422 902.42

5400 900.84

1530 @UDU-04C-13

GPS Coord

422 895.48

5400 925.09

1545 @UDU-04C-18

GPS Coord

422 872.16

5400 901.35

1556 @UDU-04C-05

GPS Coord

422 889.47

5400 881.65

1610 Complete UDU-04C ICS
 sampling. Move to SDU-03 to
 help Team B finish XRF sampling.
 Will collect XRF-03 & 04

Location SDU-03 Date 4.20.15Project / Client Bossburg / Teck

@ ~~SDU~~^{AP} SDU-03-XRF-03
GPS Coord
 422 971.78
 5400 010.46

1645 @ SDU-03-XRF-04
GPS Coord
 422 914.28
 5400 965.46

1700 Begin demobe.

1720 Leave Bossburg for Weatherman's

1735 Back @ Weatherman's. Start
 decor + Rinse blanks.

UDU-03 CORE SAMPLES

XRF-01 → COR-02

XRF-04 → COR-03

XRF-07 → COR-01

1820

off site.

Anthony P. C.
 11.20.15

Location SDU-02 Date 4.21.15Project / Client Bossburg - Teck

Observer: Bill Mac

0645 @ Weatherman's
 0700 H+S trailgate.

Plan to today is start w/
 SDU-02 XRF locations, then
 move to A series IC's samples.

0745 @ Bossburg.

0821 @ SDU-02. Stage water and
 chargers on East bank in
 shade.

0833 @ SDU-02-XRF-08
GPS Coord
 423490.30
 5401373.86

0850 @ SDU-02-XRF-07
GPS
 423 435.30
 5401 373.86

Location Kettle FallsDate 4/18/15Project / Client Bossburg
Sullyhub

1503 Water break, charge battery on tablet at 8%

1531 Tablet at 16% after 28 minutes
Michelle has called Mark Vetter and Paul McCullough

1540 Resume work, carrying around a car charger / jumper

1607 Moved UDU-04B-28 1.5' meter North due to refusal (rocks) 3 times

1630 Moved UDU-04B-30 ~ 1.5' west due to refusal at centroid and North of centroid due to cobble refusal

1650 Demote to cars

1700 Leave for Kettle Falls

1725 Arrive at Kettle Falls, Ice samples and decor, rinsates, download data

1810 Debriefing

1830 End of Day

Sullyhub
4/18/15Location Kettle FallsDate 4/20/15Project / Client Bossburg
SullyhubWeather 40-75° Sunny
Crew Lillywhite, Lewis, Stegner
observers Susan Ellis (COT) Mark Endo (COT/MHill)
Bill White (NPS) Meghan Lyons (NPS)
Activity ECS Samples at UDU-04B, ref at SW-01, 03

0645 Arrive in Kettle Falls, mobile

0700 Safety and OPS

0720 Leave for Bossburg

0745 Arrive at Bossburg, load up

0900 UDU-04B-11 is located below
Watermark of 1290 need to
use a reserve here.0940 UDU-04B-19 is on ~ 75° slope
need to use a reserve

1020 Charge / water break

1040 Return to sampling

1105 UDU-04B-01 Collated from ~2 meters
South of Centroid due to slope and unstable
debris at Centroid and N, W options1120 At UDU-04B-R01 to replace UDU-04B-11
located below normal lake level. Collated
from west of Centroid due to refusal at
Centroid and North.Sullyhub 4/20/15

Location Kettle Falls

Date 4/20/15

Project / Client Bossburg

J. Salzbach

- 1145 At UDU-04B-R02 to replace
UDU-04B-19 due to $\approx 75^\circ$ slope
- 1325 Arrive at SDU-01
- 1505 Return to vehicles to drop off samples
and get new core barrels
- 1535 Back at vehicles, quick break
- 1555 Return to SDU-3 for XRF samples
- 1630 SDU-03-XRF-02, unable to sample at
centroid or north due to refusal -
Cobbles. Able to sample to west
with difficulty. Gravel/Cobble/Boulder
mudx
- 1655 Pack up vehicles
- 1710 Leave for Kettle Falls
- 1735 Arrive in Kettle Falls, Unbut. Samples,
Ice, samples, decon, etc
- 1800 Debriefing

J. Salzbach
4/20/15

Location Kettle Falls

Date 4/20/15

Project / Client Bossburg

J. Salzbach

UDU-04B-	UTM 11N (Meters)		
Subsample	Time	Easting	Northing
-15	0812	422873.32	5400897.42
-29	0820	422880.82	5400912.63
-26	0839	422880.70	5400931.36
-11	Under High Water Mark		
-16	0908	422825.93	5400892.72
-13	0921	422833.90	5400891.37
-20	0931	422829.26	5400884.77
-19	$\approx 75^\circ$ slope $\approx 75^\circ$ slope		
-05	0947	422841.72	5400874.93
-07	1004	422897.74	5400850.64
-04	1011	422876.35	5400840.18
-01	1104	422878.76	5400925.20
R01R 1121		422880.99	5400896.45
	↳ Replaces UDU-04B-11 above		
-27	1135	422907.44	5400908.76
-R02	1148	422847.25	5400842.05
	↳ Replaces UDU-04B-19 above		

J. Salzbach
4/20/15

Location Kettle FallsDate 4/24/15

Project / Client

Bossburg
Lillywhite

SDU-01 -		UTM 11N (Meters)	
Sample Time		Easting	Northing
XRF-09	1330	423544.63	5401479.69
XRF-07	1345	423610.56	5401581.38
XRF-04	1355	423583.06	5401636.38
XRF-01	1405	423555.56	5401691.38
XRF-03	1415	423528.06	5401636.87
XRF-02	1429	423473.06	5401636.38
XRF-05	1441	423446 ③	
		→ 423446.28	5401580.59
XRF-06	1450	423555.56	5401581.38
XRF-08	1502	423528.06	5401526.38

SDU-03 -		UTM 11N (Meters)	
Sample Time		Easting	Northing
XRF-01	1612	423086.78	5401100.46
XRF-02	1632	423029.28	5401055.46

Lillywhite
4/24/15Location Kettle FallsDate 4/21/15

Project / Client

Bossburg
Lillywhite

Weather: 45-78° sun, increasing clouds, wind.

Crew: Lillywhite, Lewis, Stegner

Observers: Susan Ellis (UC) Mark Enko (Columbia) Bill White (NPS) Matt Wilkenny (OTIS), Jon Edwards (NPS)

Activity: ICS Sampling SDU-01

- 0645 Arrive in Kettle Falls, mobile
- 0700 Safety and OPS meeting
- Dehydration Key today
- 0750 Arrive at Bossburg, gear up to walk 1 mile to site
- 0805 Michelle Stegner receives call from Susan Ellis that she is running late. Michelle calls Mark Vetter
- 0830 Arrive at SDU-01/02 border. Matt Wilkenny meeting Susan Ellis, about 10 minutes behind us. We can sample without her.
- 0835 Susan and Matt with group, give Susan 14:5 briefing
- 0910 SDU-01-08 on steep cobble slope
Matt Wilkenny agrees to use a reserve station
- 0914 SDU-01-30 - same as above, steep slope,
Matt Wilkenny agrees to reserve

Daily Log

- 0645 Kent + Amy + entire team arrive at C.V. in Kettle Falls + organize for day
- 0703 Daily tailgate meeting
- 0720 Move box truck forward ~ 2 feet to make room between truck + building
- 0725 DISCUSS stair options + extension cord overhead for box truck to avoid water issues
- 0730 Weigh wet XRF samples from UDU-04, entered in program on tablet. 130°C
- 0800 Amy + Ken get ice
- 0830 Pack 2 coolers for FedEx
- 0900 Eric Weatherman + Joshua W. work on stairs + overhead extension cord
- 0945 Reweigh dry samples for XRF.
- 1000 Affix hazard diamond to nitric acid squirt bottles
- 1020 Reweigh dry samples for XRF
- 1025 Sieve UDU-04-XRF-02

Daily Log continued

- 1026 Start up XRF analyzer + perform QC analyses.
- 1035 Sieve UDU-04-XRF-04
- 1047 Sieve UDU-04-XRF-05
- 1115 Reweigh dry XRF samples
- 1125 Decon sieves
- 1130 Check RSD for XRF precision sample
- 1140 Break for lunch
- 1205 Mark returns with core samples from UDU-02
- 1210 Reweigh XRF samples
- 1229 Sieve UDU-04-XRF-R01
- 1231 ALP/KY collect rinsate + blank of deconned sieve:
UDU-04-~~XRF~~-ER-B
also 4/20/15
- 1239 Sieve UDU-04-XRF-03
- 1245 Decon sieves
- 1258 Perform closing QC samples for XRF.
- 1303 shut down XRF
- 1335 Transfer core samples for UDU-02 to 1L bottles
- 1355 UDU-02-COR-02-001 has limited volume - approx. 700 mLs
- 1400 UDU-02-COR-01-002 + 02-002 have more

Location Kettle Falls, WA Date 4/20/15Project / Client Teck, BossburgXRF analysis of Lead (ppm)

#1	Energy calibration check - passed			
#2	Blank SiO ₂		< 1.8	
#3	NIST 2709a	TV=17.3	14.6	84.4% R
#4	NIST 2780	TV=5770	4900	84.9% R
#5	UDU-04-XRF-02	Run 1	760	1/4 sample
#6	"	Run 2	991	organic matter
#7	"	Run 3	1173	
#8	UDU-04-XRF-04	Run 1	706	735%
#9	"	Run 2	343	
#10	"	Run 3	341	
#11	^{Redo} UDU-04-XRF-04	Run 1	416	} OK
#12	"	Run 2	491	
#13	"	Run 3	461	
#14	UDU-04-XRF-05	Run 1	641	
#15	"	Run 2	547	
#16	"	Run 3	765	
#17	" Precision	Run 4	594	
#18	"	Run 5	607	
#19	"	Run 6	511	
#20	"	Run 7	777	RSD=16.1%
#21	UDU-04-XRF-R01	Run 1	1593	
#22	"	Run 2	1317	
#23	"	Run 3	1242	
#24	UDU-04-XRF-03	Run 1	274	

Location Kettle Falls, WA Date 4/20/15 27Project / Client Teck, BossburgXRF analysis of Lead (ppm) continued

#25	UDU-04-XRF-03	Run 2	280
#26	"	Run 3	296
#27	Blank SiO ₂		< 1.8 closing OK
#28	NIST 2780	TV=5770	4930 85.4% R
#29	Energy calibration check - passed		
#30	ADD 4/20/15	shut down instrument	

ADD
4/20/15

Location Kettle Falls, WA Date 4/20/15Project / Client Teck, BossburgDaily Log continued

- 1400 volume than will fit in one LL bottle. ASking Dave Enos, Kris, + Paul how to handle extra volume.
- 1427 Ken departs with 2 coolers to FedEx dropoff center
- 1455 Ken returns from FedEx
- ~~1300~~¹⁵⁰⁰ Amy exports XRF data + syncs to laptop.
- 1515 Amy creates draft XRF report.
- 1615 Ken refreshes decun station for field team.
- 1625 Dewater + re ice samples.
- 1650 Document XRF training for Ken
- 1735 Teams return from field
- 1755 DL/DC collect unsate blank off deconned core barrel SDU-01-ER-A
- 1800 DL/DC collect unsate blank from deconned hand auger UDU-02-ER-C
- 1805 Debrief
- 1925 Teams depart site.

ADD 4/20/15

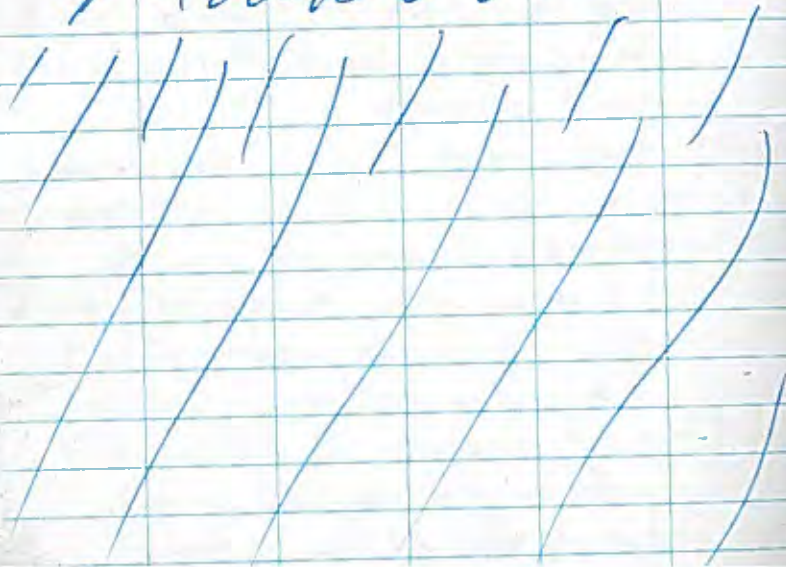
Location Kettle Falls, WA Date 4/21/15Project / Client Teck, BossburgDaily log

- 0630 Ken + Amy get ice at Walmart
- 0645 Arrive at C.N. in Kettle Falls.
- 0700 Daily Tailgate
- 0715 Teams depart
- 0720 Ken + Amy weigh out wet XRF samples + put in oven at 130°C
- 0730 Ken + Amy check increments for UDU-04-1CS-B. No increments for UDU-04B-11 or UDU-04B-19. 2 reserves submitted - UDU-04B-R01 and UDU-04B-R02.
- 0757 KY/ACD composite 30 increments to make UDU-04-1CS-B.
- 0759 Ken + Amy check increments for UDU-04-1CS-C. No increments submitted for UDU-04C-06, UDU-04C-23, or UDU-04C-26. 3 reserves submitted for UDU-04C-R02, UDU-04C-R04, and UDU-04C-R08.
- 0818 KY/ACD composite 30 increments to make UDU-04-1CS-C.
- 0820 Print label for pack cooler.
- 0900 Label core samples from UDU-02
- 0922 Reweigh dried XRF samples not dried.

Location Bossburg Date 4/19/15
 Project / Client Bossburg Refined
SEDIMENT + SOIL STUDY

- Slope: SDU-01: XRF-R02, 30 R05.
 SDU-02: ZC-06, ZC-23,
 ZA-14, ZC-24 and ZC-R03
 returned to vehicles at 1320.
 - 1340 stopped at Field office
 + recharged tablets + gps.
 - checked samples in coolers
 for ice.
 1400 - departed field office.

Mark [Signature]



Location Bossburg Date 4/20/15
 Project / Client Bossburg Refined
SEDIMENT + SOIL STUDY

- 0645 @ Kettle Falls Field Office
 teams loaded gear
 - new observers from EPA today
 Matt Wilkening EPA RMY + MARK
 ENDO CH2M HILL.
 - discussed observer situation with
 Bill White @ NPS - will share
 oversight with CCT prior to
 processing samples.
 - Eric W will move power supply to
 box truck + get stairs for truck
 access.
 - Team A - complete UDU-04C
 + collect UDU-02 cores.
 - Team B - complete UDU-04B and
 start SDU-01. XRF samples
 first.
 - Field lab to process UDU-04 XRF
 + ^{prepare} ~~analyze~~ UDU-04A for lab.
 - 0720 - teams departed for Bossburg
 - 0851 - called Paul,
 - getting ID# labels
 - battery packs by Tuesday.
 0951 - @ Bossburg to check on

Location BOSSBURG Date 4/20/15
 Project / Client BOSSBURG REFINED SEDIMENT
+ SOIL STUDY/TAI

- TEAM A completed UDU-02 cores
 I will transport to field lab. They
 will then resume UDU-4C

- TEAM B working on UDU-4B.

- ALL GOING WELL TODAY.

TEAM B Battery @ 45%

TEAM A Battery @ 70%

1156 back at Kettle Falls
 field office with UDU-02 cores

~~OK to send~~

1300 Paul McCullough called

- ok to submit samples from
 UDU-04 to as well as
 extra samples to the lab for
 XRF confirmation.

- Note - reported at daily tailgate
 meeting that Ken felt a burning
 sensation on his cheek while
 deconning. Review the decon
 procedure with team. Use face
 shield when spraying and
 spray down wind. This applies
 to field decon as well.

- 1407 - returned to Bossburg

Location BOSSBURG Date 4/20/15
 Project / Client BOSSBURG REFINED SEDIMENT
+ SOIL STUDY/TAI

? - Amy Dahl asked what to do
 with the extra core sample
 left over after container filled?

1435 at Bossburg

- Team A @ 4C should be done
 with unit today.

- Team B at SDU-01 will complete
 XRF locations today.

- Team B will attempt to collect
^{XRF}
 meekes @ SDU-04.

1600 - conversation with fault Kris

- retain all core volume

- if we need more containers it
 is OK. Contact Jeff Corvade
 this week.

- CR is a shared responsibilities
 - share

- Kris shared her conversation
 with EPA on XRF - they
 need to write down data
 but we can give them maps.

- boat ride for Matt for recon
 purposes? Ask Matt

- My, to talk to Matt about

Location Bossburg Date 4/20/15
 Project / Client BOSSBURG REFINED SEDIMENT
+ SOIL STUDY / TAI

EPA concerns related to
 ESTABLISH responsibility, XRF
 data and maps.

What can we do to help them
 out.

Issues were important enough for
 Laura Buelow to call

1659 - call ended.

- went with Matt and
 Mark Endo to flag core
 samples for UDU-03

UDU-03 XRF-07. XRF-01 XRF-04

- talked with Matt to discuss
 items relayed by Kris McCarig. I
 told him we will do whatever
 we can to make their job easier

1538 - departed Bossburg.

1557 - at Kettle Falls Field Office.

Deliricf

- No field issues from team,
 all went well.

- relayed discussions with
 Kris + that we need to
 work with observes a stream

Location BOSSBURG Date 4/21/15
 Project / Client BOSSBURG REFINED SEDIMENT
+ SOIL STUDY / TAI

- 0635 - at Kettle Field Office
- prepared for day with Team
- 0700 - conducted safety meeting
 - all present except Susan Ellis
- Jon Edwards replaced Meghan
 Lyons for NPS
- Gave Matt Wilkening + Mark
 Endo copies of SDU-01 + 02
 Maps
- Matt asked if a boat ride
 to view SDUs was possible
 today. Will check with
 Columbia Navigation. Early
 afternoon works for EPA if
 that is when we can go.
- Tony requested more maps
 from home office for all DUs
- 0720 - teams departed for
 Bossburg + SDUs 1 + 2.
- 0812 - headed to Bossburg.
- 0836 - at Bossburg. Retrieved
 XRF tags at UDU-01 + 02.
- * SDU-03 - need clarification on
 why there is cobble pieces of

Location SDU-03 Date 4.20.15Project / Client Bossburg / Teck

@ ~~SDU~~^{AP} SDU-03-XRF-03
GPS Coord

422 971.78
 5400 010.46

1645 @ SDU-03-XRF-04
GPS Coord

422 914.28
 5400 965.46

1700 Begin demobe.

1720 Leave Bossburg for Weatherman's

1735 Back @ Weatherman's. Start
 decor + Rinse blanks.

UDU-03 CORE SAMPLES

XRF-01 → COR-02

XRF-04 → COR-03

XRF-07 → COR-01

1820

off site.

Anthony P. Li
 11/20/15

Location SDU-02 Date 4.21.15Project / Client Bossburg - Teck

Observer: Billie Mance

0645 @ Weatherman's

0700 H+S trailgate.

Plan to today is start w/
 SDU-02 XRF locations, then
 move to A series IC's samples.

0745 @ Bossburg.

0821 @ SDU-02. Stage water and
 chargers on East bank in
 shade.

0833 @ SDU-02-XRF-08
GPS Coord

423 490.30
 5401 373.86

0850 @ SDU-02-XRF-07
GPS

423 435.30
 5401 373.86

Location SDU-02 Date 4.21.15Project / Client Bossburg / Tech

0859 @ SDU-02-XRF-06

GPS

423 380.30

5401 373.86

0915 @ SDU-02-XRF-04

GPS

423 352.80

5401 428.86

0926 @ SDU-02-XRF-01

GPS

423 325.30

5401 483.86

0939 @ ~~GA~~^{MP} SDU-02-XRF-02GPS

423 380.30

5401 483.86

0949 @ SDU-02-XRF-03

GPS

423 435.30

5401 483.86

Location SDU-02 Date 4.21.15Project / Client Bossburg / Tech

1003 @ SDU-02-XRF-05

GPS

423 462.80

5401 428.86

1011 Complete XRF locations.
Take a few mins to retool
and grab drink.

1035 @ 2A-30

* Refusal on cobbles after
8 attempts w/in 2 m
radius → Will use reserve
station @ SDU-02A-R06

1048 @ 2A-09

GPS

423 363.12

5401 531.16

@ 2A-10

GPS

423 325.42

5401 502.85

* 5 attempts before Adequark
Sample

Location SDU-02 Date 4.21.15Project / Client Bossburg / Teck

1111

@ 02A-25

GPS* Refused after 9 attempts
w/ 2 meters, will use

SDU-02A-R05.

1123

e 02A-24

GPS

423 311.86

5401 476.03

1132

e 02A-20

GPS

423 325.12

5401 475.38

1141

e 02A-15

GPS

423 282.13

5401 438.13

1149

e 02A-07

GPS

423 306.22

Location SDU-02 Date 4.21.15Project / Client Bossburg / Teck

1200 e 02A-08

GPS

423 319.01

5401 437.61

1205 Break for lunch.

1305 e 02-19

GPS

423 331.37

5401 445.01

1312 Marc Endu (CH) joins other
team

1319 e SDU-02A-04

GPS

423 329.13

5401 4244.80

1329 e SDU-02A-13

423 357.78

5401 431.33

Location SDU-02 Date 4.21.15Project / Client Bossburg / Teck

1335 @ O2A-17
GPS
 423 369.96
 5401 426.19

1342 @ SDU-02A-R01
 * This will replace SDU-02A-14
GPS
 423 337.92
 5401 429.92

1357 @ SDU-02A-R06
 * This will replace SDU-02A-30
GPS
 423 339.51
 5401 464.09

7412 @ SDU-02A-22
GPS
 423 376.85
 5401 528.77

1421 @ SDU-02A-01
 423 365.94
 5401 427.14

Location SDU-02 Date 4.21.15Project / Client Bossburg / Teck

1431 @ SDU-02A-28
 423 377.52
 5401 505.94

1455 @ SDU-02A-23
GPS
 423 445.75
 5401 480.30

1505 @ SDU-02A-12
 423 439.19
 5401 459.25

1516 @ SDU-02A-27
GPS
 423 423.30
 5401 421.21

1529 @ SDU-02A-05
GPS
 423 413.95
 5401 4104.95

Location SDU-02 Date 4-21-15

Project / Client Bossburg / Teck

1543 @ SDU-02A-11

GPS
423 355.86
5401 381.48

1550 @ SDU-02A-16

GPS
423 371.30
5401 377.47

1603 @ SDU-02A-205

GPS
423 424.53
5401 316.00

* This reserve station replaces SDU-02A-25.

1615 Head from SDU-02 to Bossburg.

~~1627~~ ~~Withing back to Bossburg~~
~~Bill White~~ ^{up}

1645 Leave Bossburg for Weatherman's.

Location SDU-02 Date 4-21-15

Project / Client Bossburg / Teck

1709 Back @ Weatherman's.

1735 Offsite

[Handwritten signature]
4-21-2015

Location Kettle FallsDate 4/24/15

Project / Client

Bossburg
Lillywhite

SDU-01 -		UTM 11N (Meters)	
Sample Time		Easting	Northing
XRF-09	1330	423544.63	5401479.69
XRF-07	1345	423610.56	5401581.38
XRF-04	1355	423583.06	5401636.38
XRF-01	1405	423555.56	5401691.38
XRF-03	1415	423528.06	5401636.87
XRF-02	1429	423473.06	5401636.38
XRF-05	1441	423446 ③	
		→ 423446.28	5401580.59
XRF-06	1450	423555.56	5401581.38
XRF-08	1502	423528.06	5401526.38

SDU-03 -		UTM 11N (Meters)	
Sample Time		Easting	Northing
XRF-01	1612	423086.78	5401100.46
XRF-02	1632	423029.28	5401055.46

Lillywhite
4/24/15

Location Kettle FallsDate 4/21/15

Project / Client

Bossburg
Lillywhite

Weather: 45-78° sun, increasing clouds, wind.

Crew: Lillywhite, Lewis, Stegner

Observers: Susan Ellis (UC) Mark Enko (Columbia) Bill White (NPS) Matt Wilkenny (OTIS), Jon Edwards (NPS)

Activity: ICS Sampling SDU-01

- 0645 Arrive in Kettle Falls, mobile
- 0700 Safety and OPS meeting
- Dehydration Key today
- 0750 Arrive at Bossburg, gear up to walk 1 mile to site
- 0805 Michelle Stegner receives call from Susan Ellis that she is running late. Michelle calls Mark Vetter
- 0830 Arrive at SDU-01/02 border. Matt Wilkenny meeting Susan Ellis, about 10 minutes behind us. We can sample without her.
- 0835 Susan and Matt with group, give Susan 14:5 briefing
- 0910 SDU-01-08 on steep cobble slope
Matt Wilkenny agrees to use a reserve station
- 0914 SDU-01-30 - same as above, steep slope,
Matt Wilkenny agrees to reserve

Location Kettle FallsDate 4/21/15

Project / Client

Bassburg
J. Lillywhite0945 Matt walkway and Mark Vetter
leave site to view locations via
vessel

1040 Winter and charging break

1120[Ⓢ] Resume work

1110

1215 Lunch, charge batteries

1255 Return to work

1330 SDU-01-02 within boulder field and
possibly above high water mark, Mark
Endo, EPA Representative agrees

1445 Water break

1540 Return to Bassburg w/ Susan Ellis

1610 Arrive at Bassburg, Susan reviews
Samples from after lunch.

1630 Pick up

1645 Heat for Kettle Falls

1710 Arrive in Kettle Falls. Decon, ice
Samples etc

1730 Debrief

J. Lillywhite
4/21/15Location Kettle FallsDate 4/21/15

Project / Client

Bassburg
J. Lillywhite

SDU-01-	UTM 11N (Meters)	Sample Time	Easting	Northing
-23	0900	423547.92	5401690.13	
-08	0908	→	Steep Cobble slope, unsafe	
-30	0914	→	Steep Cobble slope, unsafe	
-17	0917	423474.37	5401652.34	
-04	0929	423487.53	5401630.90	
-26	0943	423483.66	5401615.73	
-21	0948	423504.09	5401608.42	
-09	0956	423483.19	5401602.38	
-06	1004	423467.76	5401598.91	
-14	1012	423448.28	5401580.59	
-15	1023	423497.62	5401547.31	
-13	1031 [Ⓢ]	423500.83	5401536.39	
-28	1135 1111	423529.44	5401541.80	
-22	1120	423556.22	5401551.01	
-07	1128	423546.62	5401564.97	
-25	1137	423563.42	5401574.66	
-20	1145	423539.39	5401588.88	
-16	1156	423546.64	5401622.76	
-03	1204	423561.09	5401621.45	

J. Lillywhite
4/21/15

Location Kettle Falls

Date 4/21/15

Project/Client

Bossburg

~~S Lillywhite~~

SDU-01-	UTM 11N (Meters)		
Sample	Time	Easting	Northing
-19	1306	423579.62	5401659.34
-10	1313	423608.44	5401607.41
-01	1322	423630.84	5401600.15
-02	Boulders/Cobbles move to reserve		
-12	1334	423591.34	5401567.33
-24	1342	423588.63	5401546.52
-27	1351	423592.54	5401520.84
-05	1359	423606.18	5401524.36
-18	1409	423534.86	5401525.28
-11	1417	423578.57	5401478.54
-29	1432	423577.02	5401458.94
-R01	1508	423544.63	5401479.69
↳ Replaces	-08	(Cobbles on slope, page 27)	
-R02	1518	423608.24	5401575.82
↳ Replaces	-30	(Cobbles on slope, page 27)	
-R03	1526	423630.19	5401632.54
↳ Replaces	-02	(Cobbles/Boulders, page 28)	

~~S Lillywhite~~
4/21/15

Location Kettle Falls

Date 4/22/15

Project/Client

Bossburg

~~S Lillywhite~~

Weather: 40-65° Cloudy, late PM sun.
 Crew: Lillywhite, Lewis, Stegner
 Observers: Susan Ellis (CUR), Mark Ento (CIT/MHill)
 Bill White (URS), Matt Walker (EPA), John Edwards (URS)
 Activity: ICS Sampling SDU-02

0645 Arrive in Kettle Falls
 0700 Safety and OPs meeting
 0720 Leave for Bossburg
 0750 Arrive at Bossburg, load up
 0805 Leave for SDU-02
 0830 Arrive at SDU-02 gear up
 1015 Break, look into QTR to ensure we are collecting splits correctly, change tablet
 1105 Return to work
 1225 Lunch
 1255 Return to work
 1450 Charge battery, water break
 1510 Go to SDU-02C to help complete the DU with Team A
 1540 Leave for Bossburg
 1615 Arrive at Redup, load up
 1645 At Kettle Falls
 1720 Debrief S Lillywhite 4/22/15

Location Kettle Falls, WA Date 4/20/15Project / Client Teck, BossburgDaily Log continued

- 1400 volume than will fit in one LL bottle. ASking Dave Enos, Kris, + Paul how to handle extra volume.
- 1427 Ken departs with 2 coolers to FedEx dropoff center
- 1455 Ken returns from FedEx
- ~~1300~~¹⁵⁰⁰ Amy exports XRF data + syncs to laptop.
- 1515 Amy creates draft XRF report.
- 1615 Ken refreshes decan station for field team.
- 1625 Dewater + re ice samples.
- 1650 Document XRF training for Ken
- 1735 Teams return from field
- 1755 DL/DC collect unsate blank off deconned core barrel SDU-01-ER-A
- 1800 DL/DC collect unsate blank from deconned hand auger UDU-02-ER-C
- 1805 Debrief
- 1925 Teams depart site.

ADD 4/20/15

Location Kettle Falls, WA Date 4/21/15Project / Client Teck, BossburgDaily log

- 0630 Ken + Amy get ice at Walmart
- 0645 Arrive at C.N. in Kettle Falls.
- 0700 Daily Tailgate
- 0715 Teams depart
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- 0730 Ken + Amy check increments for UDU-04-1CS-B. No increments for UDU-04B-11 or UDU-04B-19. 2 reserves submitted - UDU-04B-R01 and UDU-04B-R02.
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- 0759 Ken + Amy check increments for UDU-04-1CS-C. No increments submitted for UDU-04C-06, UDU-04C-23, or UDU-04C-26. 3 reserves submitted for UDU-04C-R02, UDU-04C-R04, and UDU-04C-R08.
- 0818 KY/ACD composite 30 increments to make UDU-04-1CS-C.
- 0820 Print label for pack cooler.
- 0900 Label core samples from UDU-02
- 0922 Reweigh dried XRF samples not dried.

30 Location Kettle Falls, WA Date 4/21/15

Project / Client Teck Bossburg

XRF analysis of Lead (ppm)

add				
#1	Energy Calibration check	failed		
#2	Energy Calibration check	passed		
#3	Blank SiO ₂	<1.8	^{5/4/15} add	
#4	NIST 2709a	TV=17.3	11.6	67.1%R ^{low}
#5	" redo	12.1	69.9%R	
#6	abort - test of air			
#7	NIST 2711a	TV=1400	1248	89.1%R
#8	Energy Calibration check	passed		
#9	SDU-01-XRF-02	Run 1	206	add
#10	"	Run 2	178.4	174.8
#11	"	Run 3	245	Ave 209
#12	SDU-01-XRF-04	Run 1	296	
#13	"	Run 2	337	
#14	"	Run 3	322	Ave 318
*#15	SDU-01-XRF-05	RUN 1	330	
*#16	"	RUN 2	307	
*#17	"	RUN 3	268	Ave 302
*#18	SDU-01-XRF-06	RUN 1	342	
*#19 #20	"	RUN 2	322	
*#20 #21	"	RUN 3	317	Ave 327
#19	was aborted			
#22	SDU-01-XRF-01	Run 1	199	
#23	"		185	
#24	"		190	Ave 191

Location Kettle Falls, WA Date 4/21/15 31

Project / Client Teck Bossburg

XRF analysis of Lead (ppm) continued

#25	SDU-01-XRF-03	Run 1	282	
#26	"	Run 2	250	
#27	"	Run 3	271	Ave 268
#28	SDU-01-XRF-07	Run 1	448	
#29	"	Run 2	479	
#30	"	Run 3	420	Ave 449
#31	" Precision	Run 4	450	
#32	"	Run 5	431	
#33	"	Run 6	469	
#34	"	Run 7	478	RSD=5.1%
#35	Abort - fell over			
#36	Blank SiO ₂		<1.8	
#37	NIST 2711a, TV=1400		1351	96.5%R
#38	Energy calibration check	passed		
	shut down XRF analyzer			

4/21/15
add

Location Kettle Falls, WA Date 4/21/15Project / Client Teck BossburgDaily Log Continued

- 0935 Extra volume for VDU-02-COR-01-002 and VDU-02-COR-02-002 was collected in 2 extra bottles (leach) + sent to lab.
- 1005 Reweigh all 6 XRF samples - not ready
- 1010 Start XRF analyzer ~~1.5~~ ^{1.5} also
- 1039 Reweigh all 6 XRF samples - not ready
- 1107 Reweigh all 6 XRF samples - not ready
At 1006, ~~400~~ ^{add} SDU-01-XRF-07 was weighed + put in oven. Raised oven to 140°C to facilitate drying.
- 1134 Reweigh all 6 XRF samples.
- 1153 Sieve SDU-01-XRF-02
- 1235 Reweigh XRF samples - not ready
- 1250 Ken departs to locate UPS shipment of battery packs
- 1303 Reweigh XRF samples
- 1311 Sieve SDU-01-XRF-04 - sample contains aggregates that we broke up with baggie + fingers
small aggregates remaining in < 2mm sieved fraction
- 1330 Pack second cooler for FedEx
- 1356 Reweigh samples ^{for} XRF

Location Kettle Falls, WA Date 4/21/15 33Project / Client Teck BossburgDaily Log continued

- 1400 Ken depart to FedEx with 2 coolers
- 1404 Amy transfers SDU-01-XRF-04 to jar to send to lab. Too much volume for 8oz jar - transferred to 16oz jar.
- 1412 Turn oven temperature up to 150°C to facilitate drying of samples
- 1415 office work - Amy
- 1500 ACD collects rinsate blank of deconned sieve - SDU-01-ER-B
- 1505 Reweigh XRF samples
- 1515 Sieve SDU-01-XRF-05 - sample has aggregates that we broke up with baggie.
- 1530 Sieve SDU-01-XRF-06 - sample
- 1531 Amy left to pick up battery packs from Eric Weatherman's other location.
- 1554 Reweigh XRF samples rest of lot 7 OK to sieve (finally)
- 1600 Sieve SDU-01-XRF-01 and Decon Sieve

Location Kettle Falls, WA Date 4/21/15Project / Client Teck - BossburgDaily log continued

- 1615 Weigh out remaining XRF samples - 6
SDU-01-XRF-08 + -09 + SDU-03-XRF-01 + 04
- 1630 Sieve SDU-01-XRF-03 by hand/baggie
- 1634 Sieve SDU-01-XRF-07 by hand/baggie
All XRF samples sieved so far
today have small aggregates in < 2mm.
- 1650 Transferred SDU-01-XRF-03 to jar -
for sending to lab for confirmation
Too much volume for 8oz jar, had
to use 16 oz jar.
- 1704 Noticed that tape covering
Blank SiO₂ ripped when XRF
analyzer fell over. Repair w/ packing tape.
- 1709 Shut down XRF analyzer.
- 1710 Teams A + B return to C.N.
- 1720 DC/DC collect rinse & blank of
decontaminated/cleaned core barrel
SDU-02-ER-A
- 1725 De brief
- 1745 Depart site

~~ADD 4/21/15~~

Location Kettle Falls, WA Date 4/22/15Project / Client Teck - BossburgDaily Log

- 0630 Ken + Amy get ice at Walmart
- 0645 Arrive at C.N. in Kettle Falls
- 0700 Daily tailgate meeting
- 0720 Teams A + B depart for sampling
- 0725 Reweigh dried XRF samples from
yesterday
- 0735 Ken + Amy check increments for
SDU-01-ICS. 3 reserves used
- ~~0756~~ Ken SDU-01-R01, R02, R03 for
SDU-01-02, -08, -30
- 0756 KY/ACD composite 30
increments to create sample
SDU-01-ICS
- 0806 Reweigh dried XRF samples
- 0818 Sieve SDU-03-XRF-01
- 0822 Start XRF analyzer
- 0825 Sieve SDU-03-XRF-02 -
sample size smaller than others - 13g
- 0830 Sieve SDU-03-XRF-03
- 0838 Decon sieved
- 0847 Reweigh last 2 samples from yesterday
- 0906 Sieve SDU-03-XRF-04
- 0920 Sieve SDU-01-XRF-09
- 0920 Weigh out XRF samples for SDU-02

Location Bossburg Date 4/20/15
 Project / Client BOSSBURG REFINED SEDIMENT
+ SOIL STUDY / TAI

EPA concerns related to
 ESTABLISH responsibility, XRF
 data and maps.

What can we do to help them
 out.

Issues were important enough for
 Laura Buelow to call

1659 - call ended.

- went with Matt and
 Mark Endo to flag core
 samples for UDU-03

UDU-03 XRF-07. XRF-01 XRF-04

- talked with Matt to discuss
 items relayed by Kris McCarig. I
 told him we will do whatever
 we can to make their job easier

1538 - departed Bossburg.

1557 - at Kettle Falls Field Office.

Deliricf

- No field issues from team,
 all went well.

- relayed discussions with
 Kris + that we need to
 work with observes a stream

Location BOSSBURG Date 4/21/15
 Project / Client BOSSBURG REFINED SEDIMENT
+ SOIL STUDY / TAI

- 0635 - at Kettle Field Office
- prepared for day with Team
- 0700 - conducted safety meeting
 - all present except Susan Ellis
- Jon Edwards replaced Meghan
 Lyons for NPS
- Gave Matt Wilkening + Mark
 Endo copies of SDU-01 + 02
 Maps
- Matt asked if a boat ride
 to view SDUs was possible
 today. Will check with
 Columbia Navigation. Early
 afternoon works for EPA if
 that is when we can go.
- Tony requested more maps
 from home office for all DUs
- 0720 - teams departed for
 Bossburg + SDUs 1 + 2.
- 0812 - headed to Bossburg.
- 0836 - at Bossburg. Retrieved
 XRF tags at UDU-01 + 02.
- * SDU-03 - need clarification on
 why it's in cobble areas of

Location BOSSBURG Date 4/21/15Project / Client BOSSBURG REFINED
SEDIMENT + SOIL STUDY / TAT

- 0902 - left truck for SDU-01 and -02
- called Bob - lake level 1250.9
- 0915 @ SDU-02. Delivered indir to Tony.
- 1010 - Josh W called. They are leaving Kettlefalls Boatland.
- 1040 Josh W. called - boat is over a belt. Will be here in one hour or so.

★ Walked to SDU-04. In discussion with Matt we could shift submerged samples to locations in between the ones we can get.

- OK to gps them in. Feels we will maintain randomness.

135 Eric called - on their way to BOSSBURG

1151 - on boat headed to SDU-08 then Evans for SDU-07

★ SDU-08 - road work until Friday May 1 not working Fridays

- send crew on Friday to grab samples they can and

Location BOSSBURG Date 4/21/15Project / Client BOSSBURG REFINED SEDIMENT
+ SOIL STUDY / TAT

fill locations underwater by shifting to areas where sediment exists but not to @ in program.

- or shift entire DU to south where there is good sediment.
- took quick detour to SDU-04
- confirmed shore observations.
- went to SDU-07
- ★ - Options - collect what @ what we can move other locations to shore within DU on both sides of water.

1323 back at Bossburg

- Team A has SDU-02 & XRFs and 10+ ICS

- Team B @ SDU-01

★ - Mark Ender CH₂MHIC has concerns with our back up approach affecting randomness of samples.

- 1430 returned to vehicle to prepare for 1500 call.

- 1500 - Conv w/ Kris + Paul + Becky → on uplands - Matt should look at this for Bossburg - redrawing

Location BOSSBURG Date 4/21/15Project / Client BOSSBURG REFINED
SEDIMENT + SOIL STUDY / TAT

- Mention to Matt about uplands
- Changes came from Laura
Matt to follow this approach
- need request to go to Kris
through from Matt
- Need go thru proper channels.
→ AECOM will conduct no changes
in scope without an approved
change request

1610 Team B returned ^{from} SDU-01
complete. Matt Wilkening with
them

- Flagged core samples @ UDU-01
COR 1 - UDU-XRF-R01
COR 2 - UDU-XRF-02
COR 3 - UDU-XRF-05

while flagging I discuss my conversation
with Kris McCaig in regards to
what she needs ~~from~~ from EPA
at SDU4-07-08.

1633 - Team A returned from SDU-02
XRF complete.

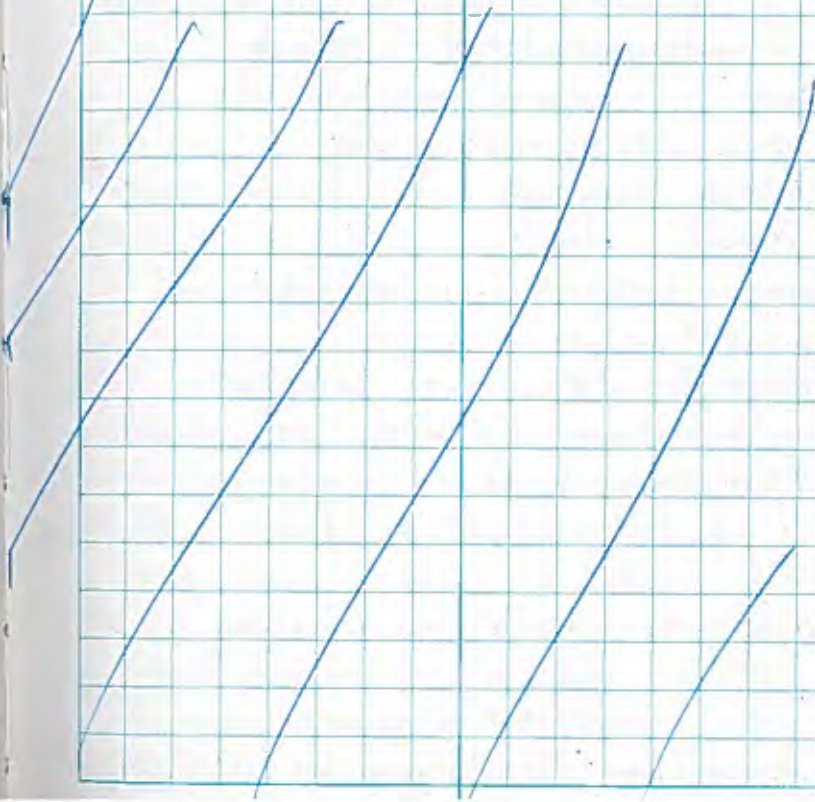
1445 - left Bossburg

1705 - back at field office.

Location BOSSBURG Date 4/21/15 39Project / Client BOSSBURG REFINED SEDIMENT
+ SOIL STUDY / TAT

- collected rinsewater blanks
after decon
- handled samples over to lab.
left field office @ 545.

Matt Wilkening



Location SDU-02 Date 4.22.15Project / Client Bossburg / TechObservers: Marc & Bill

0645 @ Weatherman's
 0700 H+S meeting.
 0730 Leave for Bossburg
 0800 @ Bossburg
 0828 @ SDU-02. Plan is to finish remaining A series, then move on to C series.

0835 @ SDU-02A-06

GPS

423 457.30

5401 408.50

0842 @ SDU-02A-02

GPS

423 475.31

5401 421.06

0953 @ SDU-02A-26

GPS

423 459.10

5401 368.28

Location SDU-02 Date 4.22.15Project / Client Bossburg / Tech

0912 @ SDU-02A-03

GPS

423 440.98

5401 312.00

0920 @ SDU-02A-29

GPS

423 448.50

5401 285.47

0930 @ SDU-02A-18

GPS

423 461.28

5401 323.64

0943 @ SDU-02A-21

GPS

423 524.49

5401 394.78

0953 Retool to start SDU-02C samples

Location SDU-02 Date 4.22.15Project / Client Bossburg / Teck

* SDU-02C-1R03, SDU-02C-24,
SDU-02C-23, &
SDU-02C-06 under water.

Reserve Stations

SDU-02C-24 → SDU-02C-R01

SDU-02C-23 → SDU-02C-R02

SDU-02C-06 → SDU-02C-R04

1026 @ SDU-02C-25

GPS

423 274.80

5401 428.67

1040 @ SDU-2C-22

GPS

423 375.88

5401 518.95

1049 @ SDU-2C-10

GPS

423 398.72

5401 528.35

Location SDU-02 Date 4.22.15Project / Client Bossburg / Teck

1100 @ SDU-2C-12

GPS

423 386.11

5401 505.29

1110 @ SDU-2C-11

GPS

423 362.76

5401 481.90

1119 @ SDU-2C-09

GPS

423 352.81

5401 483.18

1130 @ SDU-2C-08

GPS

423 406.67

5401 497.61

1137 @ SDU-02C-17

GPS

423 409.75

5401 478.76

Location SDU-02 Date 4-22-2015Project / Client Bossburg / Tech

1148 e SDU-02C-02

GPS

423 437.22

5401 484.51

1156 @ SDU-02C-18

GPS

423 445.55

5401 465.20

1204 @ SDU-02C-16

GPS

423 463.58

5401 464.10

1210 Take lunch.

1247 @ SDU-02C-05

GPS

423 473.38

5401 444.36

Location SDU-02 Date 4-22-15Project / Client Bossburg / Tech

1300 e SDU-02C-R01

GPS

423 438.13

5401 417.07

* This location replaces
SDU-02C-24.

1315 e SDU-02C-R02

GPS

423 497.62

5401 423.53

* This location replaces
SDU-02C-23.

1325 @ SDU-02C-28

GPS

423 485.43

5401 413.05

1336 @ SDU-02C-21

GPS

423 516.18

5401 396.66

Location SDU-02 Date 4.22.15Project / Client Bossburg / Tech

1343 @ SDU-02C-19

GPS

423 514.49

5401 376.56

1351 @ SDU-02C-01

423 496.54

5401 381.42

1359 @ SDU-02C-27

GPS~~423 496.54~~~~5401 381.42~~

423 471.61

5401 356.38

1409 @ SDU-02C-29

423 453.30

5401 373.60

1420 @ SDU-02C-15

423 429.17

5401 362.26

Location SDU-02 Date 4.22.15Project / Client Bossburg / Tech

1433 @ SDU-02C-30

423 425.35

5401 335.23

1449 @ SDU-02C-07

423 343.15

5401 404.69

1501 @ SDU-02C-26

423 345.91

5401 390.29

1516 @ SDU-02C-14

423 397.73

5401 391.88

1526 @ SDU-02C-13

423 380.70

5401 380.75

1534 @ SDU-02C-204

423 374.16

5401 370.08

*Replaces SDU-02C-06.

Location SDU-02Date 4.22.15Project / Client Bossburg / Teck1551 SDU-02 complete. Debnobe and
head back to Bossburg.

1608 Back @ Bossburg.

1635 Leave Bossburg for Weatherman's.

1651 Back @ Weatherman's.

1719 Debrief.

1730 Offsite.

[Signature]
4.22.15

Location SDU-03Date 4.23.15Project / Client Bossburg / TeckObservers: Megan & Mark

0645 @ Weatherman's

0700 Hit tailgate

0710 Leave ~~Bossburg~~ ^{for} Bossburg

0740 @ Bossburg.

Plan today is SDU-03A

0809 @ SDU-03A-29

GPS

423091.78

5401096.58

* Collect slightly less volume than
previous locations. Mark Endo
suggests resampling to gain more
volume. I explain that the QAPP
only requires collecting the
minimum mass, not equal
volumes through out. Talk w/ Mark
& Matt. Plan is to continue per
what I described in the QAPP,
but discussion continues like
w/ Mark Vetter & ultimately
Teck.

0843 Back (Teck) onsite.

Location Kettle Falls

Date 4/21/15

Project/Client Bossburg

S. Lillywhite

SDU-01-	UTM 11N (Meters)		
Sample	Time	Easting	Northing
-19	1306	423574.62	5401659.34
-10	1313	423618.44	5401607.41
-01	1322	423630.84	5401600.15
-02	Boulders/Cobbles move to reserve		
-12	1334	423591.34	5401567.33
-24	1342	423588.63	5401546.52
-27	1351	423592.54	5401520.84
-05	1359	423606.18	5401524.36
-18	1409	423534.86	5401525.28
-11	1417	423578.57	5401478.54
-29	1432	423577.02	5401458.94
-R01	1508	423544.63	5401479.69
↳ Replaces -08 (Cobbles on slope, page 27)			
-R02	1518	423608.24	5401575.82
↳ Replaces -30 (Cobbles on slope, page 27)			
-R03	1526	423630.19	5401632.54
↳ Replaces -02 (Cobbles/Boulders, page 28)			

S. Lillywhite
4/21/15

Location Kettle Falls

Date 4/22/15

Project/Client Bossburg

S. Lillywhite

Weather: 40-65° Cloudy, late PM sun.
 Crew: Lillywhite, Lewis, Stegner
 Observers: Susan Ellis (CUT), Mark Ento (CUT, m Hall)
 Bill White (NPS), Matt Walker (LEIA), John Edwards (CUTS)
 Activity: ICS Sampling SDU-02

0645 Arrive in Kettle Falls
 0700 Safety and OPs meeting
 0720 Leave for Bossburg
 0750 Arrive at Bossburg, load up
 0805 Leave for SDU-02
 0830 Arrive at SDU-02 gear up
 1015 Break, look into QTR to ensure we are collecting splits correctly, change tablet
 1105 Return to work
 1225 Lunch
 1255 Return to work
 1450 Charge battery, water break
 1510 Go to SDU-02C to help complete the DU with Team A
 1540 Leave for Bossburg
 1615 Arrive at Redup, load up
 1645 At Kettle Falls
 1720 Debrief *S. Lillywhite* 4/22/15

SDU-02B -		UTM 11N (Meters)	
Sample	Time	Easting	Northing
-25	0843	423369.60	5401521.30
-12	0854	423362.70	5401521.72
-07	0903	423347.03	5401530.68
-01	0915	423323.59	5401524.35
-24	0932	423281.09	5401417.25
-29	0937	423306.61	5401407.49
-26	0947	423331.74	5401451.67
-10	0955	423353.11	5401440.81
-17	1003	423380.43	5401449.89
-14	1011	423396.68	5401453.70
-23	1113	423422.95	5401514.36
-03	1123	423439.73	5401460.95
-06	1131	423466.72	5401430.13
-19	1142	423462.29	5401418.76
-05	1150	423456.44	5401393.36
-18	1159	423457.99	5401377.58
-15	1208	423450.06	5401358.93
-30	1217	423497.47	5401354.65
-27	1259	423395.22	5401395.22
		423423.40	

S. L. Lohr
4/22/15

SDU-02B		UTM 11N (Meters)	
Sample	Time	Easting	Northing
-02	1308	423493.06	5401389.78
-21	1315	423413.28	5401367.63
-28	1325	423425.99	5401350.99
-20	1335	423382.92	5401364.71
-11	1344	423357.31	5401350.97
-22	1352	423344.27	5401361.69
-16	1359	423357.37	5401373.60
-09	1409	423386.57	5401403.05
-08	1420	423374.44	5401419.78
-13	1429	423329.29	5401419.00
		423394.21	
-04	1434	423413.87	5401430.31

SDU-02C		UTM 11N (Meters)	
Sample	Time	Easting	Northing
-20	1516	423394.21	5401397.70
		423391.93	
-03	1525	423408.38	5401337.12
-04	1532	423426.25	5401301.17

S. L. Lohr
4/22/15

Location Kettle Falls, WA Date 4/21/15Project / Client Teck - BossburgDaily log continued

- 1615 Weigh out remaining XRF samples - 6
SDU-01-XRF-08 + -09 + SDU-03-XRF-01 + 04
- 1630 Sieve SDU-01-XRF-03 by hand/baggie
- 1634 Sieve SDU-01-XRF-07 by hand/baggie
All XRF samples sieved so far
today have small aggregates in < 2mm.
- 1650 Transferred SDU-01-XRF-03 to jar -
for sending to lab for confirmation
Too much volume for 8oz jar, had
to use 16 oz jar.
- 1704 Noticed that tape covering
Blank SiO₂ ripped when XRF
analyzer fell over. Repair w/ packing tape.
- 1709 Shut down XRF analyzer.
- 1710 Teams A + B return to C.N.
- 1720 DC/DC collect rinse & blank of
decontaminated/cleaned core barrel
SDU-02-ER-A
- 1725 De brief
- 1745 Depart site

~~ADD 4/21/15~~

Location Kettle Falls, WA Date 4/22/15Project / Client Teck - BossburgDaily Log

- 0630 Ken + Amy get ice at Walmart
- 0645 Arrive at C.N. in Kettle Falls
- 0700 Daily tailgate meeting
- 0720 Teams A + B depart for sampling
- 0725 Reweigh dried XRF samples from
yesterday
- 0735 Ken + Amy check increments for
SDU-01-ICS. 3 reserves used
- ~~0756~~ Ken SDU-01-R01, R02, R03 for
SDU-01-02, -08, -30
- 0756 KY/ACD composite 30
increments to create sample
SDU-01-ICS
- 0806 Reweigh dried XRF samples
- 0818 Sieve SDU-03-XRF-01
- 0822 Start XRF analyzer
- 0825 Sieve SDU-03-XRF-02 -
sample size smaller than others - 13g
- 0830 Sieve SDU-03-XRF-03
- 0838 Decon sieved
- 0847 Reweigh last 2 samples from yesterday
- 0906 Sieve SDU-03-XRF-04
- 0920 Sieve SDU-01-XRF-09
- 0920 Weigh out XRF samples for SDU-02

Kettle Falls, WA

4/22/15

Teck, Bossburg

XRF analysis of Lead (ppm)

#1	Energy Calibration Check - passed			
#2	Blank SiO ₂		< 1.8	
#3	NIST 2709a	TV=17.3	13.9	80.3%R
#4	NIST 2780	TV=5770	5048	87.5%R
#5	SDU-03-XRF-01	Run 1	247	
#6	"	Run 2	243	
#7	"	Run 3	270	Ave 253
#8	SDU-03-XRF-02	Run 1	87.4	
#9	"	Run 2	91.2	
#10	"	Run 3	88.7	Ave 89.1
#11	SDU-03-XRF-03	Run 1	15.6	
#12	"	Run 2	19.0	
#13	"	Run 3	14.7	Ave 16.4
#14	SDU-03-XRF-04	Run 1	41.5	
#15	"	Run 2	44.2	
#16	"	Run 3	52.3	Ave 46.0
#17	SDU-01-XRF-06	Run 1	384	
#18	"	Run 2	384	
#19	"	Run 3	422	Ave 397
#20	SDU-01-XRF-09	Run 1	445	
#21	"	Run 2	471	
#22	"	Run 3	401	Ave 439
#23	SDU-02-XRF-01	Run 1	350	
#24	"	Run 2	315	Ave 317

Kettle Falls, WA

4/22/15

Teck, Bossburg

XRF analysis of Lead (ppm) continued

#25	SDU-02-XRF-01 (cont)	Run 3	296	change XRF
#26	Energy calibration check - passed			
#27	SDU-02-XRF-03	Run 1	366	
#28	"	Run 2	399	
#29	"	Run 3	360	Ave 375
#30	SDU-02-XRF-04	Run 1	431	
#31	"	Run 2	427	
#32	"	Run 3	379	Ave 412
#33	SDU-02-XRF-06	Run 1	416	
#34	"	Run 2	440	Ave 481
#35	"	Run 3	587	change XRF
#36	Energy calibration check - passed			
#37	SDU-02-XRF-02	Run 1	338	
#38	"	Run 2	401	
#39	"	Run 3	412	Ave 384
#40	SDU-02-XRF-05	Run 1	372	
#41	"	Run 2	399	
#42	"	Run 3	400	Ave 390
#43	SDU-02-XRF-07	Run 1	423	
#44	"	Run 2	454	
#45	"	Run 3	425	Ave 434
#46	SDU-02-XRF-08	Run 1	611	
#47	"	Run 2	600	
#48	"	Run 3	630	Ave 614

Location Kettle Falls, WA Date 4/22/15Project / Client Teck, BossburgDaily log continued

- 0940 Reweigh remaining 1 sample from yesterday
 0942 Sieve SDU-01-XRF-08
 0950 Decon sieves
 1012 ALO collects rinsate blank of deconned sieve: SDU-03-ER-B
 Kind of soapy appearance
 1119 - Ken reweighs XRF samples from GOU-02
 1130 Weigh last 2 XRF samples SDU-02
 1145 Monk returns with remaining increments for SDU-02-1CS-A
 1153 Ken + Amy check increments for SDU-02-1CS-A. 3 reserve locations - SDU-02A-R01, R05, R06 for increments SDU-02A-14, 25, 30
 1211 KY/ALO composited 30 increments to make SDU-02-1CS-A.
 1230 Break for lunch
 1245 Pack 1st cooler
 1300 Reweigh dried XRF samples
 1306 Sieve SDU-02-XRF-01 by hand using baggie to break apart aggregates
 1318 Pack second cooler
 1336 Reweigh dried XRF samples.
 1413 Ken departs to FedEx with 2 coolers.

Location Kettle Falls, WA Date 4/22/15 39Project / Client Teck, BossburgDaily log continued

- 1433 Reweigh XRF samples
 1446 Sieve SDU-02-XRF-03 - after shaking, used baggie to break apart aggregates
 1500 Sieve SDU-02-XRF-04 - then use baggie
 1508 Sieve SDU-02-XRF-06 - use baggie after shaking on aggregates
 1515 Ken returns from FedEx + Decons sieves
 1529 Sieve SDU-02-XRF-09 by hand + baggie small aggregates < 2 min
 1610 Sieve SDU-02-XRF-02 - by hand + with baggie
 1615 Sieve SDU-02-XRF-05 - by hand + baggie
 1620 Sieve SDU-02-XRF-07 by hand ^{also 4/22/15} on the shaker + then with baggie
 1625 Decon sieved
 1650 Team B arrives back to C.N.
 1700 Team A arrives back to C.N.
 1710 DL/AD collect rinsate blank of deconned core barrel - SDU-02B-ER-A-20150422
 1720 Debrief + finish data transfer
 1750 Depart site
 also 4/22/15

Location Kettle Falls, WA Date 4/22/15Project / Client Teck, BossburgDaily log continued

- 0940 Reweigh remaining 1 sample from yesterday
 0942 Sieve SDU-01-XRF-08
 0950 Decon sieves
 1012 ALO collects rinsate blank of deconned sieve: SDU-03-ER-B
 Kind of soapy appearance
 1119 - Ken reweighs XRF samples from GOU-02
 1130 Weigh last 2 XRF samples SDU-02
 1145 Monk returns with remaining increments for SDU-02-1CS-A
 1153 Ken + Amy check increments for SDU-02-1CS-A. 3 reserve locations - SDU-02A-R01, R05, R06 for increments SDU-02A-14, 25, 30
 1211 KY/ALO composited 30 increments to make SDU-02-1CS-A.
 1230 Break for lunch
 1245 Pack 1st cooler
 1300 Reweigh dried XRF samples
 1306 Sieve SDU-02-XRF-01 by hand using baggie to break apart aggregates
 1318 Pack second cooler
 1336 Reweigh dried XRF samples.
 1413 Ken departs to FedEx with 2 coolers.

Location Kettle Falls, WA Date 4/22/15 39Project / Client Teck, BossburgDaily log continued

- 1433 Reweigh XRF samples
 1446 Sieve SDU-02-XRF-03 - after shaking, used baggie to break apart aggregates
 1500 Sieve SDU-02-XRF-04 - then use baggie
 1508 Sieve SDU-02-XRF-06 - use baggie after shaking on aggregates
 1515 Ken returns from FedEx + Decons sieves
 1529 Sieve SDU-02-XRF-09 by hand + baggie small aggregates < 2 min
 1610 Sieve SDU-02-XRF-02 - by hand + with baggie
 1615 Sieve SDU-02-XRF-05 - by hand + baggie
 1620 Sieve SDU-02-XRF-07 by hand ^{also 4/22/15} on the shaker + then with baggie
 1625 Decon sieved
 1650 Team B arrives back to C.N.
 1700 Team A arrives back to C.N.
 1710 DL/AD collect rinsate blank of deconned core barrel - SDU-02B-ER-A-20150422
 1720 Debrief + finish data transfer
 1750 Depart site
 also 4/22/15

Location Kettle Falls, WA Date 4/22/15Project / Client Teck, Bossburg
XRF analysis of Lead (ppm) continued

#49	SDU-02 XRF-05 (continued)	Run 4	570	precision
#50	"	Run 5	582	
#51	"	Run 6	621	
#52	"	Run 7	560	RSD=4.4%
#53	Blank SiO ₂		<1.0	
#54	NIST 2780 TV=5770	5045	87.4%R	
#55	Energy calibration check - passed			
#56	avg 4/22/15	shut off analyzer 718		

avg
4/22/15

Location Kettle Falls, WA Date 4/23/15 41Project / Client Teck, Bossburg
Daily Log

0630	Ken + Amy get 8 bags of material at Walmart.
0645	Arrive at C.N. in Kettle Falls
0700	Daily Tailgate meeting
0725	Teams A+B depart site including Ken
0730	Amy checks increments for SDU-02-1CS-B
0740	Sally Miller + Bill Tallock conduct safety audit of lab area. They recommended labeling the XRF standards due to elevated lead + other metals. Flammable cabinet should be relabelled as corrosive due to nitric acid contents. Remove clutter from around fire extinguisher. All recommendations implemented + also labelled nitric acid waste bucket.
0820	resumed checking increments All 30 present, no reserve locations used for SDU-02B.
0904	Amy composited 30 increments to create SDU-02-1CS-B
1005	Amy checks increments for SDU-02-1CS-C.

Location BOSSBURG Date 4/22/15
 Project / Client BOSSBURG-REFINED
SEDIMENT + SOIL STUDY / TAI

- 0630 at Kettle Falls field office
 0645 - team at field office
 0701 - started tailgate safety meeting
 - all present except Bill White who is at Bossburg evaluating an issue he identified near SDU-03.
 0712 - meeting complete - field teams departed for Bossburg.
 Eric discussed issues with sanitation in field.
 0939 @ Bossburg to check on field teams.
 TEAM A wrapped up SDU-02A and is working on SDU-2B.
 TEAM B working on SDU-02C.
 - Mark Ends (EPA) and Matt Withering (EPA) had question on split samples + volume. I responded EPA splits were being prepared in laboratory and we had enough volume. Concern related to samples with a larger coarse fraction that may be ~~30%~~

Location BOSSBURG Date 4/22/15⁴¹
 Project / Client BOSSBURG-REFINED SEDIMENT
+ SOIL STUDY / TAI

- out during sample preparation.
 - Matt asked about UDU-05 and I responded that we will bring our safety resources to field on 4/23 and we will develop a safe approach to get these samples. t.e. @ He does not want to relocate DU. I informed him we had no intention of doing this. Mark Ends wants to be sure we are out of the RR right of way when we collect these samples.
 - crews are working on rock out crops above SDU-05 again today. This is Stevens County. No blasting; just chiseling.
 1100 - departed field with remaining CS samples from SDU-02A.
 1140 - at field office. Delivered remaining SDU-02A samples to field lab for compositing.
 1127 - positive safety observation
 - using rolling dolly to move heavy sample coolers to avoid carrying them.

Location Bossburg Date 4/22/15Project / Client BOSSBURG REFINEDSEDIMENT + SOIL STUDY / TAI

- 1416 left for Bossburg to flag XRF Samples at SDUs -01 and 03
- 1434 at Bossburg. Walked out to SDU-01 and ~~02~~ 02.
- Met w/ Matt and Mark from EPA + CH. Gave them XRF data from SDU-01 and -02. They will flag XRF locations for SDU-01 likely choose three highest XRFs which are -07, -08 + 09
- SDU-03 are low 250, 89 19 + 45 in order starting at XRF 11, 22, 03, 04
- Team B completed SDU-02C and will assist Team A in wrapping up SDU-02B
- informed by Michelle that Eric now has a sore arm.
- return to vehicle with 3 sample bags from 2B and one from 2C
- 1600 - call with Kris, Becky + Paul
 - updated on days work and XRF results for SDU-07, 08 + 09 and SDU 01 thru 04.
 - Becky coming tomorrow @ 8-830

Location Bossburg Date 4/22/15Project / Client Bossburg Beach RefinedSediment / TAI

Core sample locations

SDU-01 COR1 = XRF-07

COR2 = XRF-09

COR3 = XRF-08

SDU-03

COR1 = XRF-01

COR2 = XRF-02

COR3 = XRF-04

1643 - departed Bossburg

1700 - returned ^{from} Bossburg.

Debrief

- Fit for duty - anyone not feeling up to task to let me know.
- CR - no work without CR
- monitor unless directed by EPA.
- shared positive safety observation with team about using dolly to move heavy coolers
- Safety audit tomorrow. Be yourself and work has you have been.
- Triple track logs - will collect these on Friday with Columbia Navigation. - End of Meeting

Location BOSSBURG Date 4/22/15
 Project / Client BOSSBURG REFINED SEDIMENT
+ SOIL STUDY / TH1

- team departed field office @ 1736 after collecting rinseate samples + decon.
- For Thursday - TEAM A will have Ken Yang to replace Demetrio. Team B will have Dean Rinney, Michelle will lead team as Eric will participate in safety audit.
- Touched base with Josh Weatherman about needing their assistance on Friday with the track logs will confirm with Eric Weatherman.
- departed field office @ 1741.

Michelle

Location BOSSBURG Date 4/23/15 45
 Project / Client BOSSBURG REFINED SEDIMENT
+ SOIL STUDY

- 0648 - at Field office
- Sally Miller Bill Tadlock and Dean Rinney onsite for HCCM
 - 0700 - conducted tailgate meeting
 - Bill Tadlock discussed life of fire.
 - Started audit at lab
 - look at shielding sieve shaker.
 - label XRF standards
 - Make fire extinguisher more accessible
 - use buddy system when mixing dilute HNO_3 solution
 - corrosive sign on flammable cabinet.
 - label waste water containing dilute HNO_3
 - 0826 left field office for Bossburg with Bill Tadlock
 - 0848 - at Bossburg
 - visited sample crews
 - got SDU-02 XRF results from Army. Most are above 400 mg/kg high

Location SDU-02Date 4.22.15Project / Client Bossburg / Teck1551 SDU-02 complete. Debnobe and
head back to Bossburg.

1608 Back @ Bossburg.

1635 Leave Bossburg for Weatherman's.

1651 Back @ Weatherman's.

1719 Debrief.

1730 Offsite.

[Signature]
4.22.15

Location SDU-03Date 4.23.15Project / Client Bossburg / TeckObservers: Megan & Mark

0645 @ Weatherman's

0700 Hit tailgate

0710 Leave ~~Bossburg~~ ^{for} Bossburg

0740 @ Bossburg.

Plan today is SDU-03A

0809 @ SDU-03A-29

GPS

423091.78

5401096.58

* Collect slightly less volume than
previous locations. Mark Endo
suggests resampling to gain more
volume. I explain that the QAPP
only requires collecting the
minimum mass, not equal
volumes through out. Talk w/ Mark
& Matt. Plan is to continue per
what I described in the QAPP,
but discussion continues like
w/ Mark Vetter & ultimately
Teck.

0843 Back (Teck) onsite.

Location SDU-03 Date 4.23.15Project / Client Bossbury / Tech

0849 @ SDU-03A-06

GPS

423 083.50

5401 091.50

0855 @ SDU-03A-23

GPS

423 078.13

5401 090.09

0904 @ SDU-03A-25

GPS

423 070.74

5401 093.51

0905 Vetter, Sally, Bill, Eric, onsite

0915 @ SDU-03A-26

GPS

423 067.38

5401 085.68

0926 @ SDU-03A-01

GPS

423 075.49

5401 085.68

Location SDU-03 Date 4.23.15Project / Client Bossbury / Tech

0910 @ SDU-03A-02

GPS

423 046.11

5401 075.29

@ SDU-03A-30

423 036.86

5401 056.28

1015 EPA (Mark) and Mark (CH2) talked w/ their lab and requested that we use whatever men necessary to collect the same volume @ each location. Discuss w/ Mark Vetter + Becky present, Mark Vetter will communicate w/ Paul.

1025 Vetter talks w/ Paul. Plan is to follow EPA's recommend

Location SDU-03 Date 4.23.15Project / Client Bossburg / Tech

1036 @SDU-03A-13
 423025.31
 5401056.60

1040 Talk w/ Matt (EPA), Vetter
 Matt indicates that it is
 reasonable to use core if it is
 driven to 6" then go back
 and use a funnel to scrape
 sidewall of borehole along
 total depth to fill remaining
 volume.

1053 @SDU-03A-15
GPS
 423025.66
 5401050.23

1105 @SDU-03A-20
GPS
 423001.19
 5401035.84

Location SDU-03 Date 4.23.15Project / Client Bossburg / Tech

1115 @SDU-03A-27
GPS
 423001.94
 5401028.31

1131 @SDU-03A-28
GPS
 423990.07
 540123.09

1145 @SDU-03A-19
GPS
 423984.98
 5401015.01

1155 @SDU-03A-04
GPS
 423977.57
 5401017.64

1206 @SDU-03A-11
GPS
 423960.73
 5401013.46

Location SDU-03Date 4.23.15Project / Client Bassburg / Teck

1215 Take lunch.

1325 @SDU-03A-08
GPS

423 965.41

5400 004.46

1340 @SDU-03A-05
GPS

423 953.98

5400 993.73

1357 @SDU-03A-10
GPS

423 948.57

5400 993.52

1412 @SDU-03A-12
GPS

423 925.42

5400 985.24

Location SDU-03Date 4.23.15Project / Client Bassburg / Teck1420 @SDU-03A-12
GPS

423 988.70

5400 982.31

1437 @SDU-03A-09
GPS

423 930.98

5400 977.63

1445 @SDU-03A-22
GPS

423 927.40

5400 971.82

1513 @SDU-03A-16
GPS

423 911.29

5400 957.94

1528 @SDU-03A-18
GPS

423 902.55

5400 957.13

1540 Mark Endo suggests that we
revisit northern locations to
collect additional volumes @ SDU-03A
29, 06, 23, 26, 01. Talk
w/ Vetter, he OKs this.

1554 @ ~~03-29P~~ 03A-29

1559 @ 03A-06

1605 @ 03A-07

1612 @ 03A-23

1615 @ 03A-26

1628 @ SDU-03A-21

GPS

423 889.96

5400 951.47

1636 @ SDU-03A-14

GPS

423 886.40

5400 944.45

~~@ SDU-03A-07~~

~~GPS~~

~~423~~

~~5400~~

1650 Finish up O3A-14. Send
Ollie & Wally to demobe. Will
help Team B collect
03A-07.


1704 Start demobe from
Bussburg.

1720 Leave Bussburg.

1745 Back @ Weathermans

1820 Debrief.

1827 Offsite


4.23.2015

Kettle Falls

4/23/15

Bassberg
D Lewis

40-600 - morning clouds

Crew: Dave Lewis, Michelle Stegner,
Dean Kinney.Preservers: Susan Ellis (CCT),
Mark Endo (Chr Hill) Matt Wilkinson
(EPA) John Edwards (NPS)
Megan Lyons (NPS)

Activity: TCS Sampling SDU-03B

0645 arrive Kettle Falls

0700 safety meeting

0730 Leave for Bassberg.

0815 at SDU-03B

0845 Becky from TECK on site

0905 H+S team on site; Mark Wetzel

Eric Lillywhite, Bill Tadlock (acrom)

Sally Miller (acrom)

1055 Water break

1135 back on site

1220 Lunch

1305 back on site, Eric Lillywhite,

Sally Miller, Bill Tadlock, Mark
Wetzel leave site

4/23/15

Dave
Lewis

Kettle Falls

4/23/15

Bassberg
D Lewis

SDU-03B

02 -20	TIME	UTM 11N (meters)	
		Easting	Northing
-20	0819	423085.85	5401098.53
-25	0837	423084.30	5401089.63
-18	0852	423049.96	5401077.13
-06	0908	423044.94	5401075.95
-12	0919	423040.98	5401066.37
-13	0929	423036.72	5401059.30
-11	0939	423033.14	5401055.80
-04	0949	423028.19	5401060.50
-09	0959	423022.73	5401051.03
-03	1013	423021.41	5401046.16
-22	1020	423017.70	5401038.79
-05	1033	423010.07	5401036.69
-24	1046	422 422993.20	5401021.38
-02	10 1136	422986.68	5401023.92
-01	1146	422980.83	5401019.30
-29	1155	422976.04	5401012.38
-15	1220	422963.54	5401012.84
-23	1208	422960.66	5401006.11
-27	1323	422967.08	5401001.65

Dave Lewis

4/23/15

SDU-03B (cont)		UTM 11N (meters)	
LOC	TIME	EASTING	NORTHING
-30	1334	422948.63	5401999.49
-14	1344	422934.25	5401982.52
-19	1354	422939.29	5401979.13
-26	1403	422926.23	5401982.51
-16	1412	422921.44	5401979.50
-08	1422	422920.20	5401964.50
-21	1437	422904.96	5401959.69
-28	1450	422898.57	5401958.00
-17	1459	422895.73	5401952.35
-07	1515	422892.86	5401942.88
-10	1521	422892.02	5401942.44
-10	1521	422875.01	5401940.13

SDU-03A		UTM 11N (meters)	
LOC	TIME	EASTING	NORTHING
-03	1635	422893.02	5401944.20
-24	1646	422876.62	5401942.44
-24	1646	422876.62	5401940.08
-07	1654	422881.52	5400934.55

1530 Take break to recharge computer
 1600 back on site, start on SDU-03A
 to help Team A
 Trouble starting up computer
 again after recharge break.
 1635 Computer rebooted.
 1700 Finished w/ SDU-03A
 Got 4 TMs for ferry landings cover
 F-01-COR-03 EASTING: 422846.07
 NORTHING: 5400915.01
 F-01-COR-01 EASTING: 422826.13
 NORTHING: 5400896.71
 F-01-COR-02 EASTING: 422844.83
 NORTHING: 5400934.17

1715 Left site

1745 Back at stop

4/23/15

Location Kettle Falls, WA Date 4/22/15Project / Client Teck, Bossburg
XRF analysis of Lead (ppm) continued

#49	SDU-02 XRF-05 (continued)	Run 4	570	precision
#50	"	Run 5	582	
#51	"	Run 6	621	
#52	"	Run 7	560	RSD=4.4%
#53	Blank SiO ₂		<1.0	
#54	NIST 2780 TV=5770	5045	87.4%R	
#55	Energy calibration check - passed			
#56	avg 4/22/15 shut off analyzer 718			

avg
4/22/15

Location Kettle Falls, WA Date 4/23/15 41Project / Client Teck, Bossburg
Daily Log

0630	Ken + Amy get 8 bags of material at Walmart.
0645	Arrive at C.N. in Kettle Falls
0700	Daily Tailgate meeting
0725	Teams A+B depart site including Ken
0730	Amy checks increments for SDU-02-1CS-B
0740	Sally Miller + Bill Tallock conduct safety audit of lab area. They recommended labeling the XRF standards due to elevated lead + other metals. Flammable cabinet should be relabelled as corrosive due to nitric acid contents. Remove clutter from around fire extinguisher. All recommendations implemented + also labelled nitric acid waste bucket.
0820	resumed checking increments All 30 present, no reserve locations used for SDU-02B.
0904	Amy composited 30 increments to create SDU-02-1CS-B
1005	Amy checks increments for SDU-02-1CS-C.

Location Kettle Falls, WA Date 4/23/15Project / Client Teck, BossburgDaily Log continued

- 1013 3 reserve locations - SDU-02C-R01, R02, R04 used in place of SDU-02C-06, -03, -24.
- 1050 Amy composited 30 increments to make SDU-02-1CS-C.
- 1145 Pack cooler for:
SDU-02-1CS-B
SDU-02-1CS-C
- 1250 Prepare daily draft XRF report for Paul
- 1305 Becky from Teck arrives to C.N. Amy shows Becky safety improvements made after safety audit
- 1335 Sally, Bill, + Erik Lillywhite arrive at C.N. - Departed ~1400
- 1420 Amy departs C.N. to take cooler to Fed. Ex
- 1450 Amy returns to C.N. Kettle Falls
- 1507 ALD collects rinseate blank of disposable Scoop used to fill partially full core barrels - sample ID is:
Sterileware Scoop-202-20150423
- 1515 Mark arrives back to C.N.
- 1520 Amy works on change order for

Location Kettle Falls, WA Date 4/23/15 43Project / Client Teck, BossburgDaily Log continued

- (Contd) XRF analysis in-situ at F-7
- 1705 Amy wrote change request for oven.
- 1745 Teams A+B arrived to C.N.
- 1800 Rinseate Blank on core sampler by DK/DL
SDA-03B-ER-A-20150423
- 1610 De brief
- 1630 Report site

AND
4/23/15

Location BOSSBURG Date 4/22/15
 Project / Client BOSSBURG REFINED SEDIMENT
+ SOIL STUDY / TH1

- team departed field office @ 1736 after collecting rinseate samples + decon.
- For Thursday - TEAM A will have Ken Yang to replace Demetrio. Team B will have Dean Rinney, Michelle will lead team as Eric will participate in safety audit.
- Touched base with Josh Weatherman about needing their assistance on Friday with the track logs will confirm with Eric Weatherman.
- departed field office @ 1741.

Michelle

Location BOSSBURG Date 4/23/15 45
 Project / Client BOSSBURG REFINED SEDIMENT
+ SOIL STUDY

- 0648 - at Field office
- Sally Miller Bill Tadlock and Dean Rinney onsite for HCCM
 - 0700 - conducted tailgate meeting
 - Bill Tadlock discussed life of fire.
 - Started audit at lab
 - look at shielding sieve shaker.
 - label XRF standards
 - Make fire extinguisher more accessible
 - use buddy system when mixing dilute HNO_3 solution
 - corrosive sign on flammable cabinet.
 - label waste water containing dilute HNO_3
 - 0826 left field office for Bossburg with Bill Tadlock
 - 0848 - at Bossburg
 - visited sample crews
 - got SDU-02 XRF results from Army. Most are above 400 mg/kg high

Location BOSSAUR Date 4/23/15
 Project / Client BOSSAUR-REFINED SEDIMENT & SOIL STUDY / ITHI

is over 600 mg/kg. Shared these results with EPA (Matt) + Chris Hill (Mark)

- Sally Miller + Bill Tadlock observing SDU-03 sampling.

SDU-02-XRF-05 COR1

SDU-02-XRF-06 COR2

SDU-02-XRF-04 COR3

- Conversation with EPA

- Mark Ende in discussion

with Mark Shifteman + Matt Wilkening. They want full recovery at each ICS locations. If we do not get a full core we need to try again. Maximum ~~attempts~~ @ number of attempts at each ICS location will be 15 because they try three times at the primary and three times at each cardinal step out. If no recovery then we go to reserve.

- Called Paul - he agrees with the full core barrel need.

- called Paul back to discuss;

Location BOSSAUR Date 4/23/15
 Project / Client BOSSAUR-REFINED SEDIMENT AND SOIL STUDY / ITHI

- after further discuss teams will drive sample device to 6" and remove material for lab from 6" to surface using a shovel.

- visited UDU-05

visited SDU-04

- complete reviews of SDU-04 + UDU-05
 4 is probably ok but has lots of cobbles on slopes.

1237 → Teams broke for lunch

~~TEAM~~ Team B completed 18 of 30

Team A completed 20 of 30

Safety Audit debrief

- do not probe cores wearing nitrile gloves due to sharp edges

- consider rotating team tasks

- don't walk with hands in pocket.

- at UDU-05 if Tablet carried on hill secure via lanyard.

- choose right people for task.

- daily tailgate safety meeting
 email to Bill.Tadlock@aecon.com

1310 - teams returned to field

Location BOSSBURG Date 4/23/15
 Project / Client BOSSBURG BEACH REFINED
SEDIMENT + SOIL SAMPLING

- 1320 - Sally, Bill and Eric left
 - accompanied EPA to choose
 F-1 core sample locations.
 Chose 3 location near center of
 Ferry landing.
- Per Matt Wilkenny still no Ferry access
 - 1425 called Paul to Update
 - 1455 departed Bossburg for field office
 - 1513 at Bossburg @ field office
 - 1600 conference call with Paul Kris and Bechy.
 - discussed the days work Friday work and Saturday work.
 - Friday Team B - SDU 3C
 - Team A SDU-05
 - Mark U to collected trash logs.
- 1633 - called ended.
 debriefed Army on safety audit
- 1745 - teams returned
- 1807 - Debrief
- 1823 - left field office

Location BOSSBURG Date 4/24/15
 Project / Client BOSSBURG REFINED SEDIMENT
AND SOIL SAMPLING

- 0615 - Met Michelle Stegner to review Geo XT procedures.
- 0645 - left for field office
- 0701 - at Kettle Falls field conducted tailgate meeting.
- STF, sharp object, line of fire when sampling were major items covered
- Teams loaded gear
 TEAM A - SDU-05 (301CS & XRF)
 TEAM B - SDU-03C + cores as itur time permits.
 - Field supervisor to go with Weathermans to field in boat.
 - departed field office at 0745.
 - 0819 left Kettle Falls Marina for SDU-05.
 - 0845 dropped gear at SDU-05
 - went to SDU-07 to map shore line

Mark U

Location SDU-05 Date 4.24.15Project / Client Bosbury / TechObservers: Mark / Bill / Susan

0645 @ Weatherman's
 0700 H+S
 0735 Leave from Matthew's bench
 camp ground
 * Mark indicates that he
 has to drive Susan back to
 Colville to get her muck
 boots. Will wait @ Evans further.

0753 @ Evans Camp ground. Wait
 for Susan + Mark

0815 Mark + Susan onsite

0819 Walk out to SDU-05.

0856 @ SDU-05-22

GPS

424 414.23

5394 867.40

0907 @ SDU-05-04

GPS

424 423.77

5394 887.56.

Location SDU-05 Date 4.24.15Project / Client Bosbury / Tech

0918 @ SDU-05-~~26~~ 26

GPS

424 411.21

5394 892.31

0930 @ SDU-05-XRF-08

GPS

424 356.50

5394 941.59

0944 @ SDU-05-02

GPS

424 399.92

5394 020.87

0954 @ SDU-05-20

GPS

424 376.13

5394 031.86

@ SDU-05-30

~~MP GPS~~

~~424~~

~~5394~~

* Under water,
 will use ROI.

Location SDU-05 Date 4.24.15Project / Client Bassburg / Tecla

1017 @ SDU-05-R02. This will
replace SDU-05-30 which was
under water.

GPS
424 312.83
5394 131.71

1035 @ SDU-05 - XRF-01

GPS
424 294.00
5394 316.59

1048 @ SDU-05-16

GPS
424 308.62
5394 258.43

1057 @ SDU-05-05

GPS
424 366.56
5394 269.89

Location SDU-05 Date 4.24.15Project / Client Bassburg / Tecla

1115 @ SDU-05-27

GPS

424 469.89

@ ~~SDU-05-25~~ 5394 323.24

~~GPS~~

1130 @ SDU-05-25

GPS

424 443.81

5394 267.28

* Talk w/ Mark Endo, plan is to
move XRF-07 to XRF-R03.

1143 @ SDU-05-03

GPS

424 464.46

5394 247.37

1153 @ SDU-05 - XRF-R03

GPS

424 481.50

5394 191.59

* Replaces XRF-07 (under H₂O)

Location Bossburg SDU-05 Date 4.24.15
 Project / Client Bossburg / Teck

1200 Take lunch.

1244 @ SDU-05-10
GPS
 424 335.37
 5394 243.98

1255 @ SDU-05-17
GPS
 424 339.87
 5394 210.75

1305 @ SDU-05-XRF-03
GPS
 424 356.50
 5394 191.59

1320 @ SDU-05-06
GPS
 424 405.11
 5394 202.61

Location SDU-05 Date 4.24.15
 Project / Client Bossburg / Teck

1329 @ SDU-05-12
GPS
 424 386.75
 5394 194.70

1337 @ SDU-05-23
GPS
 424 408.71
 5394 150.88

@ SDU-05-01
GPS
 424 472.25
 5394 156.32

* 1400 Talk w/ Mark Ero.
 Agree that wind/dust is a bit
 over whelming. Call Mark Vetter.
 Tell him we are going to pull
 off the SDU and head up
 to Bossburg to start core
 samples
 1435 Drive Bossburg

Location Boschung UDU-03 Date 4.24.15Project / Client BoschungWill complete UDU-03 core
samplesUDU-03

XRF-01 → Core 002

XRF-04 → Core 003

XRF-07 → Core 001

UDU-04

XRF-01 → Core 001

XRF-02 → Core 002

XRF-05 → Core 003

~~@ UDU-03~~~~@ UDU-COR-0000~~

1515 @ UDU-03 - COR-03

GPS

422879.01

5400765.18

1600 @ UDU-03 - COR-02

GPS

422879.01 / 5400765.18

Location UDU-03 Date 4.24.15

Project / Client _____

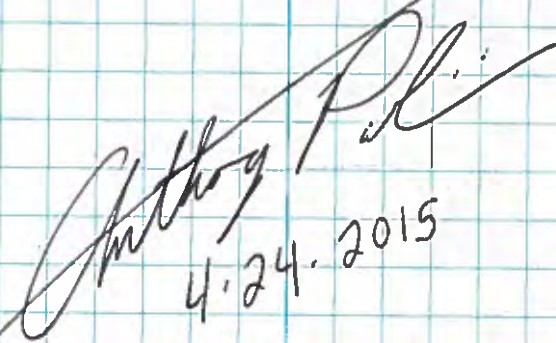
1640 Finish processing UDU-03 -
COR-02. Begin debrue

1700 Leave Boschung

1723 @ Westheimer

1750 Debrue f.

1801 offsite.



Anthony P. L.
4.24.2015

Location Kettle Falls Date 4/24/15Project / Client Basberg

Drew's Weather: 45° cloudy (morning)

Crew: Dave Lewis, Michelle Stegner

Dean Kinney

observers: Jon Edwards (NPS) Mat
Wilkinson (EPA)

Task: ICS samples

0645 Kettle Falls, safety
meeting.

0745 at Basberg

0815 Setting up on SDU-03C

0955 Water/recharge battery break

1015 Back on site

1220 Lunch

1300 Back on site

1400 Mark Vetter on site

1435 Finished ~~at~~ SDU-03C moved

into Core sampling, after break

1700 Left site

1725 at shop.

~~4/24/15~~Location Kettle Falls Date 4/24/15Project / Client Basberg

Drew's

SDU-03C UTM 11N (meters)

LOC	TIME	EASTING	NORTHING
-20	0816	423078.02	5401099.88
-10	0826	423087.50	5401096.01
-22	0832	423079.92	5401093.27
-25	0840	423070.91	5401086.40
-17	0847	423063.68	5401084.21
-07	0854	423067.91	5401079.03
-28	0903	423055.82	5401077.22
-20 -13	0914	423050.22	5401075.11
-09	0921	423050.35	5401069.59
(COLLECTED 2 METERS SOUTH OF LOCATION)			
-04	0938	423036.74	5401066.10
-29	1026	423031.01	5401063.65
-01	1033	423036.25	5401060.70
-16	1042	423023.40	5401056.86
-15	1049	423010.72	5401042.76
-06	1110	423019.90	5401042.04
-08	1100	423008.30	5401036.05
-02	1120	② 423009.55	5401024.92

~~4/24/15~~

Location Kettle Falls Date 4/24/15
 Project / Client Bursberg
Drews

SDU-03C (cont)		UTM 11N (metric)	
LOC	TIME	EASTING	NORTHING
-03	1129	42297722	5401015.58
-23	1141	422978.65	5401010.81
-30	1150	422962.42	5401012.21
-14	1159	422954.64	5401009.86
-19	1318	422957.60	5401001.91
-11	1325	422949.80	5401997.88
-26	1333	422935.27	5401985.60
-12	1339	422924.52	5401976.80
-24	1350	422917.15	5401964.56
-21	1357	422906.53	5401959.68
-18	1405	422899.61	5401958.32
-05	1417	422885.36	5401945.57
-27	1429	422887.11	5400939.37

~~4/24/15~~

~~JD~~

Location Kettle Falls Date 4/24/15
 Project / Client Bursberg
Drews

Core samples UTM 11N (metric)

XRF-R01 Core 01
 XRF-O2 Core 02
 XRF-O5 Core 03

UDU-04

COR-01-001 } split associated with XRF-R01

COR-01-001 }

COR-01-002

COR-01-003 refusal at 14.5"

TIME: 1634 EASTING: 422859.37

NORTHING: 5400871.96

~~4/24/15~~

~~JD~~

Location Kettle Falls, WA Date 4/24/15Project / Client Teck, Bossburg
Daily log

- 0645 Team members begin arriving at C.N. in Kettle Falls
- 0700 Daily tail gate
- 0740 Teams A+B depart for sampling
- 0745 Mark V. departs
- 0750 Amy checks increments for SDU-03-1CS-A - no reserves used, 30 increments checked
- 0828 ALD composites 30 increments to make SDU-03-1CS-A
- 0847 Amy checks increments for ^{discarded} ^{very large rocks} > 1 inch
SDU-03-1CS-B - 30 increments
no reserve locations used
- 0919 ALD composites 30 increments to make SDU-03-1CS-B
Lots of rocks in increments - discarded very large rocks > 1 inch.
- 0930 Amy packs 1 cooler with samples: SDU-03-1CS-A
+ SDU-03-1CS-B
- 1003 Amy calls Christine to discuss various items related to shipping samples to the lab. Christine

Kettle Falls, WA Date 4/24/15 45Project / Client Teck, Bossburg
Daily Log continued

- (cont'd) and Amy decide to hold on to rinsate blanks collected 4/22-23/15 until more samples are available for a second cooler because the holding time is 28 days for Hg.
- 1100 FedEx delivers package from Seattle office containing extra log books, map printouts, + candy bars for the team
- 1115 Amy researched shipping samples as temperature sensitive "perishable" per Dave Enos' suggestion. A "Temp Assure" option is available where US shipments are sent ground in a refrigerated truck but this is not what Dave indicated. He indicated that FedEx could put coolers on refrigeration if delayed but Amy nor Christine could determine a way to do this after speaking to FedEx. FedEx indicated they don't have refrigeration available in Memphis.
- 1130 Amy reviews change request for over.
- 1136 Amy conducts inventory of supplies.

Location Kettle Falls, WA Date 4/24/15

Project / Client Teck, Bossburg
Daily Log continued

- (cont'd) 9 large coolers } should be OK
15 medium coolers }
- ~70 aluminum trays - OK
- 167 1L bottles - need 1 more box: #12
- 500 1qt baggies - OK
- 200 1-gallon baggies - OK
- 16 buckets - OK
- 1221 Paul calls Amy to get file path for ArcPad figures.
- 1236 Amy attempts to check coordinates for the Change Request to move UDU-01-XRF-04, -05, -06.
- 1305 Mark V. arrives at C.N. Confirms actual coordinates for above XRF samples using daily log book.
- 1325 Mark departs C.N. after discussing with Amy using FedEx Priority Overnight instead of Standard Overnight from now on for shipping samples.
- 1340 Amy finishes inventory
14 ICS remaining = 420 increments
52 XRF remaining (9 DUS) 9 to lab

Location Kettle Falls, WA Date 4/24/15

Project / Client Teck, Bossburg
Daily Log continued

- (cont'd) 15 DUS need cores
= 135 + 36 1L bottles
= 171 1L bottles
- 12 8oz jars - OK
- 2 16oz jars - need 12 more
- 84 500mL w/nitric - OK
- 1417 ordered 12 more 1L bottles + 12 more 16oz jars from lab via Christine
- 1422 Amy Depart to FedEx
- 1521 Amy returns to C.N.
- 1525 Amy sets up decon station
- 1541 Amy sweeps box truck
- 1600 Amy works on other client work
- 1720 Teams A+B arrive to C.N.
- 1740 Rinsette blank core sampler by PL/DK - SPU-03C-ER-A-20150424
- 1745 Rinsette blank hand auger bucket by PL/DK - UDU-04-ER-C-20150424
- 1750 Debrief
- 1800 Depart site

asj 4/24/15

Location BOSSBURG Date 4/23/15
 Project / Client BOSSBURG BEACH REFINED
SEDIMENT + SOIL SAMPLING

- 1320 - Sally, Bill and Eric left
 - accompanied EPA to choose
 F-1 core sample locations.
 Chose 3 location near center of
 Ferry landing.
- Per Matt Wilkenny still no Ferry access
 - 1425 called Paul to Update
 - 1455 departed Bossburg for field office
 - 1513 at Bossburg @ field office
 - 1600 conference call with Paul Kris and Becky
 - discussed the days work Friday work and Saturday work.
 - Friday Team B - SDU 3C
 - Team A SDU-05
 - Mark U to collected trash logs.
- 1633 - called ended.
 debriefed Army on safety audit
- 1745 - teams returned
- 1807 - Debrief
- 1823 - left field office

Location BOSSBURG Date 4/24/15
 Project / Client BOSSBURG REFINED SEDIMENT
AND SOIL SAMPLING

- 0615 - Met Michelle Stegner to review Geo XT procedures.
- 0645 - left for field office
- 0701 - at Kettle Falls field conducted tailgate meeting.
- STF, sharp object, line of fire when sampling were major items covered
- Teams loaded gear
 TEAM A - SDU-05 (301CS & XRF)
 TEAM B - SDU-03C + cores as itur time permits.
 - Field supervisor to go with Weathermans to field in boat.
 - departed field office at 0745.
 - 0819 left Kettle Falls Marina for SDU-05.
 - 0845 dropped gear at SDU-05
 - went to SDU-07 to map shore line

Mark U

Location BOSSBURG Date 4/24/15
 Project / Client BOSSBURG REFINED SEDIMENT
+ SOIL STUDY / TAI

- 0853 at SDU7 on Pier side will walk shore from here to South; up west side of bay + down east side.
- 0951 completed SDU-07 track area between lines is under water. Shore very muddy + slick at water line. Accuracy 1/5m
- went to SDU-04
- Lake level is 1251 @ ~~low~~ Center dam.
- 1003 at SDU04 - track water line from starboard side of boat.
- shore to east of line
- 1015 SDU-04 complete, note I walked shoreline ~~at~~ instead of boating it.
- 1030 - walked shoreline @ SDU-05
- 1122 complete
- walk a circle around the entire DU - available sediment within circle, even though numerous rocks, pockets of sediment exist.
- met a gentleman named George Bishop, CCT, archeologist. He asked

Location BOSSBURG Date 4/24/15
 Project / Client BOSSBURG REFINED SEDIMENT
+ SOIL STUDY / TAI

- what I was doing. Introduced myself and informed him I was re mapping our sediment collection area that was previously cleared by CCT + NPS. Asked if we had observers. I answered yes Susan Ellis CCT + Bill White + Jan Edwards NPS. He asked if I was collecting samples and I informed him not today.
- delivered trouble to Michelle
 - headed to SDU-05 @ 1139.
 - 1152 @ SDU-05
 - Team A doing good will send Team B to SDU-05 when done.
 - 1251 - back at Kettle Falls Marina
 - 1350 - at Bossburg
 - 1354 - call from Tony - high winds creating dust will come to Bossburg to core.
 - 1432 - Team B completed SDU-3C
 - 1515 + Team A arrived at Bossburg
 - 1515 - Started collecting cores @ UDU-03 at samples 03XRF-09, 01 + 04. TEAM AB.

Location BOSSBURG Date 4/24/15Project / Client BOSSBURG REFINED SEDIMENT
+ SOIL STUDY / IAI.

- Team A instructed Team B on the
core collection process

Team B on UDU-04 XRF sample
locations 04-XRF-RO1, 02, 05.

1543 - sprinkles of rain.

1600 - CC with Paul, Kris? Becky

- Paul asked me to update his
schedule for completed + in
progress DUs

1631 - call ended.

TEAM A wrapped up for day.

- informed by Team B that UDU-04 RO1
could only reach 14.5" in depth. Five
attempts were made. so depth sample
was collected from 12-14.5"

- Mark Endo (Chr2 Mill) asked us
to be careful during coring to
avoid sloughing upper side wall
material into boring.

1650 - Team B completed UDU-RO4-RO1
and returned to vehicles

- Teams returned to Kettle Falls field
office to decon and collect
rinseate blanks from a core

Location BOSSBURG Date 4/24/15 53Project / Client BOSSBURG REFINED SEDIMENT
+ SOIL STUDY

barrel and hand auger.

714 at Kettle Falls field office

Debrief

- Core IDW to be bagged for
CR review

- Fitness for duty - how is every
one doing

- Coring straight in and out

- Dust at SDU-05

- EPA Monitors to discuss issues
with team leads when

convenient - when data logging
complete.

- goggles would be good.

Mark Endo

Location BDU-05Date 4.25.15Project / Client Bosburg / Teck

0645 Onsite
 0700 H+S meeting.
 0745 @ Evans Campground

0815 @ SDU-05-XRF-09
GPS
 424 606.50
 5394 941.59

0820 @ SDU-05-29
GPS
 424 541.09
 5394 951.78

0838 @ SDU-05-28
GPS
 424 563.40
 5394 993.91

0850 @ SDU-05-11
 424 501.84
 5394 031.62

Location SDU-05Date 4.25.15Project / Client Bosburg / Teck

0900 @ SDU-05-21
GPS
 424 485.02
 5394 041.34

0907 @ SDU-05-13
GPS
 424 449.74
 5394 051.43

0930 @ SDU-05-14
GPS
 424 *Will log
 5394 back @ 2m.
 *Tire tracks for
 nothing, or pit,
 No bio

✓ 0937 @ SDU-05-09
GPS
 424
 5394

*No mth in, no bio
 on elev pit

X 0521 Driving hard enough that tablet
 will stay in place. log. Will take pictures w/
 iPhone and load w/ tablet later.
 Sequence will be: SIMONS log, clear location
 w/ke for field

Location SDU-05 Date 4.25.15Project / Client Bossburg / Tech

0944 ✓ @ SDU-05-1206

* Replaces SDU-05-18

x no anthrac, no bio, no veg,
ele. flat.

1000 ✓ @ SDU-05-XRF-05

no anthrac, no bio, some small
brush, ele. flat.

1012 ✓ @ SDU-05-XRF-06

no anthrac, ~~no bio~~^{no} camp spmn,
some small grass like plants
elev. flat.

1030 ✓ @ SDU-05-XRF-04

no anthrac, camp spmn, no veg,
east slope of ele. flat.

1041 @ SDU-05-R03

Atv tracks, some grass, no bio,
on ele flat

* Replaces SDU-05-24.

Location SDU-05 Date 4.25.15Project / Client Bossburg / Tech

1100 ✓ @ SDU-05-19

no anthrac, some tracks in
depression east of cobbly
bank.

Resume tablet data collection.

1125 @ SDU-05-XRF-02

GPS

424 544.00

5398 316.59

1155 @ SDU-05-R04

* Replaces SDU-05-15

Located in cobbles, walk back to
can for slide hammer.

1215 Back @ R04

Collect 2 meters W of original
location.60% Recovery, use scoop to
collect remainder.GPS

424 699.09

5395 181.35

1229 @ SDU-05-005
 * Replaces SDU-08 (under H=0)
 GPS
 424 717.12
 5395 166.72

1243 @ SDU-05-07
 GPS
 424 749.81
 5395 036.86
 * had to use scoop, cobbles +
 boulders.

1310 Leave Fumes for Bassburg

1330 @ Bassburg: Take lunch.

1401 Move to SDU-03 for cores.

1413 @ SDU-03-COR-03

1427 Successfully collect 6", 12", 18"
 volume.

* RELABEL AS COR-01
 XRF-01

1435 @ COR-03
 XRF-04
 1442 001
 1445 002
 1446 003

1450 Back e van Wint for
 Sum to log samples

1505 Offsite.

1525 @ Westman's. Start logging
 samples from earlier, + decur.

1745 @ offsite

4.25.15

Location Kettle Falls Date 4/25/15Project / Client Bassberg
Drews Weather: 50° cloudy/rainCrew: Dave Lewis, Mark Vetter,
Dean Kinney.Observers: Jon Edwards (NPS), Matt
Wilbering (EPA)Task: Coring samples0645 Kettle Falls0700 Safety meeting0810 Setting up on coring samples
at UDU-041040 Finished UDU-04-03, ⁽²⁾ four fine
attempts around to get sample,
refusal at 17"Break, raining1120 Start on UDU-03-COR-03 core samples1150 Finished UDU-031210 Start at ferry landing core samples1330 Finish Ferry landing1410 going down to SDU-031415 start SDU-03 core samples1455 done w/SDU-031505 Left site1535 Back at stop, processing samples,
decontam, collect more black

4/25/15

PR

Location Kettle Falls Date 4/25/15 41Project / Client Bassberg
Drews

UDU-04	associated w/ XRF-02
COR-02-001	10YR 4/2, fine silt, lot of organic material. Time: 0826
COR-02-002	split sample 10YR 4/2 fine, silt, ^{little} fine-coarse sand, ^{little} fine-coarse gravel, ^(LITTLE) some organic material. Time: 0850
COR-02-003	Time: 0930 10YR 3/2, fine-coarse sand, little fine-coarse gravel, trace silt
COR-03-001	associated w/ XRF-05 Time: 0908 1013 10YR 4/1, silt, little fine sand, little organics
COR-03-002	Time: 1018 10YR 4/1, silt, fine to coarse sand
COR-03-003	Time: 1036 @ 17" refusal 10YR 4/2, sandy silt, fine to coarse gravel

UDU-03⁽²⁾COR-03-001⁽²⁾
01

Associated w/ XRF-07

Time: 1124

10YR 3/1, silt, fine
sand, trace coarse
gravelCOR-03-002⁽²⁾

DUPLICATE

Time: 1132

10YR 3/1, sandy silt,
some fine sand,
trace coarse gravel

COR-01-003

Time: 1138

10YR 4/4, fine silty
sandFerry Landing

F-1-COR-01-001 Time: 1216

10YR 4/4, fine silty
sand.

F-1-COR-01-002 Time: 1221

2.5Y 5/3, fine silty
sand

F-1-COR-01-003 Time: 1227

2.5Y 5/3, fine
sandy silt.Ferry Landing (cont)

F-1-COR-02-001

Time: 1241

10YR 4/2, fine silty-
coarse sand.

F-1-COR-02-002

Time: 1246

Split sample

10YR 5/2, fine
silty sand

F-1-COR-02-003

Time:

10YR 4/2, fine-coarse
silty sandF-1-COR-03-001⁽²⁾
~~001~~
02

Time: 1318

10YR 5/3
fine-coarse silty
sand, little fine gravel

F-1-COR-03-002

Time: 1323

10YR 4/2, fine
silty sand

F-1-COR-03-003

Time: 1327

10YR 4/2, fine
silty sand.

4/25/15

D

Drews

SDU-03

COR-02-001

associated w/ XRF-02

time: 1419

10YR 4/1, fine silty sand,
little fine-medium gravel

COR-02-002

time: 1422

10YR 4/1, fine silty sand,
little fine gravel

COR-02-003

time: 1425

10YR 4/1, fine silty sand,
little fine gravel

COR-02-001

time: 1442

10YR 4/2, fine silty sand, ^{course}
little fine gravel, some organic

COR-03-002

time: 1445

10YR 4/2, fine silty sand,
little organic material

COR-03-003

time: 1446

Split sample 1450 10YR 4/2, fine silty sand

~~4/26/15 Dave Lewis~~

Drews

40-60° cloudy calm

0645 at shop for mat
& safety meeting0710 Taking boat across river
to SDUs 9+10Crew: Dave Lewis, Michelle Stegner,
Dean King

Observers: Bill White (NPS), Nicole Baden (G42)

Task: XRF + ICS samples ^{Swan Ellis}
(CCT)

0915 Start on XRF samples SDU-10

1000 Start on ICS samples SDU-10

243 CCT arrived on site to
investigate possible archaeological
find out by Bill White (NPS)They informed us that SDU-9+10
and ~~beach~~ the beach farther
north are all sensitive sites. ~~They~~
After much discussion we
are demobilizing from the site.

1330 on east side of river again

~~4/27/15 DL~~

Location Kettle Falls, WA Date 4/25/15

Project / Client Teck, Bossburg
Daily Log (cont)

1600 Rinseate blank core sampler by DK
SDU-05-EP-A-20150425

1605 Rinseate blank - hand auger by DK
UDU-04-ER-C-20150425

1610 Rinseate blank - shovel by DWL
UDU-03-EP-D-20150415

DK
4/25/15

Location Kettle Falls, WA Date 4/27/15

Project / Client Teck Bossburg
Daily Log

0630 Ken + Amy get ice at Walmart

0645 Ken + Amy arrive to C.N. in
Kettle Falls

0700 Daily tailgate

0745 Teams A + B depart to sample

0746 Ken + Amy find XRF samples

0753 Ken + Amy prepare XRF samples
for oven at 150°C.

0802 Ken + Amy sort + check aug
increments from SDU-03-ICS-B+C

0817 KY/ALD composite 30 increments
no reserve locations for
SDU-03-ICS-C

0820 Ken + Amy check increments
for SDU-05-ICS

30 increments checked; 5 reserve
locations (SDU-05-R01, R03, R04, R05, R06)
used for SDU-05-08, 15, 18, 24, 30.

0847 KY/ALD composite ³⁹ increments
into 2 buckets for
SDU-05-ICS

The last increment, SDU-05-19, was
put inside clean baggie + placed in
2nd bucket due to its % moisture
content 13 & elevated compared to others

Location BOSSBURG Date 4/25/15
 Project / Client BOSSBURG REFINED
SEDIMENT + SOIL STUDY / TAI

- 0640 at Rettle Falls Field Office
 [Michelle Stegner called at 0545
 to advise she is sick today]
- Collie + Tony gave me crash
 course in Data entry as I
 will fill in for Michelle
- 0705 - conducted tailgate meeting
- 0730 - left Rettle Falls Field office
- 0750 - at Bossburg; light rain mist
- 0943 rain started
- 1042 - steady rain
- Phone call from Joe Wickman
 wants to come when we sample
 SDU-03 on Tuesday 4/28. Said
 TAI agreed to field xRF study
 at SDU-04/10 to find Ferry landing
 F2
- Took break to figure out
 data issues
- completed Ferry Site F1
- Terry's team returned, took lunch
 break and went to SDU-03
 to collect cores.
- Rain started up again.

Location BOSSBURG Date 4/25/15 55
 Project / Client BOSSBURG REFINED SEDIMENT
+ SOIL STUDY / TAI

- will collect last Cores at SDU-03
- 003 and return to shop to
 process samples
- Issue at SDU-03-COR-01 as this
 site was labeled as COR-03. Their
 were 2 COR-00-03. Northern
 most sample is COR-03
- 1452 - wrapped up SDU-03 cores
- Mark Endo requested that
 we ID the core device ~~or~~
 and where it was used.
- 1545 - left Rettle Falls ~~OF~~ @ Falls
 Field office

Mark Endo

Location SDU-09 Date 4-27-2015Project / Client Bossburg / TeckNew observers: Nicole Bradu (CH)Andrea Latier (ERA)

0645 @ Weatherman's. Plan today
is to collect XRFs in SDU-09
& SDU-10.

<u>SDU-09</u>	<u>SDU-10</u>
4 primary	4 primary
3 Reserves	3 reserves

0700 H/S meeting. Also cover
boat safety.

* Return to hospital bank, very
well marked.

0745 Leave for Bossburg.

0807 @ Bossburg.

0840 On beach waiting for boat.

0848 Boat drops Ollie & Michelle on
west side of beach.

0917 @ SDU-09

0937 @ SDU-09-XRF-04 * within 3

GPS
422326.95
540077.00

ft of water.
* Borehole has H₂O @
all depths.

Location SDU-09 Date 4-27-15Project / Client Bossburg / TeckObservers: Andrea & Meghan

0953 @ SDU-09-XRF-03

GPS
422373.00
5400950.08

1010 @ SDU-09-XRF-02

GPS
422419.13
54010127.18

1020 @ SDU-09-XRF-01

GPS
422480.15
5401344.33
083

1037 Move to SDU-10 to
collect ICS locations 10-30

1103 @ SDU-10-24

GPS
422755.97
5400794.05

Location SDU-080 Date 4.27.15Project / Client Bossburg / Teck

1110 @ SDU-10-29

GPS

422 238.05

5400 791.04

1120 @ SDU-10-28 * under water

will use reserve station

SDU-10-R05

1123 @ SDU-10-R05

GPS

422 222.91

5400 761.88

1139 @ SDU-10-26 * Wet

GPS

422 202.81

5400 748.58

1150 @ SDU-10-20

GPS

422 191.33

5400 715.33

1203 Take lunch.

Location SDU-10^{AP} SDU-06 Date 4.27.15Project / Client Bossburg / TeckSDU-10-25 APSDU-01

COR 1 - 7

COR 2 - 7

COR 3 - 8

SDU-02

COR 1 - 8

COR 2 - 6

COR 3 - 4

1415 Leave Bossburg for Evans.

SDU-06A

1455 @ SDU-06A-08

GPS

425 301.43

5393 654.36

1505 @ SDU-06A-17

GPS

425 285.91

5393 728.64

1512 @ SDU-06A-10

GPS

425 308.23

5393 728.40

Location SDU-06 Date 4.27.15Project / Client Bossburg / Teck

1520 @ SDU-06-24
GPS
 425 298.79
 5393 737.84

1529 @ SDU-06-05
GPS
 425 302.20
 5393 747.93

1537 @ SDU-06A-22
GPS
 425 314.91
 5393 749.93

1545 @ SDU-06A-15
GPS
 425 304.13
 5393 763.15

1555 @ SDU-06A-30
GPS
 425 314.38
 5393 791.67

Location SDU-06 Date 4.27.15Project / Client Bossburg / Teck

1602 @ SDU-06A-29
GPS
 425 ~~314.38~~ 302.37
 5393 ~~791.67~~ 816.28

1610 @ SDU-06A-03
GPS
 425 306.90
 5393 826.09

1626 @ SDU-06A-26
GPS
 425 283.24
 5393 830.25

1626 @ SDU-06A-13
GPS
 425 285.11
 5393 850.98

1635 @ SDU-06A-23
GPS
 425 282.19
 5393 883.95

Location SDU-06A Date 4.27.15
 Project / Client Bossburg / Teck

1643 @ SDU-06A-19
 GPS
 425 260.46
 5393 887.42

1650 Begin demutse
 1655 Wait for Susan to check samples
 1705 Offsite.

1725 @ Weatherman's.

1747 Debrief
 Offsite.

Anthony P. [Signature]
 4.27.15

Location SDU-06A Date 4.28.15
 Project / Client Bossburg / Teck
 Observers: Jubina Andraea

0645 @ Weatherman's.
 0700 Hi S meeting.

0717 Leave Kettle Falls.

0737 @ Evans Campground

0804 @ SDU-06-XRF-05 *back slide tomorrow
 GPS @ 0807, replace

425 398.74
 5393 678.89

0830 @ SDU-06-XRF-04
 GPS
 425 306.24
 5393 813.89

@ SDU-06-XRF-03
 GPS *located on west
 425 looks to be on old road
~~5393~~ bed. Refusal, will
 use XRF-1202 in place.

Drews

SDU-03

COR-02-001

associated w/ XRF-02

time: 1419

10YR 4/1, fine silty sand,
little fine-medium gravel

COR-02-002

time: 1422

10YR 4/1, fine silty sand,
little fine gravel

COR-02-003

time: 1425

10YR 4/1, fine silty sand,
little fine gravel

COR-02-001

time: 1442

10YR 4/2, fine silty sand, ^{course}
little fine gravel, some organic

COR-03-002

time: 1445

10YR 4/2, fine silty sand,
little organic material

COR-03-003

time: 1446

Split sample 1450 10YR 4/2, fine silty sand

4/26/15 ~~Dave Drews~~

Drews

40-60° cloudy calm

0645 at shop for mat
& safety meeting0710 Taking boat across river
to SDUs 9+10Crew: Dave Drews, Michelle Stegner,
Dean King

Observers: Bill White (NPS), Nicole Baden (G42)

Task: XRF + ICS samples ^{Susan Ellis}
(CCT)

0915 Start on XRF samples SDU-10

1000 Start on ICS samples SDU-10

243 CCT arrived on site to
investigate possible archaeological
find out by Bill White (NPS)They informed us that SDU-9+10
and ~~beach~~ the beach farther
north are all sensitive sites. ~~They~~
After much discussion we
are departing from the site.

1330 on east side of river again

4/27/15 ~~DZ~~

LOC	Time	UTM 11N (meters)	
		easting	northing
XRF-01	0933	422246.13	5400805.53
XRF-02	0945	422198.11	5400743.73
XRF-03	0955	422150.09	5400681.94
XRF-04	1003	422102.06	5400620.14
-08	10 meters into the water (from shoreline)		
-R01	5 meters into the water (from shoreline)		
-03	1014	422100.04	5400634.55
-05	6 meters out in water (from shoreline)		
-10	1031	422104.99	5400659.23
-01	1041	422121.36	5400672.61
-04	4.5 meters into water (from shoreline)		
-09	3.2 meters into water (from shoreline)		
-12	1105	422165.59	5400702.18
-13	1113	422181.99	5400720.14
-11	1120	422165.70	5400721.00
-14	1139	422208.57	5400755.72
-15	1147	422216.01	5400767.96

4/27/15

DZ

1430 making of SDU-06
1700 Leaving Evans Campground

4/27/15

DZ

Location

Kettle Falls

Date

4/27/15

Project / Client

Barrberg

Drews

SDU-06B

UTM 11N (meters)

LOC	TIME	EASTING	NORTHING
-05	1455	425299.28	5393658.79
-30	1502	425296.40	5393674.08
-27	1510	425291.00	5393687.28
-08	1517	425280.23	5393697.18
-01	1526	425304.61	5393706.63
-03	1533	425303.49	5393734.41
-07	1536	425283.67	5393741.29
-16	1545	425306.09	5393746.43
-14	1553	425307.64	5393819.14
-15	1600	425278.76	5393850.64
-10	1611	425280.99	5393877.56
-11	1634	425247.28	5393905.11
-02	1640	425268.86	5393883.03

~~23 25~~
~~22 02~~

4/27/15
DZ

Location

Kettle Falls

Date

4/28/15

Project / Client

Barrberg

Drews

SDU-06B (cont)

UTM 11N (meters)

LOC	TIME	EASTING	NORTHING
-23	0930	425264.50	5393902.69
-29	0840	425250.88	5393972.81
-18	0847	425248.74	5393997.16
-19	0854	425257.03	5393003.80
-13	0900	425233.43	5393008.60
-28	0911	425232.91	5392036.92
-26	0920	425242.87	5393049.35
-06	0925	425233.41	5393055.70
-22	0930	425209.77	5393080.25
-20	0942	425208.20	5393095.43
-09	0959	425189.40	5393112.80
-25	1006	425177.10	5393109.13
-24	1014	425181.28	5393119.78
-12	1024	425146.94	5393155.76
-21	1031	425128.36	5393167.14
-04	1043	425129.61	5393167.16
-17	1052	425119.17	5393180.12

4/28/15

DZ

Location Kettle Falls, WA Date 4/25/15

Project / Client Teck, Bossburg
Daily Log (cont)

1600 Rinseate blank core sampler by DK
SDU-05-EP-A-20150425

1605 Rinseate blank - hand auger by DK
UDU-04-ER-C-20150425

1610 Rinseate blank - shovel by DWL
UDU-03-EP-D-20150415

DK
4/25/15

Location Kettle Falls, WA Date 4/27/15

Project / Client Teck Bossburg
Daily Log

0630 Ken + Amy get ice at Walmart

0645 Ken + Amy arrive to C.N. in Kettle Falls

0700 Daily tailgate

0745 Teams A + B depart to sample

0746 Ken + Amy find XRF samples

0753 Ken + Amy prepare XRF samples for oven at 150°C.

0802 Ken + Amy sort + check up increments from SDU-03-1CS-B+C

0817 KY/ALD composite 30 increments no reserve locations for SDU-03-1CS-C

0820 Ken + Amy check increments for SDU-05-1CS

30 increments checked; 5 reserve locations (SDU-05-R01, R03, R04, R05, R06) used for SDU-05-08, 15, 18, 24, 30.

0847 KY/ALD composite ³⁹ increments into 2 buckets for SDU-05-1CS

The last increment, SDU-05-19, was put inside clean baggie + placed in 2nd bucket due to its % moisture content 13 & elevated compared to others

50 Location Kettle Falls, WA Date 4/27/15

Project / Client Teck Bossburg

Daily Log continued

- 0908 Pack cooler 1 with 2 buckets
for SDU-05-1CS
- 0909 Sort core samples for
SDU-03 + transfer to 1L
bottles
- 1045 start core samples for F01 & transfer
to 1L bottles
- 1335 Start weight dry SDU-XRF samples
Also packed cooler 2 with
SDU-03-1CS-C + 8 rinse blanks
Cooler 3: 9 core samples for
SDU-03-COR
Cooler 4: 9 core samples for
F-1-COR
- 1410 Ken departs with 4 coolers
to FedEx
- 1417 Amy weighs XRF samples - dried
- 1429 Amy weighs 3 remaining XRF
samples from SDU-05
- 1438 Sieve SDU-05-XRF-04
- 1441 Start up XRF analyzer
- 1455 after shaker sieve, SDU-05-XRF-04
requires break up of aggregates
by hand with baggie

Location Kettle Falls, WA Date 4/27/15 51

Project / Client Teck Bossburg

Daily log continued

- 1502 sieve SDU-05-XRF-05-shaker
- 1512 sieve SDU-05-XRF-06-shaker
- 1516 Ken returns to C.N.
- 1518 Finish sieve SDU-05-XRF-06 by hand
with baggie to break up aggregates
- 1520 Decon Sieves
- 1557 KYLAD prepare rinse blank of deconned
- also 1602 sieve: SDU-05-ER-B-20150427
- 1602 sieve SDU-05-XRF-08-shaker baggie
- 1615 sieve SDU-05-XRF-09-shaker
- 1627 Discovered that SDU-05-XRF-07
(intended as confirmation sample
to lab) was not collected. Reserve
sample SDU-05-XRF-R03 collected
instead and will be submitted to
lab.
- 1629 sieve SDU-05-XRF-02 by hand
with baggie - large clumps due to
high moisture content prior to
drying.
- 1635 Decon Sieves
- 1645 Transfer core samples for VDU-04
to 1L bottles
- ~~1735 Rinse blank~~ also 4/27/15

Location Kettle Falls, WA Date 4/27/15Project / Client Teck BossburgXRF analysis of Lead (ppm)

#1	Blank ¹⁴⁰⁰ SiO ₂ 4/27/15 Energy Calibration Check - pass		
#2	Blank SiO ₂	<1.9	
#3	NIST 2709a TV=17.3	12.4	71.7%R
#4	NIST 2711a TV=1400	1322	94.4%R
#5	SDU-05-XRF-04 Run 1	431	
#6	" Run 2	408	
#7	" Run 3	392	Ave 410
#8	SDU-05-XRF-05 Run 1	333	
#9	" Run 1	298	
#10	" Run	340	Ave 324
#11	SDU-05-XRF-06 Run 1	325	
#12	" Run 2	327	
#13	" Run 3	350	Ave 334
#14	SDU-05-XRF-08 Run 1	201	
#15	" Run 2	220	
#16	" Run 3	198	Ave 206
#17	SDU-05-XRF-09 Run 1	442	
#18	" Run 2	460	
#19	" Run 3	437	Ave 446
#20	SDU-05-XRF-02 Run 1	330	
#21	" Run 2	339	
#22	" Run 3	369	Ave 346
#23	" Precision Run 4	329	
#24	" Run 5	347	

Location Kettle Falls, WA Date 4/27/15 53Project / Client Teck BossburgXRF analysis of Lead (ppm) continued

#25	SDU-05-XRF-02 Run 6	342	
#26	" Run 7	348	RSO=3.9%
#27	Blank SiO ₂	<1.9	
#28	NIST 2711a TV=1400	1300	92.9%R
#29	Energy Calibration check - passed		

avg
4/27/15

54 Location Kettle Falls, WA Date 4/27/15

Project / Client Teck Bossburg
Daily log continued

1735 DC/DK collected in site blank
of deconned core barrel
SDU-06A-ER-A-20150427

1740 shut down XRF analyzer

1745 Re brief

1805 Report site

ACD
4/27/15

Location Kettle Falls, WA Date 4/28/15 55

Project / Client Teck Bossburg
Daily Log

0645 Teams arrive at C.V. in Kettle Falls

0700 ~~Daily~~ tailgate

0724 weigh dried SDU-05 XRF soil samples

0726 weigh out wet XRF samples from SDU-09

0733 SDU-09-XRF-04 appears to contain
higher moisture than others

0745 Transfer cores to 1L bottles for
~~SDU-09~~ 4/28/15 UDU-03

0812 Reweigh dry XRF samples from SDU-05

0824 Sieve SDU-05-XRF-03-shaker +
small aggregates broken up with baggie
by hand.

0842 Sieve SDU-05-XRF-R03

0923 Reweigh dry XRF SDU-05-01 & sieve it

0931 weigh out wet XRF samples for SDU-10

0937 Start up XRF analyzer

0948 Reweigh dry XRF samples for SDU-09

1100 Reweigh dry XRF samples for SDU-09

1107 Sieve SDU-09-XRF-01-shaker-Rocks

1115 Sieve SDU-09-XRF-02-shaker only

1134 Sieve SDU-09-XRF-04 shaker only

1156 Sieve SDU-09-XRF-03 shaker only

1215 Transfer SDU-05-XRF-R03 to
container to lab reserve for SDU-05 XRF-07.

WATER SAMPLES

Location BossburgDate 4/27/15Project / Client BOSSBURG REFINED SEDIMENT
+ SOIL STUDY

- 0640 at field office
- 0701 - conducted tailgate safety meeting
Josh Weatherman gave boating safety requirements for boat use today.
- Teams A+B going to SDUs 9+10
- Andrea LaTier + Nicole Badon onsite for EPA + CH₂M Hill.
- Bill White + Meghan Lyons for NPS
- Susan Ellis for CCT.
- 0731 teams departed for SDU-09 + 10.
- 0855 called Paul
- 0935 - headed to Bossburg.
- departed delayed until 1010 due to DB issue discussion with Viny
- 1032 @ Bossburg
- Got Team B XRF samples
Michelle reported several stations under water including one reserve
- advise Team A+B to collect samples closest to water first + we will then address the need to relocate remaining samples under water. Michelle will make a track log of current

Location BossburgDate 4/27/15 57Project / Client BOSSBURG REFINED SEDIMENT
+ SOIL STUDY

- Water line ~ 1' above water line to address forthcoming water level rises.
- 1109 - left SDU 10 with XRF samples. from SDU 9+10. All cleared by NPS + CCT.
- ~~1222~~^{1132 AM} returned to Field office w/ left Bossburg for field office.
- 1200 Back at Field Office.
- 1219 talked to Tommy CCT coming out to look at item ID'd by NPS @ SDU.
- 1245 - all from Michelle SDU-01+02 may be issue now.
- removing teams to SDU-06 until CR issues resolved.
- 1523 - called Joe Wichmann told him ~~to~~ we will be with Team at SDU-06 tomorrow. Asked about SDU-09 + SDU-10 XRF samples. Wants data?
- 1600 - all with Paul, Kris, Bethy, Sarah
- discussed days work + issues
- 1704 - called end to meeting.

Location BOSSBURG Date 4/27/15
 Project / Client BOSSBURG REFINED
SEDIMENT + SOIL STUDY / TAI,

1720 - Teams returned.

1740 - De brief

1800 - teams off site.

M. Miller

Location BOSSBURG Date 4/28/15 59
 Project / Client BOSSBURG REFINED SEDIMENT
+ SOIL STUDY / TAI

- 0630 @ Field office; prepared for final gate meeting to discuss lead standard.

- 0645 - team at field office; Jon Edwards - NPS here today.

- 0702 - safety meeting.

- 0715 - talked with Bill White + Andrea LaTien. Everything we did yesterday was right per Bill. No issues on our process.

- Bill did say that Brent Martinez was called which is why he showed up.

- 0720 team departed for Evans Campground
 - today's work - complete SDU-06 XRF + replicates A, B, C.

- 0810 - Tony called needs me to bring a slide hammer to field as one broke.

- 0825 - departed for Bossburg @ Evans Campground.

- 0858 at Evans

- met with Joe Wichnam - informed him of the general issues @ SDU-09+10. He thought

Location SDU-06A Date 4.27.15
 Project / Client Bossburg / Teck

1643 @ SDU-06A-19
 GPS
 425 260.46
 5393 887.42

1650 Begin demutse
 1655 Wait for Susan to check samples
 1705 Offsite.

1725 @ Weatherman's.

1747 Debrief
 Offsite.

Anthony P. [Signature]
 4.27.15

Location SDU-06A Date 4.28.15
 Project / Client Bossburg / Teck
 Observers: Julina & Andrea

0645 @ Weatherman's.
 0700 Hi S meeting.

0717 Leave Kettle Falls.

0737 @ Evans Campground

0804 @ SDU-06-XRF-05 *back slide tomorrow
 GPS @ 0807, replace

425 298.74
 5393 678.89

0830 @ SDU-06-XRF-04
 GPS
 425 306.24
 5393 813.89

@ SDU-06-XRF-03
 GPS *located on west
 425 looks to be on old road
~~5393~~ bed. Refusal, will
 use XRF-1202 in place.

Location SDU-06 Date 4.28.15Project / Client Bossburg/Teck

0946 @ SDU-06-XRF-R02

GPS

425 238.74

5393 008.89

0905 @ SDU-06-XRF-02

GPS

425 223.74

5393 068.89

0915 @ SDU-06-XRF-01

GPS

425 126.24

5393 173.89

0955 @ SDU-06A-06 * have to hand

GPS

425 241.84

5396 997.48

dig w/ scoop,
refusal of cobbles

1014

@ SDU-06A-01

GPS

425 237.09

5396 946.60

Location SDU-06 Date 4.28.15Project / Client Bossburg/Teck

1025 @ SDU-06A-16

GPS

425 265.24

5396 952.88

@ SDU-06A-02

GPS

425 19

5396 09

* located on rock
pile, looks like ~~locus~~

* will replace w/ reserve station

06A-R03,

1040 @ SDU-06A-12

GPS

425 241.43

5396 964.59

1051 Break for lunch / conference
call,

1255 @ SDU-06A-14

GPS

425 254.96

5396 984.99

Location SDU-06 Date 4.28.15

Project / Client Rossburg / Teck

SDU-05 Core locations	
✓COR-1 →	XRF-1
✓COR-2 →	XRF-9
✓COR-3 →	XRF-04
*Picked by Andrew Nicole	

1304 @ SDU-06A-R03
GPS *replacement for 06A-2.
 425 231.23
 5396 992.52

1317 @ SDU-06A-18 *had to hand dis,
GPS refusal on
 425 227.86 g navel/cobbler
 5394 008.93

1330 @ SDU-06A-20
GPS
 425 249.55
 5394 025.88

1338 @ SDU-06A-09
GPS
 425 235.93
 < 2am ...

Location SDU-06 Date 4.28.15

Project / Client Rossburg / Teck

1349 @ SDU-06A-28
GPS
 425 230.13
 5394 052.56

1356 @ SDU-06A-07
GPS
 425 240.79
 5394 049.60

1404 @ SDU-06A-04
 425 212.57
 5394 072.56

1413 @ SDU-06A-27
GPS
 425 190.67
 5394 114.67

1423 @ SDU-06A-21
GPS
 425 164.40
 5394 137.82

1435 @SDU-06A-11 *refusal on
GPS cobbles, have to
 425 185.57 hand dig w/
 5394 142.98 scoop.

1445 @SDU-06A-25
GPS
 425 140.07
 5394 162.97

1456 Finish A series. Retool for C.

1515 @SDU-06C-18 * refusal on
GPS cobbles, have to
 425 132.36 hand dig w/
 5394 167.38 scoop

1540 @SDU-06C-22
GPS
 425 144.98
 5394 157.40

1555 @SDU-06C-01
GPS
 425 179.08
 5394 130.63

1607 @SDU-06C-08
GPS
 425 200.46
 5394 087.31

1610 @SDU-06C-26
GPS
 425 221.75
 5394 067.60

1620 @SDU-06C-16
GPS
 425 226.59
 5394 048.27

1630 @SDU-06C-11
GPS
 425 238.96
 5394 048.13

1645 Leave Evans.

1701 @ Wertheim's.

1725 Debrief.

1735 Offsite.

Anthony
PL

0645 Onsite.

0700 HoS meeting

0720 Leave Kettle Falls.

0741

~~0720~~ @ Bossburg.

0822 @ Pump house below UDU-05.

0840 @UDU-05-XRF-13

GPS

423599.78

5401489.41

0858 @UDU-05-XRF-12

GPS

423581.94

5401453.77

0925 @UDU-05-XRF-11

GPS

423581.94

5401418.13

Location

Kettle Falls

Date

4/27/15

Project / Client

Barrberg

Drews

SDU-06B

UTM 11N (meters)

LOC	TIME	EASTING	NORTHING
-05	1455	425299.28	5393658.79
-30	1502	425296.40	5393674.08
-27	1510	425291.00	5393687.28
-08	1517	425280.23	5393697.18
-01	1526	425304.61	5393706.63
-03	1533	425303.49	5393734.41
-07	1536	425283.67	5393741.29
-16	1545	425306.09	5393746.43
-14	1553	425307.64	5393819.14
-15	1600	425278.76	5393850.64
-10	1611	425280.99	5393877.56
-11	1634	425247.28	5393905.11
-02	1640	425268.86	5393883.03

~~23 25~~
~~22 02~~

4/27/15
DZ

Location

Kettle Falls

Date

4/28/15

Project / Client

Barrberg

Drews

SDU-06B (cont)

UTM 11N (meters)

LOC	TIME	EASTING	NORTHING
-23	0930	425264.50	5393902.69
-29	0840	425250.88	5393972.81
-18	0847	425248.74	5393997.16
-19	0854	425257.03	5393003.80
-13	0900	425233.43	5393008.60
-28	0911	425232.91	5392036.92
-26	0920	425242.87	5393049.35
-06	0925	425233.41	5393055.70
-22	0930	425209.77	5393080.25
-20	0942	425208.20	5393095.43
-09	0959	425189.40	5393112.80
-25	1006	425177.10	5393109.13
-24	1014	425181.28	5393119.78
-12	1024	425146.94	5393155.76
-21	1031	425128.36	5393167.14
-04	1043	425129.61	5393167.16
-17	1052	425119.17	5393180.12

4/28/15

DZ

0645 at airport

0700 H+S meeting

0800 on beach at Evans Campground

SDU-06B

Crew: Dean Kinney, Michelle Stegner,
Dave Lewis

Observers: Bill White (NPS)

Nicole Baden (EPA)

Susan Ellis (CC)

Task: ICS samples SDU-06B

0830 Joe Whitman (CCC) on site

1100 Break for lunch while
Park Service does conference
call.1255 Start on SDU-06C, conference
call over.

1520 SDU-06C-10 and SDU-06C-ROZ

w/ person on rock sit projecting out
onto beach, advised by Tony
Palmieri (aircon) and another (EPA)
to move to another reserve

4/28/15

DL

SDU-06C

UTM

11N (meters)

Loc	TIME	EASTING	NORTHING
-30	1257	42520437	5393669.31
-24	1303	425302.51	5393680.03
-21	1312	425285.56	5393684.20
-17	1318	425296.62	5393694.12
-27	1322	425281.64	5393716.23
-14	1333	425300.87	5393758.93
-07	1337	425308.07	5393770.27
-20	1342	425316.93	5393778.98
-05	1349	425305.16	5393823.03
-09	1354	425286.96	5393834.37
-04	1402	425298.36	5393857.64
-06	1412	425284.20	5393859.37
-12	1418	425271.97	5393861.57
29	1425	425247.81	5393907.84
-25	② 1431525	425270.68	5393904.40
-28	1425	425247.81	5393407.84
-13	1439	425257.58	5393912.89
-29	1434	425260.73	5393901.18
-19	1514	425254.84	5393938.91

4/28/15

DL

Kettle Falls

4/28/15

Borsberg
d Lewis

SDU-06C (cont) UTM 11N (meters)

LOC	TIME	EASTING	NORTHING
-10		refusal, advised by Tony + Andrea (EPA)	
-R02		on top of rock berm	
-R05	1539	425278.37	5393893.31
-15	1550	425245.66	5393960.27
-23	1554	425240.17	5393972.43
-02	1601	425248.90	5393985.52
-03	1613	425222.00	5394019.88

4/28/15

JD

Kettle Falls

4/28/15

Borsberg
d Lewis

1645 Left Gwans Campground
1700 At shop detaching/briefing

4/28/15

JD

54 Location Kettle Falls, WA Date 4/27/15

Project / Client Teck Bossburg
Daily log continued

1735 DC/DK collected in site blank
of deconned core barrel
SDU-06A-ER-A-20150427

1740 shut down XRF analyzer

1745 Re brief

1805 Report site

ACD
4/27/15

Location Kettle Falls, WA Date 4/28/15 55

Project / Client Teck Bossburg
Daily Log

0645 Teams arrive at C.V. in Kettle Falls

0700 Daily tailgate

0724 weigh dried SDU-05 XRF soil samples

0726 weigh out wet XRF samples from SDU-09

0733 SDU-09-XRF-04 appears to contain
higher moisture than others

0745 Transfer cores to 1L bottles for
~~SDU-09~~ 4/28/15 UDU-03

0812 Reweigh dry XRF samples from SDU-05

0824 Sieve SDU-05-XRF-03-shaker +
small aggregates broken up with baggie
by hand.

0842 Sieve SDU-05-XRF-R03

0923 Reweigh dry XRF SDU-05-01 & sieve it

0931 weigh out wet XRF samples for SDU-10

0937 Start up XRF analyzer

0948 Reweigh dry XRF samples for SDU-09

1100 Reweigh dry XRF samples for SDU-09

1107 Sieve SDU-09-XRF-01-shaker-Rocks

1115 Sieve SDU-09-XRF-02-shaker only

1134 Sieve SDU-09-XRF-04 shaker only

1156 Sieve SDU-09-XRF-03 shaker only

1215 Transfer SDU-05-XRF-R03 to
container to lab reserve for SDU-05 XRF-07.

WATER SAMPLES

Location Kettle Falls, WA Date 4/28/15Project / Client Teck Bossburg
XRF analysis of Lead (ppm)

#1	Energy calibration check - passed			
#2	Blank SiO ₂		C1.8	
#3	NIST 2709a TV=17.3	12.4	71.7%R	
#4	NIST 2780 TV=5770	4977	86.3%R	
#5	SDU-05-XRF-01	Run 1	536	
#6	"	Run 2	345	
#7	"	Run 3	349	Ave 410
#8	SDU-05-XRF-03	Run 1	343	
#9	"	Run 2	419	
#10	"	Run 3	368	Ave=377
#11	SDU-05-XRF-R03	Run 1	331	
#12	"	Run 2	363	
#13	"	Run 3	339	Ave=344
#14	SDU-09-XRF-01	Run 1	10.8	
#15	"	Run 2	12.9	
#16	"	Run 3	13.2	Ave=12.3
#17	SDU-09-XRF-02	Run 1	73.8	
#18	"	Run 2	85.9	
#19	"	Run 3	82.4	Ave 80.7
#20	SDU-09-XRF-03	Run 1	136.7	
#21	"	Run 2	137.4	
#22	"	Run 3	127.6	Ave 133.9
#23	SDU-09-XRF-04	Run 1	115.4	
#24	"	Run 2	104.3	

Location Kettle Falls, WA Date 4/28/15Project / Client Teck Bossburg
XRF analysis of Lead (ppm) continued

#25	SDU-09-XRF-04	Run 3	102	Ave 107.2
#26	SDU-10-XRF-01	Run 1	76.8	} Ave 79.9
#27	"	Run 2	76.5	
#28	"	Run 3	76.5 ^{86.4}	
#29	SDU-10-XRF-02	Run 1	91.4	
#30	"	Run 2	93.3	
#31	"	Run 3	88	Ave 90.9
#32	SDU-10-XRF-03	Run 1	99.2	
#33	"	Run 2	106.9	
#34	"	Run 3	89.5	Ave=98.5
#35	SDU-10-XRF-04	Run 1	247	
#36	"	2	349	
#37	"	3	318	Ave 305
#38	"	4	261	
#39	"	5	292	
#40	"	6	255	
#41	"	7	258	RSD=13.6%
#42	Blank SiO ₂		C1.8	
#43	NIST 2780 TV=5770	4997	86.6%R	
#44	Energy calibration check - passed			

Avg 4/28/15

Daily log continued

- 1219 Break for lunch
- 1239 weigh dry SDU-10 samples
- 1245 put SDU-06 XRF samples into oven
after weighting wet + tray samples
- 1309 Sieve SDU-10-XRF-01-shaker
- 1315 Sieve SDU-10-XRF-02-shaker
- 1430 Sieve SDU-10-XRF-03-shaker
- 1430 Sieve SDU-10-XRF-04-shaker + hand
- 1415 Ken left to FedEx with
2 coolers:
1 9 cores for VDU-03
2 9 cores for VDU-04
- 1408 shut down XRF analyzer
- 1520 KY/ALD collect rinse + blank
of deconned sieve, 10'S
SDU-10-ER-B-20150428
- 1720 DC collected rinse + blank of
deconned core barrel
SDU-06C-ER-A-20150428
- 1730 Debrief
- 1740 Depart

auto 4/28/15

Daily Log

- 0645 Teams arrive at C.N. in Kettle Falls
- 0700 Daily tailgate
- 0720 weigh dried XRF samples from SDU-06
- 0725 Teams A + B depart to sample
- 0731 Ken + Amy check increments for SDU-06A. Reserve location SDU-06A-R03 was used for SDU-06A-02. All 30 increments checked
- 0748 KY/ALD composite 30 increments to create SDU-06-ICS-A in 1 bucket
- 0752 Ken + Amy check increments for SDU-06-ICS-B. No reserve locations used. All 30 increments checked
- 0804 KY/ALD composite 30 increments to create SDU-06-ICS-B into 1 bucket.
- 0812 Reweigh dry XRF samples for SDU-06
- 0814 Sieve SDU-06-XRF-01-shaker
- 0822 Sieve SDU-06-XRF-02-shaker
- 0823 Start XRF analyzer

Location BOSSBURG Date 4/27/15Project / Client BOSSBURG REFINED
SEDIMENT + SOIL STUDY / TAI,

1720 - Teams returned.

1740 - De brief

1800 - teams off site.

M. Miller

Location BOSSBURG Date 4/28/15 59Project / Client BOSSBURG REFINED SEDIMENT
+ SOIL STUDY / TAI

- 0630 @ Field office; prepared for final gate meeting to discuss lead standard.

- 0645 - team at field office; Jon Edwards - NPS here today.

- 0702 - safety meeting.

- 0715 - talked with Bill White + Andrea LaTien. Everything we did yesterday was right per Bill. No issues on our process.

- Bill did say that Brent Martinez was called which is why he showed up.

- 0720 team departed for Evans Campground
- today's work - complete SDU-06 XRF + replicates A, B, C.

- 0810 - Tony called needs me to bring a slide hammer to field as one probe.

- 0825 - departed for Bossburg @ Evans Campground.

- 0858 at Evans

- met with Joe Wichnam - informed him of the general issues @ SDU-09+10. He thought

Location BOSSBURG Date 4/28/15Project / Client BOSSBURG REFINED
SEDIMENT + SOIL STUDY

The XRF would be good here, as is it non-intrusive.

- informed teams to take lunch @ 11 so the CR teams can have a conference call, no work without observers + monitors. Teams understand
- Spoke with Andrea LaTrier about muddy sample SDU-05-A. She will contact Matt Wilkening to get final direction. Current ~~is~~ EPA thinking is to have analytical lab dry the sample + mix it into larger sample.
- 1806 - departed Evans with SDU-06 XRF samples.

1018 - at field office.

- prepared field change request NCS and reviewed revised SDU boundaries at water line for SDUs -04, -07, and -08.

1215 - call from Andrea LaTrier - will need Michelle + Trimble for SDU-09+10 recon tomorrow.

1223 - went to Evans with SDU-05 XRF results

- SDU-01 recon will need boat for recon

Location BOSSBURG Date 4/28/15Project / Client BOSSBURG REFINED SEDIMENT +
SOIL STUDY / TAI.

SDU-05 cores will be

COR-01 will be XRF-01

COR-02 will be XRF-09

COR-03 will be XRF-04

Field teams resumed work at SDU-06 @ 1253,

- Nicole Baden, CH, Hill + Joe ~~Wickmann~~ ^{Evans} and Joe Wickmann went to XRF lab.
- Further info on recon - evaluate + map off limits areas, grab water line track + provide to Paul. Ask Bill ~~Andrews~~ about WDU-06.
- Paul called - need to do ^{better} ~~pre~~ job rinsing samples after acid wash. Seeing Ni @ 140 ppm. EPA + CR resource evaluating the need for triplicate stations @ SDU-09.
- ask Dechy about slide hammers.
- 1852 - left Evans
- 1810 - back at field office.
- discussed xrf with Joe Wickmann. Joe + Nicole Baden observed XRF samples ~~at~~ from SDUs-09 + 10.

Location BOSSBURG Date 4/28/15
 Project / Client BOSSBURG REFINED SEDIMENT
+ SOIL STUDY / IAI

- 1515 - Joe Wichmann and Nicole Badon departed field lab. Joe said he would be in touch about field XRF study. Kris can expect a call or email.
- 1600 - CC with Kris, Paul, Bechy + Karen Tobiason (Windward)
- 1648 call ended.
- 1710 - field teams returned; conducted decon + collected rinseate samples, process observed by Andrea Latier.
- 1749 - offsite

[Handwritten signature]



Location BOSSBURG Date 4/29/15
 Project / Client BOSSBURG REFINED SEDIMENT +
SOIL STUDY / IAI

- 0614 - at field office + prepared for tailgate meeting.
- 0700 - tailgate meeting
- Teams deployed as follows
- TEAM A - UDU-05
- TEAM B - SDUs-01 and 02 and UDU-05
- team B without tablet + Michelle will record field notes in notebook for later transfer.
- Michelle Stegner joined Bill White - NPS + Susan Ellis - CCT to recon SDUs 09 + 10 with Weatherman support boat.
- 0834 - Joe Wichmann called asking about XRF data at UDU-06. Told him no samples collected yet as we do not have written permission - end of conversation.
- SDU-06 XRF results
- | | |
|------------------------|--|
| XRF - 01 = 24.9 / 25.6 | } draft to be (u) confirmed
+ photo reservoir location
all results draft |
| - 02 = 25.2 / 27 | |
| ROZ03 = 14.5 / 16.9 | |
| 04 = 18.5 / 19.9 | |
| 05 32.4 / 34.3 | |

Location SDU-03 Date 4.28.15Project / Client Bossburg / Tech

1645 Leave Evans.

1701 @ Wertheim's.

1725 Debrief.

1735 Offsite.

Anthony
 PL

Location UDU-05 Date 4.29.15Project / Client Bossburg / TechObservers: Andrew + John

0645 Onsite.

0700 HoS meeting

0720 Leave Kettle Falls.

0741

~~0720~~ @ Bossburg.

0822 @ Pump house below UDU-05.

0840 @UDU-05-XRF-13

GPS

423599.78

5401489.41

0858 @UDU-05-XRF-12

GPS

423581.94

5401453.77

0925 @UDU-05-XRF-11

GPS

423581.94

5401418.13

Location UDU-05 Date 4.29.15Project / Client Bosshung / Teck

0940 @ UDU-05 - XRF-10
GPS
 423564.10
 5401418.13

0959 @ UDU-05 - XRF-08
GPS
 423546.30
 5401382.49

1025 @ UDU-05 - XRF-09
GPS
 423555.21
 5401400.31

1045 Retval for ICS.

1053 @ UDU-05-05 hand dig
GPS due to cobbles
 423607.59
 5401485.98

Location UDU-05 Date 4.29.15Project / Client Bosshung / Teck

1109 @ UDU-05 -23 * hand dig due
GPS to cobbles
 423594.78
 5401482.22

1135 @ UDU-05-01
GPS
 423584.82
 5401448.34

1153 @ UDU-05-15
GPS
 423580.75
 5401431.78

@ UDU-05-25
GPS

423577.19
 5401428.81

1215 Take lunch.

1310 @UDU-05-20
 423 569.87
 5401 418.92

1325 @UDU-05-22
GPS
 423 568.40
 5401 412.92

1335 @UDU-05-03
GPS
 423 566.72
 5401 392.77

1548 @UDU-05-21
GPS
 423 559.39
 5401 381.72

~~1P
 @UDU-05-09
GPS
 423
 5401~~

1400 @UDU-05-11
GPS
 423 556.61
 5401 385.20

1411 @UDU-05-09
GPS
 423 545.97
 5401 365.46

1421 @UDU-05-17
GPS
 423 537.01
 5401 362.36

1437 @UDU-05-^{AP}~~12~~ 08
GPS
~~423~~ 527.33
 5401 349.22

1508 Tablet will not recharge w/
 portable battery. Troubleshoot for
 10 minutes, no luck. Turn off tablet
 @ 9% battery. Head back to Bossburg.

UDU-05

4.29.15

Bossgang / Teck

1532 Leave Bossgang for Evans

1543 @ Evans. Will help other
team collect cores in
SDU-06.~~1550 Head back to Kettle Falls~~~~1550~~

1617 Leave for Kettle Falls

1633 @ Wertheim's. Decor.

1710 Debrief.

1722 Offsite.

Anthony Pal
4.29.15

UDU-05

4.30.15

Bossgang / Teck

Observers: New (Ruben, CH) & (Darnice, NPS)

0645 @ Wertheim's.

0700 H&S meeting.

0722 Leave Kettle Falls.

0743 @ Bossgang.

0835 @ UDU-05 - XRF-07

GPS

423 537.39

5401 364.67

0850 @ UDU-05 - XRF-06

GPS

423 528.48

5401 346.87

0910 @ UDU-05 - XRF-03

GPS

423 492.84

5401 311.21

0925 @ UDU-05 - XRF-02

GPS

423 483.93

5401 293.39

- 0700 H+Smearing @ shop
 0800 at Bassberg making pore
 core samples

Crew: Dewis Dean Kinnig
 Task: Core samples @ SDU-01+02
 Brewer: Nicole Badon (EPA)

- 0815 Leave vehicles
 0830 on site at SDU-01+02
 1150 Finished core samples SDU-01+02
 1415 at Evans Campground to
 collect core samples from
 SDU-06
 1600 Using skidder steelshovel
 to collect samples at
 @ SDU-06-03 because of heavy
 cobbles.
 1615 Finished w/ SDU-06 core sampling
 1640 Back at shop demobbing/debriefing

~~4/29/15~~

~~WJ~~

CORE SAMPLES

SDU-01

COR-01-001

associated w/ XRF-07
 Time: 0849

10YR 4/2, silty fine
 sand, trace organic

COR-01-002

Time: 0854

10YR 4/2, silty fine
 sand, trace organic

COR-01-003

Time: 0858

10YR 4/2, silty fine
 sand

COR-02-001

associated w/ XRF-09
 Time: 0909

10YR 4/2, silty fine
 sand, trace organic

COR-02-002

Time: 0912

10YR 4/1, ^{Dr} silty fine
 sand

COR-02-003

Time: 0920

10YR 4/2, silty fine
 sand

~~WJ~~

~~4/29/15~~

Kettle Falls

4/29/15

Bassberg
DewisCore samples SDU-01 (cont)

COR-03-001

associated w/ XRF-08
time: ~~0932~~ 093210YR 4/2, silty fine
sand, trace organics

COR-03-002

time: 0935

10YR 4/2, silty fine sand,
trace organics

COR-03-003

time: 0941

10YR 4/2 silty fine sand

split

time: 0948

10YR 4/2 silty fine sand

replicate

time: 0955

10YR 4/2, silty fine sand

4/29/15

DL

Kettle Falls

4/29/15 57

Bassberg
DewisCore samples SDU-02

COR-01-001

associated w/ XRF-08

time: 1018

10YR 4/2, silty fine sand,
trace organic

split

time: 1021

10YR 4/2, silty fine sand,
trace organic

replicate

Time 1023

10YR 4/2, silty fine sand,
trace organic

COR-01-002

time: 1027

10YR 4/2, silty fine sand

① DL
COR replicate

time: 1033

10YR 4/2, silty fine sand

COR-01-003

time: 1034

10YR 4/2 silty fine sand

COR-02-001

time: 1110

10YR 4/2, silty fine sand
trace organic

COR-02-002

time: 1114

10YR 4/2, silty fine
sand, trace organic

4/29/15

DL

Kettle Falls

4/29/15

Bassberg
Dewisdusty
weather 55° - 65°

- 0700 H+Smearing @ shop
0800 at Bassberg making pore
core samples

Crew: Dewis Dean King
Task: Core samples @ SDU-01+02
Observers: Nicole Badon (EPA)

- 0815 Leave vehicles
0830 on site at SDU-01+02
1150 Finished core samples SDU-01+02
1415 at Evans Campground to
collect core samples from
SDU-06
1600 Using skidder steelshovel
to collect samples at
@ SDU-06-03 because of heavy
cobbles.
1615 Finished w/ SDU-06 core sampling
1640 Back at shop demobbing/debriefing

~~4/29/15~~

~~WJ~~

Kettle Falls

4/29/15⁵⁵Bassberg
Dewis

CORE SAMPLES

SDU-01

COR-01-001

associated w/ XRF-07
Time: 0849

10YR 4/2, silty fine
sand, trace organic

COR-01-002

Time: 0854

10YR 4/2, silty fine
sand, trace organic

COR-01-003

Time: 0858

10YR 4/2, silty fine
sand

COR-02-001

associated w/ XRF-09
Time: 0909

10YR 4/2, silty fine
sand, trace organic

COR-02-002

Time: 0912

10YR 4/1, ^{Dr} silty fine
sand

COR-02-003

Time: 0920

10YR 4/2, silty fine
sand

~~WJ~~

~~4/29/15~~

Kettle Falls

4/29/15

Bassberg
DewisCore samples SDU-01 (cont)

COR-03-001

associated w/ XRF-08
time: ~~0932~~ 093210YR 4/2, silty fine
sand, trace organics

COR-03-002

time: 0935

10YR 4/2, silty fine sand,
trace organics

COR-03-003

time: 0941

10YR 4/2 silty fine sand

split

time: 0948

10YR 4/2 silty fine sand

replicate

time: 0955

10YR 4/2, silty fine sand

4/29/15

DL

Kettle Falls

4/29/15 57

Bassberg
DewisCore samples SDU-02

COR-01-001

associated w/ XRF-08

time: 1018

10YR 4/2, silty fine sand,
trace organics

split

time: 1021

10YR 4/2, silty fine sand,
trace organics

replicate

Time 1023

10YR 4/2, silty fine sand,
trace organics

COR-01-002

time: 1027

10YR 4/2, silty fine sand

① DL
COR replicate

time: 1033

10YR 4/2, silty fine sand

COR-01-003

time: 1034

10YR 4/2 silty fine sand

COR-02-001

time: 1110

10YR 4/2, silty fine sand
trace organics

COR-02-002

time: 1114

10YR 4/2, silty fine
sand, trace organics

4/29/15

DL

Kettle Falls

4/29/15

Bassberg
PfeilsCore samples SDU-02 (cont)

COR-02-003

time: 1118

10YR 4/2, ~~fine~~ silty fine
sand

COR-03-001

time: 1136

10YR 4/2, fine silty
sand, trace organics

COR-03-002

time: 1140

10YR 4/2, fine silty
sand, trace organic

replicate

time: 1145

10YR 4/2, fine silty
sand, trace organic

COR-03-003

time: 1148

10YR 4/2, ~~fine~~
silty fine sand.

4/29/15

D

Kettle Falls

4/29/15

Bassberg
PfeilsCore samples at SDU-06

COR-01-001

Time: 1453

10YR 4/2 Silty very
fine sand, trace organics
easting: 425306.24

northing: 5393013.89

COR-01-002

Time: 1500

10YR 4/2 Silty, very
fine sandeasting: ~~DR~~
northing: ~~DR~~

COR-01-003

Time: 1503

10YR 4/3 Silty, fine
sand.

COR-02-001

Time: 1524

associated w/ XRF-02
10YR 4/2 silty, very
fine sand, trace
organics

COR-02-002

Time: 1532

10YR 4/2, silty very
fine sand, trace
organics.

4/29/15

DR

Kettle Falls

4/29/15

Bassberg
PfeilsCore samples SDU-02 (cont)

COR-02-003

time: 1118

10YR 4/2, ^{DR} silty fine
sand

COR-03-001

time: 1136

10YR 4/2, fine silty
sand, trace organics

COR-03-002

time: 1140

10YR 4/2, fine silty
sand, trace organic

replicate

time: 1145

10YR 4/2, fine silty
sand, trace organic

COR-03-003

time: 1148

10YR 4/2, ^{DR}
silty fine sand.

4/29/15

DR

Kettle Falls

4/29/15

Bassberg
PfeilsCore samples at SDU-06

COR-01-001

Time: 1453

10YR 4/2 Silty very
fine sand, trace organics
easting: 425306.24

northing: 5393013.89

COR-01-002

Time: 1500

10YR 4/2 Silty, very
fine sandeasting: ^{DR}
northing

COR-01-003

Time: 1503

10YR 4/3 Silty, fine
sand.

COR-02-001

Time: 1524

associated w/ XRF-02

10YR 4/2 silty, very
fine sand, trace
organics

COR-02-002

Time: 1532

10YR 4/2, silty very
fine sand, trace
organics.

4/29/15

DR

Kettle Falls

4/29/15

Borsberg
D LewisCore samples SDU-06 (cont)

COR-02-003

Time: 1534

~~(02)~~10YR 4/3, silty very
fine sand, trace organics03-001 ~~(02)~~

COR-02-003

associated w/XRF-01

Time: 1548

using shovel (tanks
steak) because of
cobbles10YR 4/2, silty fine
to coarse sand,
fine to coarse gravel,
some cobbles

COR-03-002

collected w/ stainless
steel shovel

Time: 1602 =

10YR 4/2, silty fine
to coarse sand,
/ cobbles

COR-03-003

split sample.

Time: 1609

10YR 4/2, silty fine to
coarse sand, some
fine to coarse gravel.

4/29/15

D2

Kettle Falls

4/30/15

Borsberg
D Lewis

Weather: 40-60°

0700 H+S meeting at shop
0800 at Borsberg to catch
boat to SDU-10Crew: Dean Kiny, Dave Lewis,
Michelle Stegner

Task: ICS sampling at SDU-10 + 09

observers: Nicole Budon (CH2M)

Rueben Area (CH2M), Susan

Ellis (CCT), Darika Gomez (NPS)

0900 at SDU-10 off of boat.

1047 Break while some people go on
boat to facilities (included in
cultural monitor)

1120 Back at work

1210 Lunch

~~(02)~~ 1250 Back to work1615 Left west side of river for
Borsberg

1635 Back at Lab, debrief/demat

4/30/15

D Lewis

Daily log continued

- 1219 Break for lunch
- 1239 weigh dry SDU-10 samples
- 1245 put SDU-06 XRF samples into oven
after weighting wet + tray samples
- 1309 Sieve SDU-10-XRF-01-shaker
- 1315 Sieve SDU-10-XRF-02-shaker
- 1430 Sieve SDU-10-XRF-03-shaker
- 1430 Sieve SDU-10-XRF-04-shaker + hand
- 1415 Ken left to FedEx with
2 coolers:
1 9 cores for VDU-03
2 9 cores for VDU-04
- 1408 shut down XRF analyzer
- 1520 KY/ALD collect rinse + blank
of deconned sieve, 10'S
SDU-10-ER-B-20150428
- 1720 DC collected rinse + blank of
deconned core barrel
SDU-06C-ER-A-20150428
- 1730 Debrief
- 1740 Depart

auto 4/28/15

Daily Log

- 0645 Teams arrive at C.N. in Kettle Falls
- 0700 Daily tailgate
- 0720 weigh dried XRF samples from SDU-06
- 0725 Teams A + B depart to sample
- 0731 Ken + Amy check increments for SDU-06A. Reserve location SDU-06A-R03 was used for SDU-06A-02. All 30 increments checked
- 0748 KY/ALD composite 30 increments to create SDU-06-ICS-A in 1 bucket
- 0752 Ken + Amy check increments for SDU-06-ICS-B. No reserve locations used. All 30 increments checked
- 0804 KY/ALD composite 30 increments to create SDU-06-ICS-B into 1 bucket.
- 0812 Reweigh dry XRF samples for SDU-06
- 0814 Sieve SDU-06-XRF-01-shaker
- 0822 Sieve SDU-06-XRF-02-shaker
- 0823 Start XRF analyzer

#1	Energy Calibration check - passed			
#2	Blank SiO ₂		<1.8	
#3	NIST 2709a TV=17.3		13.2	76.3%R
#4	NIST 2711a TV=1400		12.96	92.6%R
#5	SDU-06-XRF-01	Run 1	24.1	Sandy
#6	"	Run 2	25.1	
#7	"	Run 3	25.6	Ave 24.9
#8	SDU-06-XRF-02	Run 1	23.3	
#9	"	Run 2	27.0	
#10	"	Run 3	25.3	Ave 25.2
#11	SDU-06-XRF-04	Run 1	19.9	
#12	"	Run 2	17.5	
#13	"	Run 3	18.2	Ave 18.5
#14	SDU-06-XRF-05	Run 1	30.9	
#15	"	Run 2	33.5	
#16	"	Run 3	34.3	Ave 32.9
#17	SDU-06-XRF-R02	Run 1	13.2	
#18	"	Run 2	13.5	
#19	"	Run 3	16.9	Ave 14.5
#20	" Precision	Run 4	30.9	higher *
#21	"	Run 5	31.3	
#22	"	Run 6	29.6	
#23	"	Run 7	30.3	
#24	Blank SiO ₂		8.3	high

#25	Redo Blank SiO ₂		9.3	high
#26	NIST 2709a TV=17.3		24.3	140%R
#27	NIST 2711a TV=1400		1331	95.1%R *
#28	Energy Calibration check - passed			
#29	Blank SiO ₂		<1.8	OK now
#30	NIST 2709a TV=17.3		12.1	69.9%R
#31	SDU-06-XRF-R02 recheck	4	16.2	matches last 3 runs
#32	"	Run 5	16.1	
#33	"	Run 6	15.1	
#34	"	Run 7	13.1	RSD=10.7%
#35	recheck SDU-06-XRF-05		35.9	-confirms
#36	NIST 2711a TV=1400		1302	93%R
#37	Blank SiO ₂		<1.8	OK
#38	Energy calibration check - passed			
* XRF analyzer response jumped up approximately 10 ppm. After energy calibration check #28 passed, response appears back to normal. Results #20 through #27 are suspect and should not be used. Other results OK to use.				
Kettle Falls				

Location Kettle Falls, WA Date 4/29/15Project / Client Teck Bossburg
Daily Log continued

- 0828 Sieve SDU-06-XRF-04-shaker + by hand break up aggregates using baggie
- 0856 Sieve SDU-06-XRF-05-shaker only
- 0900 sieve SDU-06-XRF-R02-shaker
- 0930 Ken checks increments for SDU-06-ICS-C. Reserve location SDU-06C-R05 collected for SDU-06C-10. All 30 increments checked.
- 0940 KY composites 30 increments for SDU-06-ICS-C.
- 1003 KY collects rinsate blank of deconned sieve:
SDU-06-ER-B-20150429
- 1018 Shut down XRF analyzer
- 1019 Pack up 2 coolers:
Cooler 1: SDU-06-ICS-A
SDU-06-ICS-B
Cooler 2: SDU-06-ICS-C
SDU-09-XRF-R03 (for-07)
SDU-09-XRF-02
SDU-09-XRF-04
SDU-10-XRF-03
SDU-10-XRF-04
5 ER blanks

Location Kettle Falls, WA Date 4/29/15Project / Client Teck, Bossburg
Daily Log continued

- 1100 Amy troubleshoot database while Ken does miscellaneous items
- 1408 Ken departs for FedEx with 2 coolers. Also takes coring devices to return to AMS.
- 1500 Ken arrives back to C.N.
- 1520 Ken departs C.N. for the day.
- 1635 Team A arrives back to C.N.
- 1647 ALD/AP collect rinsate blank of deconned shovel:
SDU-06-ER-D-20150429
- 1649 ALD collect rinsate blank of deconned core barrel
UDU-05-ER-A-20150429
- 1704 ALD/AP collect rinsate blank of deconned hand auger
SDU-06-ER-C-20150429
- 1710 Rebrief
- 1720 Depart site

and
4/29/15

Location BOSSBURG Date 4/28/15
 Project / Client BOSSBURG REFINED SEDIMENT
+ SOIL STUDY / IAI

- 1515 - Joe Wichmann and Nicole Badon departed field lab. Joe said he would be in touch about field XRF study. Kris can expect a call or email.
- 1600 - CC with Kris, Paul, Becky + Karen Tobiason (Windward)
- 1648 call ended.
- 1710 - field teams returned; conducted decon + collected rinseate samples, process observed by Andrea Latier.
- 1749 - offsite

[Handwritten signature]



Location BOSSBURG Date 4/29/15
 Project / Client BOSSBURG REFINED SEDIMENT +
SOIL STUDY / IAI

- 0614 - at field office + prepared for tailgate meeting.
- 0700 - tailgate meeting
- Teams deployed as follows
- TEAM A - UDU-05
- TEAM B - SDUs-01 and 02 and UDU-05
- team B without tablet + Michelle will record field notes in notebooks for later transfer.
- Michelle Stegner joined Bill White - NPS + Susan Ellis - CCT to recon SDUs 09 + 10 with Weatherman support boat.
- 0834 - Joe Wichmann called asking about XRF data at UDU-06. Told him no samples collected yet as we do not have written permission - end of conversation.
- SDU-06 XRF results
- | | |
|------------------------|--|
| XRF - 01 = 24.9 / 25.6 | } draft to be (u) confirmed
+ photo reservoir location
all results draft |
| - 02 = 25.2 / 27 | |
| ROZ03 = 14.5 / 16.9 | |
| 04 = 18.5 / 19.9 | |
| 05 32.4 / 34.3 | |

Location Bossburg Date 4/29/15
 Project / Client BOSSBURG REFINED SEDIMENT
+ SOIL STUDY / TAI

- 0935 - departed field office for Bossburg
 1000 - at Bossburg; delivered Hugs
 went to UDU-05, SDU-01 + 02
- Team B completed SDU-01 and were working on SDU-02
 - Team A progressing with UDU-05 - had 5 XRFs when I arrived.
 - call from Michelle @ 1115. CCT Brent Martinez with them. Planning a CC with CR folks. Michelle will talk with Sarah.
 - assisted team B carrying samples + core samples back to vehicles.
 - Came back + EPA + CH on phone calls. Team B will go to Evans begin cores. EPA/CH will select. but preliminary indications are
 - SDU-06 XRF-04 is Core 1 = XRF-01
 - XRF-~~04~~ is Core 2 = XRF-02
 - XRF-~~02~~ is Core 3 = XRF-01
 - based on CH/EPA random core locations. Nicole Bador^(CH) will confirm with Andrea LaTier (EPA)
 - look at 4/27 for Sample IDs based

Location Bossburg Date 4/29/15
 Project / Client BOSSBURG REFINED SEDIMENT
+ SOIL STUDY / TAI

- returned to UDU-05. TEAM A still working on slope.
- resolution per Andrea LaTier SDU-10 - go carefully w/ two monitors; inspect area carefully inspect samples closely + advise where we can walk.
- SDU-09 - no triplicate. Monica to discuss with Kris McLaugh.
- likely we can do 9
- keep 5 meters from shoreline
- will need to map shoreline - Michelle was pulled out of area before she could complete her mapping.
- 1515 left Bossburg for Evans
- 1527 at Evans, provided Susan with UDU-05 cores to look over.
- 1535 - called Paul + discussed EPA plan for SDUs 9 + 10.
- 1600 - call with Paul, Kris + Bechy + Karen^(W)
- SDU-09 collect replicate A.
- SM limit is only at SDU-10 but to be confirmed by EPA.
- can start on SDUs 9 + 10

Location BOSSBURG Date 4/29/15
 Project / Client BOSSBURG REFINED SEDIMENT
+ SOIL STUDY / TAI

Rode back to field office with Michelle who downloaded me with the days events at SDU-10.
 1715 - at field offices. Teams already deconned & collected rinseates.

1725 - Field teams departed.

Samples collected on 4/28 as follows. (for verifying daily reports)

Team A	Team B
SDU-06A 16 ICS	SDU-06B - 17
6C 7 ICS	06B 23
06 5-XRF	

4/29 UDU-05 13 ICS 6 XRF Team A
 Cores @ SDU-01, 02, 06 Team B.

4/27 SDU-09 - 4 xrf
 SDU-10 - 5 ICS
 SDU-06A - 14 ICS } Team A

SDU-16 - 5 ICS 4 XRF
 6B - 13 ICS

Michelle

Location BOSSBURG Date 4/30/15
 Project / Client BOSSBURG REFINED SEDIMENT
+ SOIL STUDY / TAI

- 0630 @ field office.
- 0656 - team at field office bedding gear.
- New NPS person Danica ROMEYN
- New CH2M Hill person - Reuben Green
- conducted tailgate safety meeting reviewed work scope with field team as follows:

TEAM A - UDU-05 - ICS + XRF

TEAM B - SDU-09 - ICS
 SDU-10 - ICS

SDU-5 - cores as time permits.

- discussed changing decon rinse water more often with the lab team, noting use of scoop when + at what sample & recording time of rejected sample locations
- worked with Army on data + lab issues (soils water drums) + that if XRF not complete when Ken leaves the sieve shaker has to stay here.
- 0906 - departed for Bossburg
- 0928 - at Bossburg to observe sampling

UDU-05

4.29.15

Bossgang / Teck

1532 Leave Bossgang for Evans

1543 @ Evans. Will help other
team collect cores in
SDU-06.~~1550 Head back to Kettle Falls~~~~1551P~~

1617 Leave for Kettle Falls

1633 @ Wertheimann's. Decor.

1710 Debrief.

1722 Offsite.

Anthony Pal
4.29.15

UDU-05

4.30.15

Bossgang / Teck

Observers: New (Ruben, CH) & (Darnice, NPS)

0645 @ Wertheimann's.

0700 H&S meeting.

0722 Leave Kettle Falls.

0743 @ Bossgang.

0835 @ UDU-05 - XRF-07

GPS

423 537.39

5401 364.67

0850 @ UDU-05 - XRF-06

GPS

423 528.48

5401 346.87

0910 @ UDU-05 - XRF-03

GPS

423 492.84

5401 311.21

0925 @ UDU-05 - XRF-02

GPS

423 483.93

5401 293.39

0945 @ UDU-05-XRF-04

GPS

423 466.11

5401 293.39

@ UDU-05-XRF-04

GPS

423 501.75

5401 329.73

1021 @ UDU-05-XRF-05

GPS

423 510.66

5401 346.85

1030

Retrol for ICS.

1057 @ UDU-05-07

GPS

423 559.12

5401 407.04

1105 @ UDU-05-12

GPS

423 529.72

5401 358.43

~~@ UDU-05-08~~~~GPS~~~~423~~~~5401~~

1120 @ UDU-05-29

GPS

423 521.74

5401 346.28

1130 @ UDU-05-27 *hand dis

GPS

423 499.21

5401 315.68

1145 @ UDU-05-24 *hand dis

GPS

423 483.13

5401 305.28

1157 @ UDU-05-04 *hand dig

GPS

423 472.07

5401 276.77

1206 @ UDU-05-16 *hand dig

GPS

423 468.35

5401 273.16

~~@ UDU~~

1230 Take lunch.

1255 @ UDU-05-02

GPS

423 571.26

5401 434.56

1307 @ UDU-05-06

GPS

423 562.68

5401 425.55

1317 @ UDU-05-13 *hand dig

GPS

423 553.99

5401 410.71

1328 @ UDU-05-18

GPS

423 550.11

5401 402.26

1337 @ UDU-05-28

GPS

423 537.68

5401 380.36

1348 @ UDU-05-26

GPS

423 527.68

5401 371.56

1357 @ UDU-05-10

GPS

423 519.25

5401 363.82

1410 @UDU-05-14

GPS

423 474.69

5401 305.87

1425 @UDU-05-19

GPS

423 461.05

5401 286.28

1439 @UDU-05-30

GPS

423 462.06

5401 293.40

1450 Demobe from UDU-05

1507 Head to Evans.

1517 @ Evans, Mobe to COR-03

Colocated w/ XRF-04.

No splits.

1600 @ COR-03

1603 Collect 001 (6")

1608 Collect 002 (12")

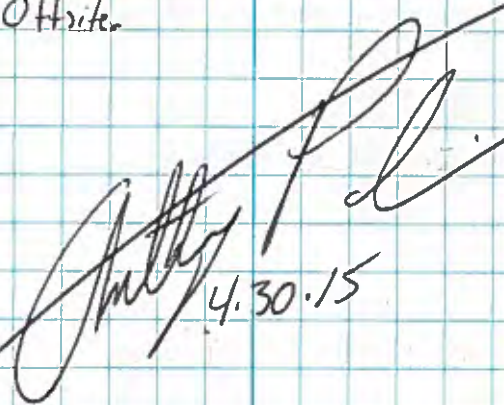
1609 Collect 003 (18")

1635 Lene Evans from Kettle Falls.

1651 @ Weathermans.

1725 Debrief.

1735 Offsite



4.30.15

Kettle Falls

4/29/15

Borsberg
D LewisCore samples SDU-06 (cont)

COR-02-003

Time: 1534

~~(02)~~10YR 4/3, silty very
fine sand, trace organics03-001 ~~(02)~~

COR-02-003

associated w/XRF-01
using shovel (tanks
steak) because of
cobbles

Time: 1548

10YR 4/2, silty fine
to coarse sand,
fine to coarse gravel,
some cobbles

COR-03-002

collected w/ stainless
steel shovel

Time: 1602

10YR 4/2, silty fine
to coarse sand,
/ cobbles

COR-03-003

split sample.

Time: 1609

10YR 4/2, silty fine to
coarse sand, some
fine to coarse gravel.

4/29/15

D2

Kettle Falls

4/30/15

Borsberg
D Lewis

Weather: 40-60°

0700 H+S meeting at shop
0800 at Borsberg to catch
boat to SDU-10Crew: Dean Kiny, Dave Lewis,
Michelle StegnerTask: ICS sampling at SDU-10 + 09
observers: Nicole Budon (CH2M)Rueben Area (CH2M), Susan
Ellis (CCT), Darika Gomez (NPS)

0900 at SDU-10 off of boat.

1047 Break while some people go on
boat to facilities (included in
cultural monitor)

1120 Back at work

1210 Lunch

~~(02)~~ 1250 Back to work1615 Left west side of river for
Borsberg

1635 Back at Lab, debrief/demat

4/30/15

D Lewis

Kettle Falls

4/30/15

Barrberg
D Lewis

SDU-10		UTM 11N (meters)	
LOC	TIME	EASTING	NORTHING
-17	0924	422090.18	5400640.80
-05	within ^{water} 5 meters of buffer zone		
-04	within ^{water} 5 meter buffer zone (D)		
-R04	0950	422077.60	5400642.89
-23	1005	422148.20	5400712.79
-R03	abandoned request of Cultural monitor (CCT)		
-25	1041	422180.21	5400730.26
-16	1123	422184.57	5400743.90
-22	1129	422180.66	5400755.08
-29	1141	422238.05	5400791.04
-02	1145	422238.00	5400804.41
-R02	1151	422245.18	5400815.12
-24	1200	422255.97	5400794.05

SDU-09A		UTM 11N (meters)	
LOC	TIME	EASTING	NORTHING
-05 (D)	1367	422294.11	5400879.79
x -13	1316	422337.51	5400963.97
-12	1322	(D) 42242	5400915.49

4/30/15 (D)

Kettle Falls

4/30/15

Barrberg
D Lewis

SDU-09A (cont)		UTM 11N (meters)	
LOC	TIME	EASTING	NORTHING
x -09	1330	422341.43	5400925.96
x -23	1345	422359.64	5400939.41
x -19	1352	422375.45	5400953.30
x -06	1400	422360.19	5400968.43
x -28	1414	422382.91	5400982.82
x -22	1424	422401.03	5400997.91
x -25	1434	422393.66 (D) 5400	5400022.94
v -08	1444	422409.51	5401039.95
v -20	1459	422417.32	5401057.80
v -02	1512	422435.61	5401082.55
v -11	1535	422443.05	5401115.46
x -24	1536	422450.74	5401108.36

4/30/15
David Lewis

Location Kettle Falls, WA Date 4/30/15Project / Client Teck, BossburgDaily Log

0645 Teams arrive
 0700 Daily tail gate
 0715 Weigh ⁶ wet XRF samples for UDU-05
 0725 Teams A & B depart to sample
 0730 Set up decon + sort core samples
 0745 Transfer core samples for SDU-06 to
 1L bottles + pack cooler 1 + 3 ER blanks
 0907 Transfer core samples for SDU-01
 to 1L bottles + pack cooler 2
 1000 Transfer core samples for SDU-02
 to 1L bottles + pack cooler 3
 1041 Reweigh dry XRF samples for UDU-05
 1053 Turn on XRF analyzer
 1115 Reweigh dry XRF samples for UDU-05
 all 6 to constant weight
 1123 Sieve UDU-05-XRF-08 shaker only
 1133 Sieve UDU-05-XRF-09 shaker only
 1141 Sieve UDU-05-XRF-10 shaker only
 1230 Sieve UDU-05-XRF-11 shaker
 1240 weight UDU-05-XRF-01 to -06 &
 put into oven
 1248 Sieve UDU-05-XRF-12 shaker only
 lots of small organic/plant material
 came through sieve.

Location Kettle Falls, WA Date 4/30/15Project / Client Teck, BossburgDaily Log continued

1257 Sieve UDU-05-XRF-13 shaker
 1305 Recon sieves
 1347 ACD collects misate blank of
 deconned sieve:
 UDU-05-ER-B-20150430
 1356 Weigh last sample from UDU-05-XRF-07
 1403 Ken departs to Fed EX with 3 coolers
 • 9 cores for SDU-06 + 3 ER blanks
 • 9 cores for SDU-01
 • 9 core for SDU-02
 1440 Reweigh dried XRF samples UDU-05 1-6
 1448 check QC samples by XRF
 1506 Ken arrives back with 9 bags ico
 1507 Sieve UDU-05-XRF-01-shaker only
 1500 Reweigh dried XRF samples - 4 ^{samples} OK to sieve
 1514 Sieve UDU-05-XRF-03-shaker only
 1522 Sieve UDU-05-XRF-04-shaker
 1542 Reweigh XRF samples
 1608 Reweigh XRF samples - all OK to sieve -
 1618 Sieve UDU-05-XRF-02-shaker. Lots
 of aggregates - large - grind against
 sieve with hand inside baggie
 1627 Sieve UDU-05-XRF-05-shaker only
 1636 Sieve UDU-05-XRF-06-shaker

Location Kettle Falls, WA Date 4/30/15Project / Client Teck, Bossburg

XRF analyzer of Lead (ppm)

#1	Energy calibration check - passed			
#2	Blank SiO ₂		<1.8	
#3	NIST 2709a TV=17.3	12.9	74.6%R	
#4	NIST 2780 TV=5770	51.7	88.7%R	
#5	UDU-05-XRF-08	Run 1	127.7	
#6	"	Run 2	117.7	
#7	"	Run 3	100.0	Ave 115.1
#8	UDU-05-XRF-09	Run 1	127.0	
#9	"	Run 2	161.3	
#10	"	Run 3	185.4	Ave 157.9
#11	UDU-05-XRF-10	Run 1	13.9	
#12	"	Run 2	19.2	
#13	"	Run 3	17.4	Ave 16.8
#14	UDU-05-XRF-11	Run 1	21.2	
#15	"	Run 2	52.5	failed 73%R
#16	"	Run 3	20.3	Ave 31.3
#17	UDU-05-XRF-11	Run 1	18.5	remixed
#18	"	Run 2	18.3	73%R
#19	"	Run 3	34.2	Ave 23.7
#20	UDU-05-XRF-11	Run 1	18.5	remixed
#21	"	Run 2	17.6	
#22	"	Run 3	14.0	Ave=18.0
#23	UDU-05-XRF-12	Run 1	1155	
#24	"	Run 2	954	Ave 1036
#25	"	Run 2	922	

Location Kettle Falls, WA Date 4/30/15Project / Client Teck, Bossburg

XRF analysis of Lead (ppm) continued

#26	UDU-05-XRF-13	Run 1	38.3	
#27	"	Run 2	39.2	
#28	"	Run 3	37.8	Ave 38.4
#29	" Precision	Run 4	36.4	
#30	"	Run 5	32.6	
#31	"	Run 6	27.5	
#32	"	Run 7	34.8	RSD=11.6%
#33	Blank SiO ₂		<1.8	
#34	NIST 2709a TV=17.3	13.3	76.9%R	
#35	NIST 2711a TV=1400	1321	94.4%R	
#36	UDU-05-XRF-01	Run 1	22.9	
#37	"	Run 2	21.2	
#38	"	Run 3	18.6	Ave 20.9
#39	UDU-05-XRF-03	Run 1	19.4	
#40	"	Run 2	14.7	
#41	"	Run 3	14.9	Ave 16.3
#42	UDU-05-XRF-04	Run 1	65.8	
#43	"	Run 2	49.6	
#44	"	Run 3	66.2	Ave 60.5
#45	UDU-05-XRF-02	Run 1	23.0	Lots of large
#46	"	Run 2	25.3	particle clump & fraction
#47	"	Run 3	25.8	Ave 24.7
#48	UDU-05-XRF-05	Run 1	30.3	Lots of plant
#49	"	Run 2	33.6	material < 2mm
#50	"	Run 2	29.2	Ave 31.0

Location Kettle Falls, WA Date 4/30/15

Project / Client Teck, Bossburg

XRF analysis of Lead (ppm) continued

#51	UDU-05-XRF-06	Run 1	21.5	
#52	"	Run 2	19.0	
#53	"	Run 3	21.6	Ave 20.4
#54	UDU-05-XRF-07	Run 1	190	
#55		Run 2	160	
#56		Run 3	219	Ave 189.7
#57	Blank SiO2		21.8	
#58	MST 2780 TV=5770		5068	97.8%R
#59	Energy calibration check - passed			

and
4/30/15

Location Kettle Falls, WA Date 4/30/15

Project / Client Teck, Bossburg

Daily Log continued

- 1640 Team B arrived back to C.N.
- 1705 SDU-05-ER-C-20150430-DL
- 1710 UDU-05-ER-A-20150430-DL
- 1712 Shut down analyzer - XRF
- 1700 Team A arrives back to C.N.
- 1723 Rebrief
- 1800 Depart site

and
4/30/15

Location BOSSBURG Date 4/29/15
 Project / Client BOSSBURG REFINED SEDIMENT
+ SOIL STUDY / TAI

Rode back to field office with Michelle who downloaded me with the days events at SDU-10.
 1715 - at field offices. Teams already deconned & collected rinseates.

1725 - Field teams departed.

Samples collected on 4/28 as follows. (for verifying daily reports)

Team A	Team B
SDU-06A 16 ICS	SDU-06B - 17
6C 7 ICS	06B 23
06 5 XRF	

4/29 UDU-05 13 ICS 6 XRF Team A
 Cores @ SDU-01, 02, 06 Team B.

4/27 SDU-09 - 4 XRF
 SDU-10 - 5 ICS
 SDU-06A - 14 ICS } Team A

SDU-16 - 5 ICS 4 XRF
 6B - 13 ICS

Michelle

Location BOSSBURG Date 4/30/15
 Project / Client BOSSBURG REFINED SEDIMENT
+ SOIL STUDY / TAI

- 0630 @ field office.
- 0656 - team at field office bedding gear.
- New NPS person Danica ROMEYN
- New CH2M Hill person - Reuben Green
- conducted tailgate safety meeting reviewed work scope with field team as follows:

TEAM A - UDU-05 - ICS + XRF

TEAM B - SDU-09 - ICS
 SDU-10 - ICS

SDU-5 - cores as time permits.

- discussed changing decon rinse water more often with the lab team, noting use of scoop when + at what sample & recording time of rejected sample locations
- worked with Army on data + lab issues (soils water drums) + that if XRF not complete when Ken leaves the sieve shaker has to stay here.
- 0906 - departed for Bossburg
- 0928 - at Bossburg to observe sampling

Location BOSSBURG Date 4/30/15
 Project / Client BOSSBURG REFINED SEDIMENTS
+ SOIL STUDY / TAI

- Team B working at SDU-10, Columbia Navigation support beached a boom SDU-10.

- went to UDU-05

- 1032 - Team A completed XRFs @ UDU-05. Taking them to Susan Ellis for review + then field/lab

1120 - off boat at Bossburg, headed to field lab

1130 - left Bossburg

1151 - at field office with XRF samples

- Teams reporting all is going well.
 - 1210 - per Michelle they completed the available locations + are breaking for lunch. Will resume at SDU-09A.

Brent Martinez CCT has a team working on BPA project in vicinity of SDU-10.

- MV to contact Andrea Latier do discuss options to collect remaining SDU-10 ICS. Refer to page #A All of QAPP during discussion.

Location BOSSBURG Date 4/30/15
 Project / Client BOSSBURG REFINED SEDIMENT
+ SOIL STUDY.

27 - SDU 10 samples have been collected however 2 stations were duplicate.

24 - collected by Team A on 4/27

29 - collected by Team A on 4/27

- means we need 5 more samples
 - informed Paul of Tally and Team B proceeding to SDU-09.

1233 - @ Bossburg headed to UDU-05

- discussed SDU-10 issue of 5 samples short with Andrea Latier.

She will discuss page All of QAPP

with him to understand appropriate "other appropriate location meaning"

- Paul dia called to discuss SDU-08 we will not exclude CR issue area.

- further discussion with Andrea to select appropriate locations at SDU-10. Will take a line a

perpendicular to the river for inundated sample to a location

that is acceptable to monitors.

No distance requirement

For CR rejected sample do some thing. Change request requested.

Location Bossburg Date 4/30/15
 Project / Client Bossburg Refined Sediment
 + Soils Study / TAI

- Field XRF study - talk to Kris
 - EPA suggest we go out to each increment + XRF at the previous cleared locations. A monitor well have to accompany team.
 - Andrea has to give presentation would like a summary to date - verbal is OK. [Citizens Advisory Group - J. Wickham]
 - Ecology wants to know XRF data.
- 1425 - discussed conversation ~~of the~~ I had with Andrea Luber (EPA) with Paul. Will follow up with Kris
- Discussed F-2 cores with respect to current concerns at SDU-09 as F-2 is within SDU-09.
 - XRF study will start in SDU-09.
- 1445 - Team completed UDU-05 ICS + 0 locations. Went to SDU-05 to start cores
- 1510 left Bossburg
 - 1519 @ Evans behind group camp.
- 1530 - head to field office for conference call - with TAI

Location Bossburg Date 4/30/15
 Project / Client Bossburg Refined Sediment +
 Soil Study / TAI

- 1550 - call from Michelle. They have 15 ICS @ SDU-09, will take a few more samples + head back to office
- 1600 - Conference call with Paul, Kris + Beccy.
- > SDU-09 - no triplicates
 - SDU-05 - for triplicates? No
 - SDU-07 in triplicate. YES
 - No CORES @ SDU-09 - awaiting decision ^{from} Monica on F-2.
- SDU-10 proceed with plan as discussed with Andrea OK to proceed prior to change request - can do this on 5/1
 - SDU-09 + 10 XRF field readings - issue with Joe Wichmann - go to ICS locations with monitors to clear areas - NO XRF outside of boundaries - We will do this work.
- HDR - 4 + 7 done 8 is being worked on. Once maps + coordinates are in hand we can move forward

Location BOSSBURG Date 4/30/15
 Project / Client BOSSBURG REFINED SEDIMENT
+ SOIL STUDY

- without signed change request.
- Have email for SDU-08 from Monica agreed to by Guy Morra of CCT.
- Matt will follow up with Dr Boone
- Kris + Becky coming in AM @ office by 0800. Dave Enos will be coming.
- call over @ 1640
- Team B returned @ 1640
 Kenen Green - 509-847-8819
- 1715 - debrief
 - discussed new developments with team + Friday field work + visit from TAI tomorrow.
- 1740 - left field office. Amy + Michelle stayed behind

[Handwritten signature]

Location BOSSBURG Date 5/1/15
 Project / Client BOSSBURG REFINED SEDIMENT
+ SOIL STUDY / TAI

- Obs at field office.
- provided GIS files to Michelle but they do not have UTM coordinates.
- conducted tailgate meeting discussed STE, dust, rocks rolling down slopes.
- team's departed at 7:25 as follows
 - Team A - SDU-05 then UDU-05
 - Team B - SDUs 9 and 10.
- 0845 - TAI - Kris McCraig, Becky Henseler + Dave Enos
 - Talked about status
 - TAI visited Amy Dahl in XRF land
- Went to Bossburg with TAI
- Met Team A on their return from SDU-05. All cores complete. This DU is done.
- Team A to decom + go to UDU-05
- 1042 boarded Columbia Navigation boat to four SDU-08, SDU-09+10, SDU-06 and SDU-07.

0645 Onsite.
 0700 HdS meeting.
 0810 Leave Kettle Falls marine
 0830 @ SDU-05
 0845 @ SDU-05 - XRF-01
 COR-01
 * 3 L @ 6"
 * 1 L @ 12"
 * 1 L @ 18"

0855 @ Collect 001 (6")
 0900 @ Collect 002 (12")
 0905 @ Collect 003 (18")

0930 @ SDU-05 - XRF-09
 COR-02
 * 1 L @ 6"
 * 2 L @ 12"
 * 1 L @ 18"
 0930 Collect 001 (6")
 0940 collect 002 (12")
 0945 collect 003 (18")

1015 Leave SDU-05 for Bosbury.

1030 @ Bosbury

~~@ UDU-05 - COR-01~~

1112 @ UDU-05

✓ COR-01 → XRF-07
 COR-02 → XRF-02
 ✓ COR-03 → XRF-12

1130 @ XRF-12

COR-03
 * 2 L @ 6"
 * 1 L @ 12"
 * 1 L @ 18"

Have to hand dig location with stainless steel shovel due to the presence of cobbles

1140 Collect 001 (6")
 1150 Collect 002 (12")
 1155 Collect 003 (18")

1200 Take lunch.

1245 @ COR-02
~~* collect 002 #1L @ 001~~
 *2L @ 002 *have to collect
 *1L @ 003 w/shovel due to
 cobbles

1300 Collect 002 (6")

1310 Collect 002 (12")

1315 Collect 003 (18")

1345 @ XRF-02 - COR-02
 *1L @ 001 *have to collect
 *1L @ 002 w/strakes steel
 *1L @ 003 shovel, due to cobbles

1355 Collect 001

1400 Collect 002

1405 Collect 003

1437 Leave Bossburg for Kettle Falls
 MINNA

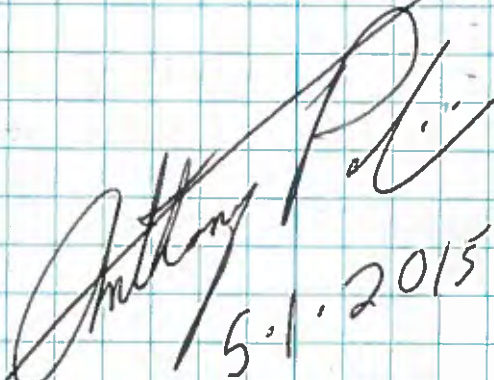
1510 Drop John & MINNA.

1515 @ Weathermans

1530 Start decon, updating
 tablets.

1720 Debrief.

1725 Offsite.


 5.1.2015

Kettle Falls

Date 5/1/15

Bassberg

D Lewis

Clear 65°

0700 H+S meeting, mob
 0905 at SDU-10 + 09 after boat
 ride.

Crew: Sean Kennedy, Dave Lewis,
 Michelle Stegner.

Task: ICS samples

Observers: Ruben Grier (QA/Mitell)

Susan Ellis (CCT), Danika Romeyn (NPS)

0915 starting alternate locations
 on SDU-10, 5 meters west of orig. loc.

0916 SDU-10-28 14.85 meters at 299°
 (From orig. loc.)

0930 SDU-10-26 7.68 meters from orig.
 location @ 301°

0946 SDU-10-30 17.66 meters at 297° from
 original location.

1002 SDU-10-27 3.4 meters at 300° from
 original location

1021 SDU-10-21 27 meters at 300° from
 original location

5/1/15

D

Kettle Falls

5/1/15

Bassberg

D Lewis

SDU-10

UTM 11N (meters)

LOC	TIME	easting	northing
-28	0916	422206.87	5400748.16
-26	0930	422194.40	5400722.14
-30	0946	422177.32	5400699.76
-27	1002	422129.87	5400669.27
-21	1021	422109.41	5400641.25

SDU-09A

UTM 11N (meters)

LOC	Time	easting	northing
x -R03	1128	422343.15	5400892.21
x -14	1138	422344.58	5400889.35
x -R02	1149	422422.40	5400886.15
(D)x -10	1204	422362.02	5400928.07
x -R04	1216	422354.02	5400936.83
x -R01	Location rejected by CCT monitor (D)		
x -27	1328	422431.14	5401204.06
(A) -21-07	1339	422458.26	5401072.97
x -30	Rejected by CCT monitor		
x -R04	Rejected by CCT monitor		
x -15	1416	422466.17	5401094.38

5/1/15

D

- 1045 Break - finished SDU-10
1103 Heading for SDU-09A
Chris, Dewe, & Becky from
Tech onsite by boat along
w/ Mark Hatter
- 1123 Starting again SDU-09A to
complete sampling there ^{starting} w/ alternate sites
- ~~1128 SDU-09A-R03 (P2) (P2)~~
- 1220 Lunch some people being loaded to
facilities back monitors
- 1315 ~~(P2)~~ Monitor back, continuing
on SDU-09A, offset locations
- 1416 SDU-09A-15 27.6 meters from
orig. location 305°
- 1436 SDU-09A-04 24.4 meters 294°
from original location
- 1451 SDU-09A-01 9.51 meters at 297° from
original location
- 1504 SDU-09A-16 22.21 meters of 308°
from original location

5/1/15
P2

SDU-09A (Cont.)		UTM 11N (meters)	
Loc	Time	easting	northing
x -04	1436	422437.99	5401050.16
x -01	1451	422430.76	5401037.58
x -16	1504	422422.63	5401024.46
x -29	1514	422376.76	5400938.25
x -26	1528	422363.44	5400909.48
x -03	1537	422351.04	5400897.24
x -17	1546	422320.55	5400876.04

5/1/15
P2

Kettle Falls

5/1/15

Bassberg
D Lewis

- 1516 SDU-09A-29 15.3 meters @ 298° from original location
- 1528 SDU-09A-26 15.4 meters at 295° from original location
- 1537 SDU-09A-03 11 meters @ 295 from original location.
- 1546 SDU-09A-~~05~~¹⁷ 29 meters @ 300° from original location
- 1630 at Bassberg after taking boat back from SDU-09A (completed)
- 1650 Back at shop.

5/1/15

DL

Kettle Falls

5/2/15

Bassberg
D Lewis

40-65°

- 0700 H + S meeting
Crew: Michelle Stegner
Drew Lewis, Dean King
- TASK: XRF samples, ICS samples
observers: Ruben Guier (C-H-m)
Megan Lyons (NPS)
- 0804 at Bassberg SDU-04
- 0840 at Smith end of SDU-04, waiting for boat to get below steep slope for safety.
- 0907 Columbia navigation onsite start XRF samples
- 1020 Leaving SDU-04

samples that required scoops to fill core barrel

- XRF-04 first attempt & recovery, 2nd attempt was 100% recovery
- XRF-03 90% recovery, finished w/ scoop
- XRF-02 80% recovery, finished w/ scoop

5/2/15

DL

Location Kettle Falls, WA Date 5/1/15Project / Client Teck, Bossburg
Daily Log

- 0645 Teams arrive at C.N. in Kettle Falls
- 0700 Daily tailgate meeting
- 0724 Ken + Amy check increments for VDU-05-1CS, all 30 checked, no reserve locations used.
- 0735 Teams depart for sampling
- 0742 KY/ALD composite 30 increments to create VDU-05-1CS
- 0745 Ken transfers SDU-05-COR-03-001 to 005 into 1L bottles to ship to lab
- 0811 Ken + Amy pack cooler to lab:
 - VDU-05-1CS
 - SDU-05-COR-03 → 3 core samples
 - VDU-05-XRF-01
 - 3 ER blanks
- 0845 Teck arrives at C.N. - Kris, Dave, + Becky
- 0856 Ken prepares more 10% nitric acid solution. Clean box truck.
- 0915 Turn on XRF analyzer to show Kris + Becky
- 0954 Turn off XRF analyzer
- 1000 Teck + Mark depart C.N.

Location Kettle Falls, WA Date 5/1/15Project / Client Teck, Bossburg
Daily log continued

- 1005 Ken + Amy continue to clean + consolidate field supplies
- 1051 Christine calls Amy to discuss various sample shipping items.
- 1150 Amy gets lunch
- 1215 Amy re-enters 1CS data into master database program
- 1330 Ken + Amy depart to drop off recycling + deliver cooler to FedEx + get gas
- 1500 Ken + Amy arrive back to C.N.
- 1514 Team A arrives to C.N.
- 1530 DC collect rinse blank of deconned Auger
SDU-05-ER-C-20150501
- 1535 DC collect rinse blank of deconned shovel
VDU-05-ER-D-20150501
- 1555 Ollie, Demetrio, Ken depart site
- 1635 Reuban + Susan return to C.N.
- 1650 Team B arrives at C.N.
- 1705 ~~404~~ SDU-10-ER-A-20150501
rinse blank of deconned core barrel by Dave Lewis

Location Kettle Falls, WA Date 5/1/15Project / Client Teck, BossburgDaily log continued

1710 Susan departed site

1715 Debrief

1730 Depart site

AWD
5/1/15Location Kettle Falls, WA Date 5/2/15Project / Client Teck, BossburgDaily Log

0650 Teams arrive at C.N. Kettle Falls

0700 Daily tailgate

0730 organize field equipment

0735 sort yesterday's samples

0745 Ken + Amy check increments for SDU-09-1CS-A. 3 reserves SDU-09A-R02, R03, R04 collected for SDU-09A-18, 21, 30

0805 KY/AWD composite 30 increments to create SDU-09-1CS-A

0810 Transfer cores from SDU-05-COR-01 + SDU-05-COR-02 to 1L bottles

0905 Transfer cores from UDV-05 Start recording mass of each core

UDV-05-COR-01-001 726 g

UDV-05-COR-01-002 162 834.5g

202 926 g

UDV-05-COR-01-003 982.5 g

02-001 1033 g

002 958.5 g

003 1345 g

03-001 162 384.5g

202 300 g

Could be limited on tabs

Location BOSSBURG Date 4/30/15
 Project / Client BOSSBURG REFINED SEDIMENT
+ SOIL STUDY

- without signed change request.
- Have email for SDU-08 from Monica agreed to by Guy Morra of CCT.
- Matt will follow up with Dr Boone
- Kris + Becky coming in AM @ office by 0800. Dave Enos will be coming.
- call over @ 1640
- Team B returned @ 1640
 Kenan Green - 509-847-5819
- 1715 - debrief
 - discussed new developments with team + Friday field work + visit from TAI tomorrow.
- 1740 - left field office. Amy + Michelle stayed behind

[Handwritten signature]

Location BOSSBURG Date 5/1/15
 Project / Client BOSSBURG REFINED SEDIMENT
+ SOIL STUDY / TAI

- Obs at field office.
- provided GIS files to Michelle but they do not have UTM coordinates.
- conducted tailgate meeting discussed STE, dust, rocks rolling down slopes.
- team's departed at 7:25 as follows
 - Team A - SDU-05 then UDU-05
 - Team B - SDUs 9 and 10.
- 0845 - TAI - Kris McCraig, Becky Henseler + Dave Enos.
 - Talked about status
 - TAI visited Amy Dahl in XRF land
- Went to Bossburg with TAI
- Met Team A on their return from SDU-05. All cores complete. This DU is done.
- Team A to decom + go to UDU-05
- 1042 boarded Columbia Navigation boat to four SDU-08, SDU-09+10, SDU-06 and SDU-07.

Location BOSSBURG Date 5/1/15
 Project / Client BOSSBURG REFINED SEDIMENT
& SOIL STUDY / TAI

- Team B called to inform me they have completed SDU-10. Michelle expecting new files from Seth + Cary.
- Visited Team B @ SDU-10 prior to them heading to SDU-09
- looked over SDU-04 + then SDU-07.
- 1343 - left Bossburg.
- Ⓞ ~~1515~~ - Conference call with Paul Kris, Bechy + Dave.
- coordinate XRF study for a boat day
- Ⓞ - start SDU-08 Tuesday
- 1640 - TAI left after confer
- Team B @ A returned @ 1515.
- + Worked on new Data Base files with Bradley Handzich. Will send revised file with TA, B, C in it.
- Team B returned @ 1649.
- Susan Ellis reviewed UDU-05 + SDU-05 core samples.
- 1800 - left field office.

[Handwritten signature]

Location BOSSBURG Date 5/2/15
 Project / Client BOSSBURG REFINED SEDIMENT
& SOIL STUDY / TAI

- 0640 @ Field Office prepared for day. New ^{season} team member Al Thador.
- 0650 - field teams at office
- discussed SDU-10 with TEAM A
- Team A's tablet not working - touch screen issue but keyboard mouse works. The tablet was dropped yesterday at UDU-05 + the screen cracked.
- clarified field notes of Team B for 4/27 + 4/30 + 5/1 @ SDU-10
- Teams departed at 0740 after all direction given for today's work + field notes from SDU-10 shared.

Team A - SDU-08 XRF (4)
 - SDU-10 ICS (5)

Team B - SDU-04 XRF (4)
 SDU-07 ~~XRF~~ ICS (30)

Field lab identified ICS sample SDU-10-205 as being wetter than all other ICS samples. Will manage accordingly.
 Field notes identified SDU-10-26 as

Project / Client Bossburg / TechObservers: Danica, Andrea, Susan

0645 Onsite.

0700 H₂SNew Accum: Al Thatchen

0736 Leave Kettle Falls

0803 @ Bossburg0912 @ SDU-08-XRF-01GPS

423 209.21

5401 902.00

0930 @ SDU-08-XRF-02GPS

423 131.07

5401 824.00

0947 @ SDU-08-XRF-03AP GPS~~423~~

5401

* ~ 3 meters into
water, will replace
w/ R03Project / Client Bossburg / Tech1007 @ SDU-08-XRF-R03GPS

423 033.77

5401 707.00

* located ~~at~~ ~ 2 m in H₂O,
offset 2 m west, which is
2 ft onshore.1020 @ SDU-08-XRF-04GPS

423 994.773

5401 668

1040* Mark Vetter takes samples
& Susan ~~to~~ Bossburg1120 @ SDU-10. Tablet will not
restart.1130 Call Mark Vetter, let him
know that tablet will not
restart.

Location SDU-10 Date 5.2.2015Project / Client Bossburg / Tech

1200 Vetter onsite w / new tablet

1215 Attempting to connect GPS to tablet.

1224 GPS Active.
Locations to check
06, 07, ~~18~~, ~~19~~, R061243 @ SDU-10-19
Culturally Oked location
is ~18 m west of original
point. *Marked as 19 in Arc Pad
GPS422102.093946198
5400621.463901681300 @ SDU-10-18
Culturally Oked location
is ~28 m west of original
location. *Marked as 18 in
Arc PadGPS
~~422124.145400657~~
422124.146901536
5400657.07033882Location SDU-10 Date 5.2.2015Project / Client Bossburg / Tech1330 @ SDU-10-R06
Culturally Oked location
is ~30 m west of original
location. *Marked as R06
in Arc Pad. *Rejected due
GPSto cultural observation. Park Service
disagrees. 11345 CCT & NPS agree core can
be collected 2 meters north
of offset location, so sample
was collected ~30 meters west
and 2 meters north of original
* R06 location GPS

422212.569454569 / 5400754.89947267

1401 @ SDU-10-07
Culturally Oked location
is ~14 meters west of
original location. *Marked as
07 in Arc Pad.
* GPS422212.569454569
5400754.89947267

Location SDU-10 / SDU-04 Date 5.2.15Project / Client Bosburg / Teck

1425 @SDU-10-06 *
Culturally Okal location
is ~32 m west of original location
*marked as 06 in Arc Pad.

1438 Demobe from SDU-10.

1450 @ Bosburg. Decon con bmaul
, retoul.

1530 @SDU-04 *18
GPS
422 233.65
5400 780.01

1550 @SDU-04-15
GPS
422 233.65
5400 780.01

1603 @SDU-04-29 *
GPS
422 233.65
5400 780.01

5/2/15
* Use GPS
coord. in Arc
Pad. Coordinates
in notebook are
incorrect.

Location SDU-10 ~~10~~ ^{AP} Date 5.2.15Project / Client Bosburg / Teck

~~AP~~
~~@SDU-04-16~~
~~GPS~~

1625 Begin demobe.

1641 Leave Bosburg

1705 @ Westhensmans

1745 Debrief

1800 offsite

5.2.2015

- 1516 SDU-09A-29 15.3 meters @ 298° from original location
- 1528 SDU-09A-26 15.4 meters at 295° from original location
- 1537 SDU-09A-03 11 meters @ 295 from original location.
- 1546 SDU-09A-~~05~~¹⁷ 29 meters @ 300° from original location
- 1630 at Bassberg after taking boat back from SDU-09A (completed)
- 1650 Back at shop.

JD

5/1/15

- 0700 H + S meeting
Crew: Michelle Stegner
Drew Lewis, Dean King
- TASK: XRF samples, ICS samples
observers: Ruben Guen (C-H-m)
Megan Lyons (NPS)
- 0804 at Bassberg SDU-04
- 0840 at Smith end of SDU-04, waiting for boat to get below steep slope for safety.
- 0907 Columbia navigation onsite start XRF samples
- 1020 Leaving SDU-04

samples that required scoops to fill core barrel

- XRF-04 first attempt & recovery
2nd attempt was 100% recovery
- XRF-03 90% recovery, finished w/ scoop
- XRF-02 80% recovery, finished w/ scoop

5/2/15

JD

Kettle Falls

5/2/15

Bosberg

Dewi

SDU-04		UTM 11N (meters)	
LOC	Time	easting	northing
XRF-04	0918	422595.13	5400613.85
XRF- R03 R02	0931	422613.13	5400649.85
XRF-03	0945	422631.13	5400685.85
XRF-02	0956	422649.13	5400721.85
XRF-01	1012	422691.13	5400781.85

SDU-07		UTM 11N (meters)	
LOC	TIME	easting	northing
XRF-03	1142	425037.52	5392795.05
XRF-01	1157	425189.31	5393030.73
XRF-02	1215	425228.73	5392911.31
XRF-04	1228	425108.73	5392671.31

SDU-04		UTM 11N (meters)	
-26	1422	422697.72	5400775.39
-10	100 steep for safety, will do reserve		
-18	1455	422682.53	5400770.11
1.34 meters from center @ 90°			

5/2/15
PW

Kettle Falls

5/2/15

Bosberg

Dewi

- 1050 at Bosberg beach waiting for Columbia Navigation to take us to SDU-07 for XRF-samples
- 1140 at SDU-07-XRFs
- 1300 back at Bosberg beach from boat
- 1315 Lunch
- 1400 Starting ICS sampling on SDU-04
- 1432 Team A ready to move, team B staying put while the boat is ferry them back across
- 1625 Leaving SDU-04
- 1645 Leaving site
- 1705 Back at shop

5/2/15

Kettle Falls

5/2/15

Dewis Bassberg

Dewis

SDU-04 (cont) UTM 11N (meters)

Loc	Time	easting	northing
-R04	1504	422677.34	5400757.51
		422677.34	5400757.51
		30% recovery, used scoop	
-30	1520	422665.84	5400745.69
		80% recovery, used scoop	
-04	1528	422657.51	5400728.46
		90% recovery, used scoop	
-27	1536	422668.49	5400732.39
		90% recovery, used scoop	
-22	1550	422677.25	5400747.26
		80% recovery, used scoop	
-19	1601	422656.18	5400714.16
-20	1609	422645.41	5400699.31
-01	1614	422612.45	5400686.23
		75% recovery, used scoop	

5/2/15

D

Kettle Falls

5/4/15

Dewis Bassberg

Dewis

40-80°

Crew: Dave Lewis, Dean Kinney,
Michelle Stegner

Task: ECS sampler SDU-07

observers: Susan Ellis (CCT)
Jon Edwards (NPS) Monica Tovel (EPA)

0700 H+S meeting

0735 Leaving shop for marina

0750 at marina getting on boat.

0830 Dropped off from boat at
SDU-07, boat going to get
Michelle, Susan, + Monica.

0905 Pentap crew here, starting
on SDU-07A

1200 Lunch, finish SDU-07A
at

1250 Back at site. (SDU-07B)

1630 Columbia Navigation picking
us up, finished w/ SDU-7B on
east side

Dean + I staying to bundle
up canopy

1745 Back at lab after boat
ride

5/4/15 D

Location Kettle Falls, WA Date 5/1/15Project / Client Teck, BossburgDaily Log continued

1710 Susan departed site

1715 Debrief

1730 Depart site

AWD
5/1/15

Location Kettle Falls, WA Date 5/2/15Project / Client Teck, BossburgDaily Log

0650 Teams arrive at C.N. Kettle Falls

0700 Daily tailgate

0730 organize field equipment

0735 sort yesterday's samples

0745 Ken + Amy check increments for SDU-09-1CS-A. 3 reserves SDU-09A-R02, R03, R04 collected for SDU-09A-18, 21, 30

0805 KY/AWD composite 30 increments to create SDU-09-1CS-A

0810 Transfer cores from SDU-05-COR-01 + SDU-05-COR-02 to 1L bottles

0905 Transfer cores from UDV-05 Start recording mass of each core

UDV-05-COR-01-001 726 g

UDV-05-COR-01-002 162 834.5g

202 926 g

UDV-05-COR-01-003 982.5 g

02-001 1033 g

002 958.5 g

003 1345 g

03-001 162 384.5g

202 300 g

Could be limited on tabs

Location Kettle Falls, WA Date 5/2/15Project / Client Teck BossburgDaily Log continued

Continued VDU-05-COR-03-002 732.5g
 -003 951.5g

1000 Amy check database + a SGS lab about limited sample volume for core samples + what is minimum mass they need.

1120 Mark arrives to C.N. with 8 XRF samples from SDU-04 + SDU-08.

1130 Weighout 8 XRF samples

1200 lunch break + Amy checking database

1300 Ken gets ice at Walmart

1330 Ken arrives back to C.N.

1341 reweigh dried XRF samples

1402 Noticed discrepancy between this XRF daily log book and the database and Team B log book. Both the database and Team B log book indicate that VDU-04A-17 could not be collected and a reserve location was used. On page 21 of this log book, the XRF team noted VDU-04A-03 could not be found. This should be changed to VDU-04A-12 to match database.

Location Kettle Falls, WA Date 5/2/15Project / Client Teck, BossburgTotal solids in grams

Sample	Tray	Tray Wet (time)	Drying	Dry Tray
SDU-04-XRF-01	17	314 (11:34)	293 (142)	292.5 (1421) OK
-02	17	405.5 (11:33)	403.5 (1342)	403.5 (1422) OK
-03	12	471 (11:35)	444.5 (1343)	444.5 (1422) OK
-04	12	305 (11:36)	266.5 (1343)	266.5 (1423) OK
SDU-08-XRF-01 *	12	477.5 (11:41)	367.5 (1425)	343 (1514) 334.5 (105) 324.5 (105)
-02	12	269.5 (11:43)	221.5 (1344)	222 (1423) OK
-R03 for	12	383 (11:51)	233.5 (1344)	233.5 (1424) OK
-04	12	269.5 (11:46)	201.5 (1344)	201.5 (1424) OK

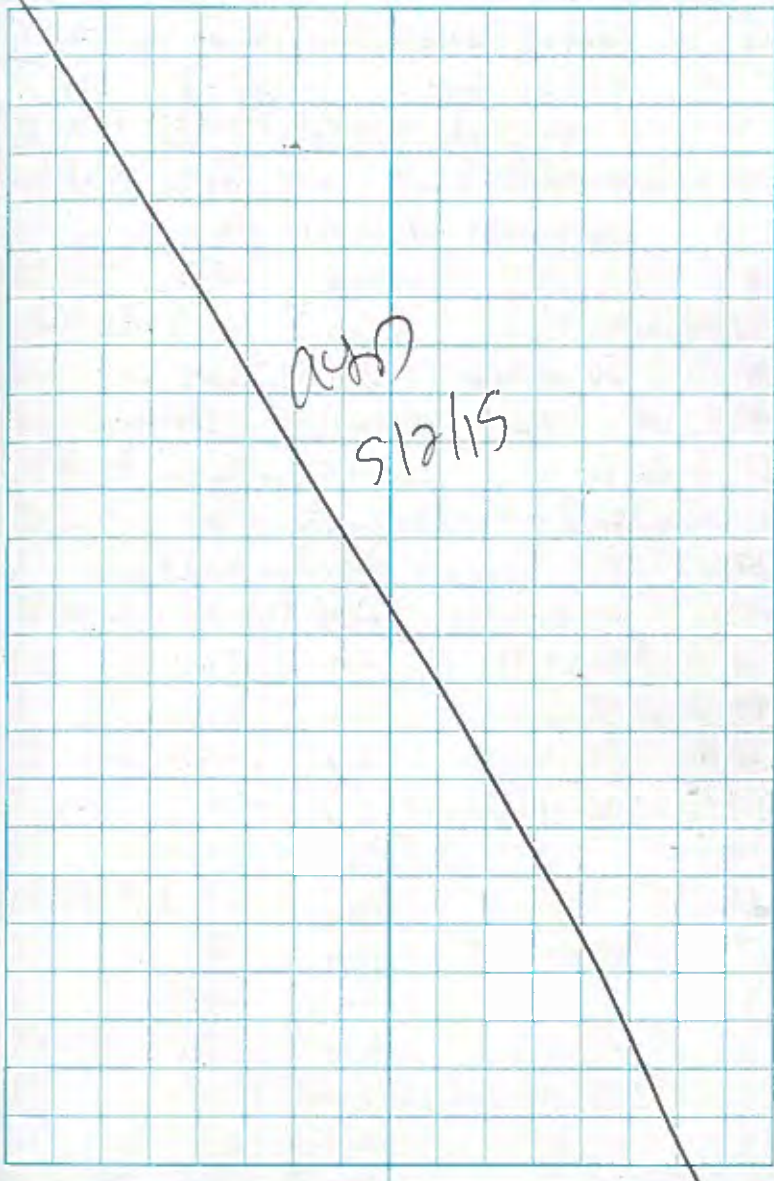
* wet sample

** wet sample - used disposable scoop to facilitate transfer to tray

Location Kettle Falls, WA Date 5/2/15Project / Client Teck, BossburgDaily Log continued

- 1421 Reweigh dried XRF samples
 1426 Sieve SDU-04-XRF-01-shaker
 1427 Turn on XRF analyzer
 1437 Sieve SDU-04-XRF-02-shaker
 1448 Sieve SDU-04-XRF-03-shaker
 1510 Sieve SDU-04-XRF-04-shaker
 1534 Sieve SDU-08-XRF-02-shaker
 1550 Sieve SDU-08-XRF-04-shaker
 1615 Sieve SDU-08-XRF-R03-shaker
 also used hand + baggie to break
 apart aggregates
 1631 KY collect rinsate blank of
 deconned sieve:
 SDU-08-ER-B-2015-0502
 1702 Team A arrives back to C.N.
 1705 Team B arrives back to C.N.
 1712 Shut down XRF analyzer
 1755 Debrief
 1805 Teams depart site

AND 5/2/15

Location Kettle Falls, WA Date 5/15Project / Client Teck, BossburgAND
5/2/15

Location Kettle Falls, WA Date 5/2/15Project / Client Teck, BossburgXRF Analysis of Lead (ppm)

#1	Energy Calibration check - passed			
#2	Blank SiO ₂		<1.8	
#3	NIST 2709a TV=17.3	13.4	77.5%R	
#4	NIST 2711a TV=1400	1317	94.1%R	
#5	SDU-04-XRF-01	Run 1	29.0	
#6	"	Run 2	29.3	
#7	"	Run 3	30.3	Ave 29.5
#8	SDU-04-XRF-02	Run 1	53.6	
#9	"	Run 2	47.3	
#10	"	Run 3	36.4	Ave 45.8
#11	SDU-04-XRF-03	Run 1	29.1	
#12	"	Run 2	35.1	
#13	"	Run 3	24.8	Ave 29.3
#14	SDU-04-XRF-04	Run 1	98.1	
#15	"	Run 2	103.2	
#16	"	Run 3	137.4	Ave 112.9
#17	SDU-08-XRF-07	Run 1	201	
#18	"	Run 2	142.1	
#19	"	Run 3	135.0	Ave 159.4
#20	SDU-08-XRF-04	Run 1	525	
#21	"	Run 2	603	
#22	"	Run 3	621	Ave 583
#23	SDU-08-XRF-R03	Run 1	243	
#24	"	Run 2	279	
#25	"	Run 3	1119	Ave 767

Location Kettle Falls, WA Date 5/2/15Project / Client Teck, BossburgXRF Analysis of Lead (ppm) continued

#26	SDU-08-XRF-R03	Run 4	245	precision check
#27	"	Run 5	297	
#28	"	Run 6	249	
#29	"	Run 7	280	RSD=6.1%
#30	SDU-08-XRF-01	Run 1	338	
#31	"	Run 2	346	
#32	"	Run 3	337	Ave 340
#33	Blank SiO ₂		<1.9	
#34	NIST 2711a TV=1400	1325	94.6%R	
#35	Energy Calibration check - passed			
1740	OK collect rinse blank from deconned core barrel SDU-04-ER-A-20150502			

avg
5/2/15

Location BOSSBURG Date 5/1/15
 Project / Client BOSSBURG REFINED SEDIMENT
& SOIL STUDY / TAI

- Team B called to inform me they have completed SDU-10. Michelle expecting new files from Seth + Cary.
- Visited Team B @ SDU-10 prior to them heading to SDU-09
- looked over SDU-04 + then SDU-07.
- 1343 - left Bossburg.
- Ⓞ ~~1515~~ - Conference call with Paul Kris Bichy + Dave.
- coordinate XRF study for a boat day
- Ⓞ - start SDU-08 Tuesday
- 1640 - TAI left after confer
- Team B @ A returned @ 1515.
- + Worked on new DataBase files with Bradley Handzlik. Will send revised file with TA, B+C in it.
- Team B returned @ 1649.
- Susan Ellis reviewed UDU-05 + SDU-05 core samples.
- 1800 - left field office.

[Handwritten signature]

Location BOSSBURG Date 5/2/15
 Project / Client BOSSBURG REFINED SEDIMENT
& SOIL STUDY / TAI

- 0640 @ Field Office prepared for day. New ^{season} team member Al Thador.
- 0650 - field teams at office
- discussed SDU-10 with TEAM A
- Team A's tablet not working - touch screen issue but keyboard mouse works. The tablet was dropped yesterday at UDU-05 + the screen cracked.
- clarified field notes of Team B for 4/27 + 4/30 + 5/1 @ SDU-10
- Teams departed at 0740 after all direction given for today's work + field notes from SDU-10 shared.

Team A - SDU-08 XRF (4)
 - SDU-10 ICS (5)

Team B - SDU-04 XRF (4)
 SDU-07 ~~XRF~~ ICS (30)

Field lab identified ICS sample SDU-10-205 as being wetter than all other ICS samples. Will manage accordingly.
 Field notes identified SDU-10-26 as

Location Bossburg Date 5/2/15
 Project / Client BOSSBURG REFINED
SEDIMENT + SOIL STUDY / TAI

wet but this sample is moist at best. SDU-10-ROS is wet.

- Completed 5/1 daily report
- 0902 departed for Bossburg.
- 0920 at Bossburg + went to #②
SDU-04

- observed XRF sampling at SDU-04.

- Team B working well on slope at SDU-04
- observed use of scoops on SDU-04-XRF
-03 and -02 to get full volume in
core barrel. Note SDU-04-XRF-ROS is extra

1030 - wrapped up SDU-04 and
took samples to Susan at SDU-08
SDU-08 completed took all samples
with me.

- Columbia Navigation shuttled team
to SDU-10. Then will take Team B to
SDU-07.

1059 - depart Bossburg w/ SDU-04 + -08
XRFs.

1120 - delivered XRF samples to lab

1130 - Tony called - tablet ~~crapp~~ won't
start up. Bring him Amy tablet.

1215 dropped tablet off to Tony

Location Bossburg Date 5/2/15
 Project / Client Bossburg refined sediment
+ Soil Study / TAI

1230 at Evans Team B Headed
Back to Bossburg.

1240 - Tony called #② they are
good to go.

1250 @ Bossburg.

1300 - collect ~~XRF~~ SDU-07 XRF
samples after Susan Ellis review
+ returned them to lab.

- 1343 @ field officer delivered SDU-07
ICS samples.

Conference Call - 1600 - with Paul
Becky + Kris.

- * - collect soil + water samples
from IDW. Measure rinsewater
pH.

- * - check w/ Andrea. later SDU-10-ROS
- can we mix.

1621 - call ended.

1710 - field teams returned w/ EPA
ADH₂MHLL reps.

- Team B - 10 ICS @ SDU-04

Team B - 3 ICS @ SDU-04 - but
used ~~old~~ old map as lab tablet
not updated when I brought to

Location BOSSBURG Date 5/2/15Project / Client BOSSBURG REFINED SEDIMENT
& SOIL STUDY / IAT

- discussed wet sample with Andrew Labier. - Manage separately from other 29 ICS @ SDU-05.
- present SDU-04, 07, 08 XRF Data to EPA + CH₂MHill for CRE determinations

SDU-04-COR-01 is XRF-01

SDU-04-COR-02 is XRF-03

SDU-04-COR-03 is XRF-04

SDU-07-COR-01 is TBD

SDU-07-COR-02 is TBD

SDU-07-COR-03 is TBD

SDU-08-COR-01 is XRF-04

SDU-08-COR-02 is XRF-02

SDU-08-COR-03 is XRF-01

SDU-07-XRF results

1745 EPA departed CH₂MHill departed.
1800 - departed field office

②
③

Mark White

Location BOSSBURG Date 5/4/15Project / Client BOSSBURG REFINED SEDIMENT
& SOIL STUDY / IAT

- 0630 - at field office
- 0645 - field teams arrived
- 0702 - conducted daily tailgate meeting
 - new CH₂MHill person - John Kelly
 - EPA - Monica Tonel
 - NPS - John Edwards; Danica Rosemaryn.
- Team A - SDU-04 ICS + cores
- Team B - SDU-07A + B
- Note - Tony, Michelle + AI are leaving Friday. Ken on Tuesday 5/5
- 0849 - departed for Bossburg + SDU-04
- 0915 of Bossburg - talked to Paul - Amy to start pulling together XRF appendix + data - packaging together.
- Field Daily reports appendices to be prepared by MV. Look over PDFs + native files to review.
- spread sheet on all deviations scoops + shovels - include date + EPA observer.
- demob Deam + give room to Tony.

Location SDU-04 Date 5.4.2015Project / Client Bossburg / TechObservers: John^(CH) & Danica (NPS)

0645 Onsite
 0700 H+S
 0735 Leave Kettle Falls.
 0755 @ Bossburg
 0810 @ SDU-04 staging area. Wait for
 safety boat.
 0920 Boat onsite.
~~092~~ @ SDU-04-02 * hand to hand
 0932 GPS dig last 20%
 422686.85 of sample
 5400 780.19

0950 @ SDU-04-13 * hand dig last
 GPS 20%
 422 672.16
 5400 766.53

1010 @ SDU-04-24 * hand to hand
 GPS dig
 422 665.79
 5400 756.24

Location SDU-04 Date 5.4.15Project / Client Bossburg / Tech

1018 @ SDU-04-15 * hand dig
 GPS
 422 656.12
 5400 740.78

1045 @ SDU-04-29 * hand dig 40%
 GPS of sample
 422 647.05
 5400 730.28

1057 @ SDU-04-~~28~~²⁵ * hand dig
 GPS
 422 641.48
 5400 720.22

1113 @ SDU-04-03 * hand dig
 GPS
 422 636.96
 5400 708.22

1125 @ SDU-04-07 * hand dig
 GPS
 422 634.18
 5400 698.10

1144 @ SDU-04-17 *hand dis

GPS

422 625.82

5400 650.00

1150 Take lunch

1252 @ SDU-04-06 *hand dis

GPS

422 672.35

5400 672.53

1305 @ SDU-04-11 *hand dis

GPS

422 677.50

5400 762.77

1318 @ SDU-04-09 *hand dis

GPS

422 611.45

5400 664.12

1337 @ SDU-04-23 hand dis

GPS

422 611.45 422 620.47

~~5400 664.12~~ 5400 650.35

1348 @ SDU-04-05 *hand dis

GPS

422 610.24

5400 642.79

1400 @ SDU-04-12 *hand dis

GPS

422 601.50

5400 635.71

1410 @ SDU-04-28

GPS

422 606.45

5400 624.03

1423 @ SDU-04-08

GPS

422 598.30

5400 617.22

1435 @SDU-04-14

GPS

422 618.27

5400 628.27

1446 @SDU-04-16 *hand dig

GPS

422 615.99

5400 617.20

1500 @SDU-04-21

GPS

422 606.68

5400 605.36

COR-01 → XRF-01

COR-02 → XRF-03

COR-03 → XRF-04

COR-01

1 L@6"

1 L@12"

+ 2 L@18"

COR-02

1 L@6"

+ 2 L@12"

1 L@18"

COR-03

1 L@6"

1 L@12"

1 L@18"

1530 @SDU-04-COR-01

1535 collect 001 ~~3:33~~ 4p1537 collect 002 ~~3:37~~ 4p1539 collect 003 ~~3:39~~ 4p@SDU-04-COR-02

1552 collect 001

1556 collect 002

1558 collect 003

@SDU-04-COR-03

1609 collect 001

1611 collect 002

1613 collect 003

1615 SDU-04 cones complete. Begin demob.

1630 Leave Bosburg for Kettle Falls

1649 @ Wertheimms

1810 Debrief.

1815 Offsite.

AP 5.6.15

* Collect all cone samples w/ stainless shovel due to refusal on cobbles & boulders!

5/4/2015

0645 Onsite

0700 Health & Safety

0730 Leave Kettle for Bosburg.

0800 @ Bosburg.

0930 @ SDU-08.

0947 @ SDU-08-30

GPS

422945.03

5401612.75

1003 @ SDU-08-27 * hand dig

GPS

422967.34

5401621.17

30% of

sample

1215 @ SDU-08-05 * hand dig 20% of sample

GPS

422975.38

5401636.57

1027 @ SDU-08-15 * hand dig 40% of sample

GPS

422994.33

5401665.36

Kettle Falls

5/2/15

Bassberg

Dewis

SDU-04 (cont) UTM 11N (meters)

Loc	Time	easting	northing
-R04	1504		
	30% recovery, used scoop	422677.34	5400757.51
-30	1520	422665.84	5400745.69
	80% recovery, used scoop		
-04	1528	422657.51	5400728.46
	90% recovery, used scoop		
-27	1536	422668.49	5400732.39
	90% recovery, used scoop		
-22	1550	422677.25	5400747.26
	80% recovery, used scoop		
-19	1601	422656.18	5400714.16
-20	1609	422645.41	5400699.31
-01	1614	422612.45	5400686.23
	75% recovery, used scoop		

5/2/15

JD

Kettle Falls

5/4/15

Bassberg

Dewis

40-80°

Crew: Dave Lewis, Dean Kinney,
Michelle Stegner

Task: ECS sampler SDU-07

observers: Susan Ellis (CCT)
Jon Edwards (NPS) Monica Tovel (EPA)

0700 H+S meeting

0735 Leaving shop for marina

0750 at marina getting on boat.

0830 Dropped off from boat at
SDU-07, boat going to get
Michelle, Susan, + Monica.

0905 Pentap crew here, starting
on SDU-07A

1200 Lunch, finish SDU-07A
at

1250 Back at site. (SDU-07B)

1630 Columbia Navigation picking
us up, finished w/ SDU-7B on
east side

Dean + I staying to bundle
up canopy

1745 Back at lab after boat
ride

5/4/15 JD

SDU-07A		UTM 11N (meters)	
LOC	TIME	EASTING	NORTHING
-03	0921	425269.78	5393059.29
-23	0930	425288.37	5393045.59
	40% recovery, used scoop to finish		
-11	0940	425272.30	5393020.27
-26	0945	425267.76	5393002.63
-24	0954	425269.65	5392951.08
	75% recovery, used scoop to finish		
-13	1201	425239.40	5392955.48
-22	1003	425246.77	5392921.49
-12	1013	425228.60	5392897.02
-06	1021	425229.30	5392879.69
	30% recovery, used scoop to finish		
-27	1032	425202.03	5392838.92
	80% recovery, used scoop to finish		
-09	1042	425183.46	5392823.99
-28	1050	425160.73	5392797.76
-02	1059	425181.70	5392763.38
-20	1107	425144.60	5392745.36
-25	1117	425104.29	5392683.86
-18	1125	425081.33	5392672.12
-19	1137	425076.17	5392631.46

~~-19~~

2 meters north of actual location

SDU-07A (cont)		UTM 11N (meters)	
LOC	TIME	EASTING	NORTHING
-14	1146	425071.49	5392618.73
SDU-07B		UTM-11N (meters)	
LOC	TIME	EASTING	NORTHING
-22	1304	425301.85	5393073.94
-09	1312	425298.65	5393058.74
	80% recovery, used scoop to finish		
-01	1320	4253288.22	5393071.44
-23	75% recovery, used scoop to finish		
-23	1329	425277.98	5393059.99
	425277.98		
-06	1332	425285.21	5393032.45
	80% recovery, used scoop to finish		
-08	1344	425256.91	5392966.23
	80% recovery, used scoop to finish		
-05	1354	425262.94	5392953.29
	80% recovery, used scoop to finish		
-12	1404	425245.64	5392930.05
	10% recovery on 2 nd try, used scoop		
-30	1412	425234.54	5392924.58

Location Kettle Falls Date 5/4/15

Project / Client Bassberg
Aewis

SDU-07B (cont) ^{UTM} 11N (metric)

LOC	time	easting	northing
-19	1418	425247.34	5392895.84
-26	1436	425216.42	5392895.35
-11	1451	425185.32	5392801.06
-07	1458	425174.85	5392766.02
-17	1505	425153.10	5392736.52
-10-15	1528	425164.41	5392721.73
-10	1536	425137.97	5392688.02
-04	1542	425123.11	5392678.34
-24	1550	425142.03	5392671.64
-13	1600	425096.16	5392658.23
-27	1605	425096.15	5392970.79
-14	1614	425098.07	5392617.66
-20	1620	425040.55	5392641.65

5/4/15
JR

Project / Client Bassberg
Aewis 45°-60°

0700 H+ meeting at shop, grab crew: Dean Kinoy, Michelle Stegner, Dave Lewis
Task: SDU-07 ICS samples
Observers: Jon Edwards (NPS), John Kelly (CH2MHill)

0750 at Marcus Island Campground catching boat.

0820 at SDU-07 westside

1015 Finished SDU-07A on eastside
Start SDU-07B

1045 Break

1105 Back to work.

1210 Lunch

1235 Back to work, Gary Panther (accorn) on site.

1410 Finished w/SDU-07C eastside

1445 Start on SDU-07C westside

1620 Finished w/SDU-07C for the day boat is back.

1650 at Marcus Island Campground waiting rest of crew.

1920 at Shop
JR

Location Kettle Falls, WA Date 5/4/15Project / Client Teck, BossburgDaily Log

- 0630 Ken + Amy get ice at Walmart
 0645 Arrive to C.N. in Kettle Falls
 0700 Daily tailgate
 0723 Weigh out XRF samples for SDU-07
 0728 Ken + Amy check increments for SDU-10-1CS. 4 reserve locations (SDU-10-R02, R04, R05, R06) collected for SDU-10-4, 5, 8, 9. SDU-10-R05 was saturated so sent separately in small container.
 0749 KY/ALD composite 29 increments into 1 bucket to create SDU-10-1CS. SDU-10-R05 placed into separate container for shipping
 0755 Pack 3 coolers:
 Cooler 1
 - SDU-09-1CS-A
 - SDU-10-1CS
 Cooler 2
 - SDU-05-COR-01 (3 samples)
 - SDU-05-COR-02 (3 samples)
 - 5 ER blanks
 Cooler 3 - 9 samples for SDU-05-COR

Location Kettle Falls, WA Date 5/4/15Project / Client Teck, BossburgDaily log continued

- 1025 Reweigh dried XRF samples
 1133 Reweigh dried XRF samples
 1137 Sieve SDU-07-XRF-02-shaker only
 1205 Lunch break + Amy enters XRFQC into database
 1245 Reweigh XRF samples
 1249 Sieve SDU-07-XRF-04 shaker + remaining aggregates broken up by hand with baggie.
 1335 Reweigh XRF samples - all OK
 1340 Sieve SDU-07-XRF-01-shaker + then by hand with baggie
 1353 Sieve SDU-07-XRF-03-shaker + then by hand with baggie
 1410 Ken departs to Fed Ex
 1436 Shut down XRF analyzer
 1455 Ken returns from Fed Ex
 1500 Amy continues to enter XRF QC results into database
 1515 Ken decans sieves
 1527 KY collects rinseate blank of decanned sieve:
 SDU-07 ER-B-20150504
 1605 Ken departs site for the day

Location Kettle Falls, WA Date 5/4/15Project / Client Teck, BossburgXRF analysis of Lead (ppm)

#1	Energy calibration check - passed			
#2	Blank SiO ₂		<1.8	
#3	NIST 2709a TV=173	13.0	75.1%R	
#4	NIST 2711a TV=5770	4964	86.4%R	
#5	SDU-07-XRF02 Run 1	103.4		
#6	"	Run 2	69.7	
#7	"	Run 3	78.5	Ave 83.9
#8	SDU-07-XRF-04 Run 1	464		
#9	"	Run 2	452	
#10	"	Run 3	560	Ave 492
#11	SDU-07-XRF-01 Run 1	508		
#12	"	Run 2	511	
#13	"	Run 3	494	Ave 504
#14	SDU-07-XRF-03 Run 1	386		
#15	"	Run 2	403	
#16	"	Run 3	411	Ave 400
#17	" Precision	Run 4	453	
#18	"	Run 5	464	
#19	"	Run 6	438	
#20	"	Run 7	378	RSD=7.9%
#21	Blank SiO ₂		<1.8	
#22	NIST 2780 TV=5770	4964	86.0%R	
#23	Energy calibration check - passed			

AVD 5/4/15

Location Kettle Falls, WA Date 5/4/15Project / Client Teck, BossburgDaily Log continued

- 1645 Team A arrives back to Co. N.
- 1725 Michelle arrives back
- 1740 Dean & Dave arrive back
- 1800 SDU-04-ER-A-20150504
inse blank collected from core barrel
- 1805 SDU-04-ER-D-20150504
inse blank from stainless steel
shovel by AT/DL
- 1810 Debrief
- 1815 Depart site

AVD 5/4/15

Location BOSSBURG Date 5/2/15Project / Client BOSSBURG REFINED SEDIMENT
& SOIL STUDY / IAT

- discussed wet sample with Andrew Labier. - Manage separately from other 29 ICS @ SDU-05.
- present SDU-04, 07, 08 XRF Data to EPA + CH₂MHill for GRE determinations

SDU-04-COR-01 is XRF-01

SDU-04-COR-02 is XRF-03

SDU-04-COR-03 is XRF-04

SDU-07-COR-01 is TBD

SDU-07-COR-02 is TBD

SDU-07-COR-03 is TBD

SDU-08-COR-01 is XRF-04

SDU-08-COR-02 is XRF-02

SDU-08-COR-03 is XRF-01

SDU-07-XRF results

1745 EPA departed CH₂MHill departed.
1800 - departed field office

②

Mark White

Location BOSSBURG Date 5/4/15Project / Client BOSSBURG REFINED SEDIMENT
& SOIL STUDY / IAT

- 0630 - at field office
 - 0645 - field teams arrived
 - 0702 - conducted daily tailgate meeting
 - new CH₂MHill person - John Kelly
 - EPA - Monica Tonel
 - NPS - John Edwards; Danica Rosemaryn.
 - Team A - SDU-04 ICS + cores
 - Team B - SDU-07A + B
- Note - Tony, Michelle + AI are leaving Friday. Ken on Tuesday 5/5
- 0849 - departed for Bossburg + SDU-04
- 0915 of Bossburg - talked to Paul - Amy to start pulling together XRF appendix + data - packaging together.
- Field Daily reports appendices to be prepared by MV. Look over PDFs + native files to review.
 - spread sheet on all deviations scoops + shovels - include date + EPA observer.
 - demob Deam + give room to Tony.

Location Bossburg Date 5/4/15
 Project / Client Bossburg Refined Sediment +
Soil Study / TAE

- Visited Team A at SDU-04. Call going well, team wearing life jackets + have Columbia Navigation as safety support
- 1007 departed for Evans + SDU-07
- Team B
- 1018 at Evans parking area. Went to SDU-07
- ~~team~~ Everything going well. Observed sampling process
- 1125 returned to parking area + headed to Bossburg again.
- 1137 back at Bossburg, went to SDU-04.
- 1152 - Team A to lunch break + changed out core barrel as it is beat up.
- Boarded Wood@ Columbia Navigation Boat + headed to SDU-08
- photographed North end.
- 2' of bank exposed since Saturday 12' since recon of Friday 4/23
- went to midpoint
- looked at midpoint + south end not too much more beach

Location BOSSBURG Date 5/4/15
 Project / Client BOSSBURG REFINED SEDIMENT
+ SOIL STUDY / TAE

- 1200 back on Bossburg beach @ beach + headed back to SDU-07
- ↳ check on team
- 1235 back at vehicle
- 1250 departed Bossburg
- 1300 @ field office.
- 1545 - talked to Tony; should wrap up SDU-04 on last core
- 1546 - talked to Michelle - got 1K/A 1K/B so far.
- 1600 - CC w/ Paul, Kris, Becky, Kaven T.
- 1650 - call wrapped up
- 1730 - talked to Paul
- considered field XRF @ SDU-07 100% spacing + at SDU-08 - more toward water if a rejected sample location on land is close to water.
- CORES for SDU-07
- COR-01 = XRF-04
- COR-02 = XRF-01
- COR-03 = XRF-03
- Team A returned returned @ 1640;
- Team B returned @ 1720.
- Susan Ellis reviewed SDU-04 ICS.

1615 SDU-04 cones complete. Begin demob.

1630 Leave Bosburg for Kettle Falls

1649 @ Wertheim

1810 Debrief.

1815 Offsite.

AP 5.6.15

* Collect all cone samples w/ stainless shovel due to refusal on cobbles & boulders!

5/4/2015

0645 Onsite

0700 Health & Safety

0730 Leave Kettle for Bosburg.

0800 @ Bosburg.

0930 @ SDU-08.

0947 @ SDU-08-30

GPS

422945.03

5401612.75

1003 @ SDU-08-27 * hand dig

GPS

422967.34

5401621.17

30% of

sample

1215 @ SDU-08-05 * hand dig 20% of sample

GPS

422975.38

5401636.57

1027 @ SDU-08-15

GPS

422994.33

5401665.36

* hand dig 40% of sample

Location SDU-08 Date 5.5.15Project / Client Bassburg / Teck

1041 @ SDU-08-24

GPS

423011.87

5401 681.75

1052 @ SDU-08-09 * hand dig 30g
of sampleGPS

423061.89

5401 681.75

1104 @ SDU-08-29

GPS

423013.92

5401 695.66

1116 @ SDU-08-06

GPS

423027.42

5401 698.45

1131 @ SDU-08-03

GPS

423036.92

5401 716.84

Location SDU-08 Date 5.5.15Project / Client Bassburg / Teck

1145 Take lunch

1223 @ SDU-08-12

GPS

423053.27

5401 735.22

1238 @ SDU-08-20

GPS

423071.62

5401 753.22

1252 @ SDU-08-13

GPS

423084.95

5401 771.73

1305 @ SDU-08-26

GPS

423093.35

5401 790.50

1316 @ SDU-08-09

GPS

423018.65 / 5401 758.48

Location SDU-08Date 5.5.15Project / Client Bossburg / Teck

1332 @SDU-08-02
GPS
 423 125.44
 5401 815.33

1345 @SDU-08-11 *hand dis 30%
GPS of sample
 423 116.00
 5401 818.91

1357 @SDU-08-18
GPS
 423 133.15
 5401 833.97

1410 @SDU-08-16 *hand dis 10%
GPS of sample
 423 152.15
 5401 843.91

1422 @SDU-08-25
GPS
 423 140.60
 5401 848.13

Location SDU-08Date 5.5.15Project / Client Bossburg / Teck

1437 @SDU-08-02
GPS
 423 148.67
 5401 854.08

1448 @SDU-08-22
GPS
 423 154.31
 5401 862.48

~~1458 @SDU-08-23 AP~~
~~GPS AP~~

1458 Henry min. + sheets. Put tablet in
 packet + take cover under trees

1620 Demobr from Bossburg

1650 Gub Team B's equipment
 @ Marcus.

1705 @ Weathermans. Besin decou.

1805 Debrief,
 offsite.

Christy P 5.5.2015

Location Kettle Falls Date 5/4/15
Project / Client Bassberg
Jewis

LOC	time	easting	northing
-19	1418	425247.34	5392895.84
-26	1436	425216.42	5392895.35
-11	1451	425185.32	5392801.06
-07	1458	425174.85	5392766.02
-17	1505	425153.10	5392736.52
10-15	1528	425164.41	5392721.73
-10	1536	425137.97	5392688.02
-04	1542	425123.11	5392678.34
-24	1550	425142.03	5392671.64
-13	1600	425096.16	5392658.23
-27	1605	425096.15	5392970.79
-14	1614	425098.07	5392617.66
-20	1620	425040.55	5392641.65

SDU-07B (cont) UTM 11N (metric)

30% recovery, used scope to finish.
90% recovery, used scope to finish.
90% recovery, used scope to finish.
90% recovery, used scope to finish.
90% recovery, used scope to finish.

5/4/15
JR

Location Kettle Falls Date 5/4/15
Project / Client Bassberg
Jewis 45°-60°

0700 H+ meeting at shop, grab crew: Dean Kinoy, Michelle Stegner, Dave Lewis
Task: SDU-07 ICS samples
Observers: Jon Edwards (NPS), John Kelly (CH2M Hill)

0750 at Marcus Island Campground catching boat.

0820 at SDU-07 westside

1015 Finished SDU-07A on eastside
Start SDU-07B

1045 Break

1105 Back to work.

1210 Lunch

1235 Back to work, Gary Panther (accorn) on site.

1410 Finished w/SDU-07C eastside

1445 Start on SDU-07C westside

1620 Finished w/SDU-07C for the day boat is back.

1650 at Marcus Island Campground waiting rest of crew.

1920 at Shop
JR

SDU-07A		UTM 11N (meters)	
LOC	TIME	EASTING	NORTHING
-08	0824	425116.28	5392982.45
-04	0833	425177.40	5392982.50
-30	0843	425160.97	5392931.94
-10	0852	425137.87	5392910.33
-29	0904	425070.68	5392857.60
-17	0914	425058.02	5392832.75
-05	0925	425031.97	5392801.42
-01	0932	425020.31	5392777.12
-16	0950	425031.54	5392764.02
-07	0942	425024.63	5392755.97
-21	0958	425009.66	5392737.37 (DZ)
-15	1007	424967.47	5392717.58

NOTE: all samples in SDU-07A on eastside had to be removed in part from core barrel w/ plastic scoop due to compacted ^(DZ) sandy-silt

5/5/15

DZ

SDU-07B		UTM 11N (meters)	
LOC	TIME	EASTING	NORTHING
-02	1021	425035.08	5392768.65
-28	1033	425028.44	5392802.04
-21	1039	425070.09	5392834.49
-16	1114	425138.05	5392928.49
-18	1124	425141.98	5392893.92
-29	1138	425141.98	5392893.92 (DZ)
		425175.86	5392999.60
-25	1149	425171.41	5393013.07
-03	1201	425190.83	5393075.41

NOTE: all samples except SDU-7B-28 ^(DZ) eastside were removed from core barrel w/ scoop because of compacted sandy-silt

5/5/15

DZ

SDU-OTC		UTM 11N (meters)	
LDC	TIME	Easting	Northing
-04	1239	425193.70	5393065.48
-21	1251	425180.79	5393028.30
-27	1258	425193.33	5393023.09
-28	1305	425187.45	5393009.30
-22	1322	425149.94 42449.94	5392933.66
-17	1314	425169.34	5392949.52
-08	1336	425073.02	5392853.86
-02	1342	425060.86	5392824.87
-30	1352	425007.81	5392742.32
-10	1401	424971.81	5392731.56
-23	1407	424963.61	5392701.57
NOTE: Every sample was removed from the core barrel w/ scoop because of compact sandy silt.			
-11	1441	425286.64	5393048.45
-19	1452	425281.14	5393027.93
40% recovery, finished w/scoop			
-24	1503	425265.12	5392941.43
85% recovery, finished w/scoop			

5/5/15

DZ

SDU-OTC (cont)		UTM 11N (meters)	
LDC	TIME	EASTING	NORTHING
-15	1512	425208.15	5392855.47
40% recovery, finished w/scoop			
-06	1519	425214.78	5392844.18
30% recovery, finished w/scoop			
-26	1527	425171.95	5392796.00
-13	1533	425151.97	5392779.70
-05	1541	425166.21	5392771.21
-14	1546	425161.50	5392737.38
60% recovery, finished w/scoop			
-09	1557	425148.94	5392727.28
30% recovery, finished w/scoop			
-20	1606	425156.86	5392713.76
70% recovery, finished w/scoop			
-07	1609	425124.27	5392661.14
85% recovery, finished w/scoop			
-16	1614	425113.35	5392660.25
-25	1618	425096.85	5392669.37

5/5/15

DZ

Location Kettle Falls WA Date 5/5/15Project / Client Teck, Bossburg
Daily Log

- 0630 Ken + Amy get ice
- 0645 Arrive at C.N. in Kettle Falls
- 0700 Rebrief
- 0725 Teams A + B depart to sample
- 0738 Ken + Amy check increments
for SDU-04-1CS - 30 checked
1 reserve, SDU-04-R04
used for SDU-04-10
- 0755 KY composited 30 increments
to make SDU-04-1CS
- 0800 Ken transfers cores from
SDU-04 to 1L bottles
- 0830 Pack 2 coolers for shipping:
Cooler 1
• SDU-04-1CS
• 3 ER blanks
Cooler 2
• 9 cores for SDU-04-COR
- 0925 Identify additional XRF
samples to send to lab for
confirmation to cover various
ranges of Lead results.
- 0950 Ken transfers additional XRF
samples to jar's after

Location Kettle Falls, WA Date 5/5/15Project / Client Teck, Bossburg
Daily log continued

- Continued approval by Teck:
- SDU-09-XRF-01 12.3 ppm Lead
- UDU-04-XRF-R01 1384 ppm Lead
- UDU-04-XRF-05 651 ppm Lead
- UDU-04-XRF-02 975 ppm Lead
- 1000 Amy enters # of containers
into database where missing
- 1050 Amy preps for XRF in field
- 1135 Amy + Mark & Gary Panther
depart to do XRF at SDU-07
- 1155 Arrive at boat pick up north
end of Marcus campground
- 1200 Boat ride to SDU-07
Radio - 5 - AECOM
channel 16 - emergency
- 1220 ALD performs QC for XRF
after safety discussion about
XRF handling
- 1223 Turn on XRF analyzer
- 1241 SDU-07-F-XRF-01 analyzed
photo facing east; location is
SE corner of west side of SDU-07
- 1410 Last XRF reading on west side of SDU-07
at North^{east} corner SDU-07-F-XRF-20
_{west}

Location Kettle Falls, WA Date 5/5/15Project / Client Teck, BossburgXRF analysis of Lead (ppm)

time	run	sample		
1223	#1	energy calibration check-passed		
1227	#2	Blank SiO ₂	<1.8	
1230	#3	NIST 2709a TV=17.3	15.9	91.3%R
1234	#4	NIST 2711a TV=1400	1353	96.6%R
1238	#5	aborted - tilted instrument		photo facing:
1241	#6	SDU-07-F-XRF-01	59.3	east
1247	#7	SDU-07-F-XRF-02	51.2	east
1253	#8		-03 49.9	east
1258	#9		-04 65.0	east
1302	#10		-05 67.4	east
1307	#11		-06 54.3	east
1311	#12		-07 68.1	east
1315	#13		-08 66.7	east
1318	#14		-09 56.2	east
1322	#15		-10 52.9	east
1324	#16	o Dup-10	51.0	Dup 3.7%
1328	#17	Blank SiO ₂	<1.8	
1331	#18	SDU-07-F-XRF-11	53.8	west
1335	#19		-12 55.7	east
1338	#20		-13 59.4	east
1343	#21		-14 69.2	east
1346	#22		-15 65.7	east
1350	#23		-16 64.6	east
1354	#24		-17 57.6	east

Location Kettle Falls, WA Date 5/5/15Project / Client Teck, BossburgXRF analysis of lead (ppm) continued

time	run	sample			photo facing
	#25	aborted			
1400	#26	SDU-07-F-XRF-18	126.0		east
1407	#27		-19 217.0		east
1410	#28	o	-20 89.5		north
1434	#29	NIST 2709a TV=17.3	13.3		76.9%R
1438	#30	SDU-07-F-XRF-21	47.9		west
1444	#31		-22 58.3		west
1448	#32		-23 46.9		west
1456	#33		-20 63.6	33.9%	Duplicate
1503	#34		-24 24.9		west
1507	#35		-25 53.3		west
1510	#36		-26 57.7		west
1514	#37		-27 108.8		west
1517	#38		-28 63.3		west
1522	#39		-29 45.1		west
1526	#40		-30 82.3		west
1529	#41		-30 59.8		dup 31.7%
1533	#42		-31 76.8		west
1538	#43		-32 74.7		west
1542	#44		-33 66.4		west
1546	#45		-34 114.7		west
1551	#46		-35 74.7		west
1551	#47	o	-37		aborted - tilted
1556	#48	o	-36 67.0		west

Location Kettle Falls, WA Date 5/5/15Project / Client Teck, Bossburg

Daily log continued

- east side 5/5/15
- 1425 Catch boat to other side of SDV-07
- 1438 start with NW corner of east side
- 1450 Army takes boat back to west side of SDV-07 to collect duplicate of SDV-07-F-XRF-20
- 1457 Return Army to east side
- 1612 Last XRF reading on east side of SDV-07 at SW corner
- 1615 Begin closing QC for XRF
- 1644 shut down XRF analyzer
- 1650 Take boat back to Marcus
- 1705 Depart Marcus back to Kettle Falls
- 1724 Arrive back to C.No.
- 1730 Rinse blank collecting: DL+AT, from Core barrel: SDV-08-ER-A-20150505
- 1800 Debrief
- 1815 Depart site

act 5/5/15

Location Kettle Falls, WA Date 5/5/15 89Project / Client Teck, Bossburg

XRF analysis of lead (ppm) continued

time	run	sample	photo factor
1600	#49	SDV-07-F-XRF-37	92.2 west
1606	#50		-38 68.4 west
1609	#51		-39 64.4 west 5.0%
1612	#52		-39 67.7 Duplicate
1617	#53	Blank SiO2	<1.8
1620	#54	NIST 2711a IV=1400	1276 91.1%R
1621	#55	about tried to analyze SS coupon	
1622	#56	Energy calibration check - passed	
1628	#57	SDV-07-F-XRF-39	67.0 precision
1630	#58		41.2
1633	#59		68.4
1638	#60	Aborted - tilted	
1638	#61		58.7
1642	#62		70.9 RSD=11.3%
1644	#63	Energy calibration check - passed	

act 5/5/15

Location BOSSBURG Date 5/5/15
 Project / Client BOSSBURG REFINED
SEDIMENT + SOIL STUDY / TH1

- 0625 @ field office, prepared for day + tailgate meeting
- 0645 - teams at field office
- discussed SDU-07 XRF spacings with Monica + John Kelly, they are onboard with 100' spacing
- discussed approach to SDU-08 with Monica. She is OIC + discuss with Matt
- discussed days work with full team.
- Per Monica - no permission @ UDU-06
- 0720 - teams departed.
 Team B to Marcus Campground to meet Columbia Navigation
 Team A to Bossburg to meet Columbia Navigation
- Field lab processing ics from SDU-04 + cores from SDU-04.
- 0811 - Monica Tanel called to advise Brent Martinez will be @ SDU-09 at 12:00 on site to point out Ferry Landing site.
- 1020 - Gary Panther on-site.
- 1130 - went to Marcus Island to

Location BOSSBURG Date 5/5/15
 Project / Client BOSSBURG

- meet Columbia Navigation to go to SDU-07
- 1155 @ Marcus Island awaiting Columbia Navigation.
- 1200 - boarded Columbia Navigation boat for SDU-07
- 1220 - started calibration of XRF.
- 1425 - moved to other side of SDU-07
~~1600~~
~~1600~~ Conference call
- 1640 - End of call
 Mary reconfigure UDU-06 to park property. Will let me know ASAP
- TEAM B completed SDU-07A + B
 Have 5 ics left in SDU-07C + 3 cores in the SDU
- 1650 - left SDU-07 for Marcus Campground.
 - TEAM B's camera not working will have to photograph tomorrow the last 4 ics
- 1705 - left Marcus after completing XRFs
- 1721 - at field office
 - Tony reported he had poison

Location BOSSBURG Date 5/5/15Project / Client BOSSBURG REFINED SEDIMENT
+ SOIL STUDY / TAI

- ivy likely from UDU-05. He had a couple of small blisters on his right hand + fore arm.
- at field office Susan Ellis reviewed SDU-07 A+B+C ~~etc~~ ICS collected today.
 - teams deconned + collected rinseate ~~blank~~ samples.
 - 1820 departed field office.

Much

Location BOSSBURG Date 5/6/15Project / Client BOSSBURG REFINED SEDIMENT
+ SOIL STUDY / TAI

- 0620 at field office.
- discussed days logistics with Eric Weatherman
- 0644 - field teams + John Kelly, CH on site.
- Michelle reported a skin rash but has not been in any brush. Many have allergy to something or sun related.
- Susan Ellis not at meeting - overslept texted Michelle that she will meet team at SDU-05.
- Michelle received ferry landing coordinates from Brent Martinez who will not be coming to site today. Emailed these to Paul.
- teams departed @ 0730.
- have coordinates in teams hands for cores @ SDU-07 + 08.
- Becky Hensden @ 0858
- 1030 - Michelle called. They are moving to west side of SDU-07 to grab final core samples
- 1046 MV, AD + Becky departed for Bossburg

Location SDU-08 Date 5.6.2015Project / Client Bosburg / TeckObservers: Monica, Danica, Susan

0645 Onsite
 0700 H2S
 0741 Leave kettle
 0808 @ Bosburg. Wait for boat shuttle to
 0858 @ SDU-08

0910 @ SDU-08-23
GPS
 423 / 70.89
 540 / 864.79

0924 @ SDU-08-17 * hand dis 30%
GPS of sample
 423 / 64.35
 540 / 874.90

0940 @ SDU-08-10 * hand dis 20%
GPS of sample
 423 / 78.26
 540 / 873.64

0951 @ SDU-08-19 * hand dis 40%
GPS of sample
 423 / 98.44
 540 / 107.20

Location SDU-08 Date 5.6.2015Project / Client Bosburg / Teck

1000 @ SDU-08-04
GPS
 423 / 210.84
 540 / 908.04

1013 @ SDU-08-21
GPS
 423 / 220.14
 540 / 918.90

1025 @ SDU-08-14
GPS
 423 / 214.09
 540 / 933.23

1038 @ SDU-08-28
GPS
 423 / 233.16
 540 / 931.65

1046 @ SDU-08-07 * hand dis 25%
GPS of sample
 423 / 224.11
 540 / 942.86

1059 Take lunch.

1150 @ SDU-08-COR-01

1 Le 6"

2 Le 12"

1 Le 18"

* Colocated
w/ XRF-04

1200 collect 6"

1205 collect 12"

1210 collect 18"

* collect w/
stainless shovel
due to refusal
w/ cobbles + boulders

@ SDU-08-COR-02

1 Le 6"

2 Le 12"

1 Le 18"

* Colocated w/
XRF-02~~1235 @ SDU-08-COR-02 AP~~~~1 Le 6"~~~~2 Le 12"~~~~1 Le 18"~~

1246 Reject CORE-02 location
(colocated w/ XRF-02) due to
cultural observation. Will move to
CORE-03 for now until EPA
decides on new location for Core 02.

1300 @ SDU-08-COR-03

* Colocated w/
XRF-01

1305 collect 001 (6", 2L)

1310 collect 002 (12")

1315 collect 003 (18")

* hand dig w/ stainless shovel
due to refusal on cobbles +
boulders.

1330 Monica (EPA) communicates
that CORE-02 will be
relocated w/ XRF-003.

1335 @ COR-02

1 Le 6"

2 Le 12"

1 Le 18"

1340 collect 001 (6")

1345 collect 002 (12", 2L)

1350 collect 003 (18")

1420 Dibble from SDU-08

1435 @ ~~SDU-09~~ UDU-06, Load
redrawn UDU-06 map onto tablet.
1500 Term B collects all XRF samples
before we can start. Vetter indicates
that he is awaiting ICS map for
UDU-06.

1547 Demote from UDU-06.
1557 Leave Bosburg for Kettle Falls.
1624 @ Weathermans, start decon.

1751 Debrief.

1800 Offsite

Anthony P. L.
5.6.2015

0645 Onsite
0700 H&S meeting.
0740 Leave Kettle for Bosburg
0805 @ Bosburg
0840 @ UDU-06
0915 @ UDU-06-11
GPS
422200.48
5400597.53

0937 @ ~~UDU-06-15~~
GPS
4222218.37
5400882.67

0948 @ ~~UDU-06-25~~
GPS
422260.94
5400909.44

1005 @ ~~UDU-06-01~~
GPS
422184.21
5400810.95

Kettle Falls

5/6/15

Bossberg
D Lewis

40°-65°

0700 at stop, H+S meeting
Crew: David Lewis, Michelle Stegner,
Gary Panther

Task: SDU-07C + core samples SDU-07

Observers: John Kelly (CHAM) Bill White (NPS)
White

0830 at SDU-07C after being picked
up at Marcus Island Campground
by boat

0935 Finished ICS sampling at
SDU-07C, Michelle taking
pictures of previous location

1010 moved to east side ~~west side~~
with aid of boat

1215 at SDU-09 for Michelle to locate
XRF locations for Amy and Wanda.
Eat Lunch

1530 Finished for the day, need info
on UDU-06, teams going back
across river

1645 Back at stop, demoving/debriefing

Kettle Falls

5/6/15

Bossberg
D Lewis

SDU-07C (cont) UTM 11N (meters)

LOC	Time	Easting	Northing
-18	0904	425051.89	5392636.68
-03	0912	425057.71	5392621.63
-12	0921	425094.69	5392627.77
-29	0926	425114.11	5392631.59
			50% recovery, finished off w/scoop
-01	0934	425119.62	5392701.48

Core samples SDU-07

COR-01-001 associated w/ XRF-04

Time: 1006

10YR 4/2, silty fine
sand

COR-01-002

Time: 1011

EPA Split

10YR 4/2, silty fine sand

COR-01-003

Time: 1017

10YR 4/2 silty fine
sand

5/6/15

DL

Location

Kettle Falls

Date

5/6/15

Project / Client

Bozberg

Dr

Core samples SPU-07 (cont)
COR-03-001 associated w/ XRF-03 ⁰²

Time: 1059

10YR 1/2 sandy fine silt

COR-03-002

Time: 1102

replicate 1107 10YR 1/2 sandy fine silt

COR-03-003

Time: ¹¹¹⁰ 1107

EPA Split 1113 10YR 1/2 sandy fine silt

COR-02-001

associated w/ XRF-01

Time: 1136

10YR 1/2 sandy fine silt

COR-02-002

Time

10YR 1/2 sandy fine silt

COR-02-003

Time

10YR 1/2 sandy fine silt

5/6/15

Dr

Location

Kettle Falls

Date

5/6/15

Project / Client

Bozberg

Dr

UDU		UTM 11N (meters)	
SPU-06		Easting	Northing
LOC. XRF-01	TIME		
XRF-01	1351	422279.68	5400932.04
XRF-02	1429	422256.18	5400888.83
XRF-03	1434	422226.90	5400850.08
XRF-04	1445	422203.39	5400806.87
XRF-05	1457	422176.34	5400765.82

5/6/15

Dr

Location Kettle Falls, WA Date 5/6/15Project / Client Teck, BossburgDaily Log

- 0645 Amy arrives with Michelle + Al at c.n.
- 0705 Daily tailgate
- 0745 Teams Depart for site
- 0800 Amy checks increments for SDV-07-1CS-A - all 30 checked, no reserves used
- 0815 Amy checks increments for SDV-07-1CS-B - all 30 checked, no reserves used
- 0830 Checking with Kris (Teck) + Paul (AECOM) about moist clay/silt samples
- 0845 Becky (Teck) arrives + assist with decision to composite moist silt/clay samples with sand.
- 0945 Kris talks with Mark + determine that because no samples are saturated with water, they can all be composited
- 1001 ALD composites 30 increments to create SDV-07-1CS-B
- 1023 ALD composites 30 increments to create SDV-07-1CS-A

Location Kettle Falls, WA Date 5/6/15Project / Client Teck, BossburgDaily log continued

- 1025 Add ice in baggies to cooler
- 1045 Depart C.N. with Mark to XRF cancel that - had to make nitric acid 10% bottle for team B
- 1055 Depart C.N. with Mark to XRF
- 1110 Arrive at Marcus parking
- 1120 Give nitric acid bottle to Eric Weatherman
- 1143 Mark + Amy arrive at Bossburg
- 1218 Depart vehicle to transport equipment to boat.
- 1236 Mark, Becky, Amy arrive SDV-09
- 1238 Start up XRF analyzer + analyze QC
- 1438 Battery low on XRF - called boat to come back with XRF case
- 1501 Shut down XRF analyzer + change battery
- 1607 Take boat back to Bossburg
- 1610 Shut down XRF analyzer
- 1612 Arrive Bossburg Beach - Amy
- 1620 Arrive back to Mark's truck
- 1636 Depart Bossburg
- 1655 Arrive C.N. Kettle Falls
- and 5/6/15

Project / Client Teck, Bossburg
XRF analysis of Lead (ppm)

1239 #1	Energy Calibration check - passed		
1242 #2	Blank SiO2	<1.9	
1245 #3	NIST 2709a TV=17.3	13.0	75.1%R
1248 #4	NIST 2780 TV=5770	5001	86.7%R
1302 #5	SOU-07A-05 ^{F-XRF} ^{at 6/11/15}	57.0	SOU-07A-5
1308 #6		-02 91.6	-17
1312 #7		-03 58.7	-R02
1316 #8		-04 68.2	-14
1320 #9		-05 62.1	-R03
1324 #10		-06 62.4	-03
1327 #11		-07 44.0	-13
1330 #12		-08 70.0	-12
1334 #13		-09 98.0	-26
1338 #14		-10 60.9	-10
1341 #15	15.6% D	Dup 71.2	-10
1345 #16		-11 54.9	-R04
1348 #17		-12 55.7	-23
1352 #18		-13 73.9	-29
1355 #19		-14 68.2	-19
1358 #20		-15 41.6	-06
1402 #21		-16 79.6	-28
1405 #22		-17 85.1	-22
1409 #23		-18 20.7	-25
1413 #24	0 ^{at 6/11/15}	-19 80.3	-16

Project / Client Teck, Bossburg
XRF analysis of Lead (ppm) continued

1418 #25	SOU-07A-05 ^{at 6/11/15}	-20	120.0	SOU-9A-01
1420 #26		-21	about	-tilted
1422 #27	^{at 6/11/15}	-21	109.4	-27
1426 #28	10.6% D	-20 dup	121.6	-01
1429 #29	1.32% D	-22	19.5	-08
1433 #30		-23	57.7	-20
1437 #31		-24	111.0	-04
1441 #32		-25	60.1	-07
1456 #33	NIST 2790 TV=5770	5057	87.6%R	
1500 #34	Blank SiO2	<1.8		
1501 #35	Energy Calibration check - passed			
1504 #36	^{new battery} Energy Calibration check - passed			
1508 #37	Blank SiO2	<1.8		
1509 #38	NIST 2780 TV=5770	5019	87.0%R	
1515 #39	SOU-07A-05 ^{F-XRF} -26	21.3	SOU-9A-02	
1519 #40	^{at 6/11/15}	-27	63.8	R06
1523 #41		-28	132.8	-24
1526 #42		-29	179.0	-11
1531 #43		-30	74.8	-15
1532 #44			about	-cond in way
1534 #45	16.7% D	-Dup	88.4	-15
1539 #46	Blank SiO2	<1.8		
1542 #47	NIST 2780 TV=5770	5160	89.4%R	
1546 #48	NIST 2709a TV=17.3	12.5	72.3%R	

Location Kettle Falls, WA Date 5/6/15Project / Client Teck, Bossburg

XRF analysis of Lead (ppm) continued

			precision	
1550	#49	SDU-09A-10	→ 131.5	SDU-09A-01
1553	#50	AYD 6/1/15	→ 129.2	
1556	#51		137.0	
1558	#52		61.7	
1601	#53		117.3	↳ RSD-21.7%
1605	#54	Energy Calibration check - passed		

AYD
5/6/15

6/1/15 crossed out sample IDs
AYD containing "F-XRF" as
these new IDs were not
needed since we could use
the existing LCS IDs for these
locations for SDU-09A + SDU-10

Location Kettle Falls, WA Date 5/6/15Project / Client Teck, Bossburg

Daily log continued

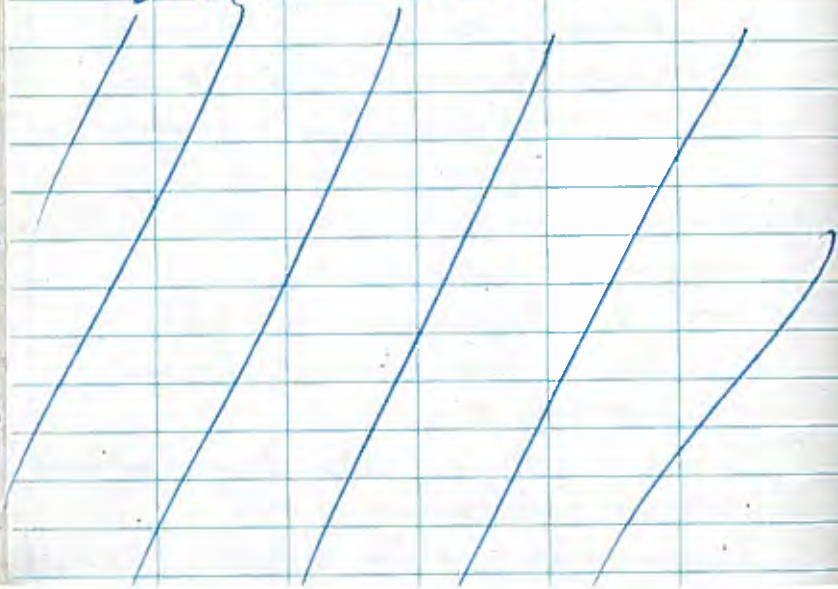
- 1735 Rinse Blank [Ⓢ] collected on decrease
core barrel from UDU-06 by AT/DL
UDU-06-ER-A-20150506
- 1740 Rinse Blank off auger used on UDU-07
Ⓢ SDU
UDU-07-ER-C-20150506 by DL/AT
- 1745 Rinse blank on shovel (stainless)
from SDU-08. by DL/AT
SDU-08-ER-D-20150506
- 1743 Rebrief
- 1705 Depart site

AYD 5/6/15

Location BOSSBURG Date 5/5/15Project / Client BOSSBURG REFINED SEDIMENT
+ SOIL STUDY / TAI

- ivy likely from UDU-05. He had a couple of small blisters on his right hand + fore arm.
- at field office Susan Ellis reviewed SDU-07 A+B+C ~~etc~~ ICS collected today.
 - teams deconned + collected rinseate ~~blank~~ samples.
 - 1820 departed field office.

Michelle

Location BOSSBURG Date 5/6/15Project / Client BOSSBURG REFINED SEDIMENT
+ SOIL STUDY / TAI

- 0620 at field office.
- discussed days logistics with Eric Weatherman
- 0644 - field teams + John Kelly, CH on site.
- Michelle reported a skin rash but has not been in any brush. Many have allergy to something or sun related.
- Susan Ellis not at meeting - overslept texted Michelle that she will meet team at SDU-05.
- Michelle received ferry landing coordinates from Brent Martinez who will not be coming to site today. Emailed these to Paul.
- teams departed @ 0730.
- have coordinates in teams hands for cores @ SDU-07 + 08.
- Becky Hensler @ 0858
- 1030 - Michelle called. They are moving to west side of SDU-07 to grab final core samples
- 1046 MV, AD + Becky departed for Bossburg

Location Bossburg Date 5/6/15
 Project / Client BOSSBURG REFINED SEDIMENT
+ SOIL STUDY

- 1146 - Michelle reported near-miss Nitric acid bottle broke + spilled
 - collar broke may have been cross threaded.
- actual departure @ 1054
- 1200 delivered new nitric bottle to Eric W. to take to team B.
- 1225 departed Marcus for Bossburg.
- 1240 @ Bossburg to download file for team A - XRFs at UDU-06 w/ Bill White
- 1230 - on boat at Bossburg have XRF + new UDU-06 locations
- flagged ICSE 09 @ 1250
- cable @ SDU-09C-R06
 422 461.18
 540 1094.98

Note - Susanna Ellis gave OK to flag SDU-09A for field XRF as no intrusive work being performed, so we walked w/ Bill White NPS

- completed flagging by 1334
- Team A found charcoal at Core 2 XRF-02 Move to XRF-R03.
- Team A completed SDU-08

Location Bossburg Date 5/6/15
 Project / Client BOSSBURG REFINED SEDIMENT
+ SOIL STUDY / TAI.

- completed SDU-09A Field XRF
- Did not receive UDU-06 ICS maps so I demobbed Team A at 1540
- MV + BH mobbed back to vehicle while Army completed XRF precision runs + Team B demobbed
- 1605 - Conference call w/ Kris Paul, Beely, Karen.
 - OK to do XRFs + pack up samples tomorrow. Hold off on SDU-10 until Friday.
- 16³⁰15 call over; returned w/ Army to field office
- 1700 - back at field office; teams deconing + collecting rinseates.
- 1730 - debriefed Beely left after debrief
- 1745 - MW AP + MS discussed UDU-06 will pour. Teams want to do Seenaug 2.
- 1805 - departed field office

Wendell

- 1435 @ ~~SDU-09~~ UDU-06, Load
redrawn UDU-06 map onto tablet.
- 1500 Term B collects all XRF samples
before we can start. Vetter indicates
that he is awaiting ICS map for
UDU-06.
- 1547 Demote from UDU-06.
- 1557 Leave Bosburg for Kettle Falls.
- 1624 @ Weathermans, Start decon.
- 1751 Debrief.
- 1800 Offsite

Anthony P. L.
5.6.2015

- 0645 Onsite
- 0700 H&S meeting.
- 0740 Leave Kettle Falls for Bosburg
- 0805 @ Bosburg
- 0840 @ UDU-06
- 0915 @ UDU-06-11
GPS
422 200.48
5400 597.53
- 0937 @ ~~UDU-06-15~~
GPS
422 218.37
5400 882.67
- 0948 @ ~~UDU-06-25~~
GPS
422 260.94
5400 909.44
- 1005 @ ~~UDU-06-01~~
GPS
422 184.21
5400 810.95

1028 @ UDU-06-22

GPS

422 184.72

5400 842.82

1044 @ UDU-06-02

GPS

422 240.13

5400 910.05

1145 Here crackling noise in tablet.
Shut off, crackling stops → possible
dust in vent fan? Restart, sounds
continues. Will continue to use tablet.

1150 @ UDU-06-17 # saturated,
location in seep
outflow.

GPS

422 276.24

5400 930.52

1213 @ UDU-06-13

GPS

422 238.77

5400 845.54

1232 @ UDU-06-21

GPS

422 274.30

5400 900.49

1245 @ UDU-06-05

GPS

422 207.90

5400 880.79

1253 Take lunch.

1338 @ UDU-06-08

GPS

422 225.35

5400 829.10

1410 @ UDU-06-27

GPS

422 221.61

5400 828.80

COR-01 → XRF-01
 COR-02 → XRF-02
 COR-03 → XRF-03

CORE-01

2L e 6"
 1L e 12"
 2L e 18"

Core-02

1L e 6"
 1L e 12"
 2L e 18"

CORE-03

2L e 6"
 1L e 12"
 2L e 18"

@COR-01

1445 collect 001 (6", 2L)
 1450 collect 002 (12")
 1455 collect 003 (18")

1503 @ COR-02

1505 collect 001 (6")
 1510 collect 002 (12")
 1515 collect 003 (18", 2L)

1525 @ COR-03

1530 collect 001 collect (6", 2L)
 1535 collect 002 (12")
 1540 collect 003 (18", 2L)

1548 Demobr From UDU-06.
 1610 Leave Bozsbung for Kettle.
 1630 @ Weathermanus. Begin decom o demobr.

1805 Demobr.

1815 Offsite.

Anthony P. L.
 5.7.2015

Location UDU-06

Date 5.7.15

Project / Client Bosbas / Teck

[Handwritten signature]
[Handwritten signature]
 5.7.2015

Location UDU-06

Date 5.7.15

Project / Client Bosbas / Teck

[Handwritten signature]
[Handwritten signature]
 5.7.2015

WDX-06

5.7.2015

Bossburg / Tech

[Handwritten signature]
5.7.2015

The manufacturers of *Rite in the Rain* all-weather writing products are grateful to the numerous environmental experts who have contributed to the development of this book. Should you have any additions, improvements or corrections for future publications of this field book or have suggestions for other environmental field book formats, we welcome your input.

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Common Field Data Error Codes

Error codes are used to explain common mistakes and are written above or close to the mistake.

Commonly used error codes include:

RE	Recording Error
CE	Calculation Error
TE	Transcription Error
SE	Spelling Error
CL	Changed for Clarity
DC	Original Sample Description Changed After Further Evaluation
WO	Write Over
NI	Not Initialed and Dated at Time of Entry
OB	Not Recorded at the Time of Initial Observation

Note: Error code should be circled, dated, and initialed when recorded.

Hazard Classifications

- Class 1 Explosives
- Class 2 Gas
- Class 3 Flammable Liquid
- Class 4 Flammable Solids (Potential spontaneous combustion, or emission of flammable gases when in contact with water)
- Class 5 Oxidizing Substances and Organic Peroxides
- Class 6 Toxic (poisonous) and infectious substances
- Class 7 Radioactive material
- Class 8 Corrosives
- Class 9 Miscellaneous dangerous goods

Container type abbreviations (for sampling guidelines)

BR - Boston Round • ABR - Amber Boston Round • AJ - Amber Jug •
AWM - Amber Wide Mouth • Poly - Polyethylene Bottles • BOD - Bottle •
CWM - Clear Wide Mouth

Kettle Falls

5/7/15

Borberg
Lewis

50-75°

0700 H+E meeting, making
Crew: Michelle Steyer
Steve Lewis, Gary Panther
observers: John Kelly (CRM)
Bill White (NPS)
Task: UDU-06 ICS & core

0810 left office

0845 at UDU-06 after boat
ride from Borberg.

1100 Break

1130 Buckets work

1230 Lunch

1330 Back at work

1345 Finished w/ ICS samples.

1350 Helping Michelle locate XRF in-situ
locations in SDU-10

SDU-10-05, Rol 08, R03, 09, 04

1630 Returned to Shop to decont

5/7/15

D

Kettle Falls

5/7/15

Borberg
Lewis

UDU-06

SDU-06

UTM 11N (meters)

LOC	Time	easting	northing
-26	0930	422284.81	5400929.98
-03	0934	422285.42	5400922.11
-18	0945	422293.78	5400909.32
-09	90% recovery, finished w/ scoop		
-09	0955	422281.57	5400911.21
-12	1003	422276.61	5400905.63
-20	1010	422271.06	5400904.60
-14	1019	422279.67	5400892.80
-16	1025	422275.71	5400889.90 SATURATED
-24	1038	422262.00	5400875.09
-28	1052	422250.28	5400856.38 SATURATED
-19	1145	422168.19	5400769.12
-07	1149	422179.88	5400786.99
-06	1154	422187.46	5400789.05
-10	1159	422193.79	5400792.78
-04	1214	422204.11	5400792.15 SATURATED
	40% recovery, used spoon to finish		
-30	1219	422193.24	5400780.11
	40% recovery, used scoop to finish		
-23	1329	422208.79	5400810.86
-29	1339	422213.98	5400812.59

5/7/15 D

Location Little Falls Date 5/7/15

Project / Client Bassberg
DeLuca

End of field
investigation.

Anthony DeLuca
5.11.15

Location _____ Date _____

Project / Client _____

Anthony DeLuca
5.11.15

Location Kettle Falls, WA Date 5/7/15Project / Client Teck, Bossburg
Daily Log

- 0645 Arrive at C.N. in Kettle Falls
- 0700 Daily Tailgate
- 0730 Weigh out XRF samples
- 0747 Al + Amy check increments for SDU-07-ICS-C - no reserve locations used
- 0803 AT/ALD composite 30 increments to create SDU-07-ICS-C
- 0812 Al + Amy check increments for SDU-08-ICS no reserve locations used
- 0826 AT/ALD composite 30 increments to create SDU-08-ICS
- 0830 Add ice to coolers
- 0900 Al transfer cores from SDU-07 to 1L bottles
- 0950 reweigh dried XRF samples
- 1000 Continue packing coolers
- 1046 reweigh dried XRF samples
- 1049 Al transfer cores from SDU-08 to 1L bottles
- 1053 Sieve UDU-06-XRF-05-shaker only

Location Kettle Falls, WA Date 5/7/15Project / Client Teck, Bossburg
Daily log continued

- 1139 Start analyzer XRF
- 1204 Sieve UDU-06-XRF-01-shaker-then used hand in baggie to break up hand aggregates
- 1224 Sieve UDU-06-XRF-02-shaker + baggie
- 1225 Recon 3 sieves
- 1245 Lunch break
- 1304 ALD collects rinsate blank of deconned sieve:
UDU-06-ER-B-20150507
- 1316 Sieve UDU-06-XRF-03-shaker + baggie
- 1325 Sieve UDU-06-XRF-04-shaker only
- 1330 Recon sieves
- 1406 Shut down analyzer - XRF
- 1430 To Fed Ex with samples
- 1500 Arrive back to C.N. + clean up box truck + prepare coolers for samples from field
- 1600 Amy sends XRF results to Paul
- 1604 Mark + Michelle arrive to C.N.
- 1634 Teams arrive back to C.N.
- 1700 Rinse blanks from core barrel AT/DC
- 1705 Rinse blank UDU-06-ER-A-20150507
- 1705 Rinse blank from hand auger DL/AT

Location Kettle Falls, WA Date 5/7/15Project / Client Teck, Bossburg

XRF analyzer of Lead (ppm)

#1	Energy calibration check - passed		
#2	Blank SiO ₂		<1.9
#3	NIST 2709a TV=17.3		11.6 67.1%R
#4	NIST 2711a TV=1400		1317 94.1%R
#5	UDU-06-XRF-05	Run 1	19.6
#6	"	Run 2	22.6
#7	"	Run 3	21.9 Ave 21.4
#8	UDU-06-XRF-01	Run 1	66.6
#9	"	Run 2	62.3
#10	"	Run 3	66.3 Ave 65.1
#11	UDU-06-XRF-02	Run 1	70.2
#12	"	Run 2	54.2
#13	"	Run 3	57.3 Ave 60.6
#14	UDU-06-XRF-03	Run 1	60.4
#15	"	Run 2	59.4
#16	"	Run 3	62.2 Ave 60.7
#17	UDU-06-XRF-04	Run 1	42.5
#18	"	Run 2	41.1
#19	"	Run 3	43.5 Ave 42.64 std
#20	" Precision	Run 4	46.8
#21	"	Run 5	39.5
#22	"	Run 6	43.9
#23	"	Run 7	41.2 RSD=36%
#24	Blank SiO ₂		<1.8

Location Kettle Falls, WA Date 5/7/15Project / Client Teck, Bossburg

XRF analysis of Lead (ppm) continued

#25	NIST 2711a TV=1400	1304	93.1%R
#26	Energy calibration check - passed		

2405/7/15

Location Kettle Falls, WA Date 5/7/15Project / Client Teck, BossburgDaily log continued1800 Rebrief
1820 Depart S.MWJD
5/7/15Location Kettle Falls, WA Date 5/8/15 101Project / Client Teck BossburgDaily log

0645 Arrive at C.V. in Kettle Falls
 0700 Tailgate Daily
 0710 Air Army check increments
 for UDU-06-1CS - no reserves
 used. 4 increments were
 saturated:
 UDU-06-17
 UDU-06-04
 UDU-06-16
 UDU-06-28

0738 AT composites 26 increments
 into 1 bucket + places 4
 saturated samples in baggies
 inside a second

0746 Gary Panther GP collects sample
 of 10W soil + sediment
 Sample ID: 10W soil/sed

0805 GP collects sample of water 10W
 Sample ID: 10W water
 Representative of 2 drums

WJD
5/8/15

Location BOSSBURG Date 5/7/15
 Project / Client BOSSBURG REFINED
SEDIMENT & SOIL STUDY / T&E

0615 @ field office

0645 - team arrival

0701 - tailgate meeting

- covered days hazards; today will be the most challenging of all field days due to field conditions + team A being one man short. Al Thatcher is highly allergic to P.I. + will assist in lab today processing XRF + ICS samples + packing samples for shipment.
- teams will not wear safety vests due to snag hazards. Will use tyvek as needed. Watch for ticks be sure not to wear tyvek in boats or vehicles if worn in field on slopes.

Team A - AP + ^{GP} ~~GP~~ will work on

500 WDU-06 ICS

Team B - MS, DL + GP will work near them on slopes.

GP will support both teams as needed.

- teams advised to stay on,

Location BOSSBURG Date 5/7/15
 Project / Client BOSSBURG REFINED SEDIMENT
+ SOIL STUDY / T&E

- public land - to use tablet maps + look for property boundaries.
- Public land marked by yellow corner posts (concrete), sign posts + tree markers
- 0730 teams departed for Bossburg.
- Bill White + Tom Edwards ~~in~~ of NPS in field today.
- Monica Tonzel + John Kelly in field today. (CEPH + CH)
- Susan Ellis (CLT) in field today working with both teams.
- other teams left assisted field lab with IDing URS equip with green stickers.
- copied all field files + photos to thumb drive.
- 1053 - first XRF on sieve shaker others still drying.
- 1100 - departed for Bossburg
- 1125 - at Bossburg. Columbia Navigation picked me up + took me to ferry landing FZ to photograph cable.

Location Bossburg Date 5/7/15
 Project / Client Bossburg Refined Sediment
+ Soil Study

1145 - at south end of UDU-06
 - Team B reported all steep
 ones done.

Went to talk with Team B
 working on UDU-06 along the
 base. ~~U~~ UDU-06. Sample UDU-06

- ICS-17 is wet due to a sap.
~~U~~ UDU-04-ICS-13 is heavily
 overgrown. Can hear a
 colony of bees buzzing up slope.
 provided support to Team A
 at steep slope by UDU-06-ICS-21
 + 5.

- Jon Edwards not at sight @ site
 he left early; Bill White stayed as the
 lone park service rep.

- 1235 - teams at lunch.

- 1305 - Paul Mc called to discuss
 demob + outstanding issues.

1325 - call over

1345 Amy Dahl called with XRF
 data for UDU-05

1 - John Kelly departed

/ / / / /

Location BOSSBURG Date 5/7/15
 Project / Client BOSSBURG-REFINED SEDIMENT
+ SOIL STUDY/TAE

XRF results @ UDU-06 A M

- UDU-06 - XRF-01 = 8 55.1 / 58.6

UDU-06 - XRF-02 = 60.6 / 70.2

UDU-06 - XRF-03 = 60.7 / 62.2

UDU-06 - XRF-04 = 42.4 / 43.5

UDU-06 - XRF-05 = 21.4 / 22.6

- Discussed results with Monica
 Tavel.

Cores will be as follows

COR-01 will be XRF-01

COR-02 will be XRF-02

COR-03 will be XRF-03

Team B flagged XRF locations at
 SDU-10 for field XRF study.

Team A went after cores
 as these 3 are the highest on
 the slope.

1520 Gary had a scratch on his arm
 cleaned it up + Dave L went to complete
 last core.

1527 - left UDU-06 for office via boat
 to Bossburg.

1520 1535 at Bossburg walked to car.

1545 - left Bossburg

Location BOSSBURG Date 8/7/15
 Project / Client BOSSBURG REFINED SEDIMENT
+ SOIL STUDY / T&I

1603 - Conference call

- follow up w/ Susan on if she needs to be present for the field XRF study at SDU-10
- 1DW - XRF samples to 1DW containers
- Water → Amy to collect samples for total metals (PCEAS) + PH.
- Soil / Sediment total metals only representative sample
- cleanup office before we leave.
- return all rental equipment + rental vehicles
- let Paul know who is driving box truck. Text Paul when you get home.
- inventory tech info @ equipment when returned.

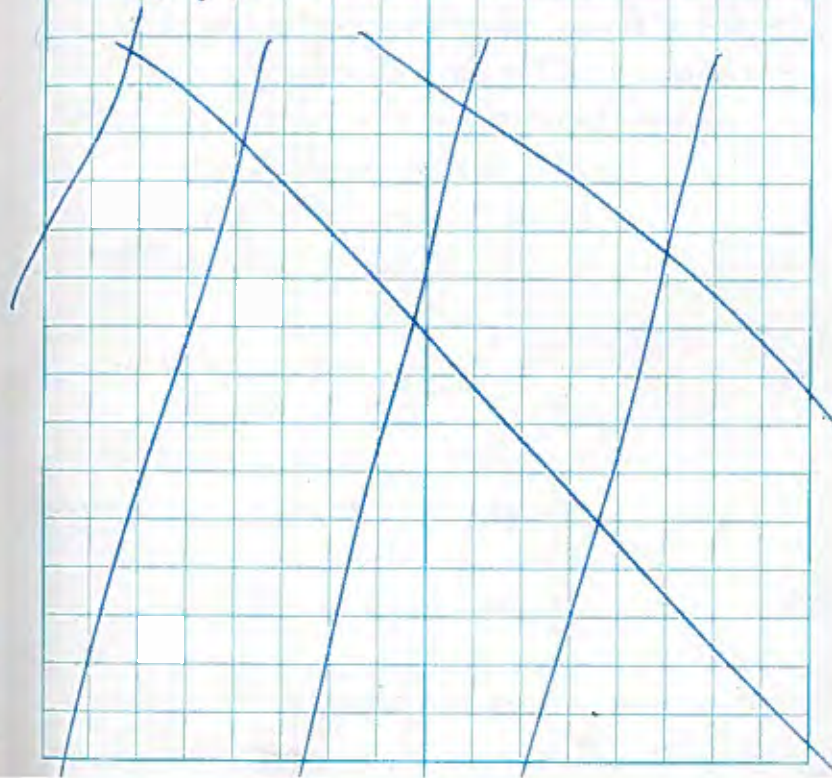
1633 call ended. Will follow up with team.

- Team B back @ 1633.
- Susan Ellis does not have to be back if SDU-10 xrf study goes forward.
- Teams disconnected & collected rinsewater samples.

Location BOSSBURG Date 8/7/15
 Project / Client BOSSBURG REFINED SEDIMENT
+ SOIL STUDY / T&I

- cleaned up + organized equipment in vehicles.
- 1750 - susan ellis completed her review of Team B samples
- 1824 left after debrief.

Mark [Signature]



Location Kettle Falls, WA Date 5/7/15Project / Client Teck, BossburgDaily log continued1800 Rebrief
1820 Depart S.MWJD
5/7/15Location Kettle Falls, WA Date 5/8/15Project / Client Teck BossburgDaily log

0645 Arrive at C.N. in Kettle Falls
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 for UDU-06-1CS - no reserves
 used. 4 increments were
 saturated:
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 inside a second

0746 Gary Panther GP collects sample
 of 10W soil + sediment
 Sample ID: 10W soil/sed

0805 GP collects sample of water 10W
 Sample ID: 10W water
 Representative of 2 drums

WJD
5/8/15

Daily log continued

0810 AI transfers core samples for UDU-06 to 12 bottles

0830 Packing 3 coolers to lab:

Cooler 1: UDU-06-1CS

Cooler 2: 9 samples for UDU-06-COR

Cooler 3: • 7 XRF samples

(includes extra 4 for confirmation)

• 7 ER blanks

and

• 2 IDW samples

0930 Load box truck

1040 Mark, Dave, Amy depart

Kettle Falls to XRF at SDU-10

On 5/7/15 sent 4 coolers:

Cooler 1: SDU-07-1CS-A+B

Cooler 2: SDU-07-1CS-C+D

Cooler 3: 9 cores for SDU-07

Cooler 4: 9 cores for SDU-08

1059 Arrive Bossburg

1108 Depart Bossburg on boat to SDU-10

1111 Arrive SDU-10

1114 Turn on XRF analyzer perform QC

1406 Shut down XRF analyzer

Daily log continued

1438 Depart SDU-10 by boat

1442 Arrive at Bossburg Beach

1454 Depart Bossburg

1513 Arrive C.N. in Kettle Falls

1555 Depart site with Dave

and
5/8/15

Project / Client Teck Bousburg
XRF analysis of Lead (ppm)

1116 #1	Energy calibration check - passed		
1119 #2	Blank SiO2	<1.8	
1122 #3	NIST 2709a TV=17.3	13.6	79.6%R
1125 #4	NIST 2711a TV=1400	1365	97.5%R
1133 #5	SDU-10 F-XRF-04 6/1/15	81.9	SDU-10-24
1136 #6	SDU-10 F-XRF-01 6/1/15	51.0	SDU-10-R02
1138 #7	SDU-10 F-XRF-02	67.5	-02
1142 #8	XRF-03	92.9	-29
1146 #9	XRF-05	103.3	-15
1149 #10	XRF-26	143.3	-07
1152 #11	XRF-06	59.7	-14
1154 #12	XRF-07	153.0	-28
1158 #13	XRF-08	71.3	-16
1202 #14	XRF-04	63.0 6.3	-22
1204 #15	7.0%0 DUP-09	67.6	-22
1211 #16	XRF-10	73.4	-25
1214 #17	XRF-11	99.7	-13
1217 #18	XRF-25	138.9	-26
1220 #19	XRF-24	73.1	-20
1223 #20	XRF-12	55.2	-11
1227 #21	XRF-13	77.8	-23
1231 #22	XRF-14	59.1	-12
1234 #23	XRF-15	60.9	-30
1338 #24	XRF-16	105.6	-22

Project / Client Teck Bousburg
XRF analysis of lead (ppm)

1241 #25	SDU-10 XRF-19	39.7	SDU-10-01
1243 #26	7.4%0 DUP-17	51.6	-01
1246 #27	XRF-18	47.0	-10
1249 #28	XRF-20	133.2	-R06
1302 #29	BLANK SiO2	<1.9	BLANK
1305 #30	SDU-10 XRF-18	ABORT	-18
1307 #31	SDU-10 XRF-18	CRUST 182	SDU-10-18
1313 #32	XRF-19	36.1	-17
1316 #33	XRF-20	47.0	-R04
1319 #34	XRF-21	67.2	-03
1323 #35	XRF-29	CRUST 142.0	-19
1326 #36	XRF-25	CRUST 161.3	-19
1329 #37	XRF-22	CRUST 130.4	-21
1340 #38	XRF-27	47.3	-06
1343 #39	32.0%0 premium	45.3	-06
1345 #40		43.7	-04
1348 #41		44.7	-06
1350 #42		46.3	-06
1352 #43		48.5	-06
1354 #44	RSD=14.8% ↓	50.1	-06
1359 #45	Blank SiO2	<1.8	
1402 #46	NIST 2709a TV=17.3	11.8	68.2%R
1405 #47	NIST 2711a TV=1400	1343	95.9%R
1406 #48	Energy calibration check - passed		

Location _____ Date _____

Project / Client _____

End of field
investigation

~~Anthony~~ ~~Pal...~~
5.12.15

Location _____ Date _____

Project / Client _____

~~Anthony~~ ~~Pal...~~
5.12.15

Location BOSSBURG Date 5/8/15
 Project / Client BOSSBURG REFINED
SEDIMENT + SOILS STUDY / TRI

- 0615 @ field office teams will
 load up box truck + await further
 instruction on SDU-10

0700 - conducted safety meeting

- team prepared samples for
 shipment to labs from UDU-06.

- team demobbed office

- GP collected IDW samples

- A1 + Army prepared UDU-06 samples

- Connect GPS to tablet

→ turn on GPS receiver

held button until a slight

green bar + flashing yellow
 + blue light. Solid green is connected

- open arc pad

- click open last map used

- connect GPS to Arc Pad

Main tools, click satellite

image turns orange when syncs

- Center on GPS

- 0825 call from Kris. XRF field is
 a go.

- advised Monica Tanel EPA + Bill
 White this is a go. Will confirm

Location BOSSBURG Date 5/8/15
 Project / Client BOSSBURG REFINED SEDIMENT
+ SOIL STUDY

time with them when we know.

- 1024 - box truck mostly packed
 except for a few odds + ends.

- 1055 - departed for Bossburg

1059 - at Bossburg

1107 - at boat to head to SDU-10

1112 - at SDU-10 started XRF

1138 - departed SDU-10

1440 - departed SDU-10

1505 - at Field office

1600 - Conference call of Paul

Kris, Bechy + Karen

1623 - call over

END OF FIELD PROJECT

Mark [Signature]

Appendix I
Sampling Collection Reports
(including photographs)

Appendix I
Sampling Collection Reports
Part 1 of 3 – Incremental Composite Samples

Appendix I
ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-01-01	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-21 13:22	Sample Team Initials	EL

Sample Collected? Y
X 423630.844 m
Y 5401600.757 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sandy silt	Vegetation Present?	Y
Vegetation Type if Present	Pond weeds		

Station Comments

Sample Collected from Station

Sample Id	SDU-01-ICS	Decision Unit	Sediment Decision Unit 1
Sample Date Time	2015-04-22 7:56	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-01-R01, R02, R03) used for SDU-01-02, -08, -30.		

Appendix I
ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-01-01

2015-04-21-13-24-21_SDU-01-01_TECK2.JPG



sample

Appendix I
ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-21-13-24-28_SDU-01-01_TECK2.JPG



groundsurface

2015-04-21-13-24-36_SDU-01-01_TECK2.JPG



overview facing west

Appendix I
ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-01-02	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime	2015-04-21 13:30	Sample Team Initials	EL
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments location abandoned; within boulder field and possibly above high water mark

Sample Collected from Station

Sample Id	SDU-01-ICS	Decision Unit	Sediment Decision Unit 1
Sample Date Time	2015-04-22 7:56	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-01-R01, R02, R03) used for SDU-01-02, -08, -30.		

Photos Collected from Station SDU-01-02

No photos taken at this station. See station comments for more details.

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-01-03	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-21 12:04	Sample Team Initials	EL

Sample Collected? Y
X 423561.0935 m
Y 5401621.458 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pond weeds		

Station Comments

Sample Collected from Station

Sample Id	SDU-01-ICS	Decision Unit	Sediment Decision Unit 1
Sample Date Time	2015-04-22 7:56	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-01-R01, R02, R03) used for SDU-01-02, -08, -30.		

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-01-03

2015-04-21-12-09-19_SDU-01-03_TECK2.JPG



sample

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-21-12-09-40_SDU-01-03_TECK2.JPG



groundsurface

2015-04-21-12-09-48_SDU-01-03_TECK2.JPG



overview facing west

Appendix I
ICS Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-01-04	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-21 9:29	Sample Team Initials	EL

Sample Collected? Y
X 423487.5363 m
Y 5401630.903 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pond weeds		

Station Comments

Sample Collected from Station

Sample Id	SDU-01-ICS	Decision Unit	Sediment Decision Unit 1
Sample Date Time	2015-04-22 7:56	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-01-R01, R02, R03) used for SDU-01-02, -08, -30.		

Appendix I
ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-01-04

2015-04-21-09-32-22_SDU-01-04_TECK2.JPG



sample

Appendix I
ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-21-09-32-35_SDU-01-04_TECK2.JPG



groundsurface

2015-04-21-09-32-41_SDU-01-04_TECK2.JPG



overview facing west

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-01-05	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-21 13:59	Sample Team Initials	EL

Sample Collected? Y
X 423606.1886 m
Y 5401524.367 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand with gravel	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-01-ICS	Decision Unit	Sediment Decision Unit 1
Sample Date Time	2015-04-22 7:56	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-01-R01, R02, R03) used for SDU-01-02, -08, -30.		

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Photos Collected from Station SDU-01-05

2015-04-21-14-01-42_SDU-01-05_TECK2.JPG



grounsurface

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-21-14-01-50_SDU-01-05_TECK2.JPG



overview facing west

2015-04-21-14-02-45_SDU-01-05_TECK2.JPG



sample

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ICS Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-01-06	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-21 10:04	Sample Team Initials	EL

Sample Collected? Y
X 423467.7621 m
Y 5401598.514 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pond weeds		

Station Comments

Sample Collected from Station

Sample Id	SDU-01-ICS	Decision Unit	Sediment Decision Unit 1
Sample Date Time	2015-04-22 7:56	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-01-R01, R02, R03) used for SDU-01-02, -08, -30.		

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-01-06

2015-04-21-10-07-27_SDU-01-06_TECK2.JPG



sample

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-21-10-07-40_SDU-01-06_TECK2.JPG



groundsurface

2015-04-21-10-07-48_SDU-01-06_TECK2.JPG



overview facing west

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Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-01-07	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-21 11:28	Sample Team Initials	EL

Sample Collected? Y
X 423546.6295 m
Y 5401564.975 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pond weeds		

Station Comments

Sample Collected from Station

Sample Id	SDU-01-ICS	Decision Unit	Sediment Decision Unit 1
Sample Date Time	2015-04-22 7:56	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-01-R01, R02, R03) used for SDU-01-02, -08, -30.		

Photos Collected from Station SDU-01-07

2015-04-21-11-31-02_SDU-01-07_TECK2.JPG



groundsurface

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-21-11-31-06_SDU-01-07_TECK2.JPG



overview facing west

2015-04-21-11-31-47_SDU-01-07_TECK2.JPG



sample

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-01-08	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime	2015-04-21 9:08	Sample Team Initials	EL
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments location abandoned; steep cobble slope, unsafe

Sample Collected from Station

Sample Id	SDU-01-ICS	Decision Unit	Sediment Decision Unit 1
Sample Date Time	2015-04-22 7:56	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-01-R01, R02, R03) used for SDU-01-02, -08, -30.		

Photos Collected from Station SDU-01-08

No photos taken at this station. See station comments for more details.

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Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-01-09	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-21 9:56	Sample Team Initials	EL

Sample Collected? Y
X 423483.1916 m
Y 5401602.384 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 5/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pond weeds		

Station Comments

Sample Collected from Station

Sample Id	SDU-01-ICS	Decision Unit	Sediment Decision Unit 1
Sample Date Time	2015-04-22 7:56	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-01-R01, R02, R03) used for SDU-01-02, -08, -30.		

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-01-09

2015-04-21-10-00-01_SDU-01-09_TECK2.JPG



sample

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-21-10-00-14_SDU-01-09_TECK2.JPG



groundsurface

2015-04-21-10-00-18_SDU-01-09_TECK2.JPG



overview facing west

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-01-10	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-21 13:13	Sample Team Initials	EL

Sample Collected? Y
X 423618.442 m
Y 5401607.412 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sandy silt	Vegetation Present?	Y
Vegetation Type if Present	Pond weeds		

Station Comments

Sample Collected from Station

Sample Id	SDU-01-ICS	Decision Unit	Sediment Decision Unit 1
Sample Date Time	2015-04-22 7:56	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-01-R01, R02, R03) used for SDU-01-02, -08, -30.		

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Photos Collected from Station SDU-01-10

2015-04-21-13-15-42_SDU-01-10_TECK2.JPG



groundsurface

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2015-04-21-13-15-54_SDU-01-10_TECK2.JPG



overview facing west

2015-04-21-13-16-09_SDU-01-10_TECK2.JPG



sample

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ICS Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-01-11	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-21 14:17	Sample Team Initials	EL

Sample Collected? Y
X 423578.5737 m
Y 5401478.543 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine to fine sandy silt	Vegetation Present?	Y
Vegetation Type if Present	Pond weeds		

Station Comments Groundsurface is predominately gravels and cobbles

Sample Collected from Station

Sample Id	SDU-01-ICS	Decision Unit	Sediment Decision Unit 1
Sample Date Time	2015-04-22 7:56	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-01-R01, R02, R03) used for SDU-01-02, -08, -30.		

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Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-01-11

2015-04-21-14-20-10_SDU-01-11_TECK2.JPG



groundsurface

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-21-14-20-15_SDU-01-11_TECK2.JPG



overview facing west

2015-04-21-14-20-37_SDU-01-11_TECK2.JPG



sample

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id SDU-01-12 **Start Depth** 0 cm
Station Type Primary **End Depth** 15 cm
Collection DateTime 2015-04-21 13:34 **Sample Team Initials** EL

Sample Collected? Y
X 423591.3448 m
Y 5401567.336 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine silty sand	Vegetation Present?	Y
Vegetation Type if Present	Pond weeds		

Station Comments

Sample Collected from Station

Sample Id	SDU-01-ICS	Decision Unit	Sediment Decision Unit 1
Sample Date Time	2015-04-22 7:56	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-01-R01, R02, R03) used for SDU-01-02, -08, -30.		

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Photos Collected from Station SDU-01-12

2015-04-21-13-36-57_SDU-01-12_TECK2.JPG



sample

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2015-04-21-13-37-09_SDU-01-12_TECK2.JPG



groundsurface

2015-04-21-13-37-12_SDU-01-12_TECK2.JPG



overview facing west

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-01-13	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-21 10:31	Sample Team Initials	EL

Sample Collected? Y
X 423500.8344 m
Y 5401536.394 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pond weeds		

Station Comments

Sample Collected from Station

Sample Id	SDU-01-ICS	Decision Unit	Sediment Decision Unit 1
Sample Date Time	2015-04-22 7:56	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-01-R01, R02, R03) used for SDU-01-02, -08, -30.		

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Photos Collected from Station SDU-01-13

2015-04-21-10-35-30_SDU-01-13_TECK2.JPG



sample

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-21-10-35-42_SDU-01-13_TECK2.JPG



groundsurface

2015-04-21-10-35-48_SDU-01-13_TECK2.JPG



overview facing west

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Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-01-14	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-21 10:14	Sample Team Initials	EL

Sample Collected? Y
X 423446.2824 m
Y 5401580.596 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pond weeds		

Station Comments

Sample Collected from Station

Sample Id	SDU-01-ICS	Decision Unit	Sediment Decision Unit 1
Sample Date Time	2015-04-22 7:56	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-01-R01, R02, R03) used for SDU-01-02, -08, -30.		

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Photos Collected from Station SDU-01-14

2015-04-21-10-17-55_SDU-01-14_TECK2.JPG



sample

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-21-10-17-58_SDU-01-14_TECK2.JPG



groundsurface

2015-04-21-10-18-10_SDU-01-14_TECK2.JPG



overview facing west

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-01-15	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-21 10:23	Sample Team Initials	EL

Sample Collected? Y
X 423497.6274 m
Y 5401547.318 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sandy silt	Vegetation Present?	Y
Vegetation Type if Present	Pond weeds		

Station Comments

Sample Collected from Station

Sample Id	SDU-01-ICS	Decision Unit	Sediment Decision Unit 1
Sample Date Time	2015-04-22 7:56	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-01-R01, R02, R03) used for SDU-01-02, -08, -30.		

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Photos Collected from Station SDU-01-15

2015-04-21-10-26-35_SDU-01-15_TECK2.JPG



groundsurface

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2015-04-21-10-26-40_SDU-01-15_TECK2.JPG



overview facing west

2015-04-21-10-27-00_SDU-01-15_TECK2.JPG



sample

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ICS Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-01-16	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-21 11:56	Sample Team Initials	EL

Sample Collected? Y
X 423546.6431 m
Y 5401622.761 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pond weeds		

Station Comments

Sample Collected from Station

Sample Id	SDU-01-ICS	Decision Unit	Sediment Decision Unit 1
Sample Date Time	2015-04-22 7:56	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-01-R01, R02, R03) used for SDU-01-02, -08, -30.		

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Photos Collected from Station SDU-01-16

2015-04-21-11-59-39_SDU-01-16_TECK2.JPG



groundsurface

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2015-04-21-11-59-45_SDU-01-16_TECK2.JPG



overview facing west

2015-04-21-12-00-30_SDU-01-16_TECK2.JPG



sample

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Station Id	SDU-01-17	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-21 9:17	Sample Team Initials	EL

Sample Collected? Y
X 423474.3746 m
Y 5401652.348 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sandy silt	Vegetation Present?	Y
Vegetation Type if Present	Pond weeds		

Station Comments

Sample Collected from Station

Sample Id	SDU-01-ICS	Decision Unit	Sediment Decision Unit 1
Sample Date Time	2015-04-22 7:56	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-01-R01, R02, R03) used for SDU-01-02, -08, -30.		

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Photos Collected from Station SDU-01-17

2015-04-21-09-20-32_SDU-01-17_TECK2.JPG



groundsurface

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2015-04-21-09-20-39_SDU-01-17_TECK2.JPG



overview facing west

2015-04-21-09-21-40_SDU-01-17_TECK2.JPG



sample

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Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-01-18	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-21 14:09	Sample Team Initials	EL

Sample Collected? Y
X 423554.8629 m
Y 5401525.288 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	N
Vegetation Type if Present	Pond weeds		

Station Comments

Sample Collected from Station

Sample Id	SDU-01-ICS	Decision Unit	Sediment Decision Unit 1
Sample Date Time	2015-04-22 7:56	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-01-R01, R02, R03) used for SDU-01-02, -08, -30.		

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Photos Collected from Station SDU-01-18

2015-04-21-14-11-47_SDU-01-18_TECK2.JPG



groundsurface

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2015-04-21-14-11-51_SDU-01-18_TECK2.JPG



sample

2015-04-21-14-11-55_SDU-01-18_TECK2.JPG



overview facing west

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Station Id	SDU-01-19	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-21 13:06	Sample Team Initials	EL
Sample Collected?	Y		
X	423574.6299 m		
Y	5401659.348 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pond weeds		

Station Comments

Sample Collected from Station

Sample Id	SDU-01-ICS	Decision Unit	Sediment Decision Unit 1
Sample Date Time	2015-04-22 7:56	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-01-R01, R02, R03) used for SDU-01-02, -08, -30.		

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Photos Collected from Station SDU-01-19

2015-04-21-13-08-35_SDU-01-19_TECK2.JPG



sample

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2015-04-21-13-08-46_SDU-01-19_TECK2.JPG



groundsurface

2015-04-21-13-08-49_SDU-01-19_TECK2.JPG



overview facing west

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Station Id	SDU-01-20	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-21 11:50	Sample Team Initials	EL

Sample Collected? Y
X 423539.3972 m
Y 5401588.883 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pond weeds		

Station Comments

Sample Collected from Station

Sample Id	SDU-01-ICS	Decision Unit	Sediment Decision Unit 1
Sample Date Time	2015-04-22 7:56	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-01-R01, R02, R03) used for SDU-01-02, -08, -30.		

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Photos Collected from Station SDU-01-20

2015-04-21-11-49-01_SDU-01-20_TECK2.JPG



sample

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2015-04-21-11-49-04_SDU-01-20_TECK2.JPG



groundsurface

2015-04-21-11-49-07_SDU-01-20_TECK2.JPG



overview facing west

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Station Id	SDU-01-21	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-21 9:48	Sample Team Initials	EL
Sample Collected?	Y		
X	423504.0921 m		
Y	5401608.428 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pond weeds		

Station Comments

Sample Collected from Station

Sample Id	SDU-01-ICS	Decision Unit	Sediment Decision Unit 1
Sample Date Time	2015-04-22 7:56	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-01-R01, R02, R03) used for SDU-01-02, -08, -30.		

Photos Collected from Station SDU-01-21

2015-04-21-09-52-18_SDU-01-21_TECK2.JPG



sample

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2015-04-21-09-52-29_SDU-01-21_TECK2.JPG



groundsurface

2015-04-21-09-52-36_SDU-01-21_TECK2.JPG



overview facing west

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Station Id	SDU-01-22	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-21 11:20	Sample Team Initials	EL
Sample Collected?	Y		
X	423556.2292 m		
Y	5401551.037 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pond weeds		

Station Comments

Sample Collected from Station

Sample Id	SDU-01-ICS	Decision Unit	Sediment Decision Unit 1
Sample Date Time	2015-04-22 7:56	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-01-R01, R02, R03) used for SDU-01-02, -08, -30.		

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Photos Collected from Station SDU-01-22

2015-04-21-11-23-53_SDU-01-22_TECK2.JPG



sample

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2015-04-21-11-24-07_SDU-01-22_TECK2.JPG



overview facing west

2015-04-21-11-24-26_SDU-01-22_TECK2.JPG



groundsurface

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Station Id	SDU-01-23	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-21 9:00	Sample Team Initials	EL

Sample Collected? Y
X 423547.9234 m
Y 5401690.131 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very silty sand	Vegetation Present?	Y
Vegetation Type if Present	Pond weed		

Station Comments

Sample Collected from Station

Sample Id	SDU-01-ICS	Decision Unit	Sediment Decision Unit 1
Sample Date Time	2015-04-22 7:56	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-01-R01, R02, R03) used for SDU-01-02, -08, -30.		

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Photos Collected from Station SDU-01-23

2015-04-21-09-03-15_SDU-01-23_TECK2.JPG



groundsurface

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2015-04-21-09-03-19_SDU-01-23_TECK2.JPG



overview facing west

2015-04-21-09-03-25_SDU-01-23_TECK2.JPG



sample

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Station Id	SDU-01-24	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-21 13:42	Sample Team Initials	EL

Sample Collected? Y
X 423588.6346 m
Y 5401546.525 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silt very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pond weeds		

Station Comments

Sample Collected from Station

Sample Id	SDU-01-ICS	Decision Unit	Sediment Decision Unit 1
Sample Date Time	2015-04-22 7:56	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-01-R01, R02, R03) used for SDU-01-02, -08, -30.		

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Photos Collected from Station SDU-01-24

2015-04-21-13-45-24_SDU-01-24_TECK2.JPG



sample

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2015-04-21-13-44-57_SDU-01-24_TECK2.JPG



groundsurface

2015-04-21-13-45-04_SDU-01-24_TECK2.JPG



overview facing west

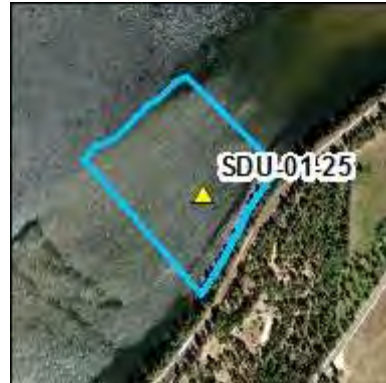
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Station Id	SDU-01-25	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-21 11:37	Sample Team Initials	EL

Sample Collected? Y
X 423563.4261 m
Y 5401574.666 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pond weeds		

Station Comments

Sample Collected from Station

Sample Id	SDU-01-ICS	Decision Unit	Sediment Decision Unit 1
Sample Date Time	2015-04-22 7:56	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-01-R01, R02, R03) used for SDU-01-02, -08, -30.		

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Photos Collected from Station SDU-01-25

2015-04-21-11-40-55_SDU-01-25_TECK2.JPG



groundsurface

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2015-04-21-11-40-59_SDU-01-25_TECK2.JPG



overview facing west

2015-04-21-11-41-17_SDU-01-25_TECK2.JPG



sample

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Station Id	SDU-01-26	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-21 9:43	Sample Team Initials	EL

Sample Collected? Y
X 423483.6623 m
Y 5401615.732 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pond weeds		

Station Comments

Sample Collected from Station

Sample Id	SDU-01-ICS	Decision Unit	Sediment Decision Unit 1
Sample Date Time	2015-04-22 7:56	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-01-R01, R02, R03) used for SDU-01-02, -08, -30.		

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Photos Collected from Station SDU-01-26

2015-04-21-09-39-41_SDU-01-26_TECK2.JPG



groundsurface

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2015-04-21-09-39-46_SDU-01-26_TECK2.JPG



overview facing west

2015-04-21-09-41-07_SDU-01-26_TECK2.JPG



sample

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Station Id	SDU-01-27	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-21 13:51	Sample Team Initials	EL

Sample Collected? Y
X 423592.5458 m
Y 5401520.848 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silt with trace fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pond weeds		

Station Comments

Sample Collected from Station

Sample Id	SDU-01-ICS	Decision Unit	Sediment Decision Unit 1
Sample Date Time	2015-04-22 7:56	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-01-R01, R02, R03) used for SDU-01-02, -08, -30.		

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Photos Collected from Station SDU-01-27

2015-04-21-13-53-22_SDU-01-27_TECK2.JPG



groundsurface

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2015-04-21-13-53-30_SDU-01-27_TECK2.JPG



overview facing west

2015-04-21-13-54-26_SDU-01-27_TECK2.JPG



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Station Id	SDU-01-28	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-21 11:11	Sample Team Initials	EL

Sample Collected? Y
X 423529.443 m
Y 5401541.805 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	N
Vegetation Type if Present	Pond weeds		

Station Comments

Sample Collected from Station

Sample Id	SDU-01-ICS	Decision Unit	Sediment Decision Unit 1
Sample Date Time	2015-04-22 7:56	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-01-R01, R02, R03) used for SDU-01-02, -08, -30.		

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Photos Collected from Station SDU-01-28

2015-04-21-11-14-34_SDU-01-28_TECK2.JPG



groundsurface

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2015-04-21-11-14-39_SDU-01-28_TECK2.JPG



overview facing west

2015-04-21-11-15-52_SDU-01-28_TECK2.JPG



sample

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Bossburg Flat Beach Refined Sediment and Soil Study



Station Id SDU-01-29 **Start Depth** 0 cm
Station Type Primary **End Depth** 15 cm
Collection DateTime 2015-04-21 14:32 **Sample Team Initials** EL

Sample Collected? Y
X 423577.0298 m
Y 5401458.945 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 6/3 top 3 in. 10Y 2/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sandy fine to coarse gravel and highly decomposed wood debris	Vegetation Present?	Y
Vegetation Type if Present	Grasses		

Station Comments

Sample Collected from Station

Sample Id	SDU-01-ICS	Decision Unit	Sediment Decision Unit 1
Sample Date Time	2015-04-22 7:56	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-01-R01, R02, R03) used for SDU-01-02, -08, -30.		

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Photos Collected from Station SDU-01-29

2015-04-21-14-25-27_SDU-01-29_TECK2.JPG



groundsurface prior to sample

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2015-04-21-14-29-18_SDU-01-29_TECK2.JPG



groundsurface

2015-04-21-14-29-22_SDU-01-29_TECK2.JPG



overview facing west

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2015-04-21-14-30-12_SDU-01-29_TECK2.JPG



sample

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Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-01-30	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime	2015-04-21 9:14	Sample Team Initials	EL
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984

Station Comments location abandoned; steep cobble slope, unsafe

Sample Collected from Station

Sample Id	SDU-01-ICS	Decision Unit	Sediment Decision Unit 1
Sample Date Time	2015-04-22 7:56	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-01-R01, R02, R03) used for SDU-01-02, -08, -30.		

Photos Collected from Station SDU-01-30

No photos taken at this station. See station comments for more details.

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Station Id SDU-01-R01 **Start Depth** 0 cm
Station Type Reserve **End Depth** 15 cm
Collection DateTime 2015-04-21 15:08 **Sample Team Initials** EL

Sample Collected? Y
X 423544.6347 m
Y 5401479.69 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pond weeds		

Station Comments

Sample Collected from Station

Sample Id	SDU-01-ICS	Decision Unit	Sediment Decision Unit 1
Sample Date Time	2015-04-22 7:56	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-01-R01, R02, R03) used for SDU-01-02, -08, -30.		

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Photos Collected from Station SDU-01-R01

2015-04-21-15-10-36_SDU-01-R01_TECK2.JPG



groundsurface

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2015-04-21-15-10-41_SDU-01-R01_TECK2.JPG



overview facing west

2015-04-21-15-11-07_SDU-01-R01_TECK2.JPG



sample

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Station Id	SDU-01-R02	Start Depth	0 cm
Station Type	Reserve	End Depth	15 cm
Collection DateTime	2015-04-21 15:18	Sample Team Initials	EL

Sample Collected? Y
X 423608.2499 m
Y 5401595.82 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pond weeds		

Station Comments

Sample Collected from Station

Sample Id	SDU-01-ICS	Decision Unit	Sediment Decision Unit 1
Sample Date Time	2015-04-22 7:56	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-01-R01, R02, R03) used for SDU-01-02, -08, -30.		

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Photos Collected from Station SDU-01-R02

2015-04-21-15-20-43_SDU-01-R02_TECK2.JPG



groundsurface

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2015-04-21-15-20-47_SDU-01-R02_TECK2.JPG



overview facing west

2015-04-21-15-21-15_SDU-01-R02_TECK2.JPG



sample

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Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-01-R03	Start Depth	0 cm
Station Type	Reserve	End Depth	15 cm
Collection DateTime	2015-04-21 15:26	Sample Team Initials	EL

Sample Collected? Y
X 423620.1929 m
Y 5401632.543 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pond weeds		

Station Comments

Sample Collected from Station

Sample Id	SDU-01-ICS	Decision Unit	Sediment Decision Unit 1
Sample Date Time	2015-04-22 7:56	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-01-R01, R02, R03) used for SDU-01-02, -08, -30.		

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Photos Collected from Station SDU-01-R03

2015-04-21-15-28-51_SDU-01-R03_TECK2.JPG



groundsurface

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2015-04-21-15-28-54_SDU-01-R03_TECK2.JPG



overview facing west

2015-04-21-15-28-59_SDU-01-R03_TECK2.JPG



sample

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Station Id	SDU-01-R04	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-01-ICS	Decision Unit	Sediment Decision Unit 1
Sample Date Time	2015-04-22 7:56	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-01-R01, R02, R03) used for SDU-01-02, -08, -30.		

Photos Collected from Station SDU-01-R04

No photos taken at this station. See station comments for more details.

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Station Id	SDU-01-R05	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-01-ICS	Decision Unit	Sediment Decision Unit 1
Sample Date Time	2015-04-22 7:56	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-01-R01, R02, R03) used for SDU-01-02, -08, -30.		

Photos Collected from Station SDU-01-R05

No photos taken at this station. See station comments for more details.

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Station Id	SDU-01-R06	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-01-ICS	Decision Unit	Sediment Decision Unit 1
Sample Date Time	2015-04-22 7:56	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-01-R01, R02, R03) used for SDU-01-02, -08, -30.		

Photos Collected from Station SDU-01-R06

No photos taken at this station. See station comments for more details.

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Station Id	SDU-02A-01	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-21 14:26	Sample Team Initials	AP
Sample Collected?	Y		
X	423365.9413 m		
Y	5401507.169 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Carp spawning depression	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located south of low water bouy

Sample Collected from Station

Sample Id	SDU-02-ICS-A	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-22 12:11	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations, SDU-02A-R01, R05, R06, were collected for SDU-02A-14, 25, 30.		

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Photos Collected from Station SDU-02A-01

2015-04-21-14-22-53_SDU-02A-01_TECK1.JPG



ground surface

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2015-04-21-14-24-01_SDU-02A-01_TECK1.JPG



2015-04-21-14-24-10_SDU-02A-01_TECK1.JPG



view north

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Station Id	SDU-02A-02	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-22 8:51	Sample Team Initials	AP

Sample Collected? Y
X 423475.3148 m
Y 5401421.062 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence Carp spawning depression
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N
Texture Silty very fine sand with trace clay
Vegetation Type if Present Some grass

Anthropogenic Changes Present? N
Color 10YR 3/2
Debris Presence N
Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? N

Station Comments located on flat west of hillside

Sample Collected from Station

Sample Id	SDU-02-ICS-A	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-22 12:11	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations, SDU-02A-R01, R05, R06, were collected for SDU-02A-14, 25, 30.		

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Photos Collected from Station SDU-02A-02

2015-04-22-08-45-34_SDU-02A-02_TECK1.JPG



g.s

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2015-04-22-08-47-50_SDU-02A-02_TECK1.JPG



2015-04-22-08-48-04_SDU-02A-02_TECK1.JPG



view north

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Station Id	SDU-02A-03	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-22 9:16	Sample Team Initials	AP

Sample Collected? Y
X 423440.985 m
Y 5401312.006 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Small crab claw adjacent to sample location	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Sandy silt with clay	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located in depression west of hillside

Sample Collected from Station

Sample Id	SDU-02-ICS-A	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-22 12:11	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations, SDU-02A-R01, R05, R06, were collected for SDU-02A-14, 25, 30.		

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Photos Collected from Station SDU-02A-03

2015-04-22-09-10-59_SDU-02A-03_TECK1.JPG



g.s

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2015-04-22-09-13-12_SDU-02A-03_TECK1.JPG



2015-04-22-09-13-22_SDU-02A-03_TECK1.JPG



view north

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Station Id	SDU-02A-04	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-21 13:22	Sample Team Initials	AP
Sample Collected?	Y		
X	423329.1377 m		
Y	5401424.802 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Carp spawning depressions	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on flat south of low water bouy

Sample Collected from Station

Sample Id	SDU-02-ICS-A	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-22 12:11	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations, SDU-02A-R01, R05, R06, were collected for SDU-02A-14, 25, 30.		

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Photos Collected from Station SDU-02A-04

2015-04-21-13-17-51_SDU-02A-04_TECK1.JPG



ground surface

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2015-04-21-13-19-16_SDU-02A-04_TECK1.JPG



2015-04-21-13-19-26_SDU-02A-04_TECK1.JPG



view north

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Station Id	SDU-02A-05	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-21 15:35	Sample Team Initials	AP
Sample Collected?	Y		
X	423413.9593 m		
Y	5401404.551 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Carp spawning depression	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on flat west of hillside

Sample Collected from Station

Sample Id	SDU-02-ICS-A	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-22 12:11	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations, SDU-02A-R01, R05, R06, were collected for SDU-02A-14, 25, 30.		

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Photos Collected from Station SDU-02A-05

2015-04-21-15-30-13_SDU-02A-05_TECK1.JPG



ground surface

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2015-04-21-15-31-37_SDU-02A-05_TECK1.JPG



2015-04-21-15-31-49_SDU-02A-05_TECK1.JPG



view north

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Station Id	SDU-02A-06	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-22 8:41	Sample Team Initials	AP
Sample Collected?	Y		
X	423457.3046 m		
Y	5401408.509 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Carp spawning depressions	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand with trace clay	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on flat west of hillside

Sample Collected from Station

Sample Id	SDU-02-ICS-A	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-22 12:11	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations, SDU-02A-R01, R05, R06, were collected for SDU-02A-14, 25, 30.		

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Photos Collected from Station SDU-02A-06

2015-04-22-08-35-13_SDU-02A-06_TECK1.JPG



ground surface

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2015-04-22-08-37-39_SDU-02A-06_TECK1.JPG



2015-04-22-08-37-51_SDU-02A-06_TECK1.JPG



view north

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Station Id	SDU-02A-07	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-21 11:55	Sample Team Initials	AP

Sample Collected? Y
X 423306.2225 m
Y 5401432.624 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located south of low water bouy

Sample Collected from Station

Sample Id	SDU-02-ICS-A	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-22 12:11	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations, SDU-02A-R01, R05, R06, were collected for SDU-02A-14, 25, 30.		

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Photos Collected from Station SDU-02A-07

2015-04-21-11-52-33_SDU-02A-07_TECK1.JPG



view north

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2015-04-21-11-52-19_SDU-02A-07_TECK1.JPG



2015-04-21-11-50-44_SDU-02A-07_TECK1.JPG



ground surface

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Station Id	SDU-02A-08	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-21 12:03	Sample Team Initials	AP

Sample Collected? Y
X 423319.0162 m
Y 5401437.619 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on open flat west of hillside, south of bouy

Sample Collected from Station

Sample Id	SDU-02-ICS-A	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-22 12:11	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations, SDU-02A-R01, R05, R06, were collected for SDU-02A-14, 25, 30.		

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Photos Collected from Station SDU-02A-08

2015-04-21-11-58-13_SDU-02A-08_TECK1.JPG



ground surface

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-21-12-00-38_SDU-02A-08_TECK1.JPG



2015-04-21-12-00-48_SDU-02A-08_TECK1.JPG



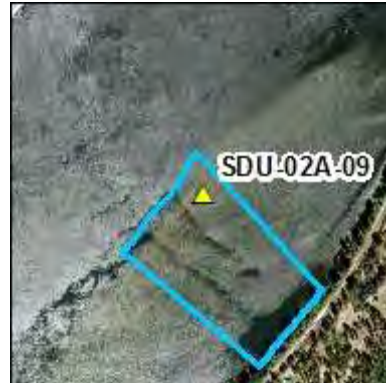
view north

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ICS Sample Collection Report
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Station Id	SDU-02A-09	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-21 10:54	Sample Team Initials	AP
Sample Collected?	Y		
X	423363.1268 m		
Y	5401531.167 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Carp spawning depressions	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on flat south of low water bouy

Sample Collected from Station

Sample Id	SDU-02-ICS-A	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-22 12:11	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations, SDU-02A-R01, R05, R06, were collected for SDU-02A-14, 25, 30.		

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Photos Collected from Station SDU-02A-09

2015-04-21-10-48-29_SDU-02A-09_TECK1.JPG



ground surface

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2015-04-21-10-49-41_SDU-02A-09_TECK1.JPG



2015-04-21-10-49-50_SDU-02A-09_TECK1.JPG



view north

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Station Id	SDU-02A-10	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-21 11:08	Sample Team Initials	AP

Sample Collected? Y
X 423325.424 m
Y 5401502.854 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine sand with trace silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments collected 1.75 meters east of proposed location due to refusal on cobbles

Sample Collected from Station

Sample Id	SDU-02-ICS-A	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-22 12:11	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations, SDU-02A-R01, R05, R06, were collected for SDU-02A-14, 25, 30.		

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Photos Collected from Station SDU-02A-10

2015-04-21-11-00-27_SDU-02A-10_TECK1.JPG



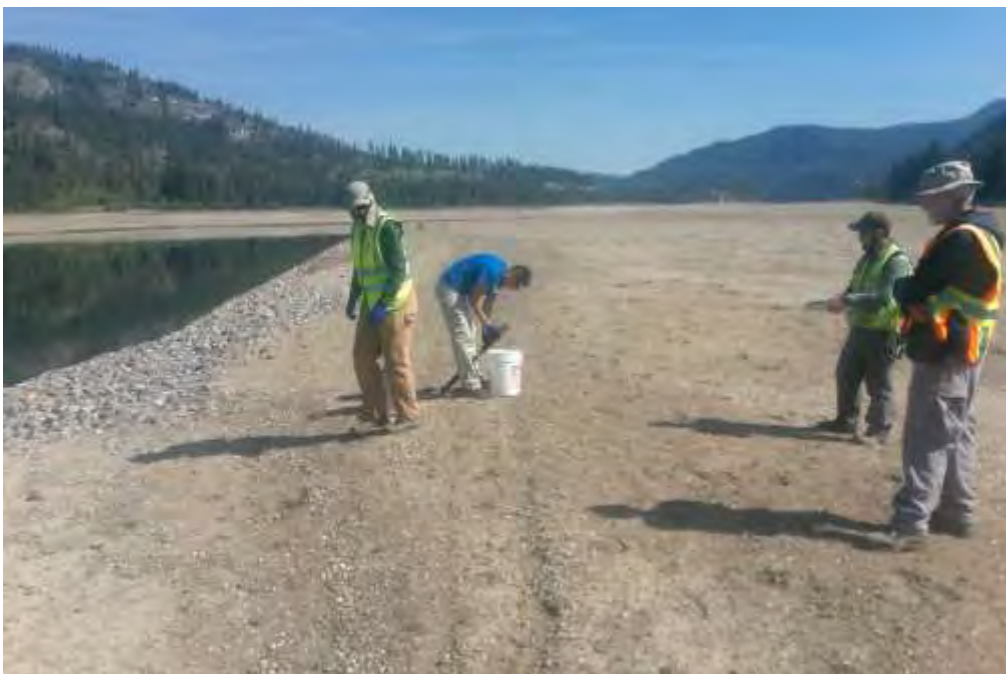
ground surface

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2015-04-21-11-05-42_SDU-02A-10_TECK1.JPG



2015-04-21-11-05-53_SDU-02A-10_TECK1.JPG



view north

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Station Id	SDU-02A-11	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-21 15:47	Sample Team Initials	AP
Sample Collected?	Y		
X	423355.8691 m		
Y	5401381.483 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Carp spawning depressions	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on flat west of hillside

Sample Collected from Station

Sample Id	SDU-02-ICS-A	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-22 12:11	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations, SDU-02A-R01, R05, R06, were collected for SDU-02A-14, 25, 30.		

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Photos Collected from Station SDU-02A-11

2015-04-21-15-42-02_SDU-02A-11_TECK1.JPG



ground surface

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2015-04-21-15-43-49_SDU-02A-11_TECK1.JPG



2015-04-21-15-43-59_SDU-02A-11_TECK1.JPG



view north

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ICS Sample Collection Report
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Station Id	SDU-02A-12	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-21 15:11	Sample Team Initials	AP

Sample Collected? Y
X 423439.1975 m
Y 5401459.259 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence Carp spawning depressions
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N
Texture Silty very fine sand
Vegetation Type if Present N

Anthropogenic Changes Present? N
Color 10YR 3/2
Debris Presence N
Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? N

Station Comments located west of hillside

Sample Collected from Station

Sample Id	SDU-02-ICS-A	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-22 12:11	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations, SDU-02A-R01, R05, R06, were collected for SDU-02A-14, 25, 30.		

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Photos Collected from Station SDU-02A-12

2015-04-21-15-06-46_SDU-02A-12_TECK1.JPG



ground surface

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2015-04-21-15-08-28_SDU-02A-12_TECK1.JPG



2015-04-21-15-08-39_SDU-02A-12_TECK1.JPG



view north

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Station Id	SDU-02A-13	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-21 13:32	Sample Team Initials	AP

Sample Collected? Y
X 423357.7844 m
Y 5401431.333 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence Carp spawning depressions
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N
Texture Silty very fine sand
Vegetation Type if Present N

Anthropogenic Changes Present? N
Color 10YR 3/2
Debris Presence N
Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? N

Station Comments located south of low water bouy

Sample Collected from Station

Sample Id	SDU-02-ICS-A	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-22 12:11	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations, SDU-02A-R01, R05, R06, were collected for SDU-02A-14, 25, 30.		

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Photos Collected from Station SDU-02A-13

2015-04-21-13-27-09_SDU-02A-13_TECK1.JPG



ground surface

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2015-04-21-13-28-34_SDU-02A-13_TECK1.JPG



2015-04-21-13-28-53_SDU-02A-13_TECK1.JPG



view north

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-02A-14	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime	2015-04-21 14:07	Sample Team Initials	AP
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984

Station Comments This sample location was abandoned due to refusal on cobbles. It was replaced by reserve SDU-02A-R01.

Sample Collected from Station

Sample Id	SDU-02-ICS-A	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-22 12:11	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations, SDU-02A-R01, R05, R06, were collected for SDU-02A-14, 25, 30.		

Photos Collected from Station SDU-02A-14

No photos taken at this station. See station comments for more details.

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Station Id	SDU-02A-15	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-21 11:46	Sample Team Initials	AP

Sample Collected? Y
X 423282.1321 m
Y 5401438.133 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand with trace silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located south of low water bouy

Sample Collected from Station

Sample Id	SDU-02-ICS-A	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-22 12:11	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations, SDU-02A-R01, R05, R06, were collected for SDU-02A-14, 25, 30.		

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Photos Collected from Station SDU-02A-15

2015-04-21-11-42-11_SDU-02A-15_TECK1.JPG



ground surface

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2015-04-21-11-43-48_SDU-02A-15_TECK1.JPG



2015-04-21-11-43-59_SDU-02A-15_TECK1.JPG



view north

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Bossburg Flat Beach Refined Sediment and Soil Study

Station Id	SDU-02A-16	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-21 15:58	Sample Team Initials	AP
Sample Collected?	Y		
X	423371.3085 m		
Y	5401377.476 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Carp spawning depression	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located west of hillside

Sample Collected from Station

Sample Id	SDU-02-ICS-A	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-22 12:11	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations, SDU-02A-R01, R05, R06, were collected for SDU-02A-14, 25, 30.		

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Photos Collected from Station SDU-02A-16

2015-04-21-15-51-32_SDU-02A-16_TECK1.JPG



ground surface

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2015-04-21-15-53-56_SDU-02A-16_TECK1.JPG



2015-04-21-15-54-09_SDU-02A-16_TECK1.JPG



view north

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Station Id	SDU-02A-17	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-21 13:41	Sample Team Initials	AP
Sample Collected?	Y		
X	423369.9693 m		
Y	5401426.198 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Carp spawning depressions	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located in flat south of bouy

Sample Collected from Station

Sample Id	SDU-02-ICS-A	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-22 12:11	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations, SDU-02A-R01, R05, R06, were collected for SDU-02A-14, 25, 30.		

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Photos Collected from Station SDU-02A-17

2015-04-21-13-36-13_SDU-02A-17_TECK1.JPG



ground surface

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2015-04-21-13-38-06_SDU-02A-17_TECK1.JPG



2015-04-21-13-38-18_SDU-02A-17_TECK1.JPG



view north

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Station Id	SDU-02A-18	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-22 9:35	Sample Team Initials	AP

Sample Collected? Y
X 423461.2853 m
Y 5401323.649 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine sand with trace silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located in depression west of hillside

Sample Collected from Station

Sample Id	SDU-02-ICS-A	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-22 12:11	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations, SDU-02A-R01, R05, R06, were collected for SDU-02A-14, 25, 30.		

Photos Collected from Station SDU-02A-18

2015-04-22-09-29-26_SDU-02A-18_TECK1.JPG



g.s

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2015-04-22-09-31-42_SDU-02A-18_TECK1.JPG



2015-04-22-09-31-53_SDU-02A-18_TECK1.JPG



view north

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Station Id	SDU-02A-19	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-21 13:13	Sample Team Initials	AP

Sample Collected? Y
X 423331.3752 m
Y 5401445.011 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located in flat south of low water bouy

Sample Collected from Station

Sample Id	SDU-02-ICS-A	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-22 12:11	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations, SDU-02A-R01, R05, R06, were collected for SDU-02A-14, 25, 30.		

Photos Collected from Station SDU-02A-19

2015-04-21-13-08-46_SDU-02A-19_TECK1.JPG



ground surface

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2015-04-21-13-09-44_SDU-02A-19_TECK1.JPG



2015-04-21-13-09-55_SDU-02A-19_TECK1.JPG



view north

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Station Id	SDU-02A-20	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-21 11:37	Sample Team Initials	AP

Sample Collected? Y
X 423325.1257 m
Y 5401475.38 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	ATV tracks	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand with silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments south of low water bouy

Sample Collected from Station

Sample Id	SDU-02-ICS-A	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-22 12:11	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations, SDU-02A-R01, R05, R06, were collected for SDU-02A-14, 25, 30.		

Photos Collected from Station SDU-02A-20

2015-04-21-11-32-23_SDU-02A-20_TECK1.JPG



ground surface

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2015-04-21-11-34-18_SDU-02A-20_TECK1.JPG



2015-04-21-11-34-27_SDU-02A-20_TECK1.JPG



view north

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Station Id	SDU-02A-21	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-22 9:48	Sample Team Initials	AP
Sample Collected?	Y		
X	423524.4982 m		
Y	5401394.785 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Crayfish shells	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Sandy silt with trace clay	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments in depression west of hillside

Sample Collected from Station

Sample Id	SDU-02-ICS-A	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-22 12:11	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations, SDU-02A-R01, R05, R06, were collected for SDU-02A-14, 25, 30.		

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Photos Collected from Station SDU-02A-21

2015-04-22-09-42-25_SDU-02A-21_TECK1.JPG



g.s

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-22-09-45-44_SDU-02A-21_TECK1.JPG



2015-04-22-09-45-51_SDU-02A-21_TECK1.JPG



view north

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ICS Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-02A-22	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-21 14:18	Sample Team Initials	AP

Sample Collected? Y
X 423376.8515 m
Y 5401528.775 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Carp spawning depressions	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Some grass		

Station Comments located on flat just south of low water bouy

Sample Collected from Station

Sample Id	SDU-02-ICS-A	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-22 12:11	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations, SDU-02A-R01, R05, R06, were collected for SDU-02A-14, 25, 30.		

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Photos Collected from Station SDU-02A-22

2015-04-21-14-14-12_SDU-02A-22_TECK1.JPG



ground surface

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2015-04-21-14-15-17_SDU-02A-22_TECK1.JPG



2015-04-21-14-15-28_SDU-02A-22_TECK1.JPG



view north

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Station Id	SDU-02A-23	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-21 15:00	Sample Team Initials	AP
Sample Collected?	Y		
X	423445.7585 m		
Y	5401480.308 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Carp spawning depression	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located west of hillside

Sample Collected from Station

Sample Id	SDU-02-ICS-A	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-22 12:11	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations, SDU-02A-R01, R05, R06, were collected for SDU-02A-14, 25, 30.		

Photos Collected from Station SDU-02A-23

2015-04-21-14-54-37_SDU-02A-23_TECK1.JPG



ground surface

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2015-04-21-14-56-21_SDU-02A-23_TECK1.JPG



2015-04-21-14-57-21_SDU-02A-23_TECK1.JPG



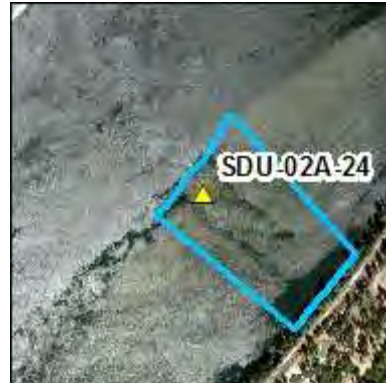
view north

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Station Id	SDU-02A-24	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-21 11:29	Sample Team Initials	AP
Sample Collected?	Y		
X	423311.8661 m		
Y	5401476.038 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand with silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments south of low water bouy

Sample Collected from Station

Sample Id	SDU-02-ICS-A	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-22 12:11	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations, SDU-02A-R01, R05, R06, were collected for SDU-02A-14, 25, 30.		

Photos Collected from Station SDU-02A-24

2015-04-21-11-22-52_SDU-02A-24_TECK1.JPG



ground surface

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2015-04-21-11-25-21_SDU-02A-24_TECK1.JPG



2015-04-21-11-25-30_SDU-02A-24_TECK1.JPG



view north

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Station Id	SDU-02A-25	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime	2015-04-21 16:11	Sample Team Initials	AP
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984

Station Comments This station was abandoned due to refusal on cobbles. It was replaced by reserve station SDU-02A-R05

Sample Collected from Station

Sample Id	SDU-02-ICS-A	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-22 12:11	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations, SDU-02A-R01, R05, R06, were collected for SDU-02A-14, 25, 30.		

Photos Collected from Station SDU-02A-25

No photos taken at this station. See station comments for more details.

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Station Id	SDU-02A-26	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-22 9:05	Sample Team Initials	AP

Sample Collected? Y
X 423459.1017 m
Y 5401368.287 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Carp spawning depressions	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand with trace clay	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on flat west of hillside

Sample Collected from Station

Sample Id	SDU-02-ICS-A	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-22 12:11	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations, SDU-02A-R01, R05, R06, were collected for SDU-02A-14, 25, 30.		

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Photos Collected from Station SDU-02A-26

2015-04-22-08-59-18_SDU-02A-26_TECK1.JPG



g.s

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2015-04-22-09-01-54_SDU-02A-26_TECK1.JPG



2015-04-22-09-02-04_SDU-02A-26_TECK1.JPG



view north

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Station Id	SDU-02A-27	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-21 15:23	Sample Team Initials	AP

Sample Collected? Y
X 423423.3045 m
Y 5401421.213 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence Carp spawning depressions
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N
Texture Silty very fine
Vegetation Type if Present N

Station Comments west of hillside.

Sample Collected from Station

Sample Id	SDU-02-ICS-A	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-22 12:11	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations, SDU-02A-R01, R05, R06, were collected for SDU-02A-14, 25, 30.		

Photos Collected from Station SDU-02A-27

2015-04-21-15-16-34_SDU-02A-27_TECK1.JPG



ground surface

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2015-04-21-15-18-15_SDU-02A-27_TECK1.JPG



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Station Id	SDU-02A-28	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-21 14:36	Sample Team Initials	AP

Sample Collected? Y
X 423377.5298 m
Y 5401505.947 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence Carp spawning depression
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N
Texture Silty very fine sand
Vegetation Type if Present N

Anthropogenic Changes Present? N
Color 10YR 3/2
Debris Presence N
Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? N

Station Comments located south of low water bouy

Sample Collected from Station

Sample Id	SDU-02-ICS-A	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-22 12:11	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations, SDU-02A-R01, R05, R06, were collected for SDU-02A-14, 25, 30.		

Photos Collected from Station SDU-02A-28

2015-04-21-14-30-44_SDU-02A-28_TECK1.JPG



ground surface

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2015-04-21-14-33-28_SDU-02A-28_TECK1.JPG



2015-04-21-14-33-40_SDU-02A-28_TECK1.JPG



view north

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Station Id	SDU-02A-29	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-22 9:37	Sample Team Initials	AP

Sample Collected? Y
X 423448.5004 m
Y 5401285.478 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine sand with trace silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on cobble bar just below hillside

Sample Collected from Station

Sample Id	SDU-02-ICS-A	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-22 12:11	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations, SDU-02A-R01, R05, R06, were collected for SDU-02A-14, 25, 30.		

Photos Collected from Station SDU-02A-29

2015-04-22-09-21-13_SDU-02A-29_TECK1.JPG



g.s

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2015-04-22-09-22-43_SDU-02A-29_TECK1.JPG



2015-04-22-09-22-47_SDU-02A-29_TECK1.JPG



view north

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Station Id	SDU-02A-30	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime	2015-04-21 14:05	Sample Team Initials	AP
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984

Station Comments This sample was abandoned due to refusal on cobbles. It was replaced by SDU-02A-R06.

Sample Collected from Station

Sample Id	SDU-02-ICS-A	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-22 12:11	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations, SDU-02A-R01, R05, R06, were collected for SDU-02A-14, 25, 30.		

Photos Collected from Station SDU-02A-30

No photos taken at this station. See station comments for more details.

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Station Id	SDU-02A-R01	Start Depth	0 cm
Station Type	Reserve	End Depth	15 cm
Collection DateTime	2015-04-21 13:51	Sample Team Initials	AP

Sample Collected? Y
X 423374.9262 m
Y 5401429.924 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Carp spawning depressions	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments this reserve location replaced SDU-02A-14, which was abandoned due to refusal

Sample Collected from Station

Sample Id	SDU-02-ICS-A	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-22 12:11	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations, SDU-02A-R01, R05, R06, were collected for SDU-02A-14, 25, 30.		

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Photos Collected from Station SDU-02A-R01

2015-04-21-13-45-32_SDU-02A-R01_TECK1.JPG



ground surface

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2015-04-21-13-48-53_SDU-02A-R01_TECK1.JPG



2015-04-21-13-49-03_SDU-02A-R01_TECK1.JPG



view north

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Station Id	SDU-02A-R02	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-02-ICS-A	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-22 12:11	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations, SDU-02A-R01, R05, R06, were collected for SDU-02A-14, 25, 30.		

Photos Collected from Station SDU-02A-R02

No photos taken at this station. See station comments for more details.

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Station Id	SDU-02A-R03	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-02-ICS-A	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-22 12:11	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations, SDU-02A-R01, R05, R06, were collected for SDU-02A-14, 25, 30.		

Photos Collected from Station SDU-02A-R03

No photos taken at this station. See station comments for more details.

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Station Id	SDU-02A-R04	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-02-ICS-A	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-22 12:11	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations, SDU-02A-R01, R05, R06, were collected for SDU-02A-14, 25, 30.		

Photos Collected from Station SDU-02A-R04

No photos taken at this station. See station comments for more details.

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Station Id	SDU-02A-R05	Start Depth	0 cm
Station Type	Reserve	End Depth	15 cm
Collection DateTime	2015-04-21 16:09	Sample Team Initials	AP

Sample Collected? Y
X 423424.5358 m
Y 5401316.004 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand with trace clay	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments This reserve station replaces SDU-02A-25, which was abandoned due to refusal.

Sample Collected from Station

Sample Id	SDU-02-ICS-A	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-22 12:11	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations, SDU-02A-R01, R05, R06, were collected for SDU-02A-14, 25, 30.		

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Photos Collected from Station SDU-02A-R05

2015-04-21-16-06-01_SDU-02A-R05_TECK1.JPG



ground surface

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2015-04-21-16-06-05_SDU-02A-R05_TECK1.JPG



2015-04-21-16-06-16_SDU-02A-R05_TECK1.JPG



view north

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Station Id	SDU-02A-R06	Start Depth	0 cm
Station Type	Reserve	End Depth	15 cm
Collection DateTime	2015-04-21 14:04	Sample Team Initials	AP

Sample Collected? Y
X 423397.5102 m
Y 5401464.095 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Carp spawning depression	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments this reserve station replaces SDU-02A-30, which was abandoned due to refusal.

Sample Collected from Station

Sample Id	SDU-02-ICS-A	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-22 12:11	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations, SDU-02A-R01, R05, R06, were collected for SDU-02A-14, 25, 30.		

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Photos Collected from Station SDU-02A-R06

2015-04-21-13-59-50_SDU-02A-R06_TECK1.JPG



ground surface

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2015-04-21-14-01-17_SDU-02A-R06_TECK1.JPG



2015-04-21-14-01-28_SDU-02A-R06_TECK1.JPG



view north

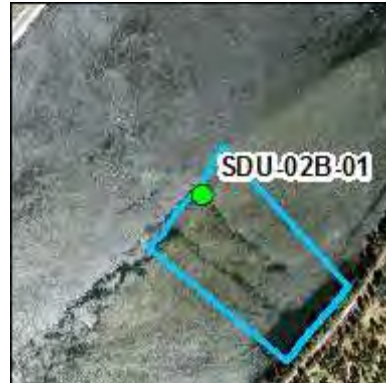
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Station Id	SDU-02B-01	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-22 9:15	Sample Team Initials	EL

Sample Collected? Y
X 423323.5918 m
Y 5401524.359 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pond weeds		

Station Comments highly unconsolidated sloped bench along river

Sample Collected from Station

Sample Id	SDU-02-ICS-B	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 9:04	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	Field	Replicate	Replicate B
Sample Comments	30 increments were checked and composited into 1 bucket. No reserve locations were used.		

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Photos Collected from Station SDU-02B-01

2015-04-22-09-18-30_SDU-02B-01_TECK2.JPG



groundsurface

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2015-04-22-09-18-35_SDU-02B-01_TECK2.JPG



overview facing west

2015-04-22-09-18-58_SDU-02B-01_TECK2.JPG



sample

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Station Id	SDU-02B-02	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-22 13:08	Sample Team Initials	EL

Sample Collected? Y
X 423413.0686 m
Y 5401381.784 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pond weeds		

Station Comments

Sample Collected from Station

Sample Id	SDU-02-ICS-B	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 9:04	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	Field	Replicate	Replicate B
Sample Comments	30 increments were checked and composited into 1 bucket. No reserve locations were used.		

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Photos Collected from Station SDU-02B-02

2015-04-22-13-11-20_SDU-02B-02_TECK2.JPG



sample

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2015-04-22-13-11-28_SDU-02B-02_TECK2.JPG



groundsurface

2015-04-22-13-11-31_SDU-02B-02_TECK2.JPG



overview facing west

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Station Id	SDU-02B-03	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-22 11:23	Sample Team Initials	EL

Sample Collected? Y
X 423439.7313 m
Y 5401460.955 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N

Texture Very fine sand
Vegetation Type if Present Pond weeds

Station Comments

Sample Collected from Station

Sample Id	SDU-02-ICS-B	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 9:04	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	Field	Replicate	Replicate B
Sample Comments	30 increments were checked and composited into 1 bucket. No reserve locations were used.		

Anthropogenic Changes Present? N
Color 2.5Y 4/2
Debris Presence N
Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? Y

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Photos Collected from Station SDU-02B-03

2015-04-22-11-26-10_SDU-02B-03_TECK2.JPG



groundsurface

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-22-11-26-16_SDU-02B-03_TECK2.JPG



overview facing west

2015-04-22-11-26-47_SDU-02B-03_TECK2.JPG



sample

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ICS Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-02B-04	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-22 14:34	Sample Team Initials	EL

Sample Collected? Y
X 423413.8774 m
Y 5401430.311 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pond weeds		

Station Comments

Sample Collected from Station

Sample Id	SDU-02-ICS-B	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 9:04	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	Field	Replicate	Replicate B
Sample Comments	30 increments were checked and composited into 1 bucket. No reserve locations were used.		

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Photos Collected from Station SDU-02B-04

2015-04-22-14-36-44_SDU-02B-04_TECK2.JPG



overview facing west

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2015-04-22-14-36-52_SDU-02B-04_TECK2.JPG



groundsurface

2015-04-22-14-37-47_SDU-02B-04_TECK2.JPG



sample

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ICS Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-02B-05	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-22 11:50	Sample Team Initials	EL
Sample Collected?	Y		
X	423456.445 m		
Y	5401393.365 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand	Vegetation Present?	N
Vegetation Type if Present	Pond weeds		

Station Comments

Sample Collected from Station

Sample Id	SDU-02-ICS-B	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 9:04	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	Field	Replicate	Replicate B
Sample Comments	30 increments were checked and composited into 1 bucket. No reserve locations were used.		

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Photos Collected from Station SDU-02B-05

2015-04-22-11-54-51_SDU-02B-05_TECK2.JPG



sample

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ICS Sample Collection Report
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2015-04-22-11-52-49_SDU-02B-05_TECK2.JPG



groundsurface

2015-04-22-11-52-52_SDU-02B-05_TECK2.JPG



overview facing west

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Station Id	SDU-02B-06	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-22 11:31	Sample Team Initials	EL

Sample Collected? Y
X 423466.72 m
Y 5401430.136 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pond weeds		

Station Comments

Sample Collected from Station

Sample Id	SDU-02-ICS-B	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 9:04	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	Field	Replicate	Replicate B
Sample Comments	30 increments were checked and composited into 1 bucket. No reserve locations were used.		

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Photos Collected from Station SDU-02B-06

2015-04-22-11-34-03_SDU-02B-06_TECK2.JPG



groundsurface

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2015-04-22-11-34-10_SDU-02B-06_TECK2.JPG



overview facing west

2015-04-22-11-36-47_SDU-02B-06_TECK2.JPG



sample

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-02B-07	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-22 9:03	Sample Team Initials	EL

Sample Collected? Y
X 423347.0395 m
Y 5401550.689 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N

Texture Silty very fine sand
Vegetation Type if Present Pond weeds
Station Comments benched slope along river

Anthropogenic Changes Present? N
Color 2.5Y 4/2
Debris Presence N

Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? Y

Sample Collected from Station

Sample Id	SDU-02-ICS-B	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 9:04	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	Field	Replicate	Replicate B
Sample Comments	30 increments were checked and composited into 1 bucket. No reserve locations were used.		

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Photos Collected from Station SDU-02B-07

2015-04-22-09-07-46_SDU-02B-07_TECK2.JPG



groundsurface

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2015-04-22-09-07-50_SDU-02B-07_TECK2.JPG



overview facing west


2015-04-22-09-08-09_SDU-02B-07_TECK2.JPG



sample

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Station Id	SDU-02B-08	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-22 14:20	Sample Team Initials	EL
Sample Collected?	Y		
X	423374.4447 m		
Y	5401419.78 m		
Coordinate System: UTM 11 North, Units: meters; Datum: WGS1984			

Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pond weeds		

Station Comments

Sample Collected from Station

Sample Id	SDU-02-ICS-B	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 9:04	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	Field	Replicate	Replicate B
Sample Comments	30 increments were checked and composited into 1 bucket. No reserve locations were used.		

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Photos Collected from Station SDU-02B-08

2015-04-22-14-22-10_SDU-02B-08_TECK2.JPG



sample

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2015-04-22-14-22-17_SDU-02B-08_TECK2.JPG



groundsurface

2015-04-22-14-22-24_SDU-02B-08_TECK2.JPG



overview facing west

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Station Id	SDU-02B-09	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-22 14:09	Sample Team Initials	EL

Sample Collected? Y
X 423386.5705 m
Y 5401403.057 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pond weeds		

Station Comments

Sample Collected from Station

Sample Id	SDU-02-ICS-B	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 9:04	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	Field	Replicate	Replicate B
Sample Comments	30 increments were checked and composited into 1 bucket. No reserve locations were used.		

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Photos Collected from Station SDU-02B-09

2015-04-22-14-12-21_SDU-02B-09_TECK2.JPG



overview facing west

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2015-04-22-14-12-13_SDU-02B-09_TECK2.JPG



sample

2015-04-22-14-12-17_SDU-02B-09_TECK2.JPG



groundsurface

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Station Id	SDU-02B-10	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-22 9:55	Sample Team Initials	EL
Sample Collected?	Y		
X	423353.1126 m		
Y	5401440.817 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine to very fine sand trace silt	Vegetation Present?	Y
Vegetation Type if Present	Pond weeds		

Station Comments

Sample Collected from Station

Sample Id	SDU-02-ICS-B	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 9:04	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	Field	Replicate	Replicate B
Sample Comments	30 increments were checked and composited into 1 bucket. No reserve locations were used.		

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Photos Collected from Station SDU-02B-10

2015-04-22-09-59-52_SDU-02B-10_TECK2.JPG



groundsurface

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2015-04-22-09-59-57_SDU-02B-10_TECK2.JPG



overview facing west

2015-04-22-10-00-34_SDU-02B-10_TECK2.JPG



sample

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Station Id	SDU-02B-11	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-22 13:43	Sample Team Initials	EL

Sample Collected? Y
X 423357.3101 m
Y 5401352.975 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes N
Description
Biological Visual Presence N
Cultural Oversight Y
Inspection Conducted?
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N

Texture Very fine sand
Vegetation Type if Present Pond weeds

Station Comments

Sample Collected from Station

Sample Id	SDU-02-ICS-B	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 9:04	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	Field	Replicate	Replicate B
Sample Comments	30 increments were checked and composited into 1 bucket. No reserve locations were used.		

Anthropogenic Changes N
Present?
Color 2.5Y 4/2
Debris Presence N
Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed N
Prior to Sampling?
Vegetation Present? Y

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Photos Collected from Station SDU-02B-11

2015-04-22-13-45-08_SDU-02B-11_TECK2.JPG



groundsurface

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2015-04-22-13-45-20_SDU-02B-11_TECK2.JPG



overview facing west

2015-04-22-13-47-02_SDU-02B-11_TECK2.JPG



sample

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Station Id	SDU-02B-12	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-22 8:54	Sample Team Initials	EL

Sample Collected? Y
X 423362.7025 m
Y 5401521.729 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pond weeds		

Station Comments

Sample Collected from Station

Sample Id	SDU-02-ICS-B	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 9:04	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	Field	Replicate	Replicate B
Sample Comments	30 increments were checked and composited into 1 bucket. No reserve locations were used.		

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Photos Collected from Station SDU-02B-12

2015-04-22-08-57-52_SDU-02B-12_TECK2.JPG



groundsurface

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2015-04-22-08-57-56_SDU-02B-12_TECK2.JPG



overview facing west

2015-04-22-08-58-56_SDU-02B-12_TECK2.JPG



sample

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Station Id	SDU-02B-13	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-22 14:26	Sample Team Initials	EL
Sample Collected?	Y		
X	423394.2109 m		
Y	5401419.005 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pond weeds		

Station Comments

Sample Collected from Station

Sample Id	SDU-02-ICS-B	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 9:04	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	Field	Replicate	Replicate B
Sample Comments	30 increments were checked and composited into 1 bucket. No reserve locations were used.		

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Photos Collected from Station SDU-02B-13

2015-04-22-14-28-17_SDU-02B-13_TECK2.JPG



overview facing west

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2015-04-22-14-29-30_SDU-02B-13_TECK2.JPG



sample

2015-04-22-14-29-41_SDU-02B-13_TECK2.JPG



groundsurface

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Station Id	SDU-02B-14	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-22 10:11	Sample Team Initials	EL

Sample Collected? Y
X 423396.6821 m
Y 5401453.7 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N

Texture Very fine sand
Vegetation Type if Present Pond weeds

Anthropogenic Changes Present? N
Color 2.5Y 4/2
Debris Presence N

Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? Y

Station Comments

Sample Collected from Station

Sample Id	SDU-02-ICS-B	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 9:04	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	Field	Replicate	Replicate B
Sample Comments	30 increments were checked and composited into 1 bucket. No reserve locations were used.		

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Photos Collected from Station SDU-02B-14

2015-04-22-10-14-12_SDU-02B-14_TECK2.JPG



groundsurface

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2015-04-22-10-14-16_SDU-02B-14_TECK2.JPG



overview facing west

2015-04-22-10-15-44_SDU-02B-14_TECK2.JPG



sample

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Station Id	SDU-02B-15	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-22 12:08	Sample Team Initials	EL

Sample Collected? Y
X 423450.0666 m
Y 5401358.938 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pond weeds		

Station Comments

Sample Collected from Station

Sample Id	SDU-02-ICS-B	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 9:04	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	Field	Replicate	Replicate B
Sample Comments	30 increments were checked and composited into 1 bucket. No reserve locations were used.		

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Photos Collected from Station SDU-02B-15

2015-04-22-12-12-28_SDU-02B-15_TECK2.JPG



sample

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2015-04-22-12-10-58_SDU-02B-15_TECK2.JPG



groundsurface

2015-04-22-12-11-06_SDU-02B-15_TECK2.JPG



overview facing west

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Station Id	SDU-02B-16	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-22 14:00	Sample Team Initials	EL
Sample Collected?	Y		
X	423337.3744 m		
Y	5401373.601 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine silty sand	Vegetation Present?	Y
Vegetation Type if Present	Pond weeds		

Station Comments

Sample Collected from Station

Sample Id	SDU-02-ICS-B	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 9:04	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	Field	Replicate	Replicate B
Sample Comments	30 increments were checked and composited into 1 bucket. No reserve locations were used.		

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Photos Collected from Station SDU-02B-16

2015-04-22-14-03-08_SDU-02B-16_TECK2.JPG



groundsurface

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2015-04-22-14-03-12_SDU-02B-16_TECK2.JPG



overview facing west

2015-04-22-14-03-47_SDU-02B-16_TECK2.JPG



sample

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Station Id	SDU-02B-17	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-22 10:03	Sample Team Initials	EL

Sample Collected? Y
X 423380.438 m
Y 5401449.891 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pond weeds		

Station Comments

Sample Collected from Station

Sample Id	SDU-02-ICS-B	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 9:04	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	Field	Replicate	Replicate B
Sample Comments	30 increments were checked and composited into 1 bucket. No reserve locations were used.		

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Photos Collected from Station SDU-02B-17

2015-04-22-10-06-30_SDU-02B-17_TECK2.JPG



groundsurface

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2015-04-22-10-06-37_SDU-02B-17_TECK2.JPG



overview facing west

2015-04-22-10-06-59_SDU-02B-17_TECK2.JPG



sample

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Station Id	SDU-02B-18	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-22 11:59	Sample Team Initials	EL

Sample Collected? Y
X 423457.9906 m
Y 5401377.574 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pond weeds		

Station Comments

Sample Collected from Station

Sample Id	SDU-02-ICS-B	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 9:04	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	Field	Replicate	Replicate B
Sample Comments	30 increments were checked and composited into 1 bucket. No reserve locations were used.		

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Photos Collected from Station SDU-02B-18

2015-04-22-12-04-48_SDU-02B-18_TECK2.JPG



sample

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-22-12-01-49_SDU-02B-18_TECK2.JPG



groundsurface

2015-04-22-12-02-00_SDU-02B-18_TECK2.JPG



overview facing west

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Station Id	SDU-02B-19	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-22 11:43	Sample Team Initials	EL

Sample Collected? Y
X 423462.2903 m
Y 5401418.768 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand some silt	Vegetation Present?	Y
Vegetation Type if Present	Pond weeds		

Station Comments

Sample Collected from Station

Sample Id	SDU-02-ICS-B	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 9:04	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	Field	Replicate	Replicate B
Sample Comments	30 increments were checked and composited into 1 bucket. No reserve locations were used.		

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Photos Collected from Station SDU-02B-19

2015-04-22-11-45-08_SDU-02B-19_TECK2.JPG



groundsurface

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2015-04-22-11-45-13_SDU-02B-19_TECK2.JPG



overview facing west

2015-04-22-11-46-29_SDU-02B-19_TECK2.JPG



sample

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ICS Sample Collection Report
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Station Id	SDU-02B-20	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-22 13:35	Sample Team Initials	EL
Sample Collected?	Y		
X	423382.9218 m		
Y	5401364.712 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand trace silt	Vegetation Present?	Y
Vegetation Type if Present	Pond weeds		

Station Comments

Sample Collected from Station

Sample Id	SDU-02-ICS-B	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 9:04	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	Field	Replicate	Replicate B
Sample Comments	30 increments were checked and composited into 1 bucket. No reserve locations were used.		

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Photos Collected from Station SDU-02B-20

2015-04-22-13-38-20_SDU-02B-20_TECK2.JPG



overview facing west

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2015-04-22-13-38-07_SDU-02B-20_TECK2.JPG



sample

2015-04-22-13-38-17_SDU-02B-20_TECK2.JPG



groundsurface

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Station Id	SDU-02B-21	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-22 13:15	Sample Team Initials	EL

Sample Collected? Y
X 423413.2885 m
Y 5401367.63 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N

Texture Very fine sand
Vegetation Type if Present Pond weeds

Anthropogenic Changes Present? N
Color 2.5Y 4/2
Debris Presence N

Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? Y

Station Comments

Sample Collected from Station

Sample Id	SDU-02-ICS-B	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 9:04	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	Field	Replicate	Replicate B
Sample Comments	30 increments were checked and composited into 1 bucket. No reserve locations were used.		

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Photos Collected from Station SDU-02B-21

2015-04-22-13-17-48_SDU-02B-21_TECK2.JPG



groundsurface

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-22-13-17-54_SDU-02B-21_TECK2.JPG



overview facing west

2015-04-22-13-18-37_SDU-02B-21_TECK2.JPG



sample

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Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-02B-22	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-22 13:52	Sample Team Initials	EL

Sample Collected? Y
X 423344.278 m
Y 5401361.698 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pond weeds		

Station Comments

Sample Collected from Station

Sample Id	SDU-02-ICS-B	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 9:04	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	Field	Replicate	Replicate B
Sample Comments	30 increments were checked and composited into 1 bucket. No reserve locations were used.		

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Photos Collected from Station SDU-02B-22

2015-04-22-13-55-11_SDU-02B-22_TECK2.JPG



overview facing west

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2015-04-22-13-55-18_SDU-02B-22_TECK2.JPG



groundsurface

2015-04-22-13-57-03_SDU-02B-22_TECK2.JPG



sample

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Bosburg Flat Beach Refined Sediment and Soil Study



Station Id SDU-02B-23 **Start Depth** 0 cm
Station Type Primary **End Depth** 15 cm
Collection DateTime 2015-04-22 11:13 **Sample Team Initials** EL

Sample Collected? Y
X 423422.2577 m
Y 5401514.362 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand with trace gravel	Vegetation Present?	Y
Vegetation Type if Present	Pond weeds		

Station Comments

Sample Collected from Station

Sample Id	SDU-02-ICS-B	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 9:04	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	Field	Replicate	Replicate B
Sample Comments	30 increments were checked and composited into 1 bucket. No reserve locations were used.		

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Photos Collected from Station SDU-02B-23

2015-04-22-11-16-04_SDU-02B-23_TECK2.JPG



groundsurface

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2015-04-22-11-16-07_SDU-02B-23_TECK2.JPG



overview facing west

2015-04-22-11-16-28_SDU-02B-23_TECK2.JPG



sample

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Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-02B-24	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-22 9:27	Sample Team Initials	EL

Sample Collected? Y
X 423281.0986 m
Y 5401417.25 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pond weeds		

Station Comments

Sample Collected from Station

Sample Id	SDU-02-ICS-B	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 9:04	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	Field	Replicate	Replicate B
Sample Comments	30 increments were checked and composited into 1 bucket. No reserve locations were used.		

Photos Collected from Station SDU-02B-24

2015-04-22-09-31-56_SDU-02B-24_TECK2.JPG



groundsurface

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2015-04-22-09-32-01_SDU-02B-24_TECK2.JPG



overview facing west

2015-04-22-09-32-12_SDU-02B-24_TECK2.JPG



sample

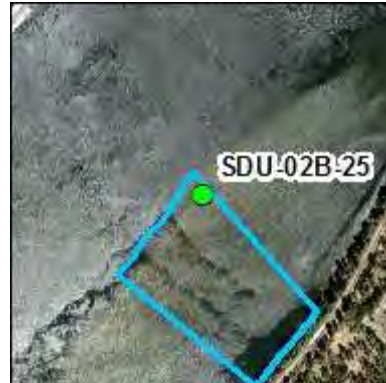
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Station Id	SDU-02B-25	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-22 8:44	Sample Team Initials	EL

Sample Collected? Y
X 423369.6065 m
Y 5401562.307 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pond weeds		

Station Comments

Sample Collected from Station

Sample Id	SDU-02-ICS-B	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 9:04	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	Field	Replicate	Replicate B
Sample Comments	30 increments were checked and composited into 1 bucket. No reserve locations were used.		

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Photos Collected from Station SDU-02B-25

2015-04-22-08-48-26_SDU-02B-25_TECK2.JPG



groundsurface

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2015-04-22-08-48-29_SDU-02B-25_TECK2.JPG



overview facing west

2015-04-22-08-48-56_SDU-02B-25_TECK2.JPG



sample

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Station Id	SDU-02B-26	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-22 9:47	Sample Team Initials	EL
Sample Collected?	Y		
X	423331.7464 m		
Y	5401451.677 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand trace silt	Vegetation Present?	Y
Vegetation Type if Present	Pond weeds		

Station Comments

Sample Collected from Station

Sample Id	SDU-02-ICS-B	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 9:04	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	Field	Replicate	Replicate B
Sample Comments	30 increments were checked and composited into 1 bucket. No reserve locations were used.		

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Photos Collected from Station SDU-02B-26

2015-04-22-09-51-09_SDU-02B-26_TECK2.JPG



groundsurface

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2015-04-22-09-51-13_SDU-02B-26_TECK2.JPG



overview facing west

2015-04-22-09-51-58_SDU-02B-26_TECK2.JPG



sample

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Station Id	SDU-02B-27	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-22 12:59	Sample Team Initials	EL
Sample Collected?	Y		
X	423423.4099 m		
Y	5401395.224 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	Pond weeds		

Station Comments

Sample Collected from Station

Sample Id	SDU-02-ICS-B	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 9:04	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	Field	Replicate	Replicate B
Sample Comments	30 increments were checked and composited into 1 bucket. No reserve locations were used.		

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Photos Collected from Station SDU-02B-27

2015-04-22-13-01-28_SDU-02B-27_TECK2.JPG



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2015-04-22-13-01-39_SDU-02B-27_TECK2.JPG



overview facing west

2015-04-22-13-02-11_SDU-02B-27_TECK2.JPG



sample

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Station Id	SDU-02B-28	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-22 13:25	Sample Team Initials	EL

Sample Collected? Y
X 423425.9904 m
Y 5401352.995 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pond weeds		

Station Comments

Sample Collected from Station

Sample Id	SDU-02-ICS-B	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 9:04	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	Field	Replicate	Replicate B
Sample Comments	30 increments were checked and composited into 1 bucket. No reserve locations were used.		

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Photos Collected from Station SDU-02B-28

2015-04-22-13-28-29_SDU-02B-28_TECK2.JPG



sample

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2015-04-22-13-28-36_SDU-02B-28_TECK2.JPG



overview acing west

2015-04-22-13-28-43_SDU-02B-28_TECK2.JPG



groundsurface

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Station Id	SDU-02B-29	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-22 9:37	Sample Team Initials	EL

Sample Collected? Y
X 423306.6169 m
Y 5401407.494 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine to fine sand trace silt	Vegetation Present?	Y
Vegetation Type if Present	Pond weeds		

Station Comments

Sample Collected from Station

Sample Id	SDU-02-ICS-B	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 9:04	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	Field	Replicate	Replicate B
Sample Comments	30 increments were checked and composited into 1 bucket. No reserve locations were used.		

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Photos Collected from Station SDU-02B-29

2015-04-22-09-40-22_SDU-02B-29_TECK2.JPG



groundsurface

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2015-04-22-09-40-29_SDU-02B-29_TECK2.JPG



overview facing west

2015-04-22-09-41-27_SDU-02B-29_TECK2.JPG



sample

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Station Id	SDU-02B-30	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-22 12:17	Sample Team Initials	EL

Sample Collected? Y
X 423497.4723 m
Y 5401354.654 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pond weeds		

Station Comments

Sample Collected from Station

Sample Id	SDU-02-ICS-B	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 9:04	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	Field	Replicate	Replicate B
Sample Comments	30 increments were checked and composited into 1 bucket. No reserve locations were used.		

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Photos Collected from Station SDU-02B-30

2015-04-22-12-19-41_SDU-02B-30_TECK2.JPG



groundsurface

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2015-04-22-12-19-52_SDU-02B-30_TECK2.JPG



overview facing west

2015-04-22-12-20-50_SDU-02B-30_TECK2.JPG



sample

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Station Id	SDU-02B-R01	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-02-ICS-B	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 9:04	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	Field	Replicate	Replicate B
Sample Comments	30 increments were checked and composited into 1 bucket. No reserve locations were used.		

Photos Collected from Station SDU-02B-R01

No photos taken at this station. See station comments for more details.

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Station Id	SDU-02B-R02	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-02-ICS-B	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 9:04	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	Field	Replicate	Replicate B
Sample Comments	30 increments were checked and composited into 1 bucket. No reserve locations were used.		

Photos Collected from Station SDU-02B-R02

No photos taken at this station. See station comments for more details.

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Station Id	SDU-02B-R03	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-02-ICS-B	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 9:04	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	Field	Replicate	Replicate B
Sample Comments	30 increments were checked and composited into 1 bucket. No reserve locations were used.		

Photos Collected from Station SDU-02B-R03

No photos taken at this station. See station comments for more details.

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Station Id	SDU-02B-R04	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-02-ICS-B	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 9:04	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	Field	Replicate	Replicate B
Sample Comments	30 increments were checked and composited into 1 bucket. No reserve locations were used.		

Photos Collected from Station SDU-02B-R04

No photos taken at this station. See station comments for more details.

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Station Id	SDU-02B-R05	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-02-ICS-B	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 9:04	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	Field	Replicate	Replicate B
Sample Comments	30 increments were checked and composited into 1 bucket. No reserve locations were used.		

Photos Collected from Station SDU-02B-R05

No photos taken at this station. See station comments for more details.

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Station Id	SDU-02B-R06	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-02-ICS-B	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 9:04	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	Field	Replicate	Replicate B
Sample Comments	30 increments were checked and composited into 1 bucket. No reserve locations were used.		

Photos Collected from Station SDU-02B-R06

No photos taken at this station. See station comments for more details.

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Station Id	SDU-02C-01	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-22 13:55	Sample Team Initials	AP

Sample Collected? Y
X 423496.5472 m
Y 5401381.424 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Carp spawning depressions	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Clayey silt with trace fine sand	Vegetation Present?	Y
Vegetation Type if Present	Some marine grass		

Station Comments located in depression west of hillside

Sample Collected from Station

Sample Id	SDU-02-ICS-C	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 10:50	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations (SDU-02C-R01, R02, R04) were used for SDU-02C-06, -23, -24.		

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Photos Collected from Station SDU-02C-01

2015-04-22-13-51-20_SDU-02C-01_TECK1.JPG



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2015-04-22-13-53-19_SDU-02C-01_TECK1.JPG



2015-04-22-13-53-29_SDU-02C-01_TECK1.JPG



view north

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Station Id	SDU-02C-02	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-22 11:52	Sample Team Initials	AP
Sample Collected?	Y		
X	423437.2291 m		
Y	5401489.513 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Carp spawning depressions	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Small grass like plant		

Station Comments located on flat southeast of low water bouy

Sample Collected from Station

Sample Id	SDU-02-ICS-C	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 10:50	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations (SDU-02C-R01, R02, R04) were used for SDU-02C-06, -23, -24.		

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Photos Collected from Station SDU-02C-02

2015-04-22-11-48-38_SDU-02C-02_TECK1.JPG



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2015-04-22-11-50-14_SDU-02C-02_TECK1.JPG



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Station Id	SDU-02C-03	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-22 15:25	Sample Team Initials	EL
Sample Collected?	Y		
X	423408.3815 m		
Y	5401337.721 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand some silt	Vegetation Present?	Y
Vegetation Type if Present	Pond weeds		

Station Comments

Sample Collected from Station

Sample Id	SDU-02-ICS-C	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 10:50	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations (SDU-02C-R01, R02, R04) were used for SDU-02C-06, -23, -24.		

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Photos Collected from Station SDU-02C-03

2015-04-22-15-28-08_SDU-02C-03_TECK2.JPG



groundsurface

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2015-04-22-15-28-12_SDU-02C-03_TECK2.JPG



overview facing west

2015-04-22-15-28-24_SDU-02C-03_TECK2.JPG



sample

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Station Id	SDU-02C-04	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-22 15:32	Sample Team Initials	EL

Sample Collected? Y
X 423426.2501 m
Y 5401301.173 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	Y	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pond weeds		

Station Comments

Sample Collected from Station

Sample Id	SDU-02-ICS-C	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 10:50	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations (SDU-02C-R01, R02, R04) were used for SDU-02C-06, -23, -24.		

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Photos Collected from Station SDU-02C-04

2015-04-22-15-35-31_SDU-02C-04_TECK2.JPG



overview facing west

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2015-04-22-15-36-19_SDU-02C-04_TECK2.JPG



sample

2015-04-22-15-36-24_SDU-02C-04_TECK2.JPG



groundsurface

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Station Id	SDU-02C-05	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-22 12:55	Sample Team Initials	AP

Sample Collected? Y
X 423473.3862 m
Y 5401444.365 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence Carp spawning depressions
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N
Texture Sandy silt
Vegetation Type if Present Small grass like plants

Anthropogenic Changes Present? N
Color 10YR 4/2
Debris Presence N
Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? Y

Station Comments located on flat west of hillside

Sample Collected from Station

Sample Id	SDU-02-ICS-C	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 10:50	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations (SDU-02C-R01, R02, R04) were used for SDU-02C-06, -23, -24.		

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Photos Collected from Station SDU-02C-05

2015-04-22-12-50-34_SDU-02C-05_TECK1.JPG



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2015-04-22-12-52-32_SDU-02C-05_TECK1.JPG



2015-04-22-12-52-42_SDU-02C-05_TECK1.JPG



view north

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Station Id	SDU-02C-06	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime	2015-04-22 15:43	Sample Team Initials	AP
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments This location was abandoned because it was under water. It was replaced by SDU-02C-R04

Sample Collected from Station

Sample Id	SDU-02-ICS-C	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 10:50	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations (SDU-02C-R01, R02, R04) were used for SDU-02C-06, -23, -24.		

Photos Collected from Station SDU-02C-06

No photos taken at this station. See station comments for more details.

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Station Id	SDU-02C-07	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-22 14:59	Sample Team Initials	AP

Sample Collected? Y
X 423343.1515 m
Y 5401404.696 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Carp spawning depressions	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Small grass like plants		

Station Comments located on flat southeast of low water bouy

Sample Collected from Station

Sample Id	SDU-02-ICS-C	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 10:50	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations (SDU-02C-R01, R02, R04) were used for SDU-02C-06, -23, -24.		

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Photos Collected from Station SDU-02C-07

2015-04-22-14-49-58_SDU-02C-07_TECK1.JPG



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2015-04-22-14-56-14_SDU-02C-07_TECK1.JPG



2015-04-22-14-56-27_SDU-02C-07_TECK1.JPG



view north

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Station Id	SDU-02C-08	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-22 11:35	Sample Team Initials	AP

Sample Collected? Y
X 423406.6718 m
Y 5401497.615 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Carp spawning depressions	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Sandy silt	Vegetation Present?	Y
Vegetation Type if Present	Small grass like plants		

Station Comments located on flat southeast of low water bouy

Sample Collected from Station

Sample Id	SDU-02-ICS-C	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 10:50	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations (SDU-02C-R01, R02, R04) were used for SDU-02C-06, -23, -24.		

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Photos Collected from Station SDU-02C-08

2015-04-22-11-30-14_SDU-02C-08_TECK1.JPG



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2015-04-22-11-32-57_SDU-02C-08_TECK1.JPG



2015-04-22-11-33-06_SDU-02C-08_TECK1.JPG



view north

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Station Id	SDU-02C-09	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-22 11:25	Sample Team Initials	AP

Sample Collected? Y
X 423358.8123 m
Y 5401463.185 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	Sample is between ATV tracks	Anthropogenic Changes Present?	N
Biological Visual Presence	Carp spawning depression	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Sandy silt	Vegetation Present?	Y
Vegetation Type if Present	Small grass like plants		

Station Comments located on flat southeast of low water bouy

Sample Collected from Station

Sample Id	SDU-02-ICS-C	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 10:50	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations (SDU-02C-R01, R02, R04) were used for SDU-02C-06, -23, -24.		

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Photos Collected from Station SDU-02C-09

2015-04-22-11-19-04_SDU-02C-09_TECK1.JPG



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2015-04-22-11-22-45_SDU-02C-09_TECK1.JPG



2015-04-22-11-22-55_SDU-02C-09_TECK1.JPG



view north

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Station Id	SDU-02C-10	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-22 10:56	Sample Team Initials	AP
Sample Collected?	Y		
X	423398.7215 m		
Y	5401528.357 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Carp spawning depressions	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on flat south of low water bouy

Sample Collected from Station

Sample Id	SDU-02-ICS-C	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 10:50	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations (SDU-02C-R01, R02, R04) were used for SDU-02C-06, -23, -24.		

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Photos Collected from Station SDU-02C-10

2015-04-22-10-48-54_SDU-02C-10_TECK1.JPG



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2015-04-22-10-53-46_SDU-02C-10_TECK1.JPG



2015-04-22-10-53-57_SDU-02C-10_TECK1.JPG



view north

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Station Id	SDU-02C-11	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-22 11:15	Sample Team Initials	AP
Sample Collected?	Y		
X	423362.7675 m		
Y	5401481.905 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Carp spawning depressions	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Small grass type plant		

Station Comments located on flat southeast of low water bouy

Sample Collected from Station

Sample Id	SDU-02-ICS-C	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 10:50	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations (SDU-02C-R01, R02, R04) were used for SDU-02C-06, -23, -24.		

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Photos Collected from Station SDU-02C-11

2015-04-22-11-10-45_SDU-02C-11_TECK1.JPG



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2015-04-22-11-12-55_SDU-02C-11_TECK1.JPG



2015-04-22-11-13-05_SDU-02C-11_TECK1.JPG



view north

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Station Id	SDU-02C-12	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-22 11:05	Sample Team Initials	AP

Sample Collected? Y
X 423386.1196 m
Y 5401505.298 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Carp spawning depression	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on flat southeast of low water bouy

Sample Collected from Station

Sample Id	SDU-02-ICS-C	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 10:50	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations (SDU-02C-R01, R02, R04) were used for SDU-02C-06, -23, -24.		

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Photos Collected from Station SDU-02C-12

2015-04-22-11-01-32_SDU-02C-12_TECK1.JPG



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2015-04-22-11-03-15_SDU-02C-12_TECK1.JPG



2015-04-22-11-03-24_SDU-02C-12_TECK1.JPG



view north

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Station Id	SDU-02C-13	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-22 15:31	Sample Team Initials	AP
Sample Collected?	Y		
X	423380.7029 m		
Y	5401380.75 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Carp spawning depressions	Color	10YR 4/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	Small grass like plants		

Station Comments located on flat southeast of low water bouy

Sample Collected from Station

Sample Id	SDU-02-ICS-C	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 10:50	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations (SDU-02C-R01, R02, R04) were used for SDU-02C-06, -23, -24.		

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Photos Collected from Station SDU-02C-13

2015-04-22-15-25-27_SDU-02C-13_TECK1.JPG



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2015-04-22-15-28-37_SDU-02C-13_TECK1.JPG



2015-04-22-15-28-47_SDU-02C-13_TECK1.JPG



view north

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Station Id	SDU-02C-14	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-22 15:22	Sample Team Initials	AP

Sample Collected? Y
X 423397.733 m
Y 5401391.883 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Carp spawning depressions	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Some small grass like plants		

Station Comments located on flatsoutheast of low water bouy

Sample Collected from Station

Sample Id	SDU-02-ICS-C	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 10:50	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations (SDU-02C-R01, R02, R04) were used for SDU-02C-06, -23, -24.		

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Photos Collected from Station SDU-02C-14

2015-04-22-15-15-34_SDU-02C-14_TECK1.JPG



g.s

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2015-04-22-15-18-22_SDU-02C-14_TECK1.JPG



2015-04-22-15-18-36_SDU-02C-14_TECK1.JPG



view north

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Station Id	SDU-02C-15	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-22 14:26	Sample Team Initials	AP
Sample Collected?	Y		
X	423429.1749 m		
Y	5401362.265 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Carp spawning depression	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Small grass like plant		

Station Comments located in depression west of hillside

Sample Collected from Station

Sample Id	SDU-02-ICS-C	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 10:50	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations (SDU-02C-R01, R02, R04) were used for SDU-02C-06, -23, -24.		

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Photos Collected from Station SDU-02C-15

2015-04-22-14-20-12_SDU-02C-15_TECK1.JPG



g.s

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2015-04-22-14-21-45_SDU-02C-15_TECK1.JPG



2015-04-22-14-21-56_SDU-02C-15_TECK1.JPG



view north

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Station Id	SDU-02C-16	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-22 12:07	Sample Team Initials	AP

Sample Collected? Y
X 423463.5869 m
Y 5401464.104 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Carp spawning depressions	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Small grass like plants		

Station Comments located on flat east of low water bouy

Sample Collected from Station

Sample Id	SDU-02-ICS-C	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 10:50	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations (SDU-02C-R01, R02, R04) were used for SDU-02C-06, -23, -24.		

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Photos Collected from Station SDU-02C-16

2015-04-22-12-04-13_SDU-02C-16_TECK1.JPG



g.s

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2015-04-22-12-05-40_SDU-02C-16_TECK1.JPG



2015-04-22-12-05-51_SDU-02C-16_TECK1.JPG



view north

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Station Id	SDU-02C-17	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-22 11:43	Sample Team Initials	AP
Sample Collected?	Y		
X	423409.7599 m		
Y	5401478.769 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Carp spawning depressions	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Sandy silt	Vegetation Present?	N
Vegetation Type if Present	Small grass like plants		

Station Comments located on flat southeast of low water bouy

Sample Collected from Station

Sample Id	SDU-02-ICS-C	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 10:50	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations (SDU-02C-R01, R02, R04) were used for SDU-02C-06, -23, -24.		

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Photos Collected from Station SDU-02C-17

2015-04-22-11-38-27_SDU-02C-17_TECK1.JPG



g.s

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2015-04-22-11-40-58_SDU-02C-17_TECK1.JPG



2015-04-22-11-41-08_SDU-02C-17_TECK1.JPG



view north

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Station Id	SDU-02C-18	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-22 12:00	Sample Team Initials	AP

Sample Collected? Y
X 423445.551 m
Y 5401465.2 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Carp spawning depressions	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Small grass like plants		

Station Comments located on flat southeast of low water bouy

Sample Collected from Station

Sample Id	SDU-02-ICS-C	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 10:50	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations (SDU-02C-R01, R02, R04) were used for SDU-02C-06, -23, -24.		

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Photos Collected from Station SDU-02C-18

2015-04-22-11-56-35_SDU-02C-18_TECK1.JPG



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2015-04-22-11-58-07_SDU-02C-18_TECK1.JPG



2015-04-22-11-58-19_SDU-02C-18_TECK1.JPG



view north

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Station Id	SDU-02C-19	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-22 13:47	Sample Team Initials	AP
Sample Collected?	Y		
X	423514.4976 m		
Y	5401376.565 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand with rounded gravel	Vegetation Present?	Y
Vegetation Type if Present	Some small grass like plant		
Station Comments	located on bank below hillside		

Sample Collected from Station

Sample Id	SDU-02-ICS-C	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 10:50	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations (SDU-02C-R01, R02, R04) were used for SDU-02C-06, -23, -24.		

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Photos Collected from Station SDU-02C-19

2015-04-22-13-42-58_SDU-02C-19_1619LP-WA70047.JPG



sample location

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2015-04-22-13-44-34_SDU-02C-19_1619LP-WA70047.JPG



sample

2015-04-22-13-44-47_SDU-02C-19_TECK1.JPG



view north

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Station Id	SDU-02C-20	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-22 15:16	Sample Team Initials	EL
Sample Collected?	Y		
X	423391.1309 m		
Y	5401347.702 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 5/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pond weeds		

Station Comments

Sample Collected from Station

Sample Id	SDU-02-ICS-C	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 10:50	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations (SDU-02C-R01, R02, R04) were used for SDU-02C-06, -23, -24.		

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Photos Collected from Station SDU-02C-20

2015-04-22-15-19-40_SDU-02C-20_TECK2.JPG



groundsurface

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2015-04-22-15-19-43_SDU-02C-20_TECK2.JPG



overview facing west

2015-04-22-15-20-23_SDU-02C-20_TECK2.JPG



sample

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Station Id	SDU-02C-21	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-22 13:39	Sample Team Initials	AP

Sample Collected? Y
X 423516.1871 m
Y 5401396.665 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Carp spawning depressions	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Clayey silt with trace very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Some marine grass		
Station Comments	located in depression west of hillside		

Sample Collected from Station

Sample Id	SDU-02-ICS-C	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 10:50	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations (SDU-02C-R01, R02, R04) were used for SDU-02C-06, -23, -24.		

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Photos Collected from Station SDU-02C-21

2015-04-22-13-35-00_SDU-02C-21_TECK1.JPG



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2015-04-22-13-37-18_SDU-02C-21_TECK1.JPG



2015-04-22-13-37-30_SDU-02C-21_TECK1.JPG



view north

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Station Id	SDU-02C-22	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-22 10:45	Sample Team Initials	AP
Sample Collected?	Y		
X	423375.8879 m		
Y	5401518.959 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Carp spawning depressions	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on flat south of low water bouy

Sample Collected from Station

Sample Id	SDU-02-ICS-C	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 10:50	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations (SDU-02C-R01, R02, R04) were used for SDU-02C-06, -23, -24.		

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Photos Collected from Station SDU-02C-22

2015-04-22-10-41-28_SDU-02C-22_TECK1.JPG



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2015-04-22-10-42-35_SDU-02C-22_TECK1.JPG



2015-04-22-10-42-45_SDU-02C-22_TECK1.JPG



view north

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Station Id	SDU-02C-23	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime	2015-04-22 13:21	Sample Team Initials	AP
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984

Station Comments This location was abandoned because it was under water. It was replaced by reserve station SDU-02C-R02.

Sample Collected from Station

Sample Id	SDU-02-ICS-C	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 10:50	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations (SDU-02C-R01, R02, R04) were used for SDU-02C-06, -23, -24.		

Photos Collected from Station SDU-02C-23

No photos taken at this station. See station comments for more details.

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Station Id	SDU-02C-24	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime	2015-04-22 13:08	Sample Team Initials	AP
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984

Station Comments This location was abandoned because it was under water. It was replaced by SDU-02C-R01

Sample Collected from Station

Sample Id	SDU-02-ICS-C	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 10:50	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations (SDU-02C-R01, R02, R04) were used for SDU-02C-06, -23, -24.		

Photos Collected from Station SDU-02C-24

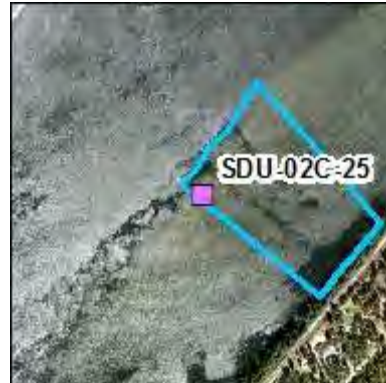
No photos taken at this station. See station comments for more details.

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Station Id	SDU-02C-25	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-22 10:33	Sample Team Initials	AP
Sample Collected?	Y		
X	423274.8057 m		
Y	5401428.674 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Carp spawning depressions	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on flat south of low water bouy

Sample Collected from Station

Sample Id	SDU-02-ICS-C	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 10:50	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations (SDU-02C-R01, R02, R04) were used for SDU-02C-06, -23, -24.		

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Photos Collected from Station SDU-02C-25

2015-04-22-10-25-36_SDU-02C-25_TECK1.JPG



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2015-04-22-10-29-49_SDU-02C-25_TECK1.JPG



2015-04-22-10-30-01_SDU-02C-25_TECK1.JPG



view north

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Station Id	SDU-02C-26	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-22 15:11	Sample Team Initials	AP

Sample Collected? Y
X 423345.9175 m
Y 5401390.292 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Carp spawning depressions	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on flat southeast of low water bouy

Sample Collected from Station

Sample Id	SDU-02-ICS-C	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 10:50	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations (SDU-02C-R01, R02, R04) were used for SDU-02C-06, -23, -24.		

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Photos Collected from Station SDU-02C-26

2015-04-22-15-04-23_SDU-02C-26_TECK1.JPG



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2015-04-22-15-08-06_SDU-02C-26_TECK1.JPG



2015-04-22-15-08-18_SDU-02C-26_TECK1.JPG



View north

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Station Id	SDU-02C-27	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-22 14:05	Sample Team Initials	AP
Sample Collected?	Y		
X	423471.6177 m		
Y	5401356.387 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Crayfish	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Clayey silt with trace very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Some small grass type plant		

Station Comments located in depression west of hillside

Sample Collected from Station

Sample Id	SDU-02-ICS-C	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 10:50	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations (SDU-02C-R01, R02, R04) were used for SDU-02C-06, -23, -24.		

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Photos Collected from Station SDU-02C-27

2015-04-22-13-59-48_SDU-02C-27_TECK1.JPG



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2015-04-22-14-02-11_SDU-02C-27_TECK1.JPG



2015-04-22-14-02-23_SDU-02C-27_TECK1.JPG



view north

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Station Id	SDU-02C-28	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-22 13:30	Sample Team Initials	AP

Sample Collected? Y
X 423485.4331 m
Y 5401413.099 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	10	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Clayey silty with trace very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Some marine grass		

Station Comments located in depression west of hillside.

Sample Collected from Station

Sample Id	SDU-02-ICS-C	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 10:50	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations (SDU-02C-R01, R02, R04) were used for SDU-02C-06, -23, -24.		

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Photos Collected from Station SDU-02C-28

2015-04-22-13-24-52_SDU-02C-28_TECK1.JPG



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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-22-13-26-50_SDU-02C-28_TECK1.JPG



2015-04-22-13-27-02_SDU-02C-28_TECK1.JPG



view north

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ICS Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study

Station Id	SDU-02C-29	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-22 14:15	Sample Team Initials	AP

Sample Collected? Y
X 423453.3023 m
Y 5401373.602 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Carp spawning depressions	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Sandy silt with trace clay	Vegetation Present?	Y
Vegetation Type if Present	Some small grass like plant		

Station Comments located in depression west of hillside

Sample Collected from Station

Sample Id	SDU-02-ICS-C	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 10:50	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations (SDU-02C-R01, R02, R04) were used for SDU-02C-06, -23, -24.		

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Photos Collected from Station SDU-02C-29

2015-04-22-14-09-07_SDU-02C-29_TECK1.JPG



view north

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-22-14-11-55_SDU-02C-29_TECK1.JPG



2015-04-22-14-12-05_SDU-02C-29_TECK1.JPG



view north

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Station Id	SDU-02C-30	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-22 14:41	Sample Team Initials	AP
Sample Collected?	Y		
X	423425.3519 m		
Y	5401335.233 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Carp spawning depression	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Some marine grass		

Station Comments located in depression west of hillside

Sample Collected from Station

Sample Id	SDU-02-ICS-C	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 10:50	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations (SDU-02C-R01, R02, R04) were used for SDU-02C-06, -23, -24.		

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Photos Collected from Station SDU-02C-30

2015-04-22-14-31-38_SDU-02C-30_TECK1.JPG



g.s

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-22-14-34-24_SDU-02C-30_TECK1.JPG



2015-04-22-14-34-38_SDU-02C-30_TECK1.JPG



view north

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Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-02C-R01	Start Depth	0 cm
Station Type	Reserve	End Depth	15 cm
Collection DateTime	2015-04-22 13:04	Sample Team Initials	AP
Sample Collected?	Y		
X	423438.6353 m		
Y	5401417.077 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Carp spawning depressions	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Small grass like plants		

Station Comments Located on on flat west of hillside. This reserve location replaces SDU-02C-24, which was abandoned because it was under water.

Sample Collected from Station

Sample Id	SDU-02-ICS-C	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 10:50	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations (SDU-02C-R01, R02, R04) were used for SDU-02C-06, -23, -24.		

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Photos Collected from Station SDU-02C-R01

2015-04-22-12-59-27_SDU-02C-R01_TECK1.JPG



g.s

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-22-13-01-22_SDU-02C-R01_TECK1.JPG



2015-04-22-13-01-39_SDU-02C-R01_TECK1.JPG



view north

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Station Id	SDU-02C-R02	Start Depth	0 cm
Station Type	Reserve	End Depth	15 cm
Collection DateTime	2015-04-22 13:18	Sample Team Initials	AP

Sample Collected? Y
X 423497.6261 m
Y 5401423.537 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Carp spawning depressions	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Some marine grass
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	20	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Clayey silt with trace very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Marine grass		

Station Comments Located in depression west of hillside. This location replaces SDU-02C-23, which was abandoned because it was under water

Sample Collected from Station

Sample Id	SDU-02-ICS-C	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 10:50	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations (SDU-02C-R01, R02, R04) were used for SDU-02C-06, -23, -24.		

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Photos Collected from Station SDU-02C-R02

2015-04-22-13-12-45_SDU-02C-R02_TECK1.JPG



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2015-04-22-13-14-50_SDU-02C-R02_TECK1.JPG



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Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-02C-R03	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-02-ICS-C	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 10:50	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations (SDU-02C-R01, R02, R04) were used for SDU-02C-06, -23, -24.		

Photos Collected from Station SDU-02C-R03

No photos taken at this station. See station comments for more details.

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Station Id	SDU-02C-R04	Start Depth	0 cm
Station Type	Reserve	End Depth	15 cm
Collection DateTime	2015-04-22 15:41	Sample Team Initials	AP

Sample Collected? Y
X 423374.1695 m
Y 5401370.088 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Carp spawning depressions	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	Y
Vegetation Type if Present	Small grass like plants		

Station Comments located on flat southeast of low water bouy. This reserve location replaces SDU-02C-06, which was abandoned becuase it was under water

Sample Collected from Station

Sample Id	SDU-02-ICS-C	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 10:50	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations (SDU-02C-R01, R02, R04) were used for SDU-02C-06, -23, -24.		

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Photos Collected from Station SDU-02C-R04

2015-04-22-15-35-07_SDU-02C-R04_TECK1.JPG



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2015-04-22-15-36-59_SDU-02C-R04_TECK1.JPG



2015-04-22-15-37-12_SDU-02C-R04_TECK1.JPG



view north

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Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-02C-R05	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-02-ICS-C	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 10:50	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations (SDU-02C-R01, R02, R04) were used for SDU-02C-06, -23, -24.		

Photos Collected from Station SDU-02C-R05

No photos taken at this station. See station comments for more details.

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Station Id	SDU-02C-R06	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-02-ICS-C	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-23 10:50	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments were checked and composited into 1 bucket. 3 reserve locations (SDU-02C-R01, R02, R04) were used for SDU-02C-06, -23, -24.		

Photos Collected from Station SDU-02C-R06

No photos taken at this station. See station comments for more details.

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Station Id	SDU-03A-01	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-23 9:35	Sample Team Initials	AP

Sample Collected? Y
X 423074.6009 m
Y 5401083.0443 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 5/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly silty fine sand with with cobbles	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments located on cobble bar west of hillside

Sample Collected from Station

Sample Id	SDU-03-ICS-A	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 8:28	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	EPA	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03A-01

2015-04-23-09-28-38_SDU-03A-01_TECK1.JPG



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2015-04-23-09-31-32_SDU-03A-01_TECK1.JPG



2015-04-23-09-31-44_SDU-03A-01_TECK1.JPG



view n.e

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Station Id	SDU-03A-02	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-23 9:52	Sample Team Initials	AP
Sample Collected?	Y		
X	423046.1164 m		
Y	5401075.296 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 2/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine sand with cobbles	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments located on cobble bar west of hillside

Sample Collected from Station

Sample Id	SDU-03-ICS-A	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 8:28	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	EPA	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03A-02

2015-04-23-09-40-41_SDU-03A-02_TECK1.JPG



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2015-04-23-09-46-48_SDU-03A-02_TECK1.JPG



2015-04-23-09-47-21_SDU-03A-02_TECK1.JPG



view n.e

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Station Id	SDU-03A-03	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-23 16:35	Sample Team Initials	MS
Sample Collected?	Y		
X	422892.831 m		
Y	5400942.8606 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine to coarse sand little fine gravel trace silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-03-ICS-A	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 8:28	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	EPA	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03A-03

2015-04-23-16-38-32_SDU-03A-03_TECK2.JPG



sample

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2015-04-23-16-38-56_SDU-03A-03_TECK2.JPG



groundsurface

2015-04-23-16-39-01_SDU-03A-03_TECK2.JPG



overview facing west

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Station Id	SDU-03A-04	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-23 12:02	Sample Team Initials	AP

Sample Collected? Y
X 422977.574 m
Y 5401017.64 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine to very fine sand with cobbles and trace silt	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments located on cobble bar west of hillside

Sample Collected from Station

Sample Id	SDU-03-ICS-A	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 8:28	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	EPA	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03A-04

2015-04-23-11-56-06_SDU-03A-04_TECK1.JPG



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2015-04-23-11-58-59_SDU-03A-04_TECK1.JPG



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Station Id	SDU-03A-05	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-23 13:53	Sample Team Initials	AP

Sample Collected? Y
X 422953.9822 m
Y 5400993.739 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine sand with cobbles and trace silt	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments located on cobble bar west of hillside

Sample Collected from Station

Sample Id	SDU-03-ICS-A	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 8:28	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	EPA	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03A-05

2015-04-23-13-43-53_SDU-03A-05_TECK1.JPG



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2015-04-23-13-49-59_SDU-03A-05_TECK1.JPG



2015-04-23-13-50-09_SDU-03A-05_TECK1.JPG



view ne

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Station Id	SDU-03A-06	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-23 8:53	Sample Team Initials	AP
Sample Collected?	Y		
X	423083.501 m		
Y	5401091.5 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly silty fine sand with cobbles	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments located on cobble bar west of hillside

Sample Collected from Station

Sample Id	SDU-03-ICS-A	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 8:28	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	EPA	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03A-06

2015-04-23-08-46-01_SDU-03A-06_TECK1.JPG



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2015-04-23-08-48-40_SDU-03A-06_TECK1.JPG



2015-04-23-08-48-51_SDU-03A-06_TECK1.JPG



view n.e

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Station Id	SDU-03A-07	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-23 16:54	Sample Team Initials	MS
Sample Collected?	Y		
X	422881.5135 m		
Y	5400934.8505 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-03-ICS-A	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 8:28	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	EPA	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03A-07

2015-04-23-16-58-41_SDU-03A-07_TECK2.JPG



sample

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2015-04-23-16-58-44_SDU-03A-07_TECK2.JPG



2015-04-23-16-58-56_SDU-03A-07_TECK2.JPG



groundsurface

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Station Id	SDU-03A-08	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-23 13:38	Sample Team Initials	AP

Sample Collected? Y
X 422965.4171 m
Y 5401004.46 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine sand with silt and cobbles	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments located on cobble bar west of hillside

Sample Collected from Station

Sample Id	SDU-03-ICS-A	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 8:28	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	EPA	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station SDU-03A-08

2015-04-23-13-25-34_SDU-03A-08_TECK1.JPG



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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-23-13-33-50_SDU-03A-08_TECK1.JPG



2015-04-23-13-34-00_SDU-03A-08_TECK1.JPG



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Station Id	SDU-03A-09	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-23 14:42	Sample Team Initials	AP

Sample Collected? Y
X 422930.9801 m
Y 5400977.638 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine sand with silt and cobbles	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on cobble bar west of hillside

Sample Collected from Station

Sample Id	SDU-03-ICS-A	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 8:28	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	EPA	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03A-09

2015-04-23-14-37-23_SDU-03A-09_TECK1.JPG



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2015-04-23-14-40-01_SDU-03A-09_TECK1.JPG



2015-04-23-14-40-10_SDU-03A-09_TECK1.JPG



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Station Id	SDU-03A-10	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-23 14:05	Sample Team Initials	AP
Sample Collected?	Y		
X	422948.5738 m		
Y	5400993.522 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine to coarse sand with cobbles	Vegetation Present?	Y
Vegetation Type if Present	N		

Station Comments located on cobble bar west of hillside

Sample Collected from Station

Sample Id	SDU-03-ICS-A	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 8:28	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	EPA	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03A-10

2015-04-23-13-56-32_SDU-03A-10_TECK1.JPG



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2015-04-23-14-02-10_SDU-03A-10_TECK1.JPG



2015-04-23-14-02-20_SDU-03A-10_TECK1.JPG



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Station Id	SDU-03A-11	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-23 12:12	Sample Team Initials	AP

Sample Collected? Y
X 422960.7385 m
Y 5401013.461 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine sand with trace silt and cobbles	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located just west of cobble bar in decision unit.

Sample Collected from Station

Sample Id	SDU-03-ICS-A	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 8:28	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	EPA	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03A-11

2015-04-23-12-05-32_SDU-03A-11_TECK1.JPG



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2015-04-23-12-08-50_SDU-03A-11_TECK1.JPG



2015-04-23-12-09-11_SDU-03A-11_TECK1.JPG



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Station Id	SDU-03A-12	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-23 14:34	Sample Team Initials	AP

Sample Collected? Y
X 422938.7076 m
Y 5400982.31 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine sand with cobbles and trace silt	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments located on cobble bar west of hill side

Sample Collected from Station

Sample Id	SDU-03-ICS-A	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 8:28	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	EPA	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station SDU-03A-12

2015-04-23-14-21-15_SDU-03A-12_TECK1.JPG



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2015-04-23-14-31-55_SDU-03A-12_TECK1.JPG



2015-04-23-14-32-08_SDU-03A-12_TECK1.JPG



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Station Id	SDU-03A-13	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-23 10:48	Sample Team Initials	AP

Sample Collected? Y
X 423025.3107 m
Y 5401056.609 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine sand with cobbles	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments located on cobble bar west of hillside

Sample Collected from Station

Sample Id	SDU-03-ICS-A	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 8:28	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	EPA	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03A-13

2015-04-23-10-43-25_SDU-03A-13_TECK1.JPG



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2015-04-23-10-43-39_SDU-03A-13_TECK1.JPG



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Station Id	SDU-03A-14	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-23 16:46	Sample Team Initials	AP

Sample Collected? Y
X 422886.4067 m
Y 5400944.452 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles and boulders
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly very fine to fine sand with silt and cobbles	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on cobble bar just west of hill side

Sample Collected from Station

Sample Id	SDU-03-ICS-A	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 8:28	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	EPA	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station SDU-03A-14

2015-04-23-16-37-31_SDU-03A-14_TECK1.JPG



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2015-04-23-16-43-08_SDU-03A-14_TECK1.JPG



2015-04-23-16-43-24_SDU-03A-14_TECK1.JPG



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Bosburg Flat Beach Refined Sediment and Soil Study



Station Id SDU-03A-15 **Start Depth** 0 cm
Station Type Primary **End Depth** 15 cm
Collection DateTime 2015-04-23 11:00 **Sample Team Initials** AP

Sample Collected? Y
X 423025.6607 m
Y 5401050.236 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine sand with silt and cobbles	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments located on cobble bar west of hillside

Sample Collected from Station

Sample Id	SDU-03-ICS-A	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 8:28	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	EPA	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03A-15

2015-04-23-10-54-16_SDU-03A-15_TECK1.JPG



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2015-04-23-10-56-56_SDU-03A-15_TECK1.JPG



2015-04-23-10-57-08_SDU-03A-15_TECK1.JPG



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Station Id	SDU-03A-16	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-23 15:18	Sample Team Initials	AP

Sample Collected? Y
X 422910.7876 m
Y 5400958.4827 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine sand with silt and cobbles	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments located on cobble bar west of beach access road

Sample Collected from Station

Sample Id	SDU-03-ICS-A	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 8:28	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	EPA	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03A-16

2015-04-23-15-13-15_SDU-03A-16_TECK1.JPG



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2015-04-23-15-15-00_SDU-03A-16_TECK1.JPG



2015-04-23-15-15-23_SDU-03A-16_TECK1.JPG



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Station Id	SDU-03A-17	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-23 14:18	Sample Team Initials	AP
Sample Collected?	Y		
X	422925.4217 m		
Y	5400985.247 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with trace silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located just west of cobble bar west of hillside

Sample Collected from Station

Sample Id	SDU-03-ICS-A	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 8:28	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	EPA	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03A-17

2015-04-23-14-12-06_SDU-03A-17_TECK1.JPG



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2015-04-23-14-15-08_SDU-03A-17_TECK1.JPG



2015-04-23-14-15-19_SDU-03A-17_TECK1.JPG



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Station Id	SDU-03A-18	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-23 15:40	Sample Team Initials	AP

Sample Collected? Y
X 422902.5555 m
Y 5400957.132 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine sand with silt and cobbles	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on cobble bar just west of beach access road

Sample Collected from Station

Sample Id	SDU-03-ICS-A	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 8:28	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	EPA	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03A-18

2015-04-23-15-23-01_SDU-03A-18_TECK1.JPG



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2015-04-23-15-26-08_SDU-03A-18_TECK1.JPG



2015-04-23-15-26-45_SDU-03A-18_TECK1.JPG



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Station Id	SDU-03A-19	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-23 11:51	Sample Team Initials	AP

Sample Collected? Y
X 422983.9342 m
Y 5401015.2661 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 5/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine sand with cobbles and trace silt	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments located on cobble bar west of hillside

Sample Collected from Station

Sample Id	SDU-03-ICS-A	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 8:28	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	EPA	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03A-19

2015-04-23-11-44-51_SDU-03A-19_TECK1.JPG



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2015-04-23-11-48-08_SDU-03A-19_TECK1.JPG



2015-04-23-11-48-26_SDU-03A-19_TECK1.JPG



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Station Id	SDU-03A-20	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-23 11:09	Sample Team Initials	AP

Sample Collected? Y
X 423001.1959 m
Y 5401035.844 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly very fine to fine sand with cobbles and trace silt	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments located on cobble bar west of hillside

Sample Collected from Station

Sample Id	SDU-03-ICS-A	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 8:28	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	EPA	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03A-20

2015-04-23-11-03-44_SDU-03A-20_TECK1.JPG



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2015-04-23-11-06-22_SDU-03A-20_TECK1.JPG



2015-04-23-11-06-33_SDU-03A-20_TECK1.JPG



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Station Id	SDU-03A-21	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-23 16:33	Sample Team Initials	AP

Sample Collected? Y
X 422889.9655 m
Y 5400951.476 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine sand with trace silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located just beneath cobble bar west of beach access road

Sample Collected from Station

Sample Id	SDU-03-ICS-A	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 8:28	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	EPA	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03A-21

2015-04-23-16-30-00_SDU-03A-21_TECK1.JPG



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2015-04-23-16-30-13_SDU-03A-21_TECK1.JPG



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Station Id	SDU-03A-22	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-23 14:52	Sample Team Initials	AP

Sample Collected? Y
X 422927.4036 m
Y 5400971.821 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine sand with silt and cobbles	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments located on cobble bar at bottom of beach access road.

Sample Collected from Station

Sample Id	SDU-03-ICS-A	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 8:28	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	EPA	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03A-22

2015-04-23-14-45-34_SDU-03A-22_TECK1.JPG



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2015-04-23-14-49-06_SDU-03A-22_TECK1.JPG



2015-04-23-14-49-23_SDU-03A-22_TECK1.JPG



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Station Id	SDU-03A-23	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-23 9:00	Sample Team Initials	AP
Sample Collected?	Y		
X	423078.1306 m		
Y	5401090.091 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly silty fine sand with cobbles	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments located on cobble bar west of hillside

Sample Collected from Station

Sample Id	SDU-03-ICS-A	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 8:28	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	EPA	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03A-23

2015-04-23-08-55-49_SDU-03A-23_TECK1.JPG



g.s

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-23-08-57-35_SDU-03A-23_TECK1.JPG



2015-04-23-08-57-48_SDU-03A-23_TECK1.JPG



view n.e

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Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-03A-24	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-23 16:46	Sample Team Initials	MS

Sample Collected? Y
X 422876.6289 m
Y 5400940.087 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine to coarse sand little fine gravel trace silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-03-ICS-A	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 8:28	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	EPA	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03A-24

2015-04-23-16-50-51_SDU-03A-24_TECK2.JPG



overview facing west

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2015-04-23-16-50-33_SDU-03A-24_TECK2.JPG



sample

2015-04-23-16-50-47_SDU-03A-24_TECK2.JPG



groundsurface

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Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-03A-25	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-23 9:12	Sample Team Initials	AP
Sample Collected?	Y		
X	423070.7457 m		
Y	5401093.519 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine sand with cobbles and trace silt	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments located on cobble bar west of hillside

Sample Collected from Station

Sample Id	SDU-03-ICS-A	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 8:28	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	EPA	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03A-25

2015-04-23-09-08-12_SDU-03A-25_1619LP-WA70047.JPG



sample

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2015-04-23-09-04-35_SDU-03A-25_TECK1.JPG



g.5

2015-04-23-09-08-20_SDU-03A-25_TECK1.JPG



view n.e

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Station Id	SDU-03A-26	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-23 9:21	Sample Team Initials	AP
Sample Collected?	Y		
X	423067.3834 m		
Y	5401085.687 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine sand with cobbles and trace silt	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments located on gravel bar west of hillside

Sample Collected from Station

Sample Id	SDU-03-ICS-A	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 8:28	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	EPA	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03A-26

2015-04-23-09-15-35_SDU-03A-26_TECK1.JPG



g.5

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2015-04-23-09-17-17_SDU-03A-26_TECK1.JPG



2015-04-23-09-17-28_SDU-03A-26_TECK1.JPG



view n.e

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Station Id	SDU-03A-27	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-23 11:22	Sample Team Initials	AP

Sample Collected? Y
X 423001.7889 m
Y 5401028.3262 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 5/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles and branches
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly very fine to fine sand with silt and cobbles	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments located on cobble bar west of hillside

Sample Collected from Station

Sample Id	SDU-03-ICS-A	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 8:28	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	EPA	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03A-27

2015-04-23-11-13-37_SDU-03A-27_TECK1.JPG



g.s

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2015-04-23-11-18-57_SDU-03A-27_TECK1.JPG



2015-04-23-11-19-06_SDU-03A-27_TECK1.JPG



view n.e

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Station Id	SDU-03A-28	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-23 11:36	Sample Team Initials	AP

Sample Collected? Y
X 422990.071 m
Y 5401023.098 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine sand with trace medium to coarse sand and cobbles	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments located on cobble bar west of hillside

Sample Collected from Station

Sample Id	SDU-03-ICS-A	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 8:28	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	EPA	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03A-28

2015-04-23-11-26-53_SDU-03A-28_TECK1.JPG



g.s

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2015-04-23-11-31-06_SDU-03A-28_TECK1.JPG



2015-04-23-11-31-16_SDU-03A-28_TECK1.JPG



view ne

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Station Id	SDU-03A-29	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-23 8:38	Sample Team Initials	AP
Sample Collected?	Y		
X	423091.2702 m		
Y	5401096.308 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly silty fine sand with cobbles	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments located on gravel barf west of hillside

Sample Collected from Station

Sample Id	SDU-03-ICS-A	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 8:28	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	EPA	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03A-29

2015-04-23-08-12-13_SDU-03A-29_TECK1.JPG



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2015-04-23-08-17-13_SDU-03A-29_TECK1.JPG



2015-04-23-08-17-25_SDU-03A-29_TECK1.JPG



view ne

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Station Id	SDU-03A-30	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-23 10:33	Sample Team Initials	AP

Sample Collected? Y
X 423036.8621 m
Y 5401056.281 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine sand with cobbles	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments located on cobble bar west of hillside

Sample Collected from Station

Sample Id	SDU-03-ICS-A	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 8:28	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	EPA	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03A-30

2015-04-23-09-58-52_SDU-03A-30_TECK1.JPG



g.5

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2015-04-23-10-09-08_SDU-03A-30_TECK1.JPG



2015-04-23-10-09-18_SDU-03A-30_TECK1.JPG



view n.e

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Station Id	SDU-03A-R01	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-03-ICS-A	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 8:28	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	EPA	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station SDU-03A-R01

No photos taken at this station. See station comments for more details.

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Station Id	SDU-03A-R02	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-03-ICS-A	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 8:28	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	EPA	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station SDU-03A-R02

No photos taken at this station. See station comments for more details.

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Station Id	SDU-03A-R03	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-03-ICS-A	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 8:28	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	EPA	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station SDU-03A-R03

No photos taken at this station. See station comments for more details.

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Station Id	SDU-03A-R04	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-03-ICS-A	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 8:28	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	EPA	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station SDU-03A-R04

No photos taken at this station. See station comments for more details.

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Station Id	SDU-03A-R05	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-03-ICS-A	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 8:28	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	EPA	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station SDU-03A-R05

No photos taken at this station. See station comments for more details.

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Station Id	SDU-03A-R06	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-03-ICS-A	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 8:28	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	EPA	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station SDU-03A-R06

No photos taken at this station. See station comments for more details.

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Station Id	SDU-03B-01	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-23 11:46	Sample Team Initials	MS

Sample Collected? Y
X 422980.8362 m
Y 5401019.305 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-03-ICS-B	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 9:19	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03B-01

2015-04-23-11-48-44_SDU-03B-01_1619LP-WA70047.JPG



sample location

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2015-04-23-11-48-46_SDU-03B-01_TECK2.JPG



overview facing west

2015-04-23-11-49-21_SDU-03B-01_TECK2.JPG



sample

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Station Id	SDU-03B-02	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-23 11:36	Sample Team Initials	MS
Sample Collected?	Y		
X	422986.6886 m		
Y	5401023.927 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine to coarse sand	Vegetation Present?	Y
Vegetation Type if Present	Pine needles		

Station Comments

Sample Collected from Station

Sample Id	SDU-03-ICS-B	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 9:19	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03B-02

2015-04-23-11-40-47_SDU-03B-02_TECK2.JPG



sample

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2015-04-23-11-38-52_SDU-03B-02_TECK2.JPG



groundsurface

2015-04-23-11-38-56_SDU-03B-02_TECK2.JPG



overview facing west

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Station Id	SDU-03B-03	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-23 10:13	Sample Team Initials	MS
Sample Collected?	Y		
X	423021.4102 m		
Y	5401046.163 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-03-ICS-B	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 9:19	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03B-03

2015-04-23-10-11-40_SDU-03B-03_TECK2.JPG



overview facing west

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2015-04-23-10-11-32_SDU-03B-03_TECK2.JPG



groundsurface

2015-04-23-10-12-01_SDU-03B-03_TECK2.JPG



sample

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Station Id	SDU-03B-04	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-23 9:49	Sample Team Initials	MS

Sample Collected? Y
X 423028.197 m
Y 5401060.503 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-03-ICS-B	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 9:19	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03B-04

2015-04-23-09-53-31_SDU-03B-04_TECK2.JPG



sample

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2015-04-23-09-53-34_SDU-03B-04_TECK2.JPG



overview facing west

2015-04-23-09-53-56_SDU-03B-04_TECK2.JPG



groundsurface

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Station Id	SDU-03B-05	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-23 10:33	Sample Team Initials	MS
Sample Collected?	Y		
X	423009.7409 m		
Y	5401036.9198 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-03-ICS-B	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 9:19	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03B-05

2015-04-23-10-37-41_SDU-03B-05_TECK2.JPG



sample

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2015-04-23-10-36-10_SDU-03B-05_TECK2.JPG



groundsurface

2015-04-23-10-36-12_SDU-03B-05_TECK2.JPG



overview facing west

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Station Id	SDU-03B-06	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-23 9:08	Sample Team Initials	MS
Sample Collected?	Y		
X	423044.9456 m		
Y	5401075.95 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine to coarse sand fine to coarse gravel trace silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-03-ICS-B	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 9:19	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03B-06

2015-04-23-09-11-19_SDU-03B-06_TECK2.JPG



sample

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2015-04-23-09-11-56_SDU-03B-06_TECK2.JPG



groundsurface

2015-04-23-09-11-59_SDU-03B-06_TECK2.JPG



overview facing west

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Station Id SDU-03B-07 **Start Depth** 0 cm
Station Type Primary **End Depth** 15 cm
Collection DateTime 2015-04-23 15:17 **Sample Team Initials** MS

Sample Collected? Y
X 422892.8666 m
Y 5400942.884 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 5/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine to coarse sand some silt some decomposed organic material	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-03-ICS-B	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 9:19	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03B-07

2015-04-23-15-13-38_SDU-03B-07_TECK2.JPG



groundsurface

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2015-04-23-15-13-47_SDU-03B-07_TECK2.JPG



overview facing west

2015-04-23-15-13-52_SDU-03B-07_TECK2.JPG



sample

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Station Id	SDU-03B-08	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-23 14:22	Sample Team Initials	MS

Sample Collected? Y
X 422919.9448 m
Y 5400965.0745 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine to coarse sand little fine gravel trace silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-03-ICS-B	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 9:19	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03B-08

2015-04-23-14-30-16_SDU-03B-08_TECK2.JPG



sample

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2015-04-23-14-26-18_SDU-03B-08_TECK2.JPG



overview facing west

2015-04-23-14-26-31_SDU-03B-08_TECK2.JPG



groundsurface

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Station Id	SDU-03B-09	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-23 9:59	Sample Team Initials	MS

Sample Collected? Y
X 423022.7315 m
Y 5401051.03 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine sand with cobbles and trace silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-03-ICS-B	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 9:19	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03B-09

2015-04-23-10-01-26_SDU-03B-09_TECK2.JPG



sample

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2015-04-23-10-01-43_SDU-03B-09_TECK2.JPG



groundsurface

2015-04-23-10-01-51_SDU-03B-09_TECK2.JPG



overview facing west

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Station Id	SDU-03B-10	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-23 15:21	Sample Team Initials	MS

Sample Collected? Y
X 422875.0106 m
Y 5400940.133 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine to coarse sand little fine gravel trace silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-03-ICS-B	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 9:19	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03B-10

2015-04-23-15-22-59_SDU-03B-10_TECK2.JPG



sample

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2015-04-23-15-23-15_SDU-03B-10_TECK2.JPG



overview facing west

2015-04-23-15-23-22_SDU-03B-10_TECK2.JPG



groundsurface

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Station Id	SDU-03B-11	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-23 9:39	Sample Team Initials	MS
Sample Collected?	Y		
X	423033.146 m		
Y	5401055.805 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine to coarse gravel	Vegetation Present?	Y
Vegetation Type if Present	Grasses		

Station Comments

Sample Collected from Station

Sample Id	SDU-03-ICS-B	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 9:19	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03B-11

2015-04-23-09-43-40_SDU-03B-11_TECK2.JPG



sample

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2015-04-23-09-43-51_SDU-03B-11_TECK2.JPG



overview facing west

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Station Id	SDU-03B-12	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-23 9:19	Sample Team Initials	MS

Sample Collected? Y
X 423040.9814 m
Y 5401066.338 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Texture	Fine to coarse sand trace silt
Vegetation Present?	N	Vegetation Type if Present	N

Station Comments

Sample Collected from Station

Sample Id	SDU-03-ICS-B	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 9:19	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03B-12

2015-04-23-09-22-30_SDU-03B-12_TECK2.JPG



sample

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2015-04-23-09-22-46_SDU-03B-12_TECK2.JPG



groundsurface

2015-04-23-09-22-51_SDU-03B-12_TECK2.JPG



overviewfacing west

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Station Id	SDU-03B-13	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-23 9:29	Sample Team Initials	MS

Sample Collected? Y
X 423036.7277 m
Y 5401059.306 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-03-ICS-B	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 9:19	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03B-13

2015-04-23-09-32-56_SDU-03B-13_TECK2.JPG



sample

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2015-04-23-09-31-48_SDU-03B-13_TECK2.JPG



groundsurface

2015-04-23-09-32-02_SDU-03B-13_TECK2.JPG



overview facing west

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Station Id	SDU-03B-14	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-23 13:44	Sample Team Initials	MS

Sample Collected? Y
X 422934.2575 m
Y 5400982.52 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine to coarse sand little fine to coarse gravel	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-03-ICS-B	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 9:19	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03B-14

2015-04-23-13-47-29_SDU-03B-14_TECK2.JPG



groundsurface

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2015-04-23-13-47-33_SDU-03B-14_TECK2.JPG



2015-04-23-13-47-45_SDU-03B-14_TECK2.JPG



sample

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Station Id	SDU-03B-15	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-23 12:20	Sample Team Initials	MS
Sample Collected?	Y		
X	422963.5436 m		
Y	5401012.843 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-03-ICS-B	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 9:19	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03B-15

2015-04-23-12-25-00_SDU-03B-15_TECK2.JPG



sample

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2015-04-23-12-21-31_SDU-03B-15_TECK2.JPG



groundsurface

2015-04-23-12-21-47_SDU-03B-15_TECK2.JPG



overview facing west

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Station Id	SDU-03B-16	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-23 14:12	Sample Team Initials	MS
Sample Collected?	Y		
X	422921.4412 m		
Y	5400975.301 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-03-ICS-B	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 9:19	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03B-16

2015-04-23-14-17-50_SDU-03B-16_TECK2.JPG



sample

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2015-04-23-14-17-59_SDU-03B-16_TECK2.JPG



groundsurface

2015-04-23-14-18-02_SDU-03B-16_TECK2.JPG



overview facing west

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Station Id	SDU-03B-17	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-23 14:59	Sample Team Initials	MS

Sample Collected? Y
X 422895.7387 m
Y 5400952.352 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine to coarse sand little fine gravel trace silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-03-ICS-B	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 9:19	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03B-17

2015-04-23-15-02-59_SDU-03B-17_TECK2.JPG



groundsurface

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2015-04-23-15-03-01_SDU-03B-17_TECK2.JPG



overview facing west

2015-04-23-15-04-47_SDU-03B-17_TECK2.JPG



sample

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Station Id	SDU-03B-18	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-23 8:52	Sample Team Initials	MS
Sample Collected?	Y		
X	423049.9674 m		
Y	5401077.134 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine to coarse sand and gravel	Vegetation Present?	Y
Vegetation Type if Present	Pine needles		

Station Comments

Sample Collected from Station

Sample Id	SDU-03-ICS-B	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 9:19	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03B-18

2015-04-23-09-00-55_SDU-03B-18_TECK2.JPG



sample

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2015-04-23-08-58-40_SDU-03B-18_TECK2.JPG



overview facing west

2015-04-23-08-58-48_SDU-03B-18_TECK2.JPG



groundsurface

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Station Id	SDU-03B-19	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-23 13:54	Sample Team Initials	MS

Sample Collected? Y
X 422938.6747 m
Y 5400979.154 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine to coarse sand	Vegetation Present?	Y
Vegetation Type if Present	Moss and grass		

Station Comments

Sample Collected from Station

Sample Id	SDU-03-ICS-B	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 9:19	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03B-19

2015-04-23-14-00-27_SDU-03B-19_TECK2.JPG



sample

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2015-04-23-13-57-41_SDU-03B-19_TECK2.JPG



groundsurface

2015-04-23-13-57-50_SDU-03B-19_TECK2.JPG



overview facing west

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Station Id	SDU-03B-20	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-23 8:19	Sample Team Initials	MS
Sample Collected?	Y		
X	423085.8534 m		
Y	5401098.639 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand trace silt fine coarse gravel	Vegetation Present?	Y
Vegetation Type if Present	Pine needles		

Station Comments

Sample Collected from Station

Sample Id	SDU-03-ICS-B	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 9:19	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03B-20

2015-04-23-08-24-35_SDU-03B-20_TECK2.JPG



sample

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-23-08-25-13_SDU-03B-20_TECK2.JPG



groundsurface

2015-04-23-08-25-21_SDU-03B-20_TECK2.JPG



overview of facing west

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Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-03B-21	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-23 14:37	Sample Team Initials	MS
Sample Collected?	Y		
X	422904.9662 m		
Y	5400959.699 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine to coarse sand little fine gravel trace silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-03-ICS-B	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 9:19	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03B-21

2015-04-23-14-41-09_SDU-03B-21_TECK2.JPG



overview facing west

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2015-04-23-14-40-54_SDU-03B-21_TECK2.JPG



sample

2015-04-23-14-41-04_SDU-03B-21_TECK2.JPG



groundsurface

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Station Id	SDU-03B-22	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-23 10:20	Sample Team Initials	MS
Sample Collected?	Y		
X	423013.7013 m		
Y	5401048.796 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine to coarse gravel	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-03-ICS-B	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 9:19	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03B-22

2015-04-23-10-25-23_SDU-03B-22_TECK2.JPG



sample

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2015-04-23-10-25-31_SDU-03B-22_TECK2.JPG



overview facing west

2015-04-23-10-25-40_SDU-03B-22_TECK2.JPG



groundsurface

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Station Id	SDU-03B-23	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-23 12:08	Sample Team Initials	MS
Sample Collected?	Y		
X	422960.667 m		
Y	5401006.118 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-03-ICS-B	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 9:19	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03B-23

2015-04-23-12-13-15_SDU-03B-23_TECK2.JPG



sample

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2015-04-23-12-10-37_SDU-03B-23_TECK2.JPG



groundsurface

2015-04-23-12-10-51_SDU-03B-23_TECK2.JPG



overview facing west

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Station Id	SDU-03B-24	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-23 10:46	Sample Team Initials	MS

Sample Collected? Y
X 422992.6054 m
Y 5401022.0554 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine to coarse sand	Vegetation Present?	Y
Vegetation Type if Present	Grasses		

Station Comments

Sample Collected from Station

Sample Id	SDU-03-ICS-B	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 9:19	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03B-24

2015-04-23-10-49-25_SDU-03B-24_TECK2.JPG



overview facing west

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2015-04-23-10-49-38_SDU-03B-24_TECK2.JPG



groundsurface

2015-04-23-10-51-05_SDU-03B-24_TECK2.JPG



sample

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Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-03B-25	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-23 8:37	Sample Team Initials	MS
Sample Collected?	Y		
X	423083.7405 m		
Y	5401090.5151 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	10	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly silty sand	Vegetation Present?	Y
Vegetation Type if Present	Mosses and grasses		

Station Comments

Sample Collected from Station

Sample Id	SDU-03-ICS-B	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 9:19	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03B-25

2015-04-23-08-40-22_SDU-03B-25_TECK2.JPG



groundsurface

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2015-04-23-08-40-34_SDU-03B-25_TECK2.JPG



sample

2015-04-23-08-40-41_SDU-03B-25_TECK2.JPG



overview facing west

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Station Id	SDU-03B-26	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-23 14:03	Sample Team Initials	MS
Sample Collected?	Y		
X	422926.236 m		
Y	5400982.512 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine to coarse sand trace silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-03-ICS-B	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 9:19	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03B-26

2015-04-23-14-07-26_SDU-03B-26_TECK2.JPG



groundsurface

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2015-04-23-14-07-37_SDU-03B-26_TECK2.JPG



overview facing west

2015-04-23-14-08-22_SDU-03B-26_TECK2.JPG



sample

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Station Id	SDU-03B-27	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-23 13:23	Sample Team Initials	MS

Sample Collected? Y
X 422966.329 m
Y 5401001.8887 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-03-ICS-B	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 9:19	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03B-27

2015-04-23-13-29-54_SDU-03B-27_TECK2.JPG



sample

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2015-04-23-13-30-20_SDU-03B-27_TECK2.JPG



groundsurface

2015-04-23-13-30-41_SDU-03B-27_TECK2.JPG



overview facing west

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Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-03B-28	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-23 14:50	Sample Team Initials	MS

Sample Collected? Y
X 422898.5764 m
Y 5400958.005 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine to coarse sand little fine gravel trace silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

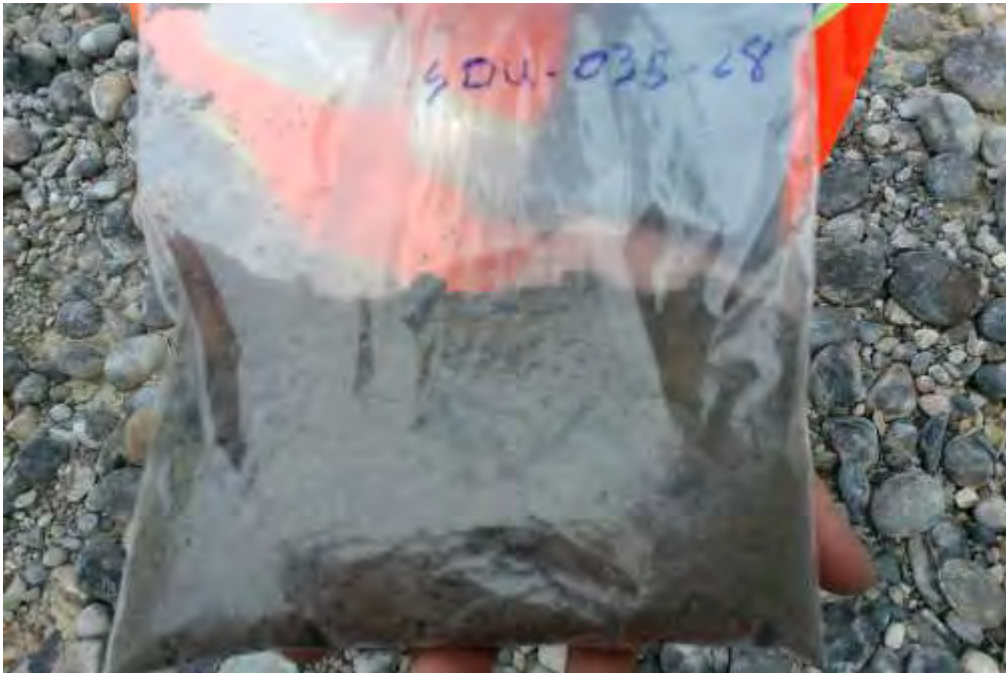
Sample Collected from Station

Sample Id	SDU-03-ICS-B	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 9:19	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03B-28

2015-04-23-14-54-55_SDU-03B-28_TECK2.JPG



sample

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2015-04-23-14-53-35_SDU-03B-28_TECK2.JPG



groundsurface

2015-04-23-14-53-40_SDU-03B-28_TECK2.JPG



overview facing west

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Station Id	SDU-03B-29	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-23 11:55	Sample Team Initials	MS
Sample Collected?	Y		
X	422976.0489 m		
Y	5401012.382 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments used core and scoop

Sample Collected from Station

Sample Id	SDU-03-ICS-B	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 9:19	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03B-29

2015-04-23-12-01-29_SDU-03B-29_TECK2.JPG



sample

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-23-11-58-59_SDU-03B-29_TECK2.JPG



groundsurface

2015-04-23-11-59-14_SDU-03B-29_TECK2.JPG



overview facing west

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Station Id	SDU-03B-30	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-23 13:34	Sample Team Initials	MS
Sample Collected?	Y		
X	422948.6318 m		
Y	5400999.494 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine to coarse sand trace silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-03-ICS-B	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 9:19	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03B-30

2015-04-23-13-39-05_SDU-03B-30_TECK2.JPG



sample

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2015-04-23-13-38-04_SDU-03B-30_TECK2.JPG



groundsurface

2015-04-23-13-38-10_SDU-03B-30_TECK2.JPG



overview facing west

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Station Id	SDU-03B-R01	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-03-ICS-B	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 9:19	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station SDU-03B-R01

No photos taken at this station. See station comments for more details.

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Station Id	SDU-03B-R02	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-03-ICS-B	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 9:19	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station SDU-03B-R02

No photos taken at this station. See station comments for more details.

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Station Id	SDU-03B-R03	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-03-ICS-B	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 9:19	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station SDU-03B-R03

No photos taken at this station. See station comments for more details.

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Station Id	SDU-03B-R04	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-03-ICS-B	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 9:19	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station SDU-03B-R04

No photos taken at this station. See station comments for more details.

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Station Id	SDU-03B-R05	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-03-ICS-B	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 9:19	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station SDU-03B-R05

No photos taken at this station. See station comments for more details.

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Station Id	SDU-03B-R06	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-03-ICS-B	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-24 9:19	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station SDU-03B-R06

No photos taken at this station. See station comments for more details.

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Station Id	SDU-03C-01	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-24 10:33	Sample Team Initials	MS
Sample Collected?	Y		
X	423036.258 m		
Y	5401060.706 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine to coarse sand little fine to coarse gravel trace silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-03-ICS-C	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-27 8:17	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03C-01

2015-04-24-10-37-24_SDU-03C-01_TECK2.JPG



sample

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-24-10-35-43_SDU-03C-01_TECK2.JPG



overview facing west

2015-04-24-10-36-10_SDU-03C-01_TECK2.JPG



groundsurface

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Station Id	SDU-03C-02	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-24 11:20	Sample Team Initials	MS

Sample Collected? Y
X 422986.5505 m
Y 5401024.921 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine to coarse sand little fine to coarse gravel trace silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-03-ICS-C	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-27 8:17	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03C-02

2015-04-24-11-23-08_SDU-03C-02_TECK2.JPG



sample

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2015-04-24-11-23-18_SDU-03C-02_TECK2.JPG



overview facing west

2015-04-24-11-23-26_SDU-03C-02_TECK2.JPG



groundsurface

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Station Id	SDU-03C-03	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-24 11:29	Sample Team Initials	MS

Sample Collected? Y
X 422972.2283 m
Y 5401015.581 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine to coarse sand little fine to coarse gravel trace silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-03-ICS-C	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-27 8:17	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03C-03

2015-04-24-11-31-29_SDU-03C-03_TECK2.JPG



sample

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Station Id	SDU-03C-04	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-24 9:38	Sample Team Initials	MS
Sample Collected?	Y		
X	423036.7412 m		
Y	5401066.103 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine to coarse sand little fine to coarse gravel trace silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-03-ICS-C	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-27 8:17	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03C-04

2015-04-24-09-42-20_SDU-03C-04_TECK2.JPG



sample

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2015-04-24-09-41-03_SDU-03C-04_TECK2.JPG



overview facing west

2015-04-24-09-40-58_SDU-03C-04_TECK2.JPG



groundsurface

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Station Id	SDU-03C-05	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-24 14:17	Sample Team Initials	MS
Sample Collected?	Y		
X	422885.3636 m		
Y	5400945.572 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand little silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-03-ICS-C	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-27 8:17	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03C-05

2015-04-24-14-19-07_SDU-03C-05_TECK2.JPG



sample

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2015-04-24-14-19-16_SDU-03C-05_TECK2.JPG



overview facing west

2015-04-24-14-19-53_SDU-03C-05_TECK2.JPG



groundsurface

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Bossburg Flat Beach Refined Sediment and Soil Study

Station Id	SDU-03C-06	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-24 11:10	Sample Team Initials	MS

Sample Collected? Y
X 423019.4646 m
Y 5401042.5437 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine to coarse sand little fine to coarse gravel trace silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-03-ICS-C	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-27 8:17	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03C-06

2015-04-24-11-13-24_SDU-03C-06_TECK2.JPG



overview facing west

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2015-04-24-11-13-44_SDU-03C-06_TECK2.JPG



groundsurface

2015-04-24-11-14-17_SDU-03C-06_TECK2.JPG



sample

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-03C-07	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-24 8:54	Sample Team Initials	MS
Sample Collected?	Y		
X	423067.9103 m		
Y	5401079.035 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine to coarse sand little fine to coarse gravel trace silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-03-ICS-C	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-27 8:17	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03C-07

2015-04-24-09-00-28_SDU-03C-07_TECK2.JPG



sample

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2015-04-24-08-57-28_SDU-03C-07_TECK2.JPG



overview facing west

2015-04-24-08-58-30_SDU-03C-07_TECK2.JPG



groundsurface

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Bossburg Flat Beach Refined Sediment and Soil Study

Station Id	SDU-03C-08	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-24 11:00	Sample Team Initials	MS

Sample Collected? Y
X 423008.3063 m
Y 5401036.051 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	Y	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine to coarse gravel little fine to coarse silt trace silt and organics	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-03-ICS-C	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-27 8:17	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03C-08

2015-04-24-11-01-30_SDU-03C-08_TECK2.JPG



groundsurface

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2015-04-24-11-01-47_SDU-03C-08_TECK2.JPG



sample

2015-04-24-11-01-53_SDU-03C-08_TECK2.JPG



overview facing west

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Station Id	SDU-03C-09	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-24 9:21	Sample Team Initials	MS

Sample Collected? Y
X 423049.5425 m
Y 5401070.3134 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine to coarse sand little fine to coarse gravel trace silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments dense cobble surface moved 1m south from center

Sample Collected from Station

Sample Id	SDU-03-ICS-C	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-27 8:17	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03C-09

2015-04-24-09-31-08_SDU-03C-09_TECK2.JPG



overview facing west

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2015-04-24-09-31-54_SDU-03C-09_TECK2.JPG



groundsurface

2015-04-24-09-32-55_SDU-03C-09_TECK2.JPG



sample

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Station Id	SDU-03C-10	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-24 8:26	Sample Team Initials	MS

Sample Collected? Y
X 423087.5042 m
Y 5401096.019 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine to coarse sand little fine to coarse gravel trace silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-03-ICS-C	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-27 8:17	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03C-10

2015-04-24-08-29-44_SDU-03C-10_TECK2.JPG



groundsurface

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2015-04-24-08-29-55_SDU-03C-10_TECK2.JPG



sample

2015-04-24-08-30-05_SDU-03C-10_TECK2.JPG



overview facing west

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Station Id	SDU-03C-11	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-24 13:25	Sample Team Initials	MS

Sample Collected? Y
X 422949.8004 m
Y 5400997.882 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine to coarse sand little fine to coarse gravel trace silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-03-ICS-C	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-27 8:17	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03C-11

2015-04-24-13-27-42_SDU-03C-11_TECK2.JPG



groundsurface

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2015-04-24-13-27-46_SDU-03C-11_TECK2.JPG



overview facing west

2015-04-24-13-28-42_SDU-03C-11_TECK2.JPG



sample; this baggie was mislabelled. Based on the date and time stamp of this photo compared with the log book and database entry form, this sample is SDU-03C-11 not SDU-03B-11.

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Station Id	SDU-03C-12	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-24 13:39	Sample Team Initials	MS

Sample Collected? Y
X 422924.522 m
Y 5400976.805 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine to coarse sand little fine to coarse gravel trace silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-03-ICS-C	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-27 8:17	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03C-12

2015-04-24-13-42-54_SDU-03C-12_TECK2.JPG



groundsurface

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2015-04-24-13-42-58_SDU-03C-12_TECK2.JPG



sample

2015-04-24-13-43-08_SDU-03C-12_TECK2.JPG



overview facing west

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Station Id	SDU-03C-13	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-24 9:14	Sample Team Initials	MS

Sample Collected? Y
X 423050.2207 m
Y 5401075.115 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine to coarse sand little fine to coarse gravel trace silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-03-ICS-C	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-27 8:17	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments composited into 1 bucket. No reserve locations used.		

Photos Collected from Station SDU-03C-13

2015-04-24-09-16-24_SDU-03C-13_TECK2.JPG



sample

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2015-04-24-09-16-32_SDU-03C-13_TECK2.JPG



overview facing west

2015-04-24-09-16-47_SDU-03C-13_TECK2.JPG



groundsurface

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Station Id	SDU-03C-14	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-24 11:59	Sample Team Initials	MS

Sample Collected? Y
X 422954.6463 m
Y 5401009.867 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine to coarse sand little fine to coarse gravel trace silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-03-ICS-C	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-27 8:17	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03C-14

2015-04-24-12-00-44_SDU-03C-14_TECK2.JPG



sample; this baggie was mislabelled. Based on the date and time stamp of this photo compared with the log book and database entry form, this sample is SDU-03C-14 not SDU-03B-14.

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2015-04-24-12-00-55_SDU-03C-14_TECK2.JPG



overview facing west

2015-04-24-12-01-03_SDU-03C-14_TECK2.JPG



groundsurface

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Station Id	SDU-03C-15	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-24 10:49	Sample Team Initials	MS
Sample Collected?	Y		
X	423010.7234 m		
Y	5401042.769 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine to coarse sand little fine gravel trace silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-03-ICS-C	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-27 8:17	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03C-15

2015-04-24-10-50-48_SDU-03C-15_TECK2.JPG



sample

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2015-04-24-10-51-05_SDU-03C-15_TECK2.JPG



groundsurface

2015-04-24-10-51-16_SDU-03C-15_TECK2.JPG



overview facing west

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Station Id	SDU-03C-16	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-24 10:42	Sample Team Initials	MS

Sample Collected? Y
X 423023.4044 m
Y 5401056.867 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine to coarse sand little fine to coarse gravel trace silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-03-ICS-C	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-27 8:17	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03C-16

2015-04-24-10-44-31_SDU-03C-16_TECK2.JPG



sample

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-24-10-44-40_SDU-03C-16_TECK2.JPG



groundsurface

2015-04-24-10-44-44_SDU-03C-16_TECK2.JPG



overview facing west

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Station Id	SDU-03C-17	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-24 8:47	Sample Team Initials	MS
Sample Collected?	Y		
X	423063.6804 m		
Y	5401084.215 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine to coarse sand little fine to coarse gravel trace silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-03-ICS-C	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-27 8:17	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments composited into 1 bucket. No reserve locations used.		

Photos Collected from Station SDU-03C-17

2015-04-24-08-50-56_SDU-03C-17_TECK2.JPG



sample

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2015-04-24-08-51-09_SDU-03C-17_TECK2.JPG



groundsurface

2015-04-24-08-51-17_SDU-03C-17_TECK2.JPG



overview facing west

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Station Id	SDU-03C-18	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-24 14:05	Sample Team Initials	MS

Sample Collected? Y
X 422899.6116 m
Y 5400958.323 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine to coarse sand little fine to coarse gravel trace silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-03-ICS-C	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-27 8:17	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03C-18

2015-04-24-14-09-22_SDU-03C-18_TECK2.JPG



sample

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2015-04-24-14-09-31_SDU-03C-18_TECK2.JPG



overview facing west

2015-04-24-14-09-41_SDU-03C-18_TECK2.JPG



groundsurface

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Station Id	SDU-03C-19	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-24 13:18	Sample Team Initials	MS

Sample Collected? Y
X 422957.6026 m
Y 5401001.917 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine to coarse sand little fine to coarse gravel trace silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-03-ICS-C	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-27 8:17	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03C-19

2015-04-24-13-22-45_SDU-03C-19_TECK2.JPG



sample

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2015-04-24-13-20-53_SDU-03C-19_TECK2.JPG



overview facing west

2015-04-24-13-21-01_SDU-03C-19_TECK2.JPG



groundsurface

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Station Id	SDU-03C-20	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-24 8:16	Sample Team Initials	MS
Sample Collected?	Y		
X	423078.0252 m		
Y	5401099.884 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine to coarse sand trace silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-03-ICS-C	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-27 8:17	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03C-20

2015-04-24-08-21-49_SDU-03C-20_TECK2.JPG



sample

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2015-04-24-08-20-32_SDU-03C-20_TECK2.JPG



groundsurface

2015-04-24-08-20-37_SDU-03C-20_TECK2.JPG



overview facing west

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Station Id	SDU-03C-21	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-24 13:57	Sample Team Initials	MS

Sample Collected? Y
X 422906.5379 m
Y 5400959.685 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine to coarse sand little fine to coarse gravel trace silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-03-ICS-C	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-27 8:17	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03C-21

2015-04-24-14-00-33_SDU-03C-21_TECK2.JPG



sample

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2015-04-24-14-00-51_SDU-03C-21_TECK2.JPG



groundsurface

2015-04-24-14-00-55_SDU-03C-21_TECK2.JPG



overview facing west

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Station Id	SDU-03C-22	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-24 8:33	Sample Team Initials	MS
Sample Collected?	Y		
X	423079.9233 m		
Y	5401093.279 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine to coarse sand little fine to coarse gravel trace silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-03-ICS-C	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-27 8:17	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments composited into 1 bucket. No reserve locations used.		

Photos Collected from Station SDU-03C-22

2015-04-24-08-36-28_SDU-03C-22_TECK2.JPG



sample

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2015-04-24-08-36-46_SDU-03C-22_TECK2.JPG



groundsurface

2015-04-24-08-36-50_SDU-03C-22_TECK2.JPG



overview facing west

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Station Id	SDU-03C-23	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-24 11:41	Sample Team Initials	MS

Sample Collected? Y
X 422978.4225 m
Y 5401011.2871 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine to coarse sand little fine to coarse gravel trace silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-03-ICS-C	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-27 8:17	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03C-23

2015-04-24-11-46-18_SDU-03C-23_1619LP-WA70047.JPG



sample; this baggie was mislabelled. Based on the date and time stamp of this photo compared with the log book and database entry form, this sample is SDU-03C-23 not SDU-03B-23.

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2015-04-24-11-44-49_SDU-03C-23_TECK2.JPG



groundsurface

2015-04-24-11-44-55_SDU-03C-23_TECK2.JPG



overview facing west

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Station Id	SDU-03C-24	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-24 13:50	Sample Team Initials	MS

Sample Collected? Y
X 422917.1502 m
Y 5400964.564 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine to coarse sand little fine to coarse gravel trace silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-03-ICS-C	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-27 8:17	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03C-24

2015-04-24-13-55-06_SDU-03C-24_TECK2.JPG



groundsurface

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2015-04-24-13-52-42_SDU-03C-24_TECK2.JPG



sample

2015-04-24-13-52-48_SDU-03C-24_TECK2.JPG



overview facing west

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Station Id	SDU-03C-25	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-24 8:40	Sample Team Initials	MS
Sample Collected?	Y		
X	423070.9113 m		
Y	5401086.408 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine to coarse sand little fine to coarse gravel trace silt	Vegetation Present?	Y
Vegetation Type if Present	Grasses		

Station Comments

Sample Collected from Station

Sample Id	SDU-03-ICS-C	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-27 8:17	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03C-25

2015-04-24-08-44-20_SDU-03C-25_TECK2.JPG



sample

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2015-04-24-08-43-32_SDU-03C-25_TECK2.JPG



groundsurface

2015-04-24-08-43-35_SDU-03C-25_TECK2.JPG



overview facing west

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Station Id	SDU-03C-26	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-24 13:33	Sample Team Initials	MS

Sample Collected? Y
X 422935.2778 m
Y 5400985.601 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 5/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine to coarse sand little fine to coarse gravel trace silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-03-ICS-C	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-27 8:17	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03C-26

2015-04-24-13-35-25_SDU-03C-26_TECK2.JPG



sample

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2015-04-24-13-35-29_SDU-03C-26_TECK2.JPG



overview facing west

2015-04-24-13-35-33_SDU-03C-26_TECK2.JPG



groundsurface

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Station Id	SDU-03C-27	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-24 14:29	Sample Team Initials	MS

Sample Collected? Y
X 422887.1182 m
Y 5400939.376 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand some silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-03-ICS-C	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-27 8:17	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03C-27

2015-04-24-14-34-52_SDU-03C-27_1619LP-WA70047.JPG

overview facing west

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2015-04-24-14-30-53_SDU-03C-27_TECK2.JPG



sample

2015-04-24-14-31-25_SDU-03C-27_TECK2.JPG



groundsurface

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Station Id	SDU-03C-28	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-24 9:03	Sample Team Initials	MS
Sample Collected?	Y		
X	423055.8233 m		
Y	5401077.229 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine to coarse sand little fine to coarse gravel trace silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-03-ICS-C	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-27 8:17	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments composited into 1 bucket. No reserve locations used.		

Photos Collected from Station SDU-03C-28

2015-04-24-09-08-11_SDU-03C-28_TECK2.JPG



groundsurface

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2015-04-24-09-08-16_SDU-03C-28_TECK2.JPG



sample

2015-04-24-09-08-19_SDU-03C-28_TECK2.JPG



overview facing west

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Station Id	SDU-03C-29	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-24 10:26	Sample Team Initials	MS

Sample Collected? Y
X 423031.0184 m
Y 5401063.652 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine to coarse sand little fine gravel trace silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-03-ICS-C	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-27 8:17	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03C-29

2015-04-24-10-27-41_SDU-03C-29_TECK2.JPG



sample

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2015-04-24-10-27-58_SDU-03C-29_TECK2.JPG



groundsurface

2015-04-24-10-28-02_SDU-03C-29_TECK2.JPG



overview facing west

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Station Id	SDU-03C-30	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-24 11:50	Sample Team Initials	MS
Sample Collected?	Y		
X	422962.4279 m		
Y	5401012.218 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine to coarse sand little fine to coarse gravel trace silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-03-ICS-C	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-27 8:17	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-03C-30

2015-04-24-11-53-35_SDU-03C-30_TECK2.JPG



sample

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2015-04-24-11-53-39_SDU-03C-30_TECK2.JPG



overview facing west

2015-04-24-11-53-50_SDU-03C-30_TECK2.JPG



groundsurface

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-03C-R01	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-03-ICS-C	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-27 8:17	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments composited into 1 bucket. No reserve locations used.		

Photos Collected from Station SDU-03C-R01

No photos taken at this station. See station comments for more details.

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-03C-R02	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-03-ICS-C	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-27 8:17	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments composited into 1 bucket. No reserve locations used.		

Photos Collected from Station SDU-03C-R02

No photos taken at this station. See station comments for more details.

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-03C-R03	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-03-ICS-C	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-27 8:17	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments composited into 1 bucket. No reserve locations used.		

Photos Collected from Station SDU-03C-R03

No photos taken at this station. See station comments for more details.

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Station Id	SDU-03C-R04	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-03-ICS-C	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-27 8:17	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments composited into 1 bucket. No reserve locations used.		

Photos Collected from Station SDU-03C-R04

No photos taken at this station. See station comments for more details.

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Station Id	SDU-03C-R05	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-03-ICS-C	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-27 8:17	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments composited into 1 bucket. No reserve locations used.		

Photos Collected from Station SDU-03C-R05

No photos taken at this station. See station comments for more details.

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Station Id	SDU-03C-R06	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-03-ICS-C	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-27 8:17	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments composited into 1 bucket. No reserve locations used.		

Photos Collected from Station SDU-03C-R06

No photos taken at this station. See station comments for more details.

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Station Id	SDU-04-01	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-02 16:14	Sample Team Initials	MS
Sample Collected?	Y		
X	422642.4544 m		
Y	5400686.2301 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand fine to coarse gravel	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments scoop used for 20%

Sample Collected from Station

Sample Id	SDU-04-ICS	Decision Unit	Sediment Decision Unit 4
Sample Date Time	2015-05-05 7:55	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 1 reserve, SDU-04-R04, used for SDU-04-10.		

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Photos Collected from Station SDU-04-01

2015-05-02-16-16-09_SDU-04-01_TECK2.JPG



overview facing south

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2015-05-02-16-16-40_SDU-04-01_TECK2.JPG



sample

2015-05-02-16-16-46_SDU-04-01_TECK2.JPG



groundsurface

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Station Id	SDU-04-02	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-04 9:43	Sample Team Initials	AP

Sample Collected? Y
X 422686.8503 m
Y 5400780.1904 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles and boulders
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	65	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on lower beach

Sample Collected from Station

Sample Id	SDU-04-ICS	Decision Unit	Sediment Decision Unit 4
Sample Date Time	2015-05-05 7:55	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 1 reserve, SDU-04-R04, used for SDU-04-10.		

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Photos Collected from Station SDU-04-02

2015-05-04-09-32-52_SDU-04-02_TECK3.JPG



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2015-05-04-09-33-34_SDU-04-02_TECK3.JPG



vne

2015-05-04-09-40-00_SDU-04-02_TECK3.JPG



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Station Id	SDU-04-03	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-04 11:21	Sample Team Initials	AP

Sample Collected? Y
X 422635.9182 m
Y 5400708.9214 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles and boulders
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		
Station Comments	located on lower beach		

Sample Collected from Station

Sample Id	SDU-04-ICS	Decision Unit	Sediment Decision Unit 4
Sample Date Time	2015-05-05 7:55	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 1 reserve, SDU-04-R04, used for SDU-04-10.		

Photos Collected from Station SDU-04-03

2015-05-04-11-13-32_SDU-04-03_TECK3.JPG



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2015-05-04-11-14-12_SDU-04-03_TECK3.JPG



vne

2015-05-04-11-18-23_SDU-04-03_TECK3.JPG



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Station Id	SDU-04-04	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-02 15:28	Sample Team Initials	MS
Sample Collected?	Y		
X	422657.5155 m		
Y	5400728.4612 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand fine to coarse gravel	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments scoop used to collect approximately 10%

Sample Collected from Station

Sample Id	SDU-04-ICS	Decision Unit	Sediment Decision Unit 4
Sample Date Time	2015-05-05 7:55	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 1 reserve, SDU-04-R04, used for SDU-04-10.		

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Photos Collected from Station SDU-04-04

2015-05-02-15-30-10_SDU-04-04_TECK2.JPG



sample

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2015-05-02-15-30-15_SDU-04-04_TECK2.JPG



overview facing south

2015-05-02-15-30-37_SDU-04-04_TECK2.JPG



groundsurface

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Station Id	SDU-04-05	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-04 13:54	Sample Team Initials	AP

Sample Collected? Y
X 422609.1973 m
Y 5400643.4906 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles and boulders
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine to coarse sand with silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on upper beach

Sample Collected from Station

Sample Id	SDU-04-ICS	Decision Unit	Sediment Decision Unit 4
Sample Date Time	2015-05-05 7:55	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 1 reserve, SDU-04-R04, used for SDU-04-10.		

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Photos Collected from Station SDU-04-05

2015-05-04-13-48-28_SDU-04-05_TECK3.JPG



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2015-05-04-13-49-04_SDU-04-05_TECK3.JPG



vne

2015-05-04-13-51-25_SDU-04-05_TECK3.JPG



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Station Id	SDU-04-06	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-04 13:02	Sample Team Initials	AP

Sample Collected? Y
X 422621.3075 m
Y 5400673.2308 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles and boulders
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located mid beach

Sample Collected from Station

Sample Id	SDU-04-ICS	Decision Unit	Sediment Decision Unit 4
Sample Date Time	2015-05-05 7:55	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 1 reserve, SDU-04-R04, used for SDU-04-10.		

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Photos Collected from Station SDU-04-06

2015-05-04-12-52-00_SDU-04-06_TECK3.JPG



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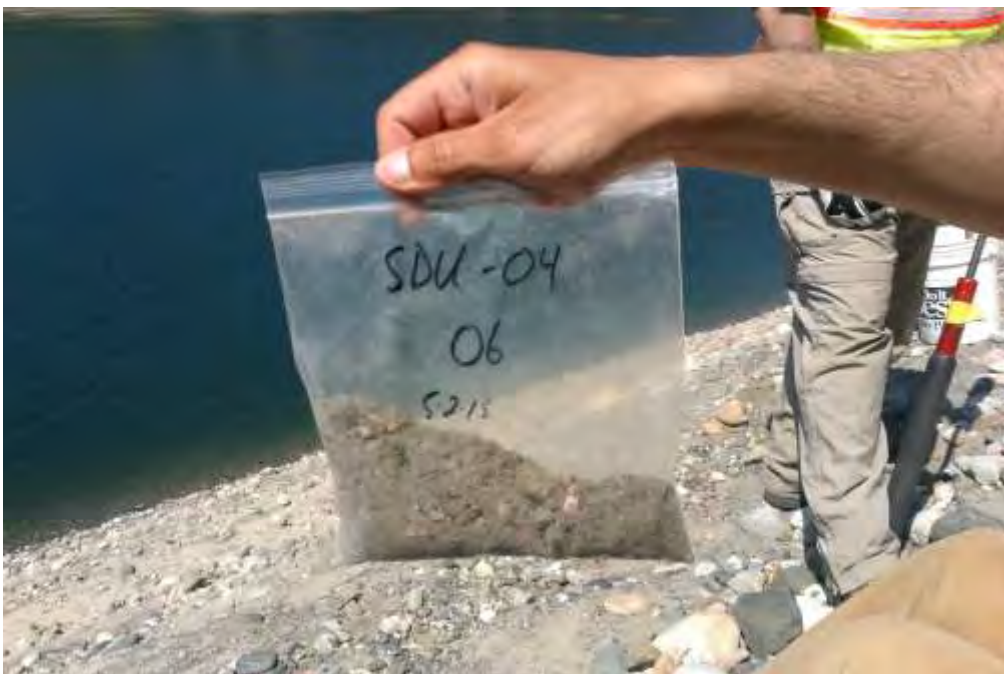
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2015-05-04-12-52-23_SDU-04-06_TECK3.JPG



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2015-05-04-12-59-15_SDU-04-06_TECK3.JPG



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Station Id	SDU-04-07	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-04 11:34	Sample Team Initials	AP

Sample Collected? Y
X 422633.9309 m
Y 5400698.8015 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles and boulders
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine sand with silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on mid beach

Sample Collected from Station

Sample Id	SDU-04-ICS	Decision Unit	Sediment Decision Unit 4
Sample Date Time	2015-05-05 7:55	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 1 reserve, SDU-04-R04, used for SDU-04-10.		

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Photos Collected from Station SDU-04-07

2015-05-04-11-26-07_SDU-04-07_TECK3.JPG



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2015-05-04-11-27-34_SDU-04-07_TECK3.JPG



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2015-05-04-11-30-32_SDU-04-07_TECK3.JPG



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Station Id	SDU-04-08	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-04 14:31	Sample Team Initials	AP

Sample Collected? Y
X 422597.2509 m
Y 5400617.9209 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles and boulders
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	60	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly very fine sand with trace silt	Vegetation Present?	N
Vegetation Type if Present	N		
Station Comments	located on lower beach		

Sample Collected from Station

Sample Id	SDU-04-ICS	Decision Unit	Sediment Decision Unit 4
Sample Date Time	2015-05-05 7:55	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 1 reserve, SDU-04-R04, used for SDU-04-10.		

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Photos Collected from Station SDU-04-08

2015-05-04-14-22-15_SDU-04-08_TECK3.JPG



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2015-05-04-14-23-27_SDU-04-08_TECK3.JPG



vne

2015-05-04-14-26-13_SDU-04-08_TECK3.JPG



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Station Id	SDU-04-09	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-04 13:27	Sample Team Initials	AP

Sample Collected? Y
X 422610.4005 m
Y 5400664.822 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 100
Shells Presence N
Surface Debris Present? N
Texture Gravelly fine to coarse sand
Vegetation Type if Present N

Anthropogenic Changes Present? N
Color 10YR 4/2
Debris Presence Cobbles and boulders
Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? N

Station Comments located on bottom of slope

Sample Collected from Station

Sample Id	SDU-04-ICS	Decision Unit	Sediment Decision Unit 4
Sample Date Time	2015-05-05 7:55	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 1 reserve, SDU-04-R04, used for SDU-04-10.		

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Photos Collected from Station SDU-04-09

2015-05-04-13-17-52_SDU-04-09_TECK3.JPG



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2015-05-04-13-22-02_SDU-04-09_TECK3.JPG



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Station Id	SDU-04-10	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime	2015-05-02 14:33	Sample Team Initials	MS
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments not sampled; steep 50 degree cobble slope and dead tree

Sample Collected from Station

Sample Id	SDU-04-ICS	Decision Unit	Sediment Decision Unit 4
Sample Date Time	2015-05-05 7:55	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 1 reserve, SDU-04-R04, used for SDU-04-10.		

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Photos Collected from Station SDU-04-10

2015-05-02-14-34-17_SDU-04-10_TECK2.JPG



overview facing south

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Station Id	SDU-04-11	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-04 13:12	Sample Team Initials	AP

Sample Collected? Y
X 422622.5009 m
Y 5400662.7728 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles and boulders
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine to coarse sand with silt	Vegetation Present?	N
Vegetation Type if Present	N		
Station Comments	located mid slope		

Sample Collected from Station

Sample Id	SDU-04-ICS	Decision Unit	Sediment Decision Unit 4
Sample Date Time	2015-05-05 7:55	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 1 reserve, SDU-04-R04, used for SDU-04-10.		

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Photos Collected from Station SDU-04-11

2015-05-04-13-05-40_SDU-04-11_TECK3.JPG



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2015-05-04-13-06-15_SDU-04-11_TECK3.JPG



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2015-05-04-13-10-21_SDU-04-11_TECK3.JPG



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Station Id	SDU-04-12	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-04 14:06	Sample Team Initials	AP

Sample Collected? Y
X 422600.4578 m
Y 5400636.4184 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 100
Shells Presence N
Surface Debris Present? N
Texture Gravelly very fine sand with trace silt
Vegetation Type if Present N

Anthropogenic Changes Present? N
Color 10YR 4/2
Debris Presence Cobbles and boulders
Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? N

Station Comments located on lower beach

Sample Collected from Station

Sample Id	SDU-04-ICS	Decision Unit	Sediment Decision Unit 4
Sample Date Time	2015-05-05 7:55	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 1 reserve, SDU-04-R04, used for SDU-04-10.		

Photos Collected from Station SDU-04-12

2015-05-04-13-59-23_SDU-04-12_TECK3.JPG



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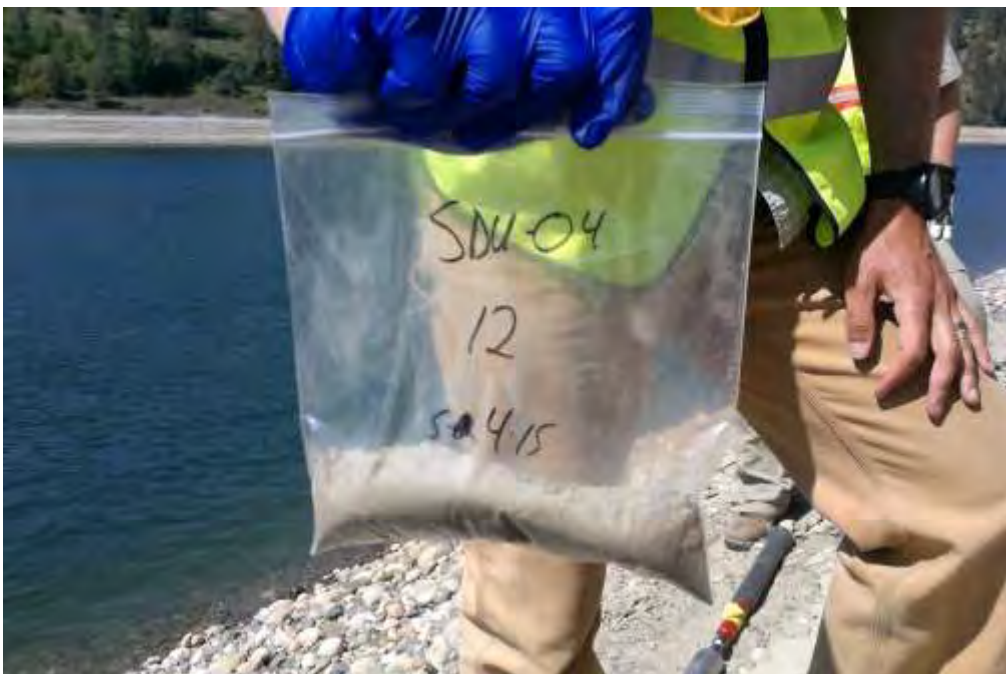
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ICS Sample Collection Report
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2015-05-04-13-59-53_SDU-04-12_TECK3.JPG



vne

2015-05-04-14-03-26_SDU-04-12_TECK3.JPG



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Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-04-13	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-04 9:56	Sample Team Initials	AP

Sample Collected? Y
X 422672.1642 m
Y 5400766.5371 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles and boulders
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on lower beach

Sample Collected from Station

Sample Id	SDU-04-ICS	Decision Unit	Sediment Decision Unit 4
Sample Date Time	2015-05-05 7:55	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 1 reserve, SDU-04-R04, used for SDU-04-10.		

Photos Collected from Station SDU-04-13

2015-05-04-09-48-54_SDU-04-13_TECK3.JPG



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Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-04-09-50-02_SDU-04-13_TECK3.JPG



vne

2015-05-04-09-53-41_SDU-04-13_TECK3.JPG



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ICS Sample Collection Report
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Station Id	SDU-04-14	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-04 14:42	Sample Team Initials	AP
Sample Collected?	Y		
X	422617.2235 m		
Y	5400628.9754 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles and boulders
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	75	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly very fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on upper beach

Sample Collected from Station

Sample Id	SDU-04-ICS	Decision Unit	Sediment Decision Unit 4
Sample Date Time	2015-05-05 7:55	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 1 reserve, SDU-04-R04, used for SDU-04-10.		

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Photos Collected from Station SDU-04-14

2015-05-04-14-36-16_SDU-04-14_TECK3.JPG



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Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-04-14-36-33_SDU-04-14_TECK3.JPG



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2015-05-04-14-39-29_SDU-04-14_TECK3.JPG



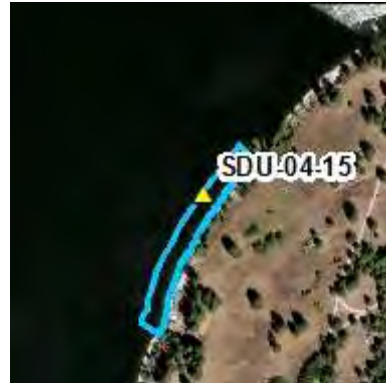
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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-04-15	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-04 10:38	Sample Team Initials	AP

Sample Collected? Y
X 422655.0718 m
Y 5400741.4856 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles and boulders
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on lower beach

Sample Collected from Station

Sample Id	SDU-04-ICS	Decision Unit	Sediment Decision Unit 4
Sample Date Time	2015-05-05 7:55	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 1 reserve, SDU-04-R04, used for SDU-04-10.		

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Photos Collected from Station SDU-04-15

2015-05-02-15-56-44_SDU-04-15_TECK3.JPG



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2015-05-02-15-46-58_SDU-04-15_TECK3.JPG



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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-04-16	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-04 14:53	Sample Team Initials	AP
Sample Collected?	Y		
X	422614.9399 m		
Y	5400617.9 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	gley 2 4/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles and boulders
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Sandy silt with clay	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on upper beach

Sample Collected from Station

Sample Id	SDU-04-ICS	Decision Unit	Sediment Decision Unit 4
Sample Date Time	2015-05-05 7:55	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 1 reserve, SDU-04-R04, used for SDU-04-10.		

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Photos Collected from Station SDU-04-16

2015-05-04-14-46-17_SDU-04-16_TECK3.JPG



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Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-04-14-47-22_SDU-04-16_TECK3.JPG



vne

2015-05-04-14-51-00_SDU-04-16_TECK3.JPG



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ICS Sample Collection Report
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Station Id	SDU-04-17	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-04 11:50	Sample Team Initials	AP
Sample Collected?	Y		
X	422624.7772 m		
Y	5400690.704 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles and boulders
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	60	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine sand with silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on lower beach

Sample Collected from Station

Sample Id	SDU-04-ICS	Decision Unit	Sediment Decision Unit 4
Sample Date Time	2015-05-05 7:55	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 1 reserve, SDU-04-R04, used for SDU-04-10.		

Photos Collected from Station SDU-04-17

2015-05-04-11-40-24_SDU-04-17_TECK3.JPG



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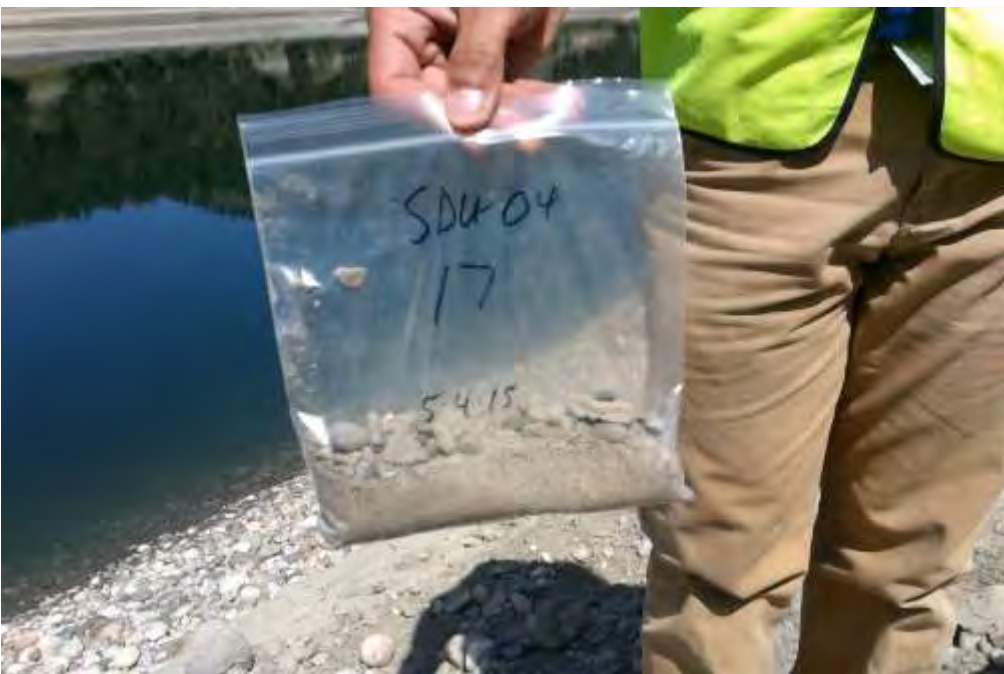
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Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-04-11-40-42_SDU-04-17_TECK3.JPG



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2015-05-04-11-48-29_SDU-04-17_TECK3.JPG



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Station Id	SDU-04-18	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-02 14:55	Sample Team Initials	MS

Sample Collected? Y
X 422682.538 m
Y 5400770.1108 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	Y	Surface Debris Removed Prior to Sampling?	cobble moved
Texture	Silty fine to coarse sandfine to coarse gravel	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments 1.34m at 90 degrees

Sample Collected from Station

Sample Id	SDU-04-ICS	Decision Unit	Sediment Decision Unit 4
Sample Date Time	2015-05-05 7:55	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 1 reserve, SDU-04-R04, used for SDU-04-10.		

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Photos Collected from Station SDU-04-18

2015-05-02-14-56-50_SDU-04-18_TECK2.JPG



sample

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-02-14-57-09_SDU-04-18_TECK2.JPG



groundsurface

2015-05-02-14-57-23_SDU-04-18_TECK2.JPG



overview facing south

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Station Id	SDU-04-19	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-02 16:01	Sample Team Initials	MS
Sample Collected?	Y		
X	422656.1888 m		
Y	5400714.1608 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-04-ICS	Decision Unit	Sediment Decision Unit 4
Sample Date Time	2015-05-05 7:55	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 1 reserve, SDU-04-R04, used for SDU-04-10.		

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Photos Collected from Station SDU-04-19

2015-05-02-16-04-12_SDU-04-19_TECK2.JPG



sample

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2015-05-02-16-04-27_SDU-04-19_TECK2.JPG



groundsurface

2015-05-02-16-04-59_SDU-04-19_TECK2.JPG



overview facing south

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Station Id	SDU-04-20	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-02 16:09	Sample Team Initials	MS

Sample Collected? Y
X 422645.4187 m
Y 5400699.31 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N

Station Comments

Sample Collected from Station

Sample Id	SDU-04-ICS	Decision Unit	Sediment Decision Unit 4
Sample Date Time	2015-05-05 7:55	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 1 reserve, SDU-04-R04, used for SDU-04-10.		

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Photos Collected from Station SDU-04-20

2015-05-02-16-10-22_SDU-04-20_TECK2.JPG



sample

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2015-05-02-16-10-29_SDU-04-20_TECK2.JPG



overview facing south

2015-05-02-16-10-45_SDU-04-20_TECK2.JPG



groundsurface

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Station Id	SDU-04-21	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-04 15:04	Sample Team Initials	AP

Sample Collected? Y
X 422605.6303 m
Y 5400606.0595 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	50	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand with gravel	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on upper beach

Sample Collected from Station

Sample Id	SDU-04-ICS	Decision Unit	Sediment Decision Unit 4
Sample Date Time	2015-05-05 7:55	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 1 reserve, SDU-04-R04, used for SDU-04-10.		

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Photos Collected from Station SDU-04-21

2015-05-04-14-56-55_SDU-04-21_TECK3.JPG



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2015-05-04-14-57-18_SDU-04-21_TECK3.JPG



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2015-05-04-15-01-09_SDU-04-21_TECK3.JPG



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Station Id	SDU-04-22	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-02 15:50	Sample Team Initials	MS

Sample Collected? Y
X 422677.2509 m
Y 5400747.2603 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments scoop used to recover 20%

Sample Collected from Station

Sample Id	SDU-04-ICS	Decision Unit	Sediment Decision Unit 4
Sample Date Time	2015-05-05 7:55	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 1 reserve, SDU-04-R04, used for SDU-04-10.		

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Photos Collected from Station SDU-04-22

2015-05-02-15-53-17_SDU-04-22_TECK2.JPG



sample

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2015-05-02-15-53-26_SDU-04-22_TECK2.JPG



overview facing north

2015-05-02-15-54-09_SDU-04-22_TECK2.JPG



groundsurface

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Station Id	SDU-04-23	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-04 13:41	Sample Team Initials	AP

Sample Collected? Y
X 422619.4217 m
Y 5400651.0581 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	gley 2 4/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles and boulders
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Sandy silt with clay	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located mid slope

Sample Collected from Station

Sample Id	SDU-04-ICS	Decision Unit	Sediment Decision Unit 4
Sample Date Time	2015-05-05 7:55	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 1 reserve, SDU-04-R04, used for SDU-04-10.		

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Photos Collected from Station SDU-04-23

2015-05-04-13-31-57_SDU-04-23_TECK3.JPG



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2015-05-04-13-38-18_SDU-04-23_TECK3.JPG



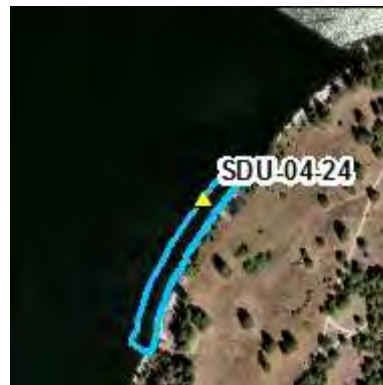
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Station Id	SDU-04-24	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-04 10:12	Sample Team Initials	AP

Sample Collected? Y
X 422664.7454 m
Y 5400756.9475 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles and boulders
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on lower beach

Sample Collected from Station

Sample Id	SDU-04-ICS	Decision Unit	Sediment Decision Unit 4
Sample Date Time	2015-05-05 7:55	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 1 reserve, SDU-04-R04, used for SDU-04-10.		

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Photos Collected from Station SDU-04-24

2015-05-04-10-09-44_SDU-04-24_TECK3.JPG



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2015-05-04-10-01-18_SDU-04-24_TECK3.JPG



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2015-05-04-10-02-21_SDU-04-24_TECK3.JPG



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Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-04-25	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-04 11:07	Sample Team Initials	AP
Sample Collected?	Y		
X	422640.5372 m		
Y	5400720.9214 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles and boulders
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on lower beach

Sample Collected from Station

Sample Id	SDU-04-ICS	Decision Unit	Sediment Decision Unit 4
Sample Date Time	2015-05-05 7:55	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 1 reserve, SDU-04-R04, used for SDU-04-10.		

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Photos Collected from Station SDU-04-25

2015-05-04-10-58-26_SDU-04-25_TECK3.JPG



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Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-04-10-58-59_SDU-04-25_TECK3.JPG



vne

2015-05-04-11-04-39_SDU-04-25_TECK3.JPG



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ICS Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-04-26	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-02 14:22	Sample Team Initials	MS

Sample Collected? Y
X 422697.7252 m
Y 5400775.397 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sandfine to coarse gravel	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-04-ICS	Decision Unit	Sediment Decision Unit 4
Sample Date Time	2015-05-05 7:55	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 1 reserve, SDU-04-R04, used for SDU-04-10.		

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Photos Collected from Station SDU-04-26

2015-05-02-14-24-12_SDU-04-26_TECK2.JPG



sample

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2015-05-02-14-24-19_SDU-04-26_TECK2.JPG



overview facing north

2015-05-02-14-24-40_SDU-04-26_TECK2.JPG



groundsurface

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Station Id	SDU-04-27	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-02 15:36	Sample Team Initials	MS
Sample Collected?	Y		
X	422668.4954 m		
Y	5400732.3942 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand fine to coarse gravel	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments Scoop used to collect 10%

Sample Collected from Station

Sample Id	SDU-04-ICS	Decision Unit	Sediment Decision Unit 4
Sample Date Time	2015-05-05 7:55	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 1 reserve, SDU-04-R04, used for SDU-04-10.		

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Photos Collected from Station SDU-04-27

2015-05-02-15-38-59_SDU-04-27_TECK2.JPG



overview facing south

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-02-15-43-30_SDU-04-27_TECK2.JPG



sample

2015-05-02-15-43-47_SDU-04-27_TECK2.JPG



groundsurface

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Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-04-28	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-04 14:18	Sample Team Initials	AP

Sample Collected? Y
X 422605.408 m
Y 5400624.7373 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	40	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine to coarse sand with silt	Vegetation Present?	Y
Vegetation Type if Present	N		

Station Comments located directly below gully that accesses beach

Sample Collected from Station

Sample Id	SDU-04-ICS	Decision Unit	Sediment Decision Unit 4
Sample Date Time	2015-05-05 7:55	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 1 reserve, SDU-04-R04, used for SDU-04-10.		

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Photos Collected from Station SDU-04-28

2015-05-04-14-11-53_SDU-04-28_TECK3.JPG



gs

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2015-05-04-14-12-30_SDU-04-28_TECK3.JPG



vne

2015-05-04-14-15-58_SDU-04-28_TECK3.JPG



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Station Id	SDU-04-29	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-04 10:53	Sample Team Initials	AP

Sample Collected? Y
X 422646.0041 m
Y 5400730.9797 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles and boulders
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand with gravel	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on lower beach

Sample Collected from Station

Sample Id	SDU-04-ICS	Decision Unit	Sediment Decision Unit 4
Sample Date Time	2015-05-05 7:55	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 1 reserve, SDU-04-R04, used for SDU-04-10.		

Photos Collected from Station SDU-04-29

2015-05-04-10-42-26_SDU-04-29_TECK3.JPG



gs

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2015-05-04-10-43-29_SDU-04-29_TECK3.JPG



vne

2015-05-04-10-50-45_SDU-04-29_TECK3.JPG



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Station Id	SDU-04-30	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-02 15:20	Sample Team Initials	MS
Sample Collected?	Y		
X	422665.8483 m		
Y	5400745.6921 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand fine to coarse gravel	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments scoop used to recover approximately 20%

Sample Collected from Station

Sample Id	SDU-04-ICS	Decision Unit	Sediment Decision Unit 4
Sample Date Time	2015-05-05 7:55	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 1 reserve, SDU-04-R04, used for SDU-04-10.		

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Photos Collected from Station SDU-04-30

2015-05-02-15-22-14_SDU-04-30_TECK2.JPG



sample

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2015-05-02-15-22-19_SDU-04-30_TECK2.JPG



overview facing north

2015-05-02-15-22-42_SDU-04-30_TECK2.JPG



groundsurface

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Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-04-R01	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-04-ICS	Decision Unit	Sediment Decision Unit 4
Sample Date Time	2015-05-05 7:55	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 1 reserve, SDU-04-R04, used for SDU-04-10.		

Photos Collected from Station SDU-04-R01

No photos taken at this station. See station comments for more details.

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Station Id	SDU-04-R02	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-04-ICS	Decision Unit	Sediment Decision Unit 4
Sample Date Time	2015-05-05 7:55	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 1 reserve, SDU-04-R04, used for SDU-04-10.		

Photos Collected from Station SDU-04-R02

No photos taken at this station. See station comments for more details.

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Station Id	SDU-04-R03	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-04-ICS	Decision Unit	Sediment Decision Unit 4
Sample Date Time	2015-05-05 7:55	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 1 reserve, SDU-04-R04, used for SDU-04-10.		

Photos Collected from Station SDU-04-R03

No photos taken at this station. See station comments for more details.

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Station Id	SDU-04-R04	Start Depth	0 cm
Station Type	Reserve	End Depth	15 cm
Collection DateTime	2015-05-02 15:04	Sample Team Initials	MS

Sample Collected? Y
X 422677.3478 m
Y 5400757.5186 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand fine to coarse gravel	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments First and second attempt failed, third 1m at 270 degrees successful. Approximately 30% recovery due to loose sand and gravel. used scoop to collect.

Sample Collected from Station

Sample Id	SDU-04-ICS	Decision Unit	Sediment Decision Unit 4
Sample Date Time	2015-05-05 7:55	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 1 reserve, SDU-04-R04, used for SDU-04-10.		

Photos Collected from Station SDU-04-R04

2015-05-02-15-14-34_SDU-04-R04_TECK2.JPG



groundsurface

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Station Id	SDU-04-R05	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-04-ICS	Decision Unit	Sediment Decision Unit 4
Sample Date Time	2015-05-05 7:55	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 1 reserve, SDU-04-R04, used for SDU-04-10.		

Photos Collected from Station SDU-04-R05

No photos taken at this station. See station comments for more details.

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Station Id	SDU-04-R06	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-04-ICS	Decision Unit	Sediment Decision Unit 4
Sample Date Time	2015-05-05 7:55	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. 1 reserve, SDU-04-R04, used for SDU-04-10.		

Photos Collected from Station SDU-04-R06

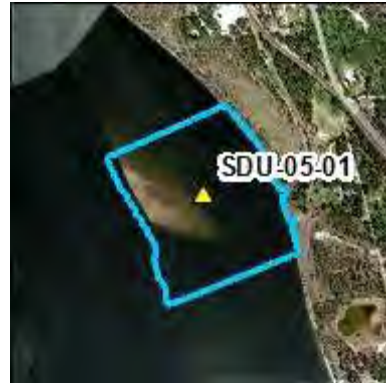
No photos taken at this station. See station comments for more details.

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Station Id	SDU-05-01	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-24 13:54	Sample Team Initials	AP
Sample Collected?	Y		
X	424472.2588 m		
Y	5395156.32 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Carp spawning depression	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on elevated flat

Sample Collected from Station

Sample Id	SDU-05-ICS	Decision Unit	Sediment Decision Unit 5
Sample Date Time	2015-04-27 8:47	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	29 increments checked and composited into 2 buckets. Due to high moisture content, 1 increment, SDU-05-19, was shipped separately in a clean baggie in a bucket on top of other composited sediment. 5 reserve locations (SDU-05-R01, R03, R04, F05, F06) used for SDU-05-08, 15, 18, 24, 30.		

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Photos Collected from Station SDU-05-01

2015-04-24-13-46-34_SDU-05-01_1619LP-WA70047.JPG



ground surface

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2015-04-24-13-47-39_SDU-05-01_TECK1.JPG



view n

2015-04-24-13-50-00_SDU-05-01_TECK1.JPG



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Station Id	SDU-05-02	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-24 9:50	Sample Team Initials	AP
Sample Collected?	Y		
X	424399.9234 m		
Y	5395020.873 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Carp spawning depressions	Color	10YR 4/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on flat north og low water bouy, just south of island

Sample Collected from Station

Sample Id	SDU-05-ICS	Decision Unit	Sediment Decision Unit 5
Sample Date Time	2015-04-27 8:47	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	29 increments checked and composited into 2 buckets. Due to high moisture content, 1 increment, SDU-05-19, was shipped seperately in a clean baggie in a bucket on top of other composited sediment. 5 reserve locations (SDU-05-R01, R03, R04, F05, F06) used for SDU-05-08, 15, 18, 24, 30.		

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Photos Collected from Station SDU-05-02

2015-04-24-09-47-20_SDU-05-02_1619LP-WA70047.JPG



overview facing NW

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2015-04-24-09-44-13_SDU-05-02_TECK1.JPG



gs

2015-04-24-09-47-09_SDU-05-02_TECK1.JPG

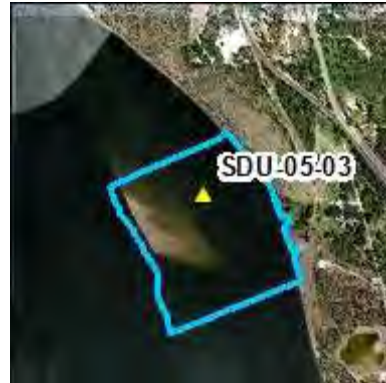


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Station Id	SDU-05-03	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-24 11:45	Sample Team Initials	AP
Sample Collected?	Y		
X	424464.4609 m		
Y	5395247.374 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Carp spawning depressions	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on elevated flat

Sample Collected from Station

Sample Id	SDU-05-ICS	Decision Unit	Sediment Decision Unit 5
Sample Date Time	2015-04-27 8:47	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	29 increments checked and composited into 2 buckets. Due to high moisture content, 1 increment, SDU-05-19, was shipped separately in a clean baggie in a bucket on top of other composited sediment. 5 reserve locations (SDU-05-R01, R03, R04, F05, F06) used for SDU-05-08, 15, 18, 24, 30.		

Photos Collected from Station SDU-05-03

2015-04-24-11-39-30_SDU-05-03_TECK1.JPG



gs

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2015-04-24-11-41-27_SDU-05-03_TECK1.JPG



view n

2015-04-24-11-41-53_SDU-05-03_TECK1.JPG

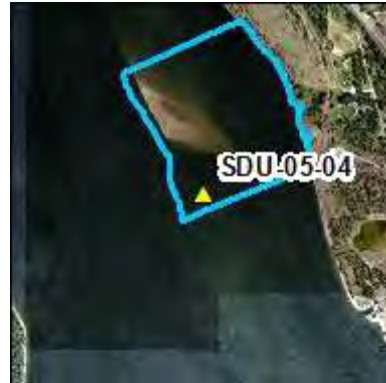


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Station Id	SDU-05-04	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-24 9:13	Sample Team Initials	AP
Sample Collected?	Y		
X	424423.7776 m		
Y	5394887.569 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Carp spawning depressions	Color	10YR 4/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silt with trace very fine sand and clay	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on flat northeast of low water buoy

Sample Collected from Station

Sample Id	SDU-05-ICS	Decision Unit	Sediment Decision Unit 5
Sample Date Time	2015-04-27 8:47	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	29 increments checked and composited into 2 buckets. Due to high moisture content, 1 increment, SDU-05-19, was shipped separately in a clean baggie in a bucket on top of other composited sediment. 5 reserve locations (SDU-05-R01, R03, R04, F05, F06) used for SDU-05-08, 15, 18, 24, 30.		

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Photos Collected from Station SDU-05-04

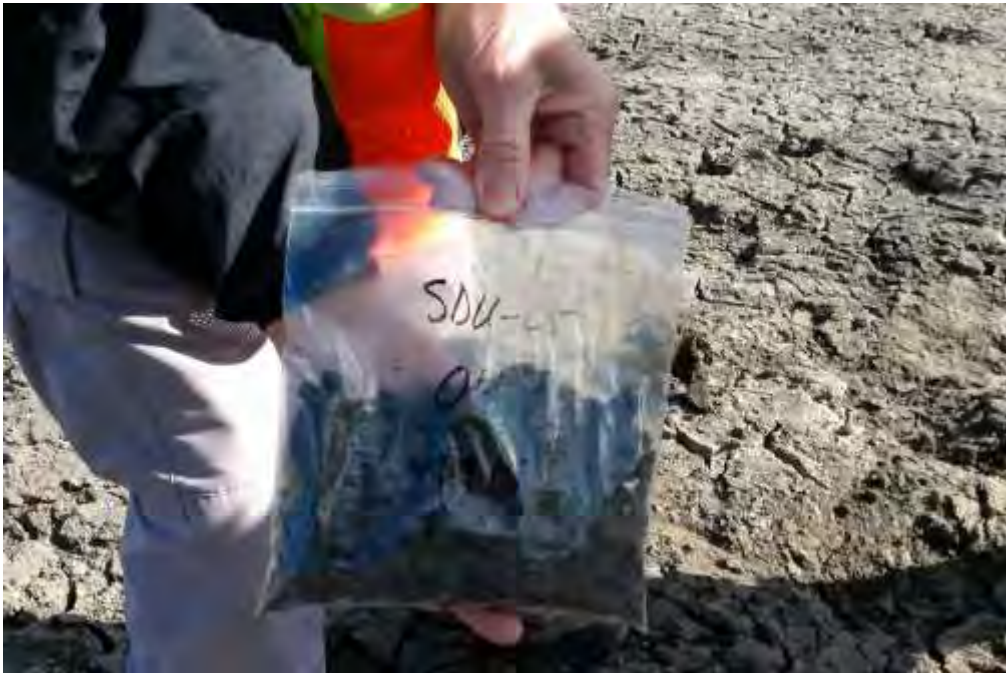
2015-04-24-09-06-49_SDU-05-04_TECK1.JPG



gs

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2015-04-24-09-10-06_SDU-05-04_TECK1.JPG



2015-04-24-09-10-19_SDU-05-04_TECK1.JPG



view n

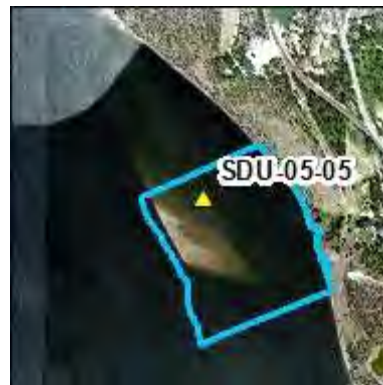
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Station Id	SDU-05-05	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-24 11:06	Sample Team Initials	AP

Sample Collected? Y
X 424366.5628 m
Y 5395269.89 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence Carp spawning depression
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N
Texture Silty fine sand
Vegetation Type if Present N

Station Comments located on elevated flat

Sample Collected from Station

Sample Id	SDU-05-ICS	Decision Unit	Sediment Decision Unit 5
Sample Date Time	2015-04-27 8:47	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	29 increments checked and composited into 2 buckets. Due to high moisture content, 1 increment, SDU-05-19, was shipped separately in a clean baggie in a bucket on top of other composited sediment. 5 reserve locations (SDU-05-R01, R03, R04, F05, F06) used for SDU-05-08, 15, 18, 24, 30.		

Anthropogenic Changes Present? N
Color 10YR 3/2
Debris Presence N
Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? N

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Photos Collected from Station SDU-05-05

2015-04-24-10-57-12_SDU-05-05_TECK1.JPG



gs

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2015-04-24-11-00-02_SDU-05-05_TECK1.JPG



2015-04-24-11-00-17_SDU-05-05_TECK1.JPG



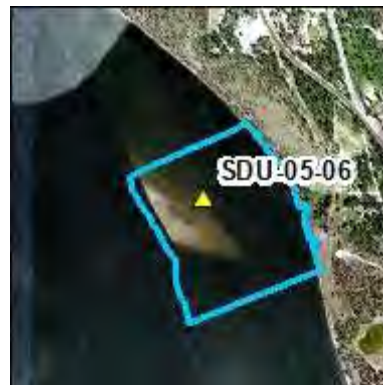
view n

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Station Id	SDU-05-06	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-24 13:22	Sample Team Initials	AP

Sample Collected? Y
X 424405.1138 m
Y 5395202.618 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence Carp spawning depressions
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N
Texture Silty fine sand
Vegetation Type if Present N

Anthropogenic Changes Present? N
Color 10YR 3/2
Debris Presence N
Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? N

Station Comments located on elevated flat

Sample Collected from Station

Sample Id	SDU-05-ICS	Decision Unit	Sediment Decision Unit 5
Sample Date Time	2015-04-27 8:47	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	29 increments checked and composited into 2 buckets. Due to high moisture content, 1 increment, SDU-05-19, was shipped separately in a clean baggie in a bucket on top of other composited sediment. 5 reserve locations (SDU-05-R01, R03, R04, F05, F06) used for SDU-05-08, 15, 18, 24, 30.		

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Photos Collected from Station SDU-05-06

2015-04-24-13-16-43_SDU-05-06_TECK1.JPG



gs

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-24-13-17-18_SDU-05-06_TECK1.JPG



view n

2015-04-24-13-19-37_SDU-05-06_TECK1.JPG

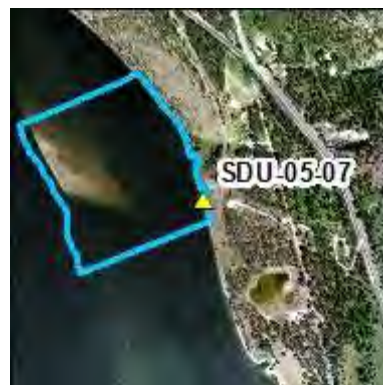


Appendix I
ICS Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study

Station Id	SDU-05-07	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-25 12:51	Sample Team Initials	AP

Sample Collected? Y
X 424749.818 m
Y 5395036.863 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles and boulders
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine to coarse sand with cobbles and boulders	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on east river bank adjacent to old boat ramp

Sample Collected from Station

Sample Id	SDU-05-ICS	Decision Unit	Sediment Decision Unit 5
Sample Date Time	2015-04-27 8:47	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	29 increments checked and composited into 2 buckets. Due to high moisture content, 1 increment, SDU-05-19, was shipped separately in a clean baggie in a bucket on top of other composited sediment. 5 reserve locations (SDU-05-R01, R03, R04, F05, F06) used for SDU-05-08, 15, 18, 24, 30.		

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Photos Collected from Station SDU-05-07

2015-04-25-12-41-17_SDU-05-07_TECK1.JPG



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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-25-12-42-08_SDU-05-07_TECK1.JPG



view nw

2015-04-25-12-49-21_SDU-05-07_TECK1.JPG



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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-05-08	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime	2015-04-25 12:36	Sample Team Initials	AP
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984

Station Comments under water, replaced by reserve station SDU-05-R05.

Sample Collected from Station

Sample Id	SDU-05-ICS	Decision Unit	Sediment Decision Unit 5
Sample Date Time	2015-04-27 8:47	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	29 increments checked and composited into 2 buckets. Due to high moisture content, 1 increment, SDU-05-19, was shipped seperately in a clean baggie in a bucket on top of other composited sediment. 5 reserve locations (SDU-05-R01, R03, R04, F05, F06) used for SDU-05-08, 15, 18, 24, 30.		

Photos Collected from Station SDU-05-08

No photos taken at this station. See station comments for more details.

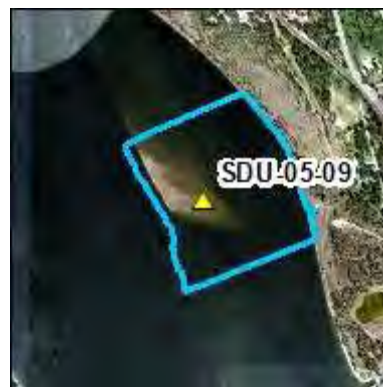
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ICS Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-05-09	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-25 9:37	Sample Team Initials	AP

Sample Collected? Y
X 424415.3321 m
Y 5395097.089 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand with trace silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on elevated flat

Sample Collected from Station

Sample Id	SDU-05-ICS	Decision Unit	Sediment Decision Unit 5
Sample Date Time	2015-04-27 8:47	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	29 increments checked and composited into 2 buckets. Due to high moisture content, 1 increment, SDU-05-19, was shipped seperately in a clean baggie in a bucket on top of other composited sediment. 5 reserve locations (SDU-05-R01, R03, R04, F05, F06) used for SDU-05-08, 15, 18, 24, 30.		

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Photos Collected from Station SDU-05-09

2015-04-25-09-43-08_SDU-05-09_1619LP-WA70043.JPG



North

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-25-09-43-00_SDU-05-09_1619LP-WA70043.JPG



North

2015-04-26-20-27-50_SDU-05-09_TECK1.JPG



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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Station Id	SDU-05-10	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-24 12:49	Sample Team Initials	AP

Sample Collected? Y
X 424335.3782 m
Y 5395243.987 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Carp spawning depressions	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	Y
Vegetation Type if Present	Some small grass like plants		

Station Comments located on elevated flat

Sample Collected from Station

Sample Id	SDU-05-ICS	Decision Unit	Sediment Decision Unit 5
Sample Date Time	2015-04-27 8:47	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	29 increments checked and composited into 2 buckets. Due to high moisture content, 1 increment, SDU-05-19, was shipped separately in a clean baggie in a bucket on top of other composited sediment. 5 reserve locations (SDU-05-R01, R03, R04, F05, F06) used for SDU-05-08, 15, 18, 24, 30.		

Photos Collected from Station SDU-05-10

2015-04-24-12-44-01_SDU-05-10_TECK1.JPG



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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-24-12-45-25_SDU-05-10_TECK1.JPG



view n

2015-04-24-12-46-50_SDU-05-10_TECK1.JPG



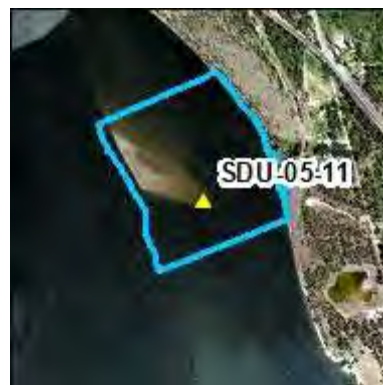
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ICS Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-05-11	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-25 8:56	Sample Team Initials	AP

Sample Collected? Y
X 424501.8413 m
Y 5395031.62 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Carp spawning depressions	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand with silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on elevated flat

Sample Collected from Station

Sample Id	SDU-05-ICS	Decision Unit	Sediment Decision Unit 5
Sample Date Time	2015-04-27 8:47	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	29 increments checked and composited into 2 buckets. Due to high moisture content, 1 increment, SDU-05-19, was shipped separately in a clean baggie in a bucket on top of other composited sediment. 5 reserve locations (SDU-05-R01, R03, R04, F05, F06) used for SDU-05-08, 15, 18, 24, 30.		

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Photos Collected from Station SDU-05-11

2015-04-25-08-49-23_SDU-05-11_TECK1.JPG



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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-25-08-50-05_SDU-05-11_TECK1.JPG



view n

2015-04-25-08-53-09_SDU-05-11_TECK1.JPG



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ICS Sample Collection Report
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Station Id	SDU-05-12	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-24 13:32	Sample Team Initials	AP

Sample Collected? Y
X 424386.7557 m
Y 5395194.705 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence Carp spawning depressions
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N
Texture Silty fine sand
Vegetation Type if Present N

Station Comments located on elevated flat

Sample Collected from Station

Sample Id	SDU-05-ICS	Decision Unit	Sediment Decision Unit 5
Sample Date Time	2015-04-27 8:47	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	29 increments checked and composited into 2 buckets. Due to high moisture content, 1 increment, SDU-05-19, was shipped separately in a clean baggie in a bucket on top of other composited sediment. 5 reserve locations (SDU-05-R01, R03, R04, F05, F06) used for SDU-05-08, 15, 18, 24, 30.		

Photos Collected from Station SDU-05-12

2015-04-24-13-26-31_SDU-05-12_TECK1.JPG



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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-24-13-26-56_SDU-05-12_TECK1.JPG



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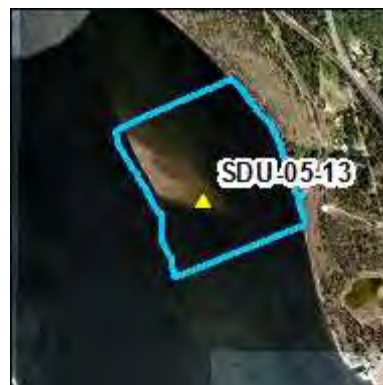
2015-04-24-13-29-22_SDU-05-12_TECK1.JPG



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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Station Id	SDU-05-13	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-25 9:20	Sample Team Initials	AP
Sample Collected?	Y		
X	424449.7462 m		
Y	5395051.431 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Carp spawning depressions	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with trace silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on elevated flat

Sample Collected from Station

Sample Id	SDU-05-ICS	Decision Unit	Sediment Decision Unit 5
Sample Date Time	2015-04-27 8:47	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	29 increments checked and composited into 2 buckets. Due to high moisture content, 1 increment, SDU-05-19, was shipped separately in a clean baggie in a bucket on top of other composited sediment. 5 reserve locations (SDU-05-R01, R03, R04, F05, F06) used for SDU-05-08, 15, 18, 24, 30.		

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Photos Collected from Station SDU-05-13

2015-04-25-09-15-09_SDU-05-13_TECK1.JPG



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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-25-09-15-36_SDU-05-13_TECK1.JPG



view n

2015-04-25-09-18-02_SDU-05-13_TECK1.JPG

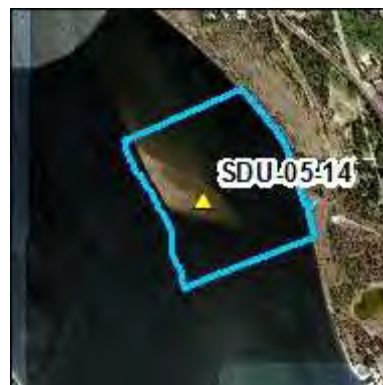


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ICS Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study

Station Id	SDU-05-14	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-25 9:30	Sample Team Initials	AP

Sample Collected? Y
X 424420.6252 m
Y 5395085.72 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description ATV tracks

Biological Visual Presence N

Cultural Oversight Inspection Conducted? Y

Odor N

Percent Ground Coverage 0

Shells Presence N

Surface Debris Present? N

Texture Very fine sand

Vegetation Type if Present N

Station Comments located on elevated flat

Anthropogenic Changes Present? N

Color 10YR 5/1

Debris Presence N

Percent Canopy Coverage 0

Sheen Presence N

Substrate Type Sediment

Surface Debris Removed Prior to Sampling? N

Vegetation Present? N

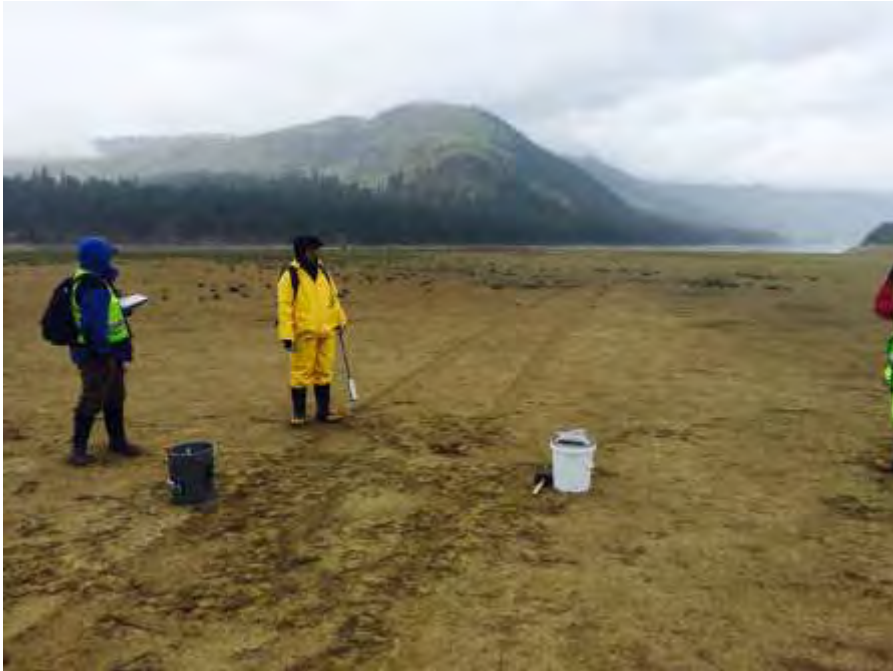
Sample Collected from Station

Sample Id	SDU-05-ICS	Decision Unit	Sediment Decision Unit 5
Sample Date Time	2015-04-27 8:47	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	29 increments checked and composited into 2 buckets. Due to high moisture content, 1 increment, SDU-05-19, was shipped separately in a clean baggie in a bucket on top of other composited sediment. 5 reserve locations (SDU-05-R01, R03, R04, F05, F06) used for SDU-05-08, 15, 18, 24, 30.		

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Photos Collected from Station SDU-05-14

2015-04-26-11-47-10_SDU-05-14_TECK1.png



looking northwest

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2015-04-26-11-46-51_SDU-05-14_TECK1.png



sample location

2015-04-26-11-46-23_SDU-05-14_TECK1.png



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Station Id	SDU-05-15	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime	2015-04-25 12:25	Sample Team Initials	AP
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984

Station Comments under water, replaced by reserve station SDU-05-R04

Sample Collected from Station

Sample Id	SDU-05-ICS	Decision Unit	Sediment Decision Unit 5
Sample Date Time	2015-04-27 8:47	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	29 increments checked and composited into 2 buckets. Due to high moisture content, 1 increment, SDU-05-19, was shipped seperately in a clean baggie in a bucket on top of other composited sediment. 5 reserve locations (SDU-05-R01, R03, R04, F05, F06) used for SDU-05-08, 15, 18, 24, 30.		

Photos Collected from Station SDU-05-15

No photos taken at this station. See station comments for more details.

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Station Id	SDU-05-16	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-24 10:52	Sample Team Initials	AP

Sample Collected? Y
X 424308.6204 m
Y 5395258.431 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence Carp spawning depressions
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N
Texture Silty fine sand
Vegetation Type if Present N

Station Comments located on elevated flat

Sample Collected from Station

Sample Id	SDU-05-ICS	Decision Unit	Sediment Decision Unit 5
Sample Date Time	2015-04-27 8:47	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	29 increments checked and composited into 2 buckets. Due to high moisture content, 1 increment, SDU-05-19, was shipped separately in a clean baggie in a bucket on top of other composited sediment. 5 reserve locations (SDU-05-R01, R03, R04, F05, F06) used for SDU-05-08, 15, 18, 24, 30.		

Anthropogenic Changes Present? N
Color 10YR 3/2
Debris Presence N
Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? N

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Photos Collected from Station SDU-05-16

2015-04-24-10-48-06_SDU-05-16_TECK1.JPG



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2015-04-24-10-50-02_SDU-05-16_TECK1.JPG



2015-04-24-10-50-12_SDU-05-16_TECK1.JPG



view n

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ICS Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study

Station Id	SDU-05-17	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-24 13:00	Sample Team Initials	AP
Sample Collected?	Y		
X	424339.8758 m		
Y	5395210.751 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Carp spawning depressions	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand with trace silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on elevated flat

Sample Collected from Station

Sample Id	SDU-05-ICS	Decision Unit	Sediment Decision Unit 5
Sample Date Time	2015-04-27 8:47	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	29 increments checked and composited into 2 buckets. Due to high moisture content, 1 increment, SDU-05-19, was shipped separately in a clean baggie in a bucket on top of other composited sediment. 5 reserve locations (SDU-05-R01, R03, R04, F05, F06) used for SDU-05-08, 15, 18, 24, 30.		

Photos Collected from Station SDU-05-17

2015-04-24-12-52-45_SDU-05-17_TECK1.JPG



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2015-04-24-12-56-04_SDU-05-17_TECK1.JPG



view n

2015-04-24-12-58-44_SDU-05-17_TECK1.JPG



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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-05-18	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime	2015-04-25 16:42	Sample Team Initials	AP
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984

Station Comments under water, replace with reserve station SDU-05-R06

Sample Collected from Station

Sample Id	SDU-05-ICS	Decision Unit	Sediment Decision Unit 5
Sample Date Time	2015-04-27 8:47	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	29 increments checked and composited into 2 buckets. Due to high moisture content, 1 increment, SDU-05-19, was shipped seperately in a clean baggie in a bucket on top of other composited sediment. 5 reserve locations (SDU-05-R01, R03, R04, F05, F06) used for SDU-05-08, 15, 18, 24, 30.		

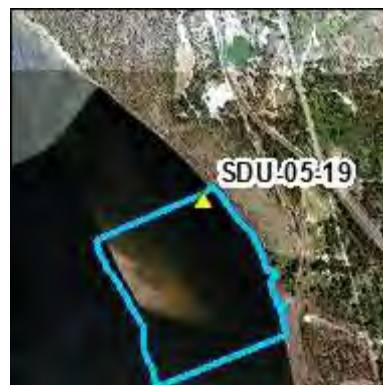
Photos Collected from Station SDU-05-18

No photos taken at this station. See station comments for more details.

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Station Id	SDU-05-19	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-25 11:00	Sample Team Initials	AP
Sample Collected?	Y		
X	424508.5721 m		
Y	5395400.728 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Goose tracks	Color	10YR 3/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Clayey silt with trace very fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located in depression just below east river bank

Sample Collected from Station

Sample Id	SDU-05-ICS	Decision Unit	Sediment Decision Unit 5
Sample Date Time	2015-04-27 8:47	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	29 increments checked and composited into 2 buckets. Due to high moisture content, 1 increment, SDU-05-19, was shipped separately in a clean baggie in a bucket on top of other composited sediment. 5 reserve locations (SDU-05-R01, R03, R04, F05, F06) used for SDU-05-08, 15, 18, 24, 30.		

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Photos Collected from Station SDU-05-19

2015-04-25-11-21-26_SDU-05-19_1619LP-WA70043.JPG



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2015-04-25-11-20-46_SDU-05-19_1619LP-WA70043.JPG



2015-04-26-20-27-50_SDU-05-19_TECK1.JPG



looking northwest

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Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-05-20	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-24 10:00	Sample Team Initials	AP

Sample Collected? Y
X 424326.1336 m
Y 5395031.863 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence Carp spawning depressions
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N
Texture Silty very fine sand
Vegetation Type if Present N

Anthropogenic Changes Present? N
Color 10YR 4/3
Debris Presence N
Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? N

Station Comments located north of low water bouy, on south bank leading up to island

Sample Collected from Station

Sample Id	SDU-05-ICS	Decision Unit	Sediment Decision Unit 5
Sample Date Time	2015-04-27 8:47	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	29 increments checked and composited into 2 buckets. Due to high moisture content, 1 increment, SDU-05-19, was shipped seperately in a clean baggie in a bucket on top of other composited sediment. 5 reserve locations (SDU-05-R01, R03, R04, F05, F06) used for SDU-05-08, 15, 18, 24, 30.		

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Photos Collected from Station SDU-05-20

2015-04-24-09-54-14_SDU-05-20_TECK1.JPG



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2015-04-24-09-57-37_SDU-05-20_TECK1.JPG



2015-04-24-09-57-49_SDU-05-20_TECK1.JPG



view n

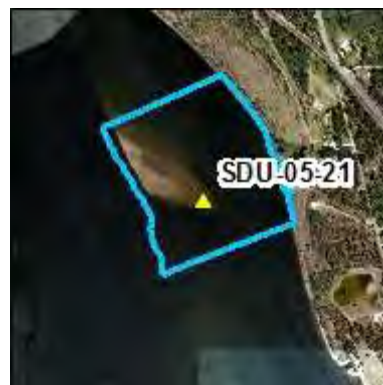
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Station Id	SDU-05-21	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-25 9:07	Sample Team Initials	AP

Sample Collected? Y
X 424485.0279 m
Y 5395041.344 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Carp spawning depressions	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand with trace silt	Vegetation Present?	N
Vegetation Type if Present	N		
Station Comments	located on elevated flat		

Sample Collected from Station

Sample Id	SDU-05-ICS	Decision Unit	Sediment Decision Unit 5
Sample Date Time	2015-04-27 8:47	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	29 increments checked and composited into 2 buckets. Due to high moisture content, 1 increment, SDU-05-19, was shipped seperately in a clean baggie in a bucket on top of other composited sediment. 5 reserve locations (SDU-05-R01, R03, R04, F05, F06) used for SDU-05-08, 15, 18, 24, 30.		

Photos Collected from Station SDU-05-21

2015-04-25-09-00-35_SDU-05-21_TECK1.JPG



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2015-04-25-09-00-59_SDU-05-21_TECK1.JPG



view n

2015-04-25-09-03-47_SDU-05-21_TECK1.JPG

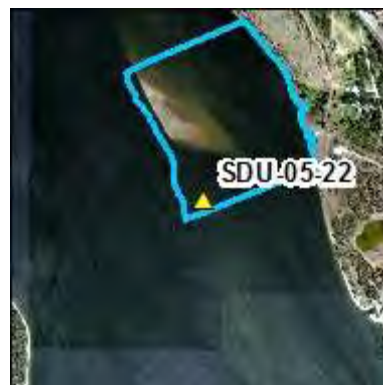


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Station Id	SDU-05-22	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-24 9:02	Sample Team Initials	AP

Sample Collected? Y
X 424414.2319 m
Y 5394867.404 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Carp spawning depressions	Color	10YR 4/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silt with trace fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on flat east of low water bouy

Sample Collected from Station

Sample Id	SDU-05-ICS	Decision Unit	Sediment Decision Unit 5
Sample Date Time	2015-04-27 8:47	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	29 increments checked and composited into 2 buckets. Due to high moisture content, 1 increment, SDU-05-19, was shipped seperately in a clean baggie in a bucket on top of other composited sediment. 5 reserve locations (SDU-05-R01, R03, R04, F05, F06) used for SDU-05-08, 15, 18, 24, 30.		

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Photos Collected from Station SDU-05-22

2015-04-24-08-53-39_SDU-05-22_TECK1.JPG



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2015-04-24-08-57-25_SDU-05-22_TECK1.JPG



2015-04-24-08-57-33_SDU-05-22_TECK1.JPG



view north

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Station Id	SDU-05-23	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-24 13:42	Sample Team Initials	AP

Sample Collected? Y
X 424408.7182 m
Y 5395150.387 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Carp spawning depressions	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on elevated flat

Sample Collected from Station

Sample Id	SDU-05-ICS	Decision Unit	Sediment Decision Unit 5
Sample Date Time	2015-04-27 8:47	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	29 increments checked and composited into 2 buckets. Due to high moisture content, 1 increment, SDU-05-19, was shipped separately in a clean baggie in a bucket on top of other composited sediment. 5 reserve locations (SDU-05-R01, R03, R04, F05, F06) used for SDU-05-08, 15, 18, 24, 30.		

Photos Collected from Station SDU-05-23

2015-04-24-13-36-32_SDU-05-23_TECK1.JPG



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2015-04-24-13-37-01_SDU-05-23_TECK1.JPG



view n

2015-04-24-13-39-44_SDU-05-23_TECK1.JPG



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Station Id	SDU-05-24	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime	2015-04-25 17:08	Sample Team Initials	AP
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984

Station Comments under water, collect sample at reserve station SDU-05-R03.

Sample Collected from Station

Sample Id	SDU-05-ICS	Decision Unit	Sediment Decision Unit 5
Sample Date Time	2015-04-27 8:47	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	29 increments checked and composited into 2 buckets. Due to high moisture content, 1 increment, SDU-05-19, was shipped seperately in a clean baggie in a bucket on top of other composited sediment. 5 reserve locations (SDU-05-R01, R03, R04, F05, F06) used for SDU-05-08, 15, 18, 24, 30.		

Photos Collected from Station SDU-05-24

No photos taken at this station. See station comments for more details.

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Station Id	SDU-05-25	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-24 11:36	Sample Team Initials	AP

Sample Collected? Y
X 424443.8173 m
Y 5395267.287 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence Carp spawning depressions
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N
Texture Silty with clay and trace fine sand
Vegetation Type if Present N

Anthropogenic Changes Present? N
Color 10YR 3/2
Debris Presence N
Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? N

Station Comments located on elevated flat

Sample Collected from Station

Sample Id	SDU-05-ICS	Decision Unit	Sediment Decision Unit 5
Sample Date Time	2015-04-27 8:47	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	29 increments checked and composited into 2 buckets. Due to high moisture content, 1 increment, SDU-05-19, was shipped seperately in a clean baggie in a bucket on top of other composited sediment. 5 reserve locations (SDU-05-R01, R03, R04, F05, F06) used for SDU-05-08, 15, 18, 24, 30.		

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Photos Collected from Station SDU-05-25

2015-04-24-11-33-26_SDU-05-25_1619LP-WA70047.JPG



overview facing NE

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2015-04-24-11-27-46_SDU-05-25_TECK1.JPG



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2015-04-24-11-33-34_SDU-05-25_TECK1.JPG

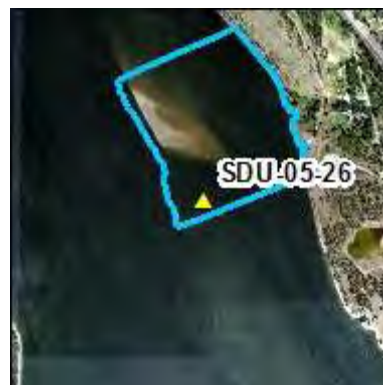


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Station Id	SDU-05-26	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-24 9:24	Sample Team Initials	AP

Sample Collected? Y
X 424441.2135 m
Y 5394892.315 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Carp spawning depressions	Color	10YR 4/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Sily with clay and trace very fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on flat northeast of low water bouy

Sample Collected from Station

Sample Id	SDU-05-ICS	Decision Unit	Sediment Decision Unit 5
Sample Date Time	2015-04-27 8:47	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	29 increments checked and composited into 2 buckets. Due to high moisture content, 1 increment, SDU-05-19, was shipped seperately in a clean baggie in a bucket on top of other composited sediment. 5 reserve locations (SDU-05-R01, R03, R04, F05, F06) used for SDU-05-08, 15, 18, 24, 30.		

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Photos Collected from Station SDU-05-26

2015-04-24-09-16-40_SDU-05-26_TECK1.JPG



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2015-04-24-09-20-36_SDU-05-26_TECK1.JPG



2015-04-24-09-20-51_SDU-05-26_TECK1.JPG



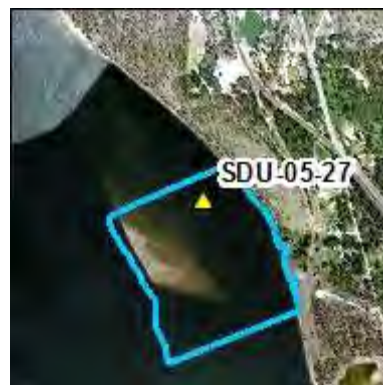
view n

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Station Id	SDU-05-27	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-24 11:20	Sample Team Initials	AP

Sample Collected? Y
X 424469.8923 m
Y 5395323.249 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Carp spawning depressions	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silt with clay and trace fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on elevated flat, on slope that faces east

Sample Collected from Station

Sample Id	SDU-05-ICS	Decision Unit	Sediment Decision Unit 5
Sample Date Time	2015-04-27 8:47	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	29 increments checked and composited into 2 buckets. Due to high moisture content, 1 increment, SDU-05-19, was shipped separately in a clean baggie in a bucket on top of other composited sediment. 5 reserve locations (SDU-05-R01, R03, R04, F05, F06) used for SDU-05-08, 15, 18, 24, 30.		

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Photos Collected from Station SDU-05-27

2015-04-24-11-13-05_SDU-05-27_TECK1.JPG



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2015-04-24-11-16-49_SDU-05-27_TECK1.JPG



2015-04-24-11-17-00_SDU-05-27_TECK1.JPG



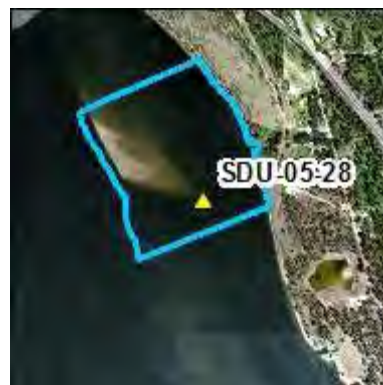
view n

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Station Id	SDU-05-28	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-25 8:44	Sample Team Initials	AP
Sample Collected?	Y		
X	424563.4062 m		
Y	5394993.913 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Carp spawning depression	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand with trace silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on flat northeast of low water bouy

Sample Collected from Station

Sample Id	SDU-05-ICS	Decision Unit	Sediment Decision Unit 5
Sample Date Time	2015-04-27 8:47	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	29 increments checked and composited into 2 buckets. Due to high moisture content, 1 increment, SDU-05-19, was shipped seperately in a clean baggie in a bucket on top of other composited sediment. 5 reserve locations (SDU-05-R01, R03, R04, F05, F06) used for SDU-05-08, 15, 18, 24, 30.		

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Photos Collected from Station SDU-05-28

2015-04-25-08-37-24_SDU-05-28_TECK1.JPG



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2015-04-25-08-37-45_SDU-05-28_TECK1.JPG



view n

2015-04-25-08-41-56_SDU-05-28_TECK1.JPG

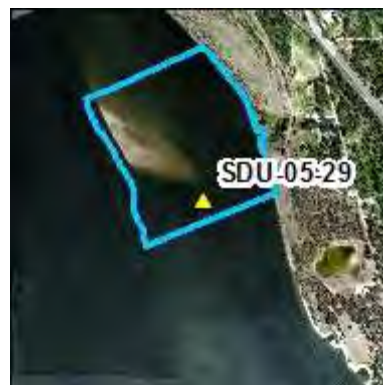


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Station Id	SDU-05-29	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-25 8:34	Sample Team Initials	AP
Sample Collected?	Y		
X	424541.0958 m		
Y	5394951.784 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Carp spawning depressions	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silt with trace very fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on flat north east of low water bouy

Sample Collected from Station

Sample Id	SDU-05-ICS	Decision Unit	Sediment Decision Unit 5
Sample Date Time	2015-04-27 8:47	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	29 increments checked and composited into 2 buckets. Due to high moisture content, 1 increment, SDU-05-19, was shipped seperately in a clean baggie in a bucket on top of other composited sediment. 5 reserve locations (SDU-05-R01, R03, R04, F05, F06) used for SDU-05-08, 15, 18, 24, 30.		

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Photos Collected from Station SDU-05-29

2015-04-25-08-28-07_SDU-05-29_TECK1.JPG



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2015-04-25-08-29-25_SDU-05-29_TECK1.JPG



view n

2015-04-25-08-30-13_SDU-05-29_TECK1.JPG



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Station Id	SDU-05-30	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime	2015-04-24 10:22	Sample Team Initials	AP
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984

Station Comments Abandoned because the location was under water. Replaced by reserve station SDU-05-R01

Sample Collected from Station

Sample Id	SDU-05-ICS	Decision Unit	Sediment Decision Unit 5
Sample Date Time	2015-04-27 8:47	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	29 increments checked and composited into 2 buckets. Due to high moisture content, 1 increment, SDU-05-19, was shipped seperately in a clean baggie in a bucket on top of other composited sediment. 5 reserve locations (SDU-05-R01, R03, R04, F05, F06) used for SDU-05-08, 15, 18, 24, 30.		

Photos Collected from Station SDU-05-30

No photos taken at this station. See station comments for more details.

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Station Id	SDU-05-R01	Start Depth	0 cm
Station Type	Reserve	End Depth	15 cm
Collection DateTime	2015-04-24 10:24	Sample Team Initials	AP

Sample Collected? Y
X 424362.833 m
Y 5395131.717 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Goose tracks	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine to fine sand with silt	Vegetation Present?	Y
Vegetation Type if Present	Some scattered grass		
Station Comments	located on elevated flat		

Sample Collected from Station

Sample Id	SDU-05-ICS	Decision Unit	Sediment Decision Unit 5
Sample Date Time	2015-04-27 8:47	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	29 increments checked and composited into 2 buckets. Due to high moisture content, 1 increment, SDU-05-19, was shipped seperately in a clean baggie in a bucket on top of other composited sediment. 5 reserve locations (SDU-05-R01, R03, R04, F05, F06) used for SDU-05-08, 15, 18, 24, 30.		

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Photos Collected from Station SDU-05-R01

2015-04-24-10-15-31_SDU-05-R01_TECK1.JPG



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2015-04-24-10-19-33_SDU-05-R01_TECK1.JPG



2015-04-24-10-19-46_SDU-05-R01_TECK1.JPG



view n

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Station Id	SDU-05-R02	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-05-ICS	Decision Unit	Sediment Decision Unit 5
Sample Date Time	2015-04-27 8:47	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	29 increments checked and composited into 2 buckets. Due to high moisture content, 1 increment, SDU-05-19, was shipped seperately in a clean baggie in a bucket on top of other composited sediment. 5 reserve locations (SDU-05-R01, R03, R04, F05, F06) used for SDU-05-08, 15, 18, 24, 30.		

Photos Collected from Station SDU-05-R02

No photos taken at this station. See station comments for more details.

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Station Id	SDU-05-R03	Start Depth	0 cm
Station Type	Reserve	End Depth	15 cm
Collection DateTime	2015-04-25 10:41	Sample Team Initials	AP
Sample Collected?	Y		
X	424293.3115 m		
Y	5395212.916 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	ATV tracks	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand with silt	Vegetation Present?	Y
Vegetation Type if Present	Some grass		

Station Comments this reserve station replaced SDU-05-24, which was under water. located on elevated flat

Sample Collected from Station

Sample Id	SDU-05-ICS	Decision Unit	Sediment Decision Unit 5
Sample Date Time	2015-04-27 8:47	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	29 increments checked and composited into 2 buckets. Due to high moisture content, 1 increment, SDU-05-19, was shipped separately in a clean baggie in a bucket on top of other composited sediment. 5 reserve locations (SDU-05-R01, R03, R04, F05, F06) used for SDU-05-08, 15, 18, 24, 30.		

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Photos Collected from Station SDU-05-R03

2015-04-25-10-51-18_SDU-05-R03_1619LP-WA70043.JPG



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2015-04-25-10-51-12_SDU-05-R03_1619LP-WA70043.JPG



2015-04-26-20-27-50_SDU-05-R03_TECK1.JPG



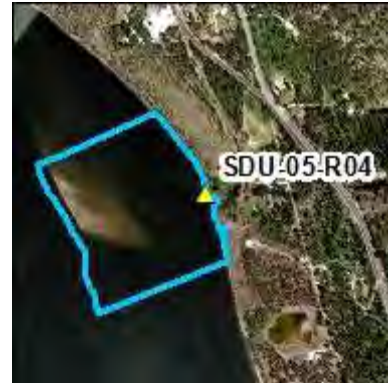
looking north

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Station Id	SDU-05-R04	Start Depth	0 cm
Station Type	Reserve	End Depth	15 cm
Collection DateTime	2015-04-25 12:23	Sample Team Initials	AP
Sample Collected?	Y		
X	424699.0934 m		
Y	5395181.356 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	ATV tracks	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles and boulders
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine with silt and cobbles	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments this reserve location replaces SDU-05-15, which is under water

Sample Collected from Station

Sample Id	SDU-05-ICS	Decision Unit	Sediment Decision Unit 5
Sample Date Time	2015-04-27 8:47	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	29 increments checked and composited into 2 buckets. Due to high moisture content, 1 increment, SDU-05-19, was shipped separately in a clean baggie in a bucket on top of other composited sediment. 5 reserve locations (SDU-05-R01, R03, R04, F05, F06) used for SDU-05-08, 15, 18, 24, 30.		

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Photos Collected from Station SDU-05-R04

2015-04-25-11-48-55_SDU-05-R04_TECK1.JPG



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2015-04-25-12-17-03_SDU-05-R04_TECK1.JPG



view n

2015-04-25-12-19-16_SDU-05-R04_TECK1.JPG

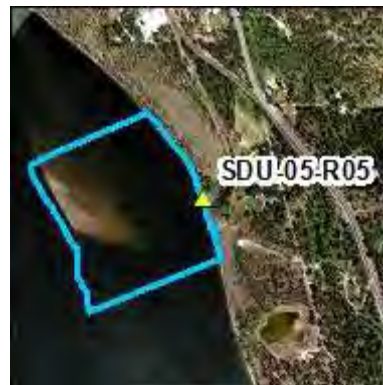


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Bosburg Flat Beach Refined Sediment and Soil Study

Station Id	SDU-05-R05	Start Depth	0 cm
Station Type	Reserve	End Depth	15 cm
Collection DateTime	2015-04-25 12:34	Sample Team Initials	AP

Sample Collected? Y
X 424717.1295 m
Y 5395166.724 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description On beach access road
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N
Texture Gravelly fine sand with silt
Vegetation Type if Present Some grass

Anthropogenic Changes Present? N
Color 10YR 4/2
Debris Presence N
Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? Y

Station Comments this reserve station replaces SDU-05-08, which was under water

Sample Collected from Station

Sample Id	SDU-05-ICS	Decision Unit	Sediment Decision Unit 5
Sample Date Time	2015-04-27 8:47	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	29 increments checked and composited into 2 buckets. Due to high moisture content, 1 increment, SDU-05-19, was shipped separately in a clean baggie in a bucket on top of other composited sediment. 5 reserve locations (SDU-05-R01, R03, R04, F05, F06) used for SDU-05-08, 15, 18, 24, 30.		

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Photos Collected from Station SDU-05-R05

2015-04-25-12-29-00_SDU-05-R05_TECK1.JPG



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2015-04-25-12-29-49_SDU-05-R05_TECK1.JPG



view west

2015-04-25-12-31-33_SDU-05-R05_TECK1.JPG



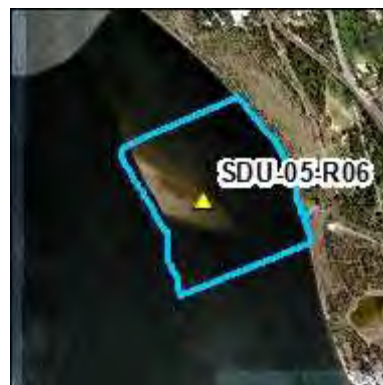
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Station Id	SDU-05-R06	Start Depth	0 cm
Station Type	Reserve	End Depth	15 cm
Collection DateTime	2015-04-25 10:12	Sample Team Initials	AP

Sample Collected? Y
X 424431.6156 m
Y 5395109.465 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand with trace silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments Collected in place of SDU-05-18, which was under water. located on elevated flat

Sample Collected from Station

Sample Id	SDU-05-ICS	Decision Unit	Sediment Decision Unit 5
Sample Date Time	2015-04-27 8:47	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	29 increments checked and composited into 2 buckets. Due to high moisture content, 1 increment, SDU-05-19, was shipped seperately in a clean baggie in a bucket on top of other composited sediment. 5 reserve locations (SDU-05-R01, R03, R04, F05, F06) used for SDU-05-08, 15, 18, 24, 30.		

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Photos Collected from Station SDU-05-R06

2015-04-25-09-50-20_SDU-05-R06_1619LP-WA70043.JPG



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2015-04-25-09-50-08_SDU-05-R06_1619LP-WA70043.JPG



2015-04-26-20-27-50_SDU-05-R06_TECK1.JPG



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Station Id	SDU-06A-01	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-28 10:20	Sample Team Initials	AP
Sample Collected?	Y		
X	425237.0988 m		
Y	5393946.6026 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Deer tracks	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand with silt	Vegetation Present?	Y
Vegetation Type if Present	Some grass		
Station Comments	located on upper beach		

Sample Collected from Station

Sample Id	SDU-06-ICS-A	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 7:48	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06A-R03 was used for SDU-06A-02.		

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Photos Collected from Station SDU-06A-01

2015-04-28-10-14-01_SDU-06A-01_TECK1.JPG



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2015-04-28-10-14-17_SDU-06A-01_TECK1.JPG



view n

2015-04-28-10-17-10_SDU-06A-01_TECK1.JPG



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Station Id	SDU-06A-02	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime	2015-04-28 13:12	Sample Team Initials	AP
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments met refusal on rock, replaced by reserve station SDU-06A-R03

Sample Collected from Station

Sample Id	SDU-06-ICS-A	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 7:48	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06A-R03 was used for SDU-06A-02.		

Photos Collected from Station SDU-06A-02

No photos taken at this station. See station comments for more details.

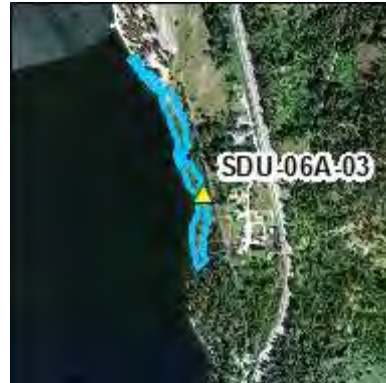
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Station Id	SDU-06A-03	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-27 16:15	Sample Team Initials	AP

Sample Collected? Y
X 425306.9043 m
Y 5393826.0909 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Upper 3": very fine sand with trace silt/ lower 6": sandy silt	Vegetation Present?	Y
Vegetation Type if Present	Some grass		

Station Comments located on upper beach. Upper 3" of core consists on very fine sand with trace silt, lower 3" consists of sandy silt

Sample Collected from Station

Sample Id	SDU-06-ICS-A	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 7:48	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06A-R03 was used for SDU-06A-02.		

Photos Collected from Station SDU-06A-03

2015-04-27-16-10-07_SDU-06A-03_TECK1.JPG



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2015-04-27-16-10-27_SDU-06A-03_TECK1.JPG



view n

2015-04-27-16-12-46_SDU-06A-03_TECK1.JPG



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Station Id	SDU-06A-04	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-28 14:09	Sample Team Initials	AP
Sample Collected?	Y		
X	425212.577 m		
Y	5394072.5691 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand	Vegetation Present?	N
Vegetation Type if Present	Some grass		
Station Comments	located on upper beach		

Sample Collected from Station

Sample Id	SDU-06-ICS-A	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 7:48	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06A-R03 was used for SDU-06A-02.		

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Photos Collected from Station SDU-06A-04

2015-04-28-14-03-51_SDU-06A-04_TECK1.JPG



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2015-04-28-14-04-09_SDU-06A-04_TECK1.JPG



view n

2015-04-28-14-07-16_SDU-06A-04_TECK1.JPG



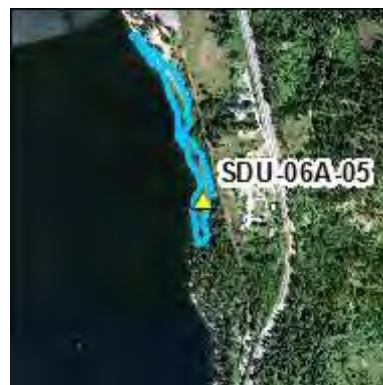
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Station Id	SDU-06A-05	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-27 15:33	Sample Team Initials	AP

Sample Collected? Y
X 425302.2029 m
Y 5393747.9372 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 5/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand with trace silt	Vegetation Present?	Y
Vegetation Type if Present	Some grass		

Station Comments located on upper beach adjacent to tree

Sample Collected from Station

Sample Id	SDU-06-ICS-A	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 7:48	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06A-R03 was used for SDU-06A-02.		

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Photos Collected from Station SDU-06A-05

2015-04-27-15-29-18_SDU-06A-05_TECK1.JPG



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2015-04-27-15-29-37_SDU-06A-05_TECK1.JPG



view n

2015-04-27-15-31-29_SDU-06A-05_TECK1.JPG



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Station Id	SDU-06A-06	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-28 10:09	Sample Team Initials	AP
Sample Collected?	Y		
X	425241.8433 m		
Y	5393997.4824 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Sandy gravel with cobbles	Vegetation Present?	Y
Vegetation Type if Present	Some grass		
Station Comments	located on upper beach		

Sample Collected from Station

Sample Id	SDU-06-ICS-A	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 7:48	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06A-R03 was used for SDU-06A-02.		

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Photos Collected from Station SDU-06A-06

2015-04-28-09-57-09_SDU-06A-06_TECK1.JPG



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2015-04-28-09-57-29_SDU-06A-06_TECK1.JPG



view n

2015-04-28-10-03-53_SDU-06A-06_TECK1.JPG



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Station Id	SDU-06A-07	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-28 14:00	Sample Team Initials	AP

Sample Collected? Y
X 425240.7909 m
Y 5394049.6066 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on upper beach

Sample Collected from Station

Sample Id	SDU-06-ICS-A	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 7:48	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06A-R03 was used for SDU-06A-02.		

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Photos Collected from Station SDU-06A-07

2015-04-28-13-56-25_SDU-06A-07_TECK1.JPG



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2015-04-28-13-56-42_SDU-06A-07_TECK1.JPG



view n

2015-04-28-13-58-44_SDU-06A-07_TECK1.JPG

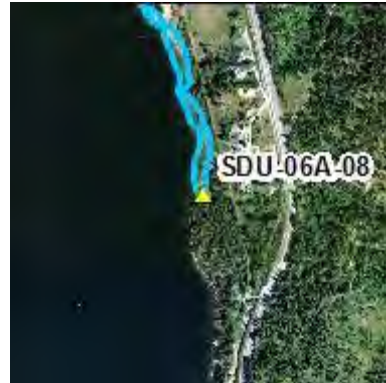


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Station Id	SDU-06A-08	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-27 15:00	Sample Team Initials	AP
Sample Collected?	Y		
X	425301.4362 m		
Y	5393654.3646 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Tree duff
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand with some organic material	Vegetation Present?	Y
Vegetation Type if Present	Some grass and a large tree		
Station Comments	located under large tree		

Sample Collected from Station

Sample Id	SDU-06-ICS-A	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 7:48	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06A-R03 was used for SDU-06A-02.		

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Photos Collected from Station SDU-06A-08

2015-04-27-14-52-42_SDU-06A-08_TECK1.JPG



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2015-04-27-14-53-20_SDU-06A-08_TECK1.JPG



view n

2015-04-27-14-55-55_SDU-06A-08_TECK1.JPG



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Station Id	SDU-06A-09	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-28 13:45	Sample Team Initials	AP

Sample Collected? Y
X 425235.9352 m
Y 5394038.0471 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on upper beach

Sample Collected from Station

Sample Id	SDU-06-ICS-A	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 7:48	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06A-R03 was used for SDU-06A-02.		

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Photos Collected from Station SDU-06A-09

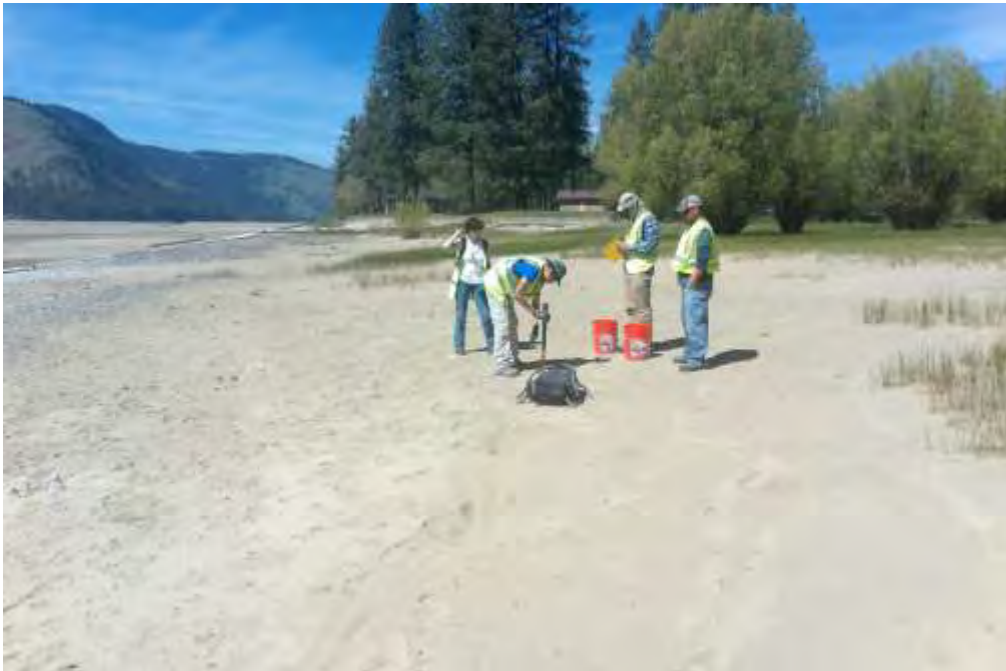
2015-04-28-13-38-26_SDU-06A-09_TECK1.JPG



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2015-04-28-13-38-43_SDU-06A-09_TECK1.JPG



view n

2015-04-28-13-41-00_SDU-06A-09_TECK1.JPG

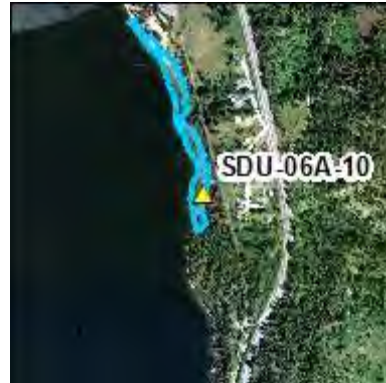


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Station Id	SDU-06A-10	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-27 15:17	Sample Team Initials	AP
Sample Collected?	Y		
X	425308.2328 m		
Y	5393728.4039 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Tree duff
Odor	N	Percent Canopy Coverage	50
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments located adjacent to large tree

Sample Collected from Station

Sample Id	SDU-06-ICS-A	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 7:48	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06A-R03 was used for SDU-06A-02.		

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Photos Collected from Station SDU-06A-10

2015-04-27-15-12-44_SDU-06A-10_TECK1.JPG



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2015-04-27-15-13-11_SDU-06A-10_TECK1.JPG



view n

2015-04-27-15-14-32_SDU-06A-10_TECK1.JPG

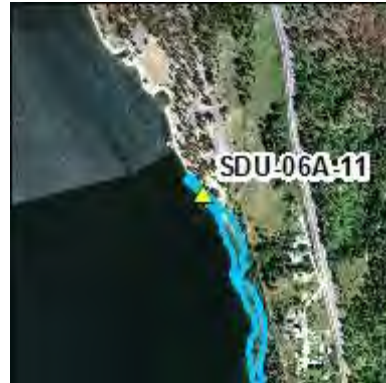


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Station Id	SDU-06A-11	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-28 14:42	Sample Team Initials	AP
Sample Collected?	Y		
X	425155.5715 m		
Y	5394142.983 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Sandy gravel with cobbles	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on upper beach, just below bulkhead

Sample Collected from Station

Sample Id	SDU-06-ICS-A	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 7:48	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06A-R03 was used for SDU-06A-02.		

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Photos Collected from Station SDU-06A-11

2015-04-28-14-33-09_SDU-06A-11_TECK1.JPG



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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-28-14-33-25_SDU-06A-11_TECK1.JPG



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2015-04-28-14-40-32_SDU-06A-11_TECK1.JPG



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Station Id	SDU-06A-12	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-28 10:46	Sample Team Initials	AP
Sample Collected?	Y		
X	425241.4351 m		
Y	5393964.5999 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand with trace rounded fine gravel, high % organic material	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on upper beach

Sample Collected from Station

Sample Id	SDU-06-ICS-A	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 7:48	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06A-R03 was used for SDU-06A-02.		

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Photos Collected from Station SDU-06A-12

2015-04-28-10-39-22_SDU-06A-12_TECK1.JPG



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2015-04-28-10-39-46_SDU-06A-12_TECK1.JPG



view n

2015-04-28-10-45-02_SDU-06A-12_TECK1.JPG

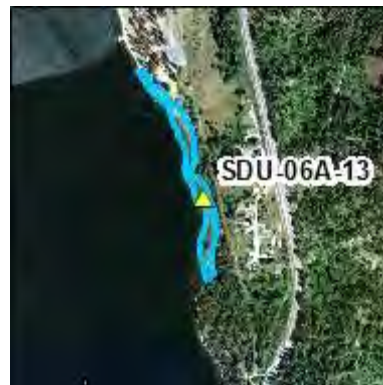


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Station Id	SDU-06A-13	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-27 16:31	Sample Team Initials	AP

Sample Collected? Y
X 425285.1127 m
Y 5393850.9836 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N	
Biological Visual Presence	N	Color	10YR 4/2	
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N	
Odor	N	Percent Canopy Coverage	0	
Percent Ground Coverage	0	Sheen Presence	N	
Shells Presence	N	Substrate Type	Sediment	
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N	
Texture	Fine sand with trace silt and some organic material		Vegetation Present?	Y
Vegetation Type if Present	Some grass			
Station Comments	located on upper beach			

Sample Collected from Station

Sample Id	SDU-06-ICS-A	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 7:48	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06A-R03 was used for SDU-06A-02.		

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Photos Collected from Station SDU-06A-13

2015-04-27-16-26-46_SDU-06A-13_TECK1.JPG



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2015-04-27-16-27-06_SDU-06A-13_TECK1.JPG



view n

2015-04-27-16-28-32_SDU-06A-13_TECK1.JPG



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Station Id	SDU-06A-14	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-28 13:01	Sample Team Initials	AP

Sample Collected? Y
X 425254.9624 m
Y 5393984.9946 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand, high % organic matter	Vegetation Present?	Y
Vegetation Type if Present	Some grass		
Station Comments	located on upper beach		

Sample Collected from Station

Sample Id	SDU-06-ICS-A	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 7:48	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06A-R03 was used for SDU-06A-02.		

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Photos Collected from Station SDU-06A-14

2015-04-28-12-59-48_SDU-06A-14_TECK1.JPG



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2015-04-28-12-54-39_SDU-06A-14_TECK1.JPG



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2015-04-28-12-55-16_SDU-06A-14_TECK1.JPG



view n

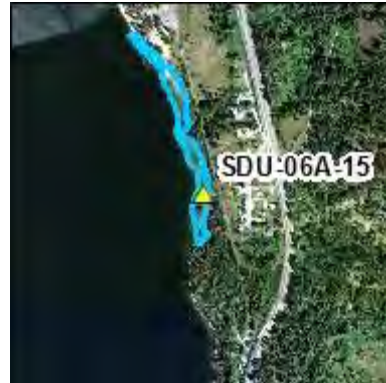
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Station Id	SDU-06A-15	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-27 15:48	Sample Team Initials	AP

Sample Collected? Y
X 425304.4309 m
Y 5393763.1582 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 5/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand with trace silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on upper beach

Sample Collected from Station

Sample Id	SDU-06-ICS-A	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 7:48	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06A-R03 was used for SDU-06A-02.		

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Photos Collected from Station SDU-06A-15

2015-04-27-15-44-31_SDU-06A-15_TECK1.JPG



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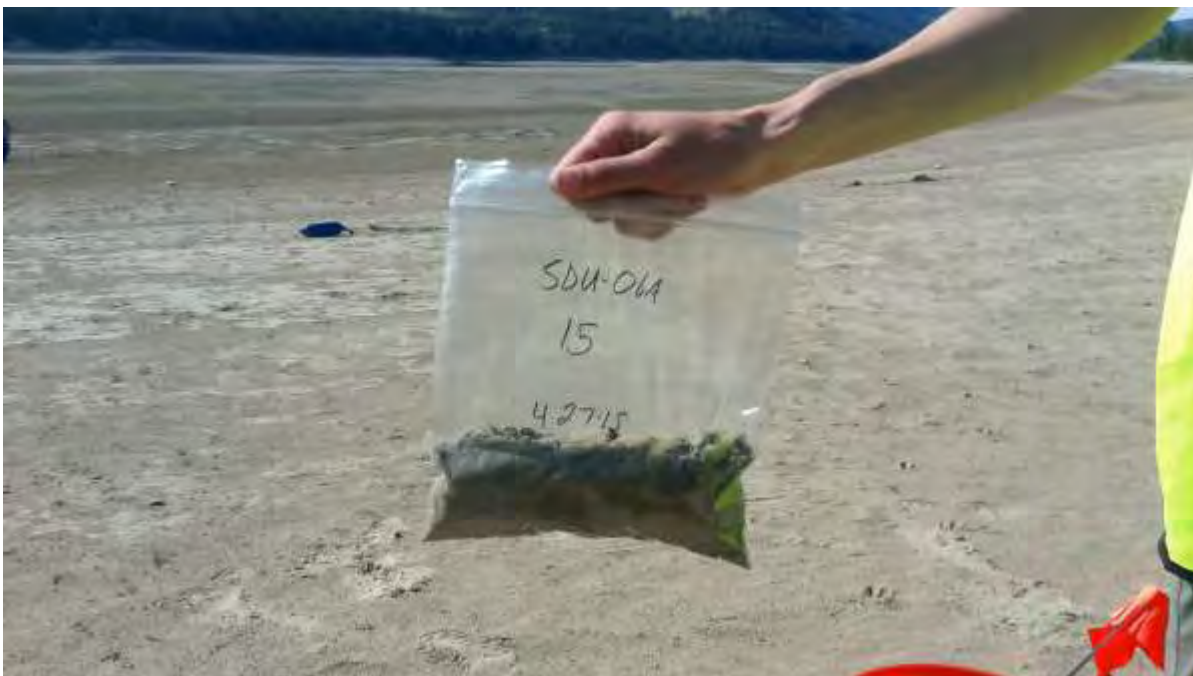
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2015-04-27-15-44-48_SDU-06A-15_TECK1.JPG



view n

2015-04-27-15-46-12_SDU-06A-15_TECK1.JPG



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Station Id SDU-06A-16 **Start Depth** 0 cm
Station Type Primary **End Depth** 15 cm
Collection DateTime 2015-04-28 10:32 **Sample Team Initials** AP

Sample Collected? Y
X 425265.2443 m
Y 5393952.8871 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand, high % organic material	Vegetation Present?	N
Vegetation Type if Present	Grass		

Station Comments located on upper beach in grassy area

Sample Collected from Station

Sample Id	SDU-06-ICS-A	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 7:48	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06A-R03 was used for SDU-06A-02.		

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Photos Collected from Station SDU-06A-16

2015-04-28-10-24-11_SDU-06A-16_TECK1.JPG



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2015-04-28-10-24-45_SDU-06A-16_TECK1.JPG



view n

2015-04-28-10-29-48_SDU-06A-16_TECK1.JPG



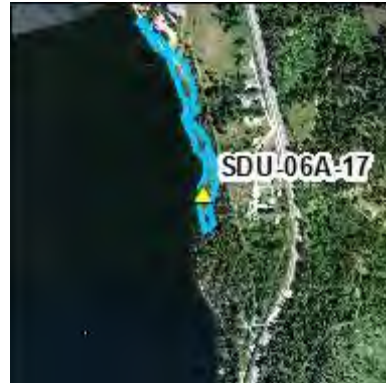
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Station Id	SDU-06A-17	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-27 15:09	Sample Team Initials	AP

Sample Collected? Y
X 425285.9121 m
Y 5393728.6426 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located onn upper beach

Sample Collected from Station

Sample Id	SDU-06-ICS-A	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 7:48	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06A-R03 was used for SDU-06A-02.		

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Photos Collected from Station SDU-06A-17

2015-04-27-15-04-26_SDU-06A-17_TECK1.JPG



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2015-04-27-15-04-46_SDU-06A-17_TECK1.JPG



view n

2015-04-27-15-07-27_SDU-06A-17_TECK1.JPG



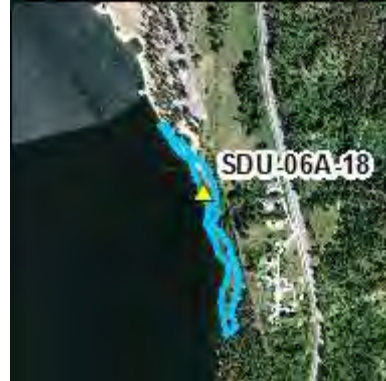
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Bosburg Flat Beach Refined Sediment and Soil Study



Station Id SDU-06A-18 **Start Depth** 0 cm
Station Type Primary **End Depth** 15 cm
Collection DateTime 2015-04-28 13:25 **Sample Team Initials** AP

Sample Collected? Y
X 425227.667 m
Y 5394008.9331 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly very fine sand with cobbles	Vegetation Present?	Y
Vegetation Type if Present	Some grass		
Station Comments	located mid beach		

Sample Collected from Station

Sample Id	SDU-06-ICS-A	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 7:48	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06A-R03 was used for SDU-06A-02.		

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Photos Collected from Station SDU-06A-18

2015-04-28-13-14-07_SDU-06A-18_TECK1.JPG



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2015-04-28-13-14-21_SDU-06A-18_TECK1.JPG



view n

2015-04-28-13-22-53_SDU-06A-18_TECK1.JPG

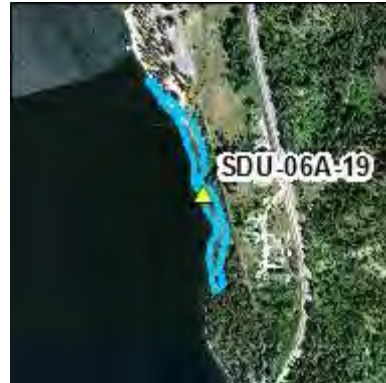


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Station Id	SDU-06A-19	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-27 16:48	Sample Team Initials	AP
Sample Collected?	Y		
X	425260.4613 m		
Y	5393887.4297 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand with trace silt	Vegetation Present?	N
Vegetation Type if Present	Some grass like plants		
Station Comments	located on upper beach		

Sample Collected from Station

Sample Id	SDU-06-ICS-A	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 7:48	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06A-R03 was used for SDU-06A-02.		

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Photos Collected from Station SDU-06A-19

2015-04-27-16-44-35_SDU-06A-19_TECK1.JPG



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2015-04-27-16-44-49_SDU-06A-19_TECK1.JPG



view n

2015-04-27-16-46-20_SDU-06A-19_TECK1.JPG



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Station Id	SDU-06A-20	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-28 13:35	Sample Team Initials	AP

Sample Collected? Y
X 425219.5552 m
Y 5394025.8899 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Some grass		
Station Comments	located on mid beach		

Sample Collected from Station

Sample Id	SDU-06-ICS-A	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 7:48	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06A-R03 was used for SDU-06A-02.		

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Photos Collected from Station SDU-06A-20

2015-04-28-13-29-56_SDU-06A-20_TECK1.JPG



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2015-04-28-13-30-12_SDU-06A-20_TECK1.JPG



view n

2015-04-28-13-33-36_SDU-06A-20_TECK1.JPG



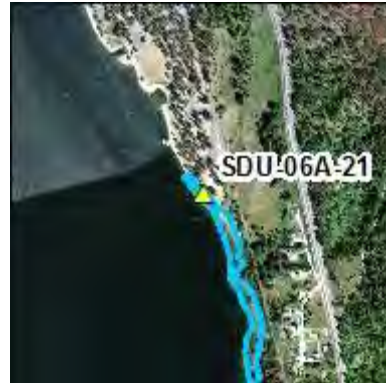
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Station Id	SDU-06A-21	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-28 14:30	Sample Team Initials	AP

Sample Collected? Y
X 425164.4021 m
Y 5394137.827 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand with trace fine rounded gravel	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on upper beach

Sample Collected from Station

Sample Id	SDU-06-ICS-A	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 7:48	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06A-R03 was used for SDU-06A-02.		

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Photos Collected from Station SDU-06A-21

2015-04-28-14-23-42_SDU-06A-21_TECK1.JPG



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2015-04-28-14-23-56_SDU-06A-21_TECK1.JPG



view n

2015-04-28-14-28-29_SDU-06A-21_TECK1.JPG



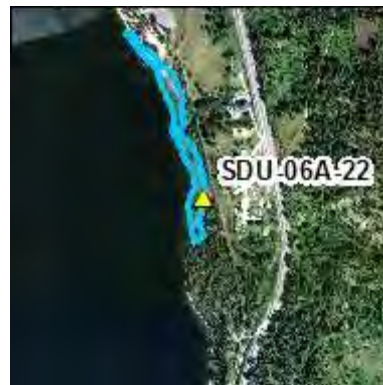
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Station Id	SDU-06A-22	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-27 15:41	Sample Team Initials	AP

Sample Collected? Y
X 425314.9157 m
Y 5393749.9378 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Tree duff
Odor	N	Percent Canopy Coverage	40
Percent Ground Coverage	60	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand, some organic material	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments located on upper beach adjacent to tree

Sample Collected from Station

Sample Id	SDU-06-ICS-A	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 7:48	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06A-R03 was used for SDU-06A-02.		

Photos Collected from Station SDU-06A-22

2015-04-27-15-36-47_SDU-06A-22_TECK1.JPG



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2015-04-27-15-37-24_SDU-06A-22_TECK1.JPG



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2015-04-27-15-39-27_SDU-06A-22_TECK1.JPG



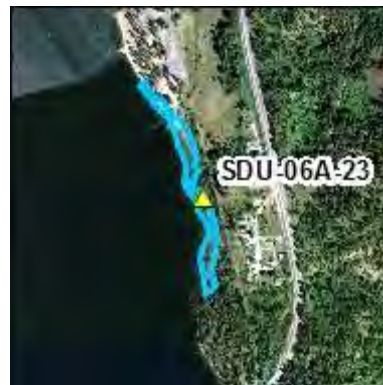
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Station Id	SDU-06A-23	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-27 16:41	Sample Team Initials	AP

Sample Collected? Y
X 425282.194 m
Y 5393883.9506 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand with trace silt	Vegetation Present?	Y
Vegetation Type if Present	Some grass		
Station Comments	located on upper beach		

Sample Collected from Station

Sample Id	SDU-06-ICS-A	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 7:48	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06A-R03 was used for SDU-06A-02.		

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Photos Collected from Station SDU-06A-23

2015-04-27-16-35-34_SDU-06A-23_TECK1.JPG



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2015-04-27-16-35-50_SDU-06A-23_TECK1.JPG



view n

2015-04-27-16-37-39_SDU-06A-23_TECK1.JPG



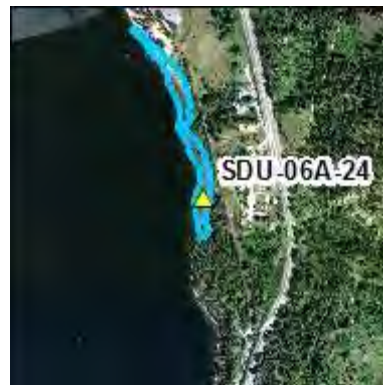
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Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-06A-24	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-27 15:25	Sample Team Initials	AP

Sample Collected? Y
X 425298.7941 m
Y 5393737.8437 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand with trace silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on upper beach

Sample Collected from Station

Sample Id	SDU-06-ICS-A	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 7:48	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06A-R03 was used for SDU-06A-02.		

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Photos Collected from Station SDU-06A-24

2015-04-27-15-19-36_SDU-06A-24_TECK1.JPG



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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-27-15-19-58_SDU-06A-24_TECK1.JPG



view n

2015-04-27-15-22-07_SDU-06A-24_TECK1.JPG



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Station Id	SDU-06A-25	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-28 14:57	Sample Team Initials	AP
Sample Collected?	Y		
X	425140.072 m		
Y	5394162.9738 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Sandy gravel with cobbles	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on upper beach below bulkhead

Sample Collected from Station

Sample Id	SDU-06-ICS-A	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 7:48	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06A-R03 was used for SDU-06A-02.		

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Photos Collected from Station SDU-06A-25

2015-04-28-14-45-54_SDU-06A-25_1619LP-WA70047.JPG



overview facing NW

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-28-14-45-38_SDU-06A-25_TECK1.JPG



gs

2015-04-28-14-54-30_SDU-06A-25_TECK1.JPG



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Station Id	SDU-06A-26	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-27 16:23	Sample Team Initials	AP

Sample Collected? Y
X 425283.2484 m
Y 5393830.2536 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine to very fine sand with silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on upper beach

Sample Collected from Station

Sample Id	SDU-06-ICS-A	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 7:48	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06A-R03 was used for SDU-06A-02.		

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Photos Collected from Station SDU-06A-26

2015-04-27-16-19-29_SDU-06A-26_TECK1.JPG



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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-27-16-19-41_SDU-06A-26_TECK1.JPG



view n

2015-04-27-16-21-05_SDU-06A-26_TECK1.JPG



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Station Id	SDU-06A-27	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-28 14:20	Sample Team Initials	AP

Sample Collected? Y
X 425190.6792 m
Y 5394114.6705 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	Immediately adjacent to bulkhead	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on upper beach immediately adjacent to bulkhead

Sample Collected from Station

Sample Id	SDU-06-ICS-A	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 7:48	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06A-R03 was used for SDU-06A-02.		

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Photos Collected from Station SDU-06A-27

2015-04-28-14-12-42_SDU-06A-27_TECK1.JPG



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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-28-14-13-02_SDU-06A-27_TECK1.JPG



view n

2015-04-28-14-17-31_SDU-06A-27_TECK1.JPG



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Station Id	SDU-06A-28	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-28 13:54	Sample Team Initials	AP
Sample Collected?	Y		
X	425230.1302 m		
Y	5394052.5651 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Some grass		
Station Comments	located on upper beach		

Sample Collected from Station

Sample Id	SDU-06-ICS-A	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 7:48	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06A-R03 was used for SDU-06A-02.		

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Photos Collected from Station SDU-06A-28

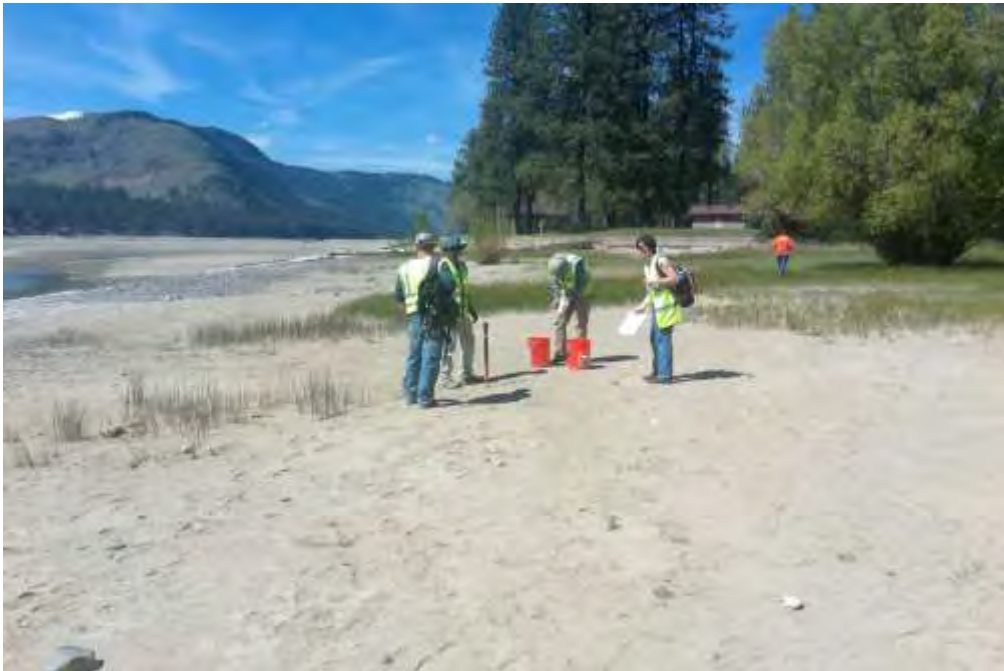
2015-04-28-13-48-58_SDU-06A-28_TECK1.JPG



gs

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2015-04-28-13-49-15_SDU-06A-28_TECK1.JPG



view n

2015-04-28-13-51-57_SDU-06A-28_TECK1.JPG



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Station Id	SDU-06A-29	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-27 16:06	Sample Team Initials	AP
Sample Collected?	Y		
X	425302.3951 m		
Y	5393816.2808 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand with trace silt	Vegetation Present?	Y
Vegetation Type if Present	Some grass		
Station Comments	locatd on upper beach		

Sample Collected from Station

Sample Id	SDU-06-ICS-A	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 7:48	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06A-R03 was used for SDU-06A-02.		

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Photos Collected from Station SDU-06A-29

2015-04-27-16-02-01_SDU-06A-29_TECK1.JPG



gs

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2015-04-27-16-02-17_SDU-06A-29_TECK1.JPG



view n

2015-04-27-16-04-11_SDU-06A-29_TECK1.JPG

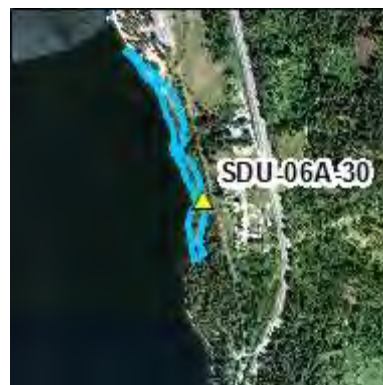


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Station Id	SDU-06A-30	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-27 15:57	Sample Team Initials	AP

Sample Collected? Y
X 425314.38 m
Y 5393791.6704 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Some tree duff
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand with trace silt	Vegetation Present?	Y
Vegetation Type if Present	Some grass		

Station Comments located on upper beach adjacent to tree

Sample Collected from Station

Sample Id	SDU-06-ICS-A	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 7:48	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06A-R03 was used for SDU-06A-02.		

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Photos Collected from Station SDU-06A-30

2015-04-27-15-51-54_SDU-06A-30_TECK1.JPG



gs

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2015-04-27-15-52-16_SDU-06A-30_TECK1.JPG



view n

2015-04-27-15-55-31_SDU-06A-30_TECK1.JPG



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Station Id	SDU-06A-R01	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-06-ICS-A	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 7:48	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06A-R03 was used for SDU-06A-02.		

Photos Collected from Station SDU-06A-R01

No photos taken at this station. See station comments for more details.

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Station Id	SDU-06A-R02	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-06-ICS-A	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 7:48	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06A-R03 was used for SDU-06A-02.		

Photos Collected from Station SDU-06A-R02

No photos taken at this station. See station comments for more details.

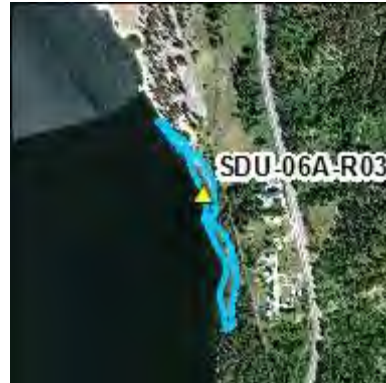
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Station Id	SDU-06A-R03	Start Depth	0 cm
Station Type	Reserve	End Depth	15 cm
Collection DateTime	2015-04-28 13:09	Sample Team Initials	AP

Sample Collected? Y
X 425231.2331 m
Y 5393992.5218 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand with trace silt and fine rounded gravel	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on upper beach. replaces SDU-06A-02, which met refusal on rock

Sample Collected from Station

Sample Id	SDU-06-ICS-A	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 7:48	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06A-R03 was used for SDU-06A-02.		

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Photos Collected from Station SDU-06A-R03

2015-04-28-13-04-00_SDU-06A-R03_1619LP-WA70047.JPG



ground surface

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2015-04-28-13-04-38_SDU-06A-R03_1619LP-WA70047.JPG



overview facing north

2015-04-28-13-06-46_SDU-06A-R03_1619LP-WA70047.JPG



sample

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Station Id	SDU-06A-R04	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-06-ICS-A	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 7:48	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06A-R03 was used for SDU-06A-02.		

Photos Collected from Station SDU-06A-R04

No photos taken at this station. See station comments for more details.

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Station Id	SDU-06A-R05	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-06-ICS-A	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 7:48	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06A-R03 was used for SDU-06A-02.		

Photos Collected from Station SDU-06A-R05

No photos taken at this station. See station comments for more details.

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Station Id	SDU-06A-R06	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-06-ICS-A	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 7:48	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06A-R03 was used for SDU-06A-02.		

Photos Collected from Station SDU-06A-R06

No photos taken at this station. See station comments for more details.

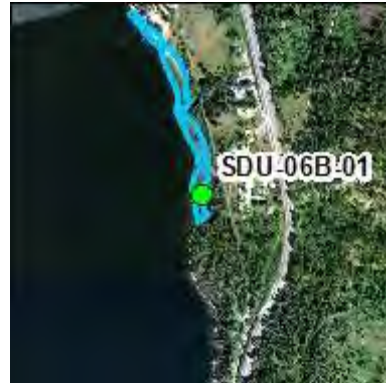
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Station Id	SDU-06B-01	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-27 15:26	Sample Team Initials	MS

Sample Collected? Y
X 425304.618 m
Y 5393706.6387 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine silty sand some organic	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments along northern edge of sample area

Sample Collected from Station

Sample Id	SDU-06-ICS-B	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 8:04	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-06B-01

2015-04-27-15-26-47_SDU-06B-01_TECK2.JPG



sample

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2015-04-27-15-26-53_SDU-06B-01_TECK2.JPG



groundsurface

2015-04-27-15-27-02_SDU-06B-01_TECK2.JPG



overview facing west

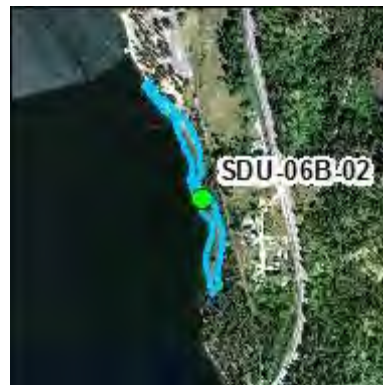
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Station Id	SDU-06B-02	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-27 16:40	Sample Team Initials	MS

Sample Collected? Y
X 425268.86 m
Y 5393883.0397 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-06-ICS-B	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 8:04	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-06B-02

2015-04-27-16-41-33_SDU-06B-02_TECK2.JPG



sample

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-27-16-41-39_SDU-06B-02_TECK2.JPG



groundsurface

2015-04-27-16-41-44_SDU-06B-02_TECK2.JPG



overview facing west

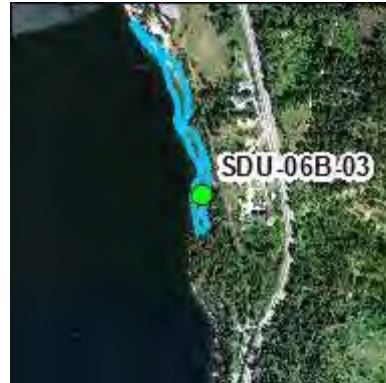
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Station Id	SDU-06B-03	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-27 15:33	Sample Team Initials	MS

Sample Collected? Y
X 425303.4936 m
Y 5393734.4188 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-06-ICS-B	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 8:04	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-06B-03

2015-04-27-15-34-25_SDU-06B-03_TECK2.JPG



sample

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2015-04-27-15-34-39_SDU-06B-03_TECK2.JPG



groundsurface

2015-04-27-15-34-42_SDU-06B-03_TECK2.JPG



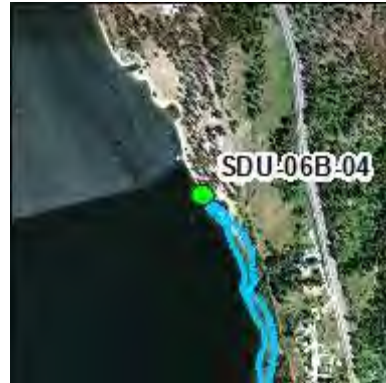
overview facing west

Appendix I
ICS Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-06B-04	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-28 10:43	Sample Team Initials	MS
Sample Collected?	Y		
X	425129.6137 m		
Y	5394178.0994 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly silty sand	Vegetation Present?	N
Vegetation Type if Present	N		
Station Comments	cobbles on surface		

Sample Collected from Station

Sample Id	SDU-06-ICS-B	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 8:04	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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ICS Sample Collection Report
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Photos Collected from Station SDU-06B-04

2015-04-28-10-45-15_SDU-06B-04_TECK2.JPG



overview facing west

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-28-10-46-30_SDU-06B-04_TECK2.JPG



groundsurface

2015-04-28-10-46-45_SDU-06B-04_TECK2.JPG



sample

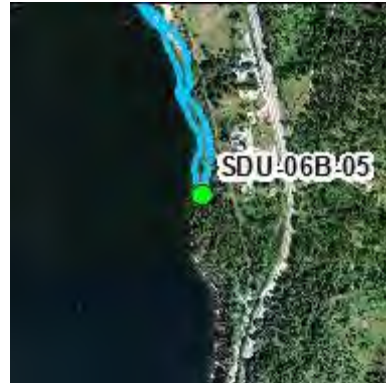
Appendix I
ICS Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-06B-05	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-27 14:55	Sample Team Initials	MS

Sample Collected? Y
X 425299.2851 m
Y 5393658.798 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Willow		

Station Comments

Sample Collected from Station

Sample Id	SDU-06-ICS-B	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 8:04	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-06B-05

2015-04-27-14-56-24_SDU-06B-05_TECK2.JPG



sample

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-27-14-56-35_SDU-06B-05_TECK2.JPG



groundsurface

2015-04-27-14-56-41_SDU-06B-05_TECK2.JPG



overview facing west

Appendix I
ICS Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-06B-06	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-28 9:25	Sample Team Initials	MS
Sample Collected?	Y		
X	425233.4174 m		
Y	5394055.708 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-06-ICS-B	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 8:04	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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ICS Sample Collection Report
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Photos Collected from Station SDU-06B-06

2015-04-28-09-26-07_SDU-06B-06_TECK2.JPG



groundsurface

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-28-09-26-00_SDU-06B-06_TECK2.JPG



sample

2015-04-28-09-26-10_SDU-06B-06_TECK2.JPG



overview facing west

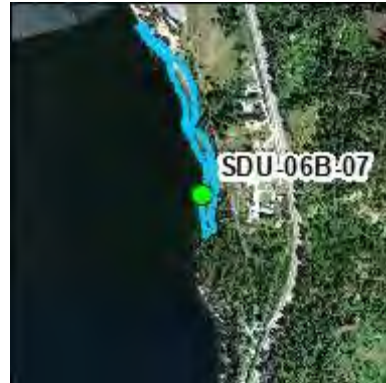
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ICS Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-06B-07	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-27 15:39	Sample Team Initials	MS

Sample Collected? Y
X 425283.6715 m
Y 5393741.296 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-06-ICS-B	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 8:04	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-06B-07

2015-04-27-15-40-11_SDU-06B-07_TECK2.JPG



sample

Appendix I
ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-27-15-40-19_SDU-06B-07_TECK2.JPG



groundsurface

2015-04-27-15-40-23_SDU-06B-07_TECK2.JPG



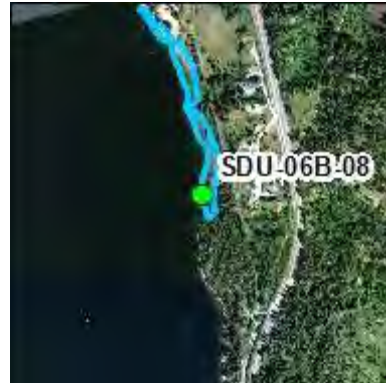
overview facing west

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Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-06B-08	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-27 15:17	Sample Team Initials	MS
Sample Collected?	Y		
X	425280.2309 m		
Y	5393697.1891 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/4
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	Periwinkle	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-06-ICS-B	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 8:04	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-06B-08

2015-04-27-15-18-40_SDU-06B-08_TECK2.JPG



sample

Appendix I
ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-27-15-18-48_SDU-06B-08_TECK2.JPG



groundsurface

2015-04-27-15-18-51_SDU-06B-08_TECK2.JPG



overview facing west

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ICS Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-06B-09	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-28 9:59	Sample Team Initials	MS

Sample Collected? Y
X 425189.4088 m
Y 5394112.8045 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N

Texture Silty fine sand
Vegetation Type if Present Grasses

Anthropogenic Changes Present? N
Color 10YR 4/2
Debris Presence N

Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? N

Station Comments

Sample Collected from Station

Sample Id	SDU-06-ICS-B	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 8:04	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-06B-09

2015-04-28-10-00-27_SDU-06B-09_TECK2.JPG



sample

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-28-10-00-47_SDU-06B-09_TECK2.JPG



groundsurface

2015-04-28-10-00-56_SDU-06B-09_TECK2.JPG



overview facing west

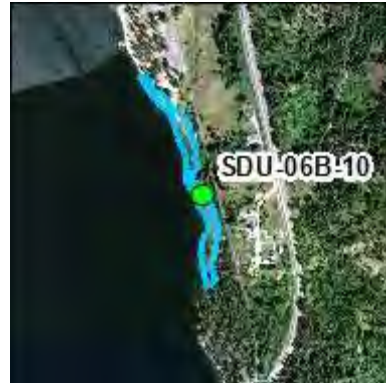
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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-06B-10	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-27 16:11	Sample Team Initials	MS

Sample Collected? Y
X 425280.9973 m
Y 5393877.5699 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-06-ICS-B	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 8:04	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-06B-10

2015-04-27-16-12-57_SDU-06B-10_TECK2.JPG



sample

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-27-16-13-05_SDU-06B-10_TECK2.JPG



groundsurface

2015-04-27-16-13-07_SDU-06B-10_TECK2.JPG



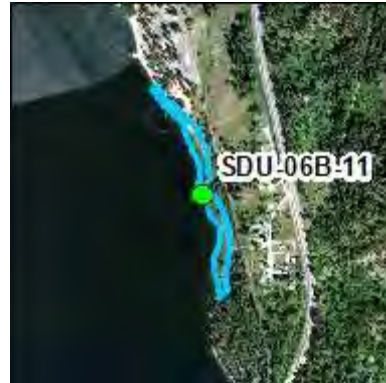
overview facing west

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ICS Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-06B-11	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-27 16:34	Sample Team Initials	MS
Sample Collected?	Y		
X	425247.2838 m		
Y	5393905.1178 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	Willow		

Station Comments

Sample Collected from Station

Sample Id	SDU-06-ICS-B	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 8:04	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-06B-11

2015-04-27-16-35-13_SDU-06B-11_TECK2.JPG



sample

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-27-16-35-19_SDU-06B-11_TECK2.JPG



groundsurface

2015-04-27-16-35-23_SDU-06B-11_TECK2.JPG



overview facing west

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ICS Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-06B-12	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-28 10:24	Sample Team Initials	MS
Sample Collected?	Y		
X	425146.9404 m		
Y	5394155.7605 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly silty sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-06-ICS-B	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 8:04	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-06B-12

2015-04-28-10-26-34_SDU-06B-12_TECK2.JPG



sample

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-28-10-26-52_SDU-06B-12_TECK2.JPG



groundsurface

2015-04-28-10-26-56_SDU-06B-12_TECK2.JPG



overview facing west

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Station Id	SDU-06B-13	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-28 9:00	Sample Team Initials	MS

Sample Collected? Y
X 425233.4338 m
Y 5394008.6061 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N

Texture Silty fine sand
Vegetation Type if Present N

Anthropogenic Changes Present? N
Color 10YR 4/2
Debris Presence N

Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? N

Station Comments

Sample Collected from Station

Sample Id	SDU-06-ICS-B	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 8:04	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-06B-13

2015-04-28-09-06-33_SDU-06B-13_TECK2.JPG



sample

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-28-09-06-45_SDU-06B-13_TECK2.JPG



groundsurface

2015-04-28-09-06-50_SDU-06B-13_TECK2.JPG



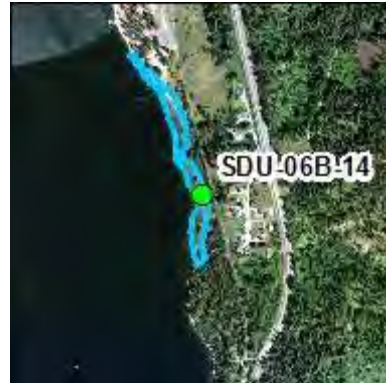
overview facing west

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ICS Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-06B-14	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-27 15:53	Sample Team Initials	MS
Sample Collected?	Y		
X	425307.6441 m		
Y	5393819.1444 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	Grasses		

Station Comments

Sample Collected from Station

Sample Id	SDU-06-ICS-B	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 8:04	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-06B-14

2015-04-27-15-56-22_SDU-06B-14_TECK2.JPG



sample

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2015-04-27-15-56-32_SDU-06B-14_TECK2.JPG



groundsurface

2015-04-27-15-56-35_SDU-06B-14_TECK2.JPG



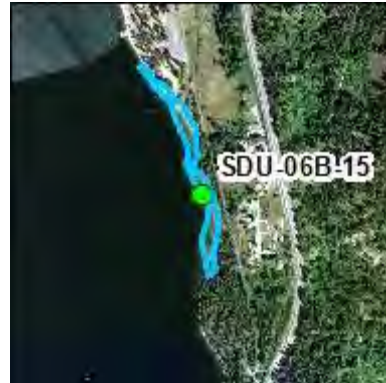
overview facing west

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ICS Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-06B-15	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-27 16:00	Sample Team Initials	MS
Sample Collected?	Y		
X	425278.7656 m		
Y	5393850.6426 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-06-ICS-B	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 8:04	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-06B-15

2015-04-27-16-02-49_SDU-06B-15_TECK2.JPG



sample

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-27-16-02-56_SDU-06B-15_TECK2.JPG



groundsurface

2015-04-27-16-03-00_SDU-06B-15_TECK2.JPG



overview facing west

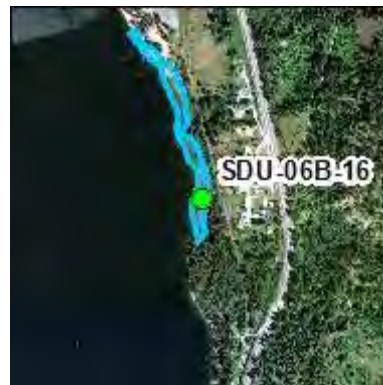
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ICS Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-06B-16	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-27 15:45	Sample Team Initials	MS

Sample Collected? Y
X 425306.0906 m
Y 5393746.4357 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N

Texture Silty fine sand
Vegetation Type if Present N

Anthropogenic Changes Present? N
Color 10YR 4/2
Debris Presence N

Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? N

Station Comments

Sample Collected from Station

Sample Id	SDU-06-ICS-B	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 8:04	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-06B-16

2015-04-27-15-46-22_SDU-06B-16_TECK2.JPG



sample

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2015-04-27-15-46-30_SDU-06B-16_TECK2.JPG



groundsurface

2015-04-27-15-46-46_SDU-06B-16_TECK2.JPG



overview facing west

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-06B-17	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-28 10:52	Sample Team Initials	MS
Sample Collected?	Y		
X	425119.1733 m		
Y	5394180.1217 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly silty sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-06-ICS-B	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 8:04	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-06B-17

2015-04-28-10-56-10_SDU-06B-17_TECK2.JPG



overview facing west

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ICS Sample Collection Report
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2015-04-28-10-56-20_SDU-06B-17_TECK2.JPG



groundsurface

2015-04-28-10-57-07_SDU-06B-17_TECK2.JPG



sample

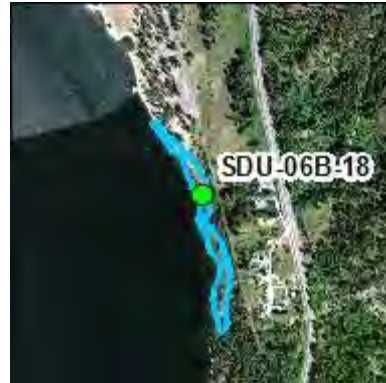
Appendix I
ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-06B-18	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-28 8:47	Sample Team Initials	MS

Sample Collected? Y
X 425248.7401 m
Y 5393997.1643 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N

Texture Silty fine sand
Vegetation Type if Present N

Anthropogenic Changes Present? N
Color 10YR 4/2
Debris Presence N

Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? N

Station Comments

Sample Collected from Station

Sample Id	SDU-06-ICS-B	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 8:04	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-06B-18

2015-04-28-08-49-04_SDU-06B-18_TECK2.JPG



sample

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-28-08-49-13_SDU-06B-18_TECK2.JPG



groundsurface

2015-04-28-08-49-16_SDU-06B-18_TECK2.JPG



overview facing west

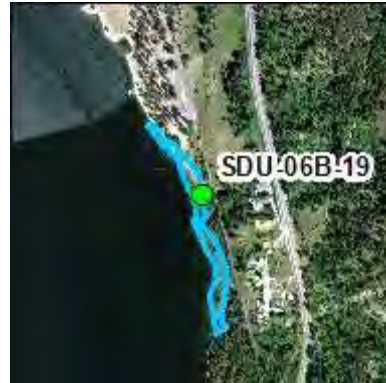
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Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-06B-19	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-28 8:54	Sample Team Initials	MS

Sample Collected? Y
X 425257.0352 m
Y 5394003.8069 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-06-ICS-B	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 8:04	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-06B-19

2015-04-28-08-55-03_SDU-06B-19_TECK2.JPG



sample

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2015-04-28-08-55-14_SDU-06B-19_TECK2.JPG



groundsurface

2015-04-28-08-55-19_SDU-06B-19_TECK2.JPG



overview facing west

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Station Id	SDU-06B-20	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-28 9:42	Sample Team Initials	MS
Sample Collected?	Y		
X	425208.2075 m		
Y	5394095.4384 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand trace organics	Vegetation Present?	Y
Vegetation Type if Present	Grasses		

Station Comments

Sample Collected from Station

Sample Id	SDU-06-ICS-B	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 8:04	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-06B-20

2015-04-28-09-38-44_SDU-06B-20_TECK2.JPG



sample

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-28-09-38-55_SDU-06B-20_TECK2.JPG



groundsurface

2015-04-28-09-39-02_SDU-06B-20_TECK2.JPG



overview facing west

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ICS Sample Collection Report
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Station Id	SDU-06B-21	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-28 10:31	Sample Team Initials	MS

Sample Collected? Y
X 425128.365 m
Y 5394167.1495 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly silty sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments dense cobbles on surface

Sample Collected from Station

Sample Id	SDU-06-ICS-B	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 8:04	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-06B-21

2015-04-28-10-38-23_SDU-06B-21_TECK2.JPG



sample

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2015-04-28-10-38-28_SDU-06B-21_TECK2.JPG



groundsurface

2015-04-28-10-34-34_SDU-06B-21_TECK2.JPG



overview facing west

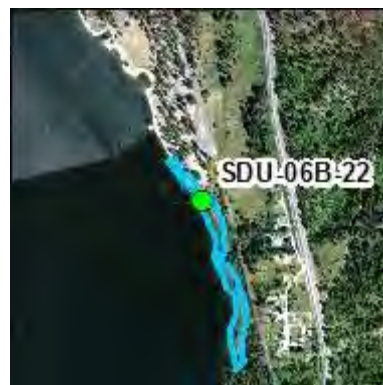
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ICS Sample Collection Report
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Station Id	SDU-06B-22	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-28 9:30	Sample Team Initials	MS

Sample Collected? Y
X 425205.7787 m
Y 5394080.2589 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-06-ICS-B	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 8:04	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-06B-22

2015-04-28-09-32-50_SDU-06B-22_TECK2.JPG



overview facing west

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2015-04-28-09-32-12_SDU-06B-22_TECK2.JPG



sample

2015-04-28-09-32-47_SDU-06B-22_TECK2.JPG



groundsurface

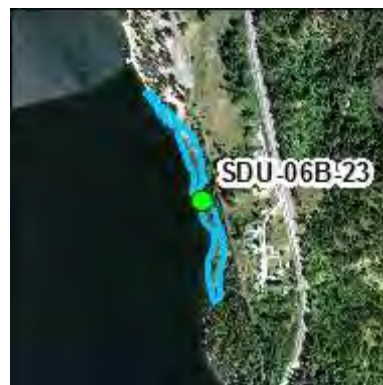
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ICS Sample Collection Report
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Station Id	SDU-06B-23	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-28 8:30	Sample Team Initials	MS

Sample Collected? Y
X 425264.5051 m
Y 5393902.6915 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand some organics	Vegetation Present?	N
Vegetation Type if Present	Grasses		

Station Comments

Sample Collected from Station

Sample Id	SDU-06-ICS-B	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 8:04	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-06B-23

2015-04-28-08-28-12_SDU-06B-23_TECK2.JPG



sample

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2015-04-28-08-28-22_SDU-06B-23_TECK2.JPG



groundsurface

2015-04-28-08-28-31_SDU-06B-23_TECK2.JPG



overview facing west

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Station Id	SDU-06B-24	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-28 10:14	Sample Team Initials	MS

Sample Collected? Y
X 425181.2824 m
Y 5394119.7848 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine sand with silt	Vegetation Present?	Y
Vegetation Type if Present	Grasses		

Station Comments

Sample Collected from Station

Sample Id	SDU-06-ICS-B	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 8:04	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-06B-24

2015-04-28-10-17-06_SDU-06B-24_TECK2.JPG



sample

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2015-04-28-10-17-16_SDU-06B-24_TECK2.JPG



groundsurface

2015-04-28-10-17-20_SDU-06B-24_TECK2.JPG



overview facing west

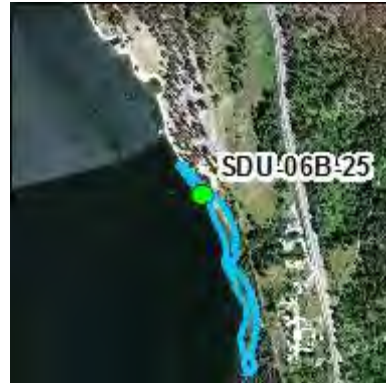
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ICS Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-06B-25	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-28 10:06	Sample Team Initials	MS

Sample Collected? Y
X 425177.1019 m
Y 5394109.1339 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly silty	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments small cobbles on surface

Sample Collected from Station

Sample Id	SDU-06-ICS-B	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 8:04	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-06B-25

2015-04-28-10-09-33_SDU-06B-25_TECK2.JPG



overview facing west

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2015-04-28-10-09-47_SDU-06B-25_TECK2.JPG



sample

2015-04-28-10-09-54_SDU-06B-25_TECK2.JPG



groundsurface

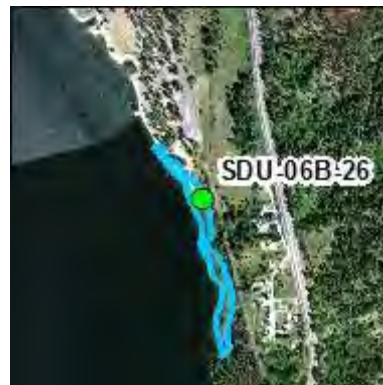
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Station Id	SDU-06B-26	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-28 9:20	Sample Team Initials	MS

Sample Collected? Y
X 425242.8779 m
Y 5394049.3563 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-06-ICS-B	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 8:04	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-06B-26

2015-04-28-09-18-54_SDU-06B-26_TECK2.JPG



sample

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2015-04-28-09-19-01_SDU-06B-26_TECK2.JPG



groundsurface

2015-04-28-09-19-05_SDU-06B-26_TECK2.JPG



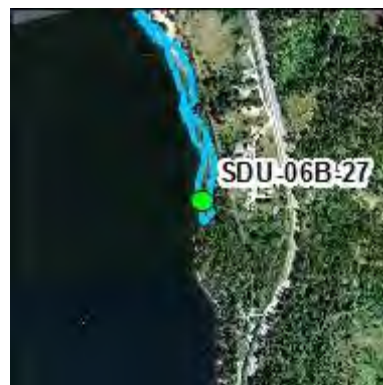
overview facing west

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Station Id	SDU-06B-27	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-27 15:10	Sample Team Initials	MS
Sample Collected?	Y		
X	425291.0054 m		
Y	5393687.2825 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-06-ICS-B	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 8:04	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station SDU-06B-27

2015-04-27-15-12-19_SDU-06B-27_TECK2.JPG



sample

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2015-04-27-15-12-27_SDU-06B-27_TECK2.JPG



groundsurface

2015-04-27-15-12-31_SDU-06B-27_TECK2.JPG



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Station Id	SDU-06B-28	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-28 9:11	Sample Team Initials	MS

Sample Collected? Y
X 425232.9191 m
Y 5394036.924 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-06-ICS-B	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 8:04	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-06B-28

2015-04-28-09-12-19_SDU-06B-28_TECK2.JPG



sample

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2015-04-28-09-12-28_SDU-06B-28_TECK2.JPG



groundsurface

2015-04-28-09-12-34_SDU-06B-28_TECK2.JPG



overview facing west

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Station Id	SDU-06B-29	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-28 8:40	Sample Team Initials	MS
Sample Collected?	Y		
X	425250.8889 m		
Y	5393972.8163 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand trace organics	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-06-ICS-B	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 8:04	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-06B-29

2015-04-28-08-41-38_SDU-06B-29_TECK2.JPG



sample

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-28-08-41-52_SDU-06B-29_TECK2.JPG



groundsurface

2015-04-28-08-41-56_SDU-06B-29_TECK2.JPG



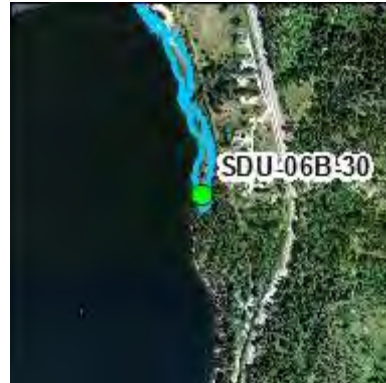
overview facing west

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Station Id	SDU-06B-30	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-27 15:02	Sample Team Initials	MS
Sample Collected?	Y		
X	425296.4058 m		
Y	5393674.0828 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-06-ICS-B	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 8:04	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-06B-30

2015-04-27-15-03-58_SDU-06B-30_TECK2.JPG



sample

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2015-04-27-15-04-08_SDU-06B-30_TECK2.JPG



groundsurface

2015-04-27-15-04-12_SDU-06B-30_TECK2.JPG



overview facing west

Appendix I
ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-06B-R01	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-06-ICS-B	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 8:04	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station SDU-06B-R01

No photos taken at this station. See station comments for more details.

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-06B-R02	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-06-ICS-B	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 8:04	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station SDU-06B-R02

No photos taken at this station. See station comments for more details.

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Station Id	SDU-06B-R03	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-06-ICS-B	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 8:04	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station SDU-06B-R03

No photos taken at this station. See station comments for more details.

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Station Id	SDU-06B-R04	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-06-ICS-B	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 8:04	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station SDU-06B-R04

No photos taken at this station. See station comments for more details.

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-06B-R05	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-06-ICS-B	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 8:04	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station SDU-06B-R05

No photos taken at this station. See station comments for more details.

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Station Id	SDU-06B-R06	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-06-ICS-B	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 8:04	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station SDU-06B-R06

No photos taken at this station. See station comments for more details.

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Station Id	SDU-06C-01	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-28 15:59	Sample Team Initials	AP

Sample Collected? Y
X 425179.0807 m
Y 5394130.6343 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	1YR 4/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand	Vegetation Type if Present	N

Station Comments located on upper beach just below bulk head

Sample Collected from Station

Sample Id	SDU-06-ICS-C	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 9:40	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	Field	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06C-R05 used for SDU-06C-10.		

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Photos Collected from Station SDU-06C-01

2015-04-28-15-51-55_SDU-06C-01_TECK1.JPG



gs

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2015-04-28-15-52-10_SDU-06C-01_TECK1.JPG



vn

2015-04-28-15-56-25_SDU-06C-01_TECK1.JPG



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Station Id	SDU-06C-02	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-28 16:01	Sample Team Initials	MS
Sample Collected?	Y		
X	425248.9 m		
Y	5393985.5237 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-06-ICS-C	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 9:40	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	Field	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06C-R05 used for SDU-06C-10.		

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Photos Collected from Station SDU-06C-02

2015-04-28-15-57-46_SDU-06C-02_TECK2.JPG



groundsurface

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2015-04-28-15-57-50_SDU-06C-02_TECK2.JPG



overview facing west

2015-04-28-16-02-07_SDU-06C-02_TECK2.JPG



sample

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-06C-03	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-28 16:13	Sample Team Initials	MS
Sample Collected?	Y		
X	425222.0089 m		
Y	5394019.8828 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-06-ICS-C	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 9:40	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	Field	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06C-R05 used for SDU-06C-10.		

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Photos Collected from Station SDU-06C-03

2015-04-28-16-16-16_SDU-06C-03_TECK2.JPG



overview east to west

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2015-04-28-16-16-10_SDU-06C-03_TECK2.JPG



photo of location

2015-04-28-16-16-00_SDU-06C-03_TECK2.JPG



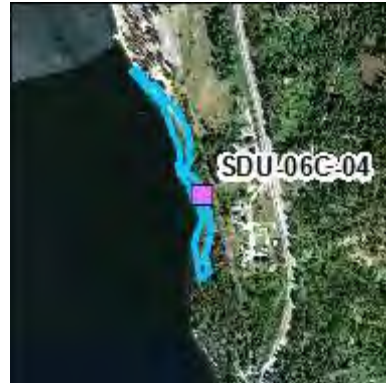
sample

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Station Id	SDU-06C-04	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-28 14:02	Sample Team Initials	MS
Sample Collected?	Y		
X	425298.3634 m		
Y	5393857.6477 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand some organics	Vegetation Present?	Y
Vegetation Type if Present	Willow		

Station Comments

Sample Collected from Station

Sample Id	SDU-06-ICS-C	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 9:40	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	Field	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06C-R05 used for SDU-06C-10.		

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Photos Collected from Station SDU-06C-04

2015-04-28-14-04-18_SDU-06C-04_TECK2.JPG



overview facing west

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2015-04-28-14-05-29_SDU-06C-04_TECK2.JPG



sample

2015-04-28-14-05-40_SDU-06C-04_TECK2.JPG



groundsurface

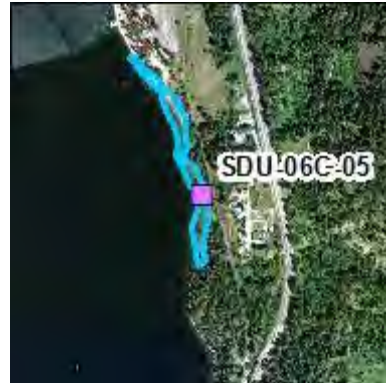
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Station Id	SDU-06C-05	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-28 13:49	Sample Team Initials	MS

Sample Collected? Y
X 425305.1656 m
Y 5393823.0333 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-06-ICS-C	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 9:40	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	Field	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06C-R05 used for SDU-06C-10.		

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Photos Collected from Station SDU-06C-05

2015-04-28-13-50-32_SDU-06C-05_TECK2.JPG



overview facing west

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2015-04-28-13-50-40_SDU-06C-05_TECK2.JPG



groundsurface

2015-04-28-13-50-53_SDU-06C-05_TECK2.JPG



sample

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Station Id	SDU-06C-06	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-28 14:12	Sample Team Initials	MS
Sample Collected?	Y		
X	425284.2078 m		
Y	5393859.3723 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-06-ICS-C	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 9:40	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	Field	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06C-R05 used for SDU-06C-10.		

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Photos Collected from Station SDU-06C-06

2015-04-28-14-14-51_SDU-06C-06_TECK2.JPG



sample

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2015-04-28-14-15-02_SDU-06C-06_TECK2.JPG



groundsurface

2015-04-28-14-15-07_SDU-06C-06_TECK2.JPG



overview facing west

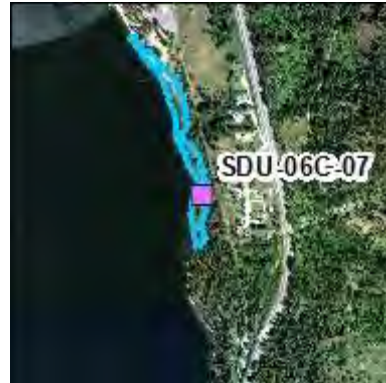
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Station Id	SDU-06C-07	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-28 13:37	Sample Team Initials	MS

Sample Collected? Y
X 425308.0756 m
Y 5393770.2752 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-06-ICS-C	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 9:40	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	Field	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06C-R05 used for SDU-06C-10.		

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Photos Collected from Station SDU-06C-07

2015-04-28-13-38-18_SDU-06C-07_TECK2.JPG



sample

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2015-04-28-13-38-27_SDU-06C-07_TECK2.JPG



2015-04-28-13-38-34_SDU-06C-07_TECK2.JPG



overview facing west

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Station Id	SDU-06C-08	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-28 16:06	Sample Team Initials	AP

Sample Collected? Y
X 425200.4662 m
Y 5394087.3161 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Some grass		
Station Comments	located on upper beach		

Sample Collected from Station

Sample Id	SDU-06-ICS-C	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 9:40	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	Field	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06C-R05 used for SDU-06C-10.		

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Photos Collected from Station SDU-06C-08

2015-04-28-16-02-42_SDU-06C-08_TECK1.JPG



gs

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2015-04-28-16-02-55_SDU-06C-08_TECK1.JPG



vn

2015-04-28-16-04-59_SDU-06C-08_TECK1.JPG

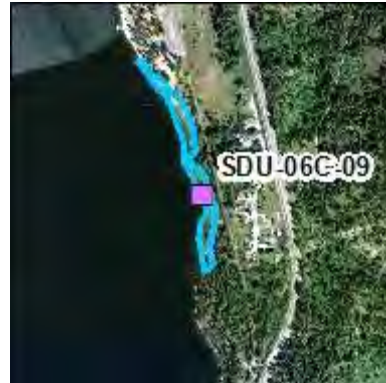


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Station Id	SDU-06C-09	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-28 13:54	Sample Team Initials	MS
Sample Collected?	Y		
X	425286.9699 m		
Y	5393834.376 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-06-ICS-C	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 9:40	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	Field	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06C-R05 used for SDU-06C-10.		

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Photos Collected from Station SDU-06C-09

2015-04-28-13-55-34_SDU-06C-09_TECK2.JPG



sample

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2015-04-28-13-55-40_SDU-06C-09_TECK2.JPG



groundsurface

2015-04-28-13-55-43_SDU-06C-09_TECK2.JPG



overview facing west

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Station Id	SDU-06C-10	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime	2015-04-28 15:20	Sample Team Initials	MS
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984

Station Comments location abandoned; located on a rock rib projecting out onto beach

Sample Collected from Station

Sample Id	SDU-06-ICS-C	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 9:40	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	Field	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06C-R05 used for SDU-06C-10.		

Photos Collected from Station SDU-06C-10

No photos taken at this station. See station comments for more details.

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Station Id	SDU-06C-11	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-28 16:33	Sample Team Initials	AP
Sample Collected?	Y		
X	425238.9674 m		
Y	5394048.1364 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Snail shell in sample	Color	10YR 4/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	Y	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on upper beach

Sample Collected from Station

Sample Id	SDU-06-ICS-C	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 9:40	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	Field	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06C-R05 used for SDU-06C-10.		

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Photos Collected from Station SDU-06C-11

2015-04-28-16-27-22_SDU-06C-11_TECK1.JPG



gs

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2015-04-28-16-27-37_SDU-06C-11_TECK1.JPG



vn

2015-04-28-16-30-58_SDU-06C-11_TECK1.JPG



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Station Id	SDU-06C-12	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-28 14:18	Sample Team Initials	MS

Sample Collected? Y
X 425271.97 m
Y 5393861.5794 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment

Station Comments

Sample Collected from Station

Sample Id	SDU-06-ICS-C	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 9:40	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	Field	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06C-R05 used for SDU-06C-10.		

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Photos Collected from Station SDU-06C-12

2015-04-28-14-14-51_SDU-06C-12_TECK2.JPG



sample

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2015-04-28-14-20-07_SDU-06C-12_TECK2.JPG



groundsurface

2015-04-28-14-20-10_SDU-06C-12_TECK2.JPG



overview facing west

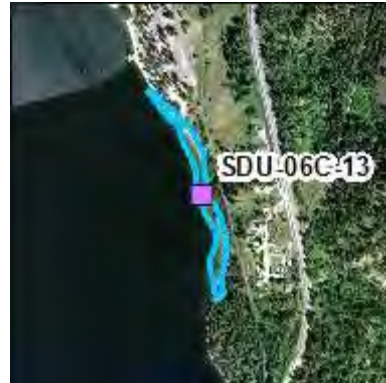
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Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-06C-13	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-28 14:39	Sample Team Initials	MS

Sample Collected? Y
X 425257.5847 m
Y 5393912.8923 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	20
Percent Ground Coverage	80	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	Y
Vegetation Type if Present	Willow		

Station Comments

Sample Collected from Station

Sample Id	SDU-06-ICS-C	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 9:40	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	Field	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06C-R05 used for SDU-06C-10.		

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Photos Collected from Station SDU-06C-13

2015-04-28-14-41-42_SDU-06C-13_TECK2.JPG



sample

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-28-14-41-50_SDU-06C-13_TECK2.JPG



groundsurface

2015-04-28-14-41-58_SDU-06C-13_TECK2.JPG



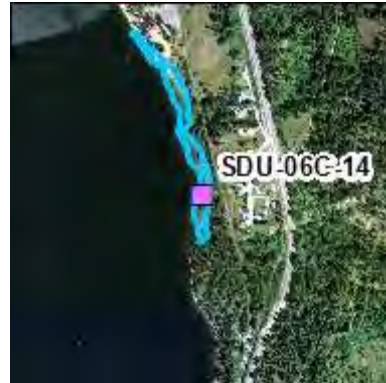
overview facng west

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ICS Sample Collection Report
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Station Id	SDU-06C-14	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-28 13:30	Sample Team Initials	MS
Sample Collected?	Y		
X	425300.8781 m		
Y	5393758.9372 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-06-ICS-C	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 9:40	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	Field	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06C-R05 used for SDU-06C-10.		

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Photos Collected from Station SDU-06C-14

2015-04-28-13-32-44_SDU-06C-14_TECK2.JPG



sample

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-28-13-32-53_SDU-06C-14_TECK2.JPG



groundsurface

2015-04-28-13-32-57_SDU-06C-14_TECK2.JPG



overview facing west

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Station Id	SDU-06C-15	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-28 15:50	Sample Team Initials	MS
Sample Collected?	Y		
X	425245.6695 m		
Y	5393960.2759 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-06-ICS-C	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 9:40	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	Field	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06C-R05 used for SDU-06C-10.		

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Photos Collected from Station SDU-06C-15

2015-04-28-15-53-59_SDU-06C-15_TECK2.JPG



sample

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2015-04-28-15-52-19_SDU-06C-15_TECK2.JPG



overview facing west

2015-04-28-15-52-37_SDU-06C-15_TECK2.JPG



groundsurface

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Station Id	SDU-06C-16	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-28 16:25	Sample Team Initials	AP

Sample Collected? Y
X 425226.5972 m
Y 5394048.2767 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments located on upper beach

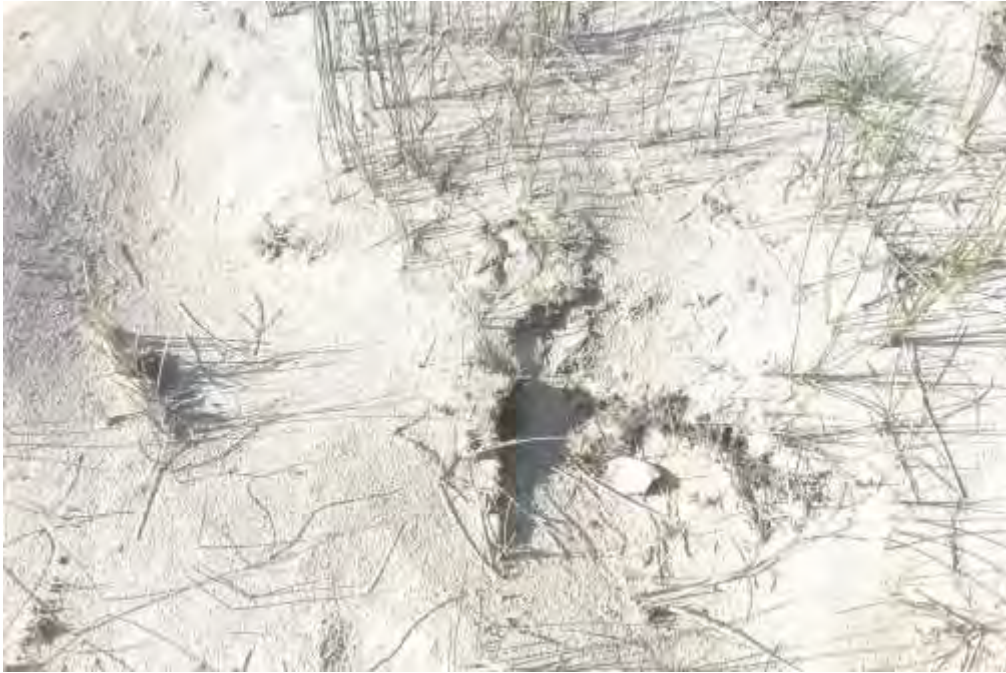
Sample Collected from Station

Sample Id	SDU-06-ICS-C	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 9:40	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	Field	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06C-R05 used for SDU-06C-10.		

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Photos Collected from Station SDU-06C-16

2015-04-28-16-19-42_SDU-06C-16_TECK1.JPG



gs

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-28-16-20-09_SDU-06C-16_TECK1.JPG



vn

2015-04-28-16-23-37_SDU-06C-16_TECK1.JPG

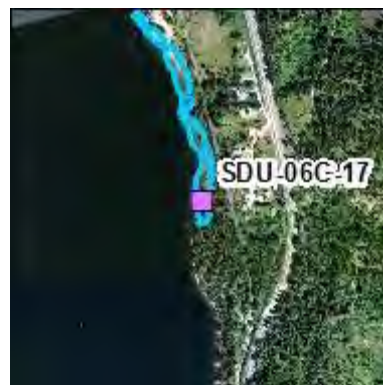


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Station Id	SDU-06C-17	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-28 13:18	Sample Team Initials	MS
Sample Collected?	Y		
X	425296.62 m		
Y	5393694.123 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-06-ICS-C	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 9:40	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	Field	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06C-R05 used for SDU-06C-10.		

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Photos Collected from Station SDU-06C-17

2015-04-28-13-18-44_SDU-06C-17_TECK2.JPG



sample

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2015-04-28-13-18-49_SDU-06C-17_TECK2.JPG



groundsurface

2015-04-28-13-18-54_SDU-06C-17_TECK2.JPG



overview facing west

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Station Id	SDU-06C-18	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-28 15:32	Sample Team Initials	AP

Sample Collected? Y
X 425132.3606 m
Y 5394167.3868 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Sandy cobbles with gravel	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on upper beach adjacent to bulk head

Sample Collected from Station

Sample Id	SDU-06-ICS-C	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 9:40	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	Field	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06C-R05 used for SDU-06C-10.		

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Photos Collected from Station SDU-06C-18

2015-04-28-15-21-29_SDU-06C-18_TECK1.JPG



gs

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2015-04-28-15-21-49_SDU-06C-18_TECK1.JPG



view n

2015-04-28-15-29-08_SDU-06C-18_TECK1.JPG



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Station Id	SDU-06C-19	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-28 15:14	Sample Team Initials	MS

Sample Collected? Y
X 425254.8407 m
Y 5393938.9106 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	40	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Grasses		

Station Comments

Sample Collected from Station

Sample Id	SDU-06-ICS-C	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 9:40	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	Field	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06C-R05 used for SDU-06C-10.		

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Photos Collected from Station SDU-06C-19

2015-04-28-15-17-15_SDU-06C-19_TECK2.JPG



overview facing west

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2015-04-28-15-17-28_SDU-06C-19_TECK2.JPG



groundsurface

2015-04-28-15-17-34_SDU-06C-19_TECK2.JPG



sample

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ICS Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-06C-20	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-28 13:42	Sample Team Initials	MS
Sample Collected?	Y		
X	425316.1068 m		
Y	5393779.0007 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-06-ICS-C	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 9:40	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	Field	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06C-R05 used for SDU-06C-10.		

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Photos Collected from Station SDU-06C-20

2015-04-28-13-43-15_SDU-06C-20_TECK2.JPG



sample

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2015-04-28-13-43-24_SDU-06C-20_TECK2.JPG



groundsurface

2015-04-28-13-43-27_SDU-06C-20_TECK2.JPG



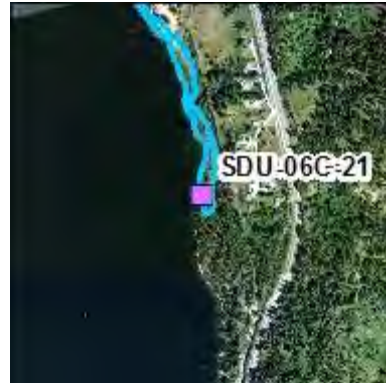
overview facing west

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Station Id	SDU-06C-21	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-28 13:12	Sample Team Initials	MS
Sample Collected?	Y		
X	425285.5664 m		
Y	5393684.2054 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand fine to coarse gravel	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-06-ICS-C	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 9:40	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	Field	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06C-R05 used for SDU-06C-10.		

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Photos Collected from Station SDU-06C-21

2015-04-28-13-13-10_SDU-06C-21_TECK2.JPG



sample

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2015-04-28-13-13-16_SDU-06C-21_TECK2.JPG



groundsurface

2015-04-28-13-13-20_SDU-06C-21_TECK2.JPG



overview facing west

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Station Id	SDU-06C-22	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-28 15:47	Sample Team Initials	AP

Sample Collected? Y
X 425144.9874 m
Y 5394157.4047 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Sandy gravel with cobbles	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on upper beach adjacent to bulk head

Sample Collected from Station

Sample Id	SDU-06-ICS-C	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 9:40	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	Field	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06C-R05 used for SDU-06C-10.		

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Photos Collected from Station SDU-06C-22

2015-04-28-15-36-58_SDU-06C-22_TECK1.JPG



gs

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-28-15-37-13_SDU-06C-22_TECK1.JPG



view n

2015-04-28-15-44-47_SDU-06C-22_TECK1.JPG



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Station Id	SDU-06C-23	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-28 15:56	Sample Team Initials	MS
Sample Collected?	Y		
X	425240.1748 m		
Y	5393972.4378 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-06-ICS-C	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 9:40	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	Field	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06C-R05 used for SDU-06C-10.		

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Photos Collected from Station SDU-06C-23

2015-04-28-15-57-38_SDU-06C-23_TECK2.JPG



sample

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2015-04-28-15-57-46_SDU-06C-23_TECK2.JPG



groundsurface

2015-04-28-15-57-50_SDU-06C-23_TECK2.JPG



overview facing west

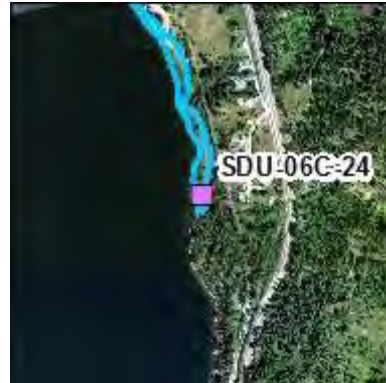
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Station Id	SDU-06C-24	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-28 13:03	Sample Team Initials	MS

Sample Collected? Y
X 425302.5149 m
Y 5393680.0321 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand trace fine gravel	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-06-ICS-C	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 9:40	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	Field	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06C-R05 used for SDU-06C-10.		

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Photos Collected from Station SDU-06C-24

2015-04-28-13-04-25_SDU-06C-24_TECK2.JPG



sample

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2015-04-28-13-04-36_SDU-06C-24_TECK2.JPG



groundsurface

2015-04-28-13-04-43_SDU-06C-24_TECK2.JPG



overview facing west

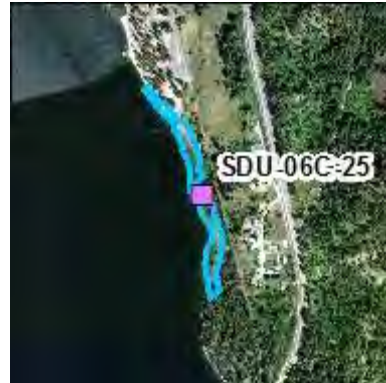
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Station Id	SDU-06C-25	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-28 15:25	Sample Team Initials	MS

Sample Collected? Y
X 425270.6885 m
Y 5393904.4058 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	40
Percent Ground Coverage	70	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Willow grasses		

Station Comments

Sample Collected from Station

Sample Id	SDU-06-ICS-C	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 9:40	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	Field	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06C-R05 used for SDU-06C-10.		

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Photos Collected from Station SDU-06C-25

2015-04-28-15-24-09_SDU-06C-25_TECK2.JPG



sample

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2015-04-28-15-24-18_SDU-06C-25_TECK2.JPG



groundsurface

2015-04-28-15-24-23_SDU-06C-25_TECK2.JPG



overview facing west

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Station Id	SDU-06C-26	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-28 16:14	Sample Team Initials	AP

Sample Collected? Y
X 425221.7552 m
Y 5394067.6016 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand, some organic material	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments located on upper beach

Sample Collected from Station

Sample Id	SDU-06-ICS-C	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 9:40	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	Field	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06C-R05 used for SDU-06C-10.		

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Photos Collected from Station SDU-06C-26

2015-04-28-16-09-26_SDU-06C-26_TECK1.JPG



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2015-04-28-16-09-54_SDU-06C-26_TECK1.JPG



vn

2015-04-28-16-12-45_SDU-06C-26_TECK1.JPG

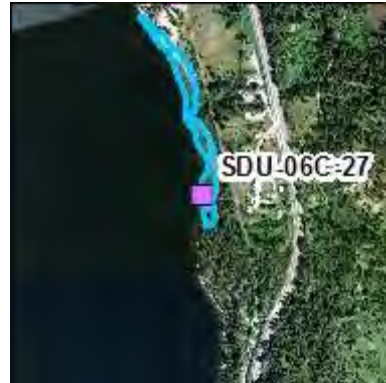


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Station Id	SDU-06C-27	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-28 13:22	Sample Team Initials	MS
Sample Collected?	Y		
X	425281.6421 m		
Y	5393716.233 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-06-ICS-C	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 9:40	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	Field	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06C-R05 used for SDU-06C-10.		

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Photos Collected from Station SDU-06C-27

2015-04-28-13-24-54_SDU-06C-27_TECK2.JPG



sample

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2015-04-28-13-25-01_SDU-06C-27_TECK2.JPG



groundsurface

2015-04-28-13-25-06_SDU-06C-27_TECK2.JPG



overview facing west

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Station Id	SDU-06C-28	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-28 14:25	Sample Team Initials	MS
Sample Collected?	Y		
X	425247.8149 m		
Y	5393907.8425 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand trace coarse sand trace fine gravel trace organics	Vegetation Present?	N
Vegetation Type if Present	Willow		

Station Comments

Sample Collected from Station

Sample Id	SDU-06-ICS-C	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 9:40	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	Field	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06C-R05 used for SDU-06C-10.		

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Photos Collected from Station SDU-06C-28

2015-04-28-14-27-05_SDU-06C-28_TECK2.JPG



sample

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2015-04-28-14-27-17_SDU-06C-28_TECK2.JPG



groundsurface

2015-04-28-14-27-21_SDU-06C-28_TECK2.JPG



overview facing west

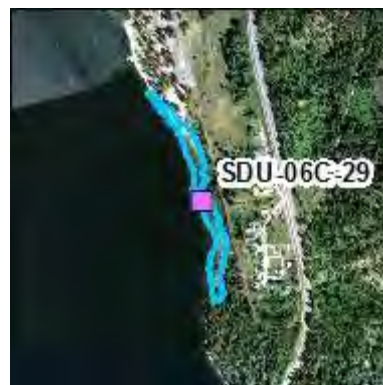
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Station Id	SDU-06C-29	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-28 14:34	Sample Team Initials	MS

Sample Collected? Y
X 425260.7395 m
Y 5393901.1865 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	50
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	Willow		

Station Comments

Sample Collected from Station

Sample Id	SDU-06-ICS-C	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 9:40	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	Field	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06C-R05 used for SDU-06C-10.		

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Photos Collected from Station SDU-06C-29

2015-04-28-14-33-47_SDU-06C-29_TECK2.JPG



sample

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-28-14-33-54_SDU-06C-29_TECK2.JPG



groundsurface

2015-04-28-14-33-58_SDU-06C-29_TECK2.JPG



overview facing west

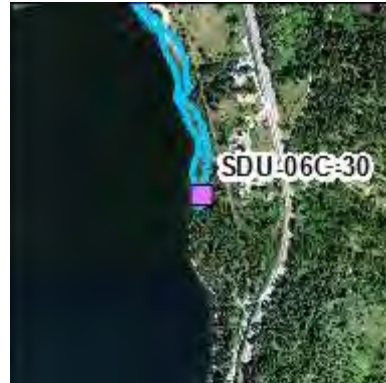
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Station Id	SDU-06C-30	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-28 12:57	Sample Team Initials	MS

Sample Collected? Y
X 425304.3776 m
Y 5393669.3183 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	Y
Vegetation Type if Present	Grasses		

Station Comments

Sample Collected from Station

Sample Id	SDU-06-ICS-C	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 9:40	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	Field	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06C-R05 used for SDU-06C-10.		

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Photos Collected from Station SDU-06C-30

2015-04-28-12-59-01_SDU-06C-30_TECK2.JPG



sample

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2015-04-28-12-59-08_SDU-06C-30_TECK2.JPG



groundsurface

2015-04-28-12-59-19_SDU-06C-30_TECK2.JPG



overview facing west

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Station Id	SDU-06C-R01	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-06-ICS-C	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 9:40	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	Field	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06C-R05 used for SDU-06C-10.		

Photos Collected from Station SDU-06C-R01

No photos taken at this station. See station comments for more details.

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Station Id	SDU-06C-R02	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-06-ICS-C	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 9:40	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	Field	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06C-R05 used for SDU-06C-10.		

Photos Collected from Station SDU-06C-R02

No photos taken at this station. See station comments for more details.

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Station Id	SDU-06C-R03	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-06-ICS-C	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 9:40	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	Field	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06C-R05 used for SDU-06C-10.		

Photos Collected from Station SDU-06C-R03

No photos taken at this station. See station comments for more details.

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Station Id	SDU-06C-R04	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-06-ICS-C	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 9:40	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	Field	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06C-R05 used for SDU-06C-10.		

Photos Collected from Station SDU-06C-R04

No photos taken at this station. See station comments for more details.

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Station Id	SDU-06C-R05	Start Depth	0 cm
Station Type	Reserve	End Depth	15 cm
Collection DateTime	2015-04-28 15:40	Sample Team Initials	MS

Sample Collected? Y
X 425278.3743 m
Y 5393893.3149 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	Grasses		

Station Comments reserve for SDU-06B-10

Sample Collected from Station

Sample Id	SDU-06-ICS-C	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 9:40	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	Field	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06C-R05 used for SDU-06C-10.		

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Photos Collected from Station SDU-06C-R05

2015-04-28-15-42-52_SDU-06C-R05_TECK2.JPG



sample

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2015-04-28-15-41-41_SDU-06C-R05_TECK2.JPG



overview facing west

2015-04-28-15-41-50_SDU-06C-R05_TECK2.JPG



groundsurface

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Station Id	SDU-06C-R06	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-06-ICS-C	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 9:40	Collection Method	ICS
Initials on CoC	KY	Matrix	Sediment
Sample Split	Field	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. Reserve location SDU-06C-R05 used for SDU-06C-10.		

Photos Collected from Station SDU-06C-R06

No photos taken at this station. See station comments for more details.

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Station Id	SDU-07A-01	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 9:32	Sample Team Initials	MS

Sample Collected? Y
X 425020.3125 m
Y 5392771.1231 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N

Texture Silty fine sand
Vegetation Type if Present N

Anthropogenic Changes Present? N
Color 10YR 4/1
Debris Presence N

Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? N

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-A	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:23	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07A-01

2015-05-05-09-39-32_SDU-07A-01_TECK2.JPG



sample

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2015-05-05-09-37-10_SDU-07A-01_TECK2.JPG



overview facing south

2015-05-05-09-37-28_SDU-07A-01_TECK2.JPG



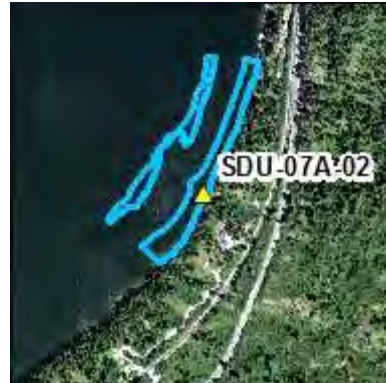
groundsurface

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Station Id	SDU-07A-02	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-04 10:59	Sample Team Initials	MS
Sample Collected?	Y		
X	425181.7024 m		
Y	5392763.3813 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-A	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:23	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07A-02

2015-05-04-11-03-16_SDU-07A-02_TECK2.JPG



ground surface

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2015-05-04-11-03-23_SDU-07A-02_TECK2.JPG



sample

2015-05-04-11-03-26_SDU-07A-02_TECK2.JPG



overview facing north

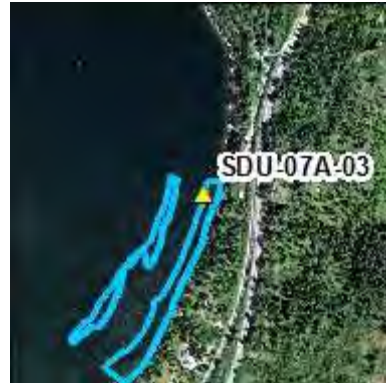
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Station Id	SDU-07A-03	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-04 9:21	Sample Team Initials	MS

Sample Collected? Y
X 425269.7817 m
Y 5393050.1925 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N
Texture Silty fine sand
Vegetation Type if Present N

Anthropogenic Changes Present? N
Color 10YR 4/2
Debris Presence N
Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? N

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-A	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:23	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07A-03

2015-05-04-09-26-43_SDU-07A-03_TECK2.JPG



sample

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2015-05-04-09-24-45_SDU-07A-03_TECK2.JPG



groundsurface

2015-05-04-09-24-50_SDU-07A-03_TECK2.JPG



overview facing north

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Station Id	SDU-07A-04	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 8:33	Sample Team Initials	MS

Sample Collected? Y
X 425177.406 m
Y 5392982.5049 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N

Texture Silty fine sand
Vegetation Type if Present N

Anthropogenic Changes Present? N
Color 10YR 4/2
Debris Presence N

Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? N

Station Comments scoop

Sample Collected from Station

Sample Id	SDU-07-ICS-A	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:23	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07A-04

2015-05-05-08-39-58_SDU-07A-04_TECK2.JPG



sample

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2015-05-05-08-40-02_SDU-07A-04_TECK2.JPG



overview facing north

2015-05-05-08-40-05_SDU-07A-04_TECK2.JPG



groundsurface

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Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07A-05	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 9:25	Sample Team Initials	MS

Sample Collected? Y
X 425031.9724 m
Y 5392801.4254 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N

Texture Silty fine sand
Vegetation Type if Present N

Anthropogenic Changes Present? N
Color 10YR 4/1
Debris Presence N

Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? N

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-A	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:23	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07A-05

2015-05-05-09-29-12_SDU-07A-05_TECK2.JPG



overview facing east

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-05-09-29-15_SDU-07A-05_TECK2.JPG



groundsurface

2015-05-05-09-29-34_SDU-07A-05_TECK2.JPG



sample

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07A-06	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-04 10:21	Sample Team Initials	MS

Sample Collected? Y
X 425229.3097 m
Y 5392874.6989 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N

Texture Sediment
Vegetation Type if Present N

Station Comments scoop used

Sample Collected from Station

Sample Id	SDU-07-ICS-A	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:23	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Anthropogenic Changes Present? N
Color 10YR 4/2
Debris Presence N

Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? N

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Photos Collected from Station SDU-07A-06

2015-05-04-10-24-29_SDU-07A-06_TECK2.JPG



sample

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-04-10-24-39_SDU-07A-06_TECK2.JPG



groundsurface

2015-05-04-10-24-42_SDU-07A-06_TECK2.JPG



Overview facing south

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ICS Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07A-07	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 9:42	Sample Team Initials	MS

Sample Collected? Y
X 425024.6398 m
Y 5392755.9725 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N

Texture Silty fine sand
Vegetation Type if Present N

Anthropogenic Changes Present? N
Color 10YR 4/1
Debris Presence N

Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? N

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-A	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:23	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07A-07

2015-05-05-09-48-41_SDU-07A-07_TECK2.JPG



sample

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-05-09-46-14_SDU-07A-07_TECK2.JPG



overview facing east

2015-05-05-09-46-21_SDU-07A-07_TECK2.JPG



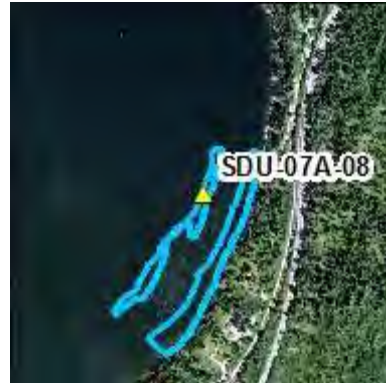
groundsurface

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ICS Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07A-08	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 8:24	Sample Team Initials	MS
Sample Collected?	Y		
X	425166.2865 m		
Y	5392982.4512 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-A	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:23	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07A-08

2015-05-05-08-31-13_SDU-07A-08_TECK2.JPG



sample

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2015-05-05-08-30-14_SDU-07A-08_TECK2.JPG



groundsurface

2015-05-05-08-30-23_SDU-07A-08_TECK2.JPG



overview facing south

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Station Id	SDU-07A-09	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-04 10:42	Sample Team Initials	MS
Sample Collected?	Y		
X	425183.4697 m		
Y	5392823.9917 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-A	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:23	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07A-09

2015-05-04-10-43-59_SDU-07A-09_TECK2.JPG



sample

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-04-10-44-06_SDU-07A-09_TECK2.JPG



overview facing south

2015-05-04-10-44-17_SDU-07A-09_TECK2.JPG



groundsurface

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Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07A-10	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 8:52	Sample Team Initials	MS
Sample Collected?	Y		
X	425137.8777 m		
Y	5392910.3341 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-A	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:23	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07A-10

2015-05-05-08-58-34_SDU-07A-10_TECK2.JPG



sample

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2015-05-05-08-58-40_SDU-07A-10_TECK2.JPG



groundsurface

2015-05-05-08-58-51_SDU-07A-10_TECK2.JPG



overview facinf south

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Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07A-11	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-04 9:40	Sample Team Initials	MS
Sample Collected?	Y		
X	425272.3049 m		
Y	5393020.2715 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-A	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:23	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07A-11

2015-05-04-09-42-38_SDU-07A-11_TECK2.JPG



groundsurface

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-04-09-42-42_SDU-07A-11_TECK2.JPG



sample

2015-05-04-09-42-46_SDU-07A-11_TECK2.JPG



overview facing north

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ICS Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07A-12	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-04 10:13	Sample Team Initials	MS
Sample Collected?	Y		
X	425228.6074 m		
Y	5392897.0206 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-A	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:23	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07A-12

2015-05-04-10-18-44_SDU-07A-12_TECK2.JPG



sample

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2015-05-04-10-18-51_SDU-07A-12_TECK2.JPG



groundsurface

2015-05-04-10-18-55_SDU-07A-12_TECK2.JPG



overview facing north

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Station Id	SDU-07A-13	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-04 12:01	Sample Team Initials	MS
Sample Collected?	Y		
X	425239.4078 m		
Y	5392955.4847 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-A	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:23	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07A-13

2015-05-04-12-04-25_SDU-07A-13_TECK2.JPG



sample

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2015-05-04-12-04-38_SDU-07A-13_TECK2.JPG



groundsurface

2015-05-04-12-04-45_SDU-07A-13_TECK2.JPG



overview facing north

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Station Id	SDU-07A-14	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-04 11:46	Sample Team Initials	MS
Sample Collected?	Y		
X	425071.4912 m		
Y	5392618.7331 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-A	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:23	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07A-14

2015-05-04-11-48-25_SDU-07A-14_TECK2.JPG



groundsurface

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2015-05-04-11-48-29_SDU-07A-14_TECK2.JPG



overview facing south

2015-05-04-11-49-28_SDU-07A-14_TECK2.JPG



sample

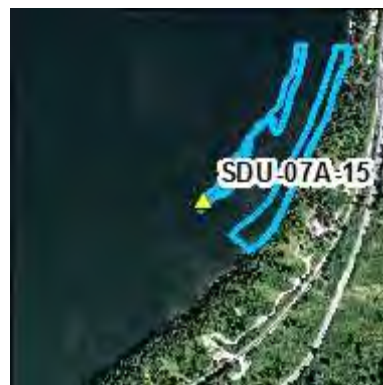
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Station Id	SDU-07A-15	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 10:07	Sample Team Initials	MS

Sample Collected? Y
X 424967.4717 m
Y 5392717.5847 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N

Texture Silty fine sand
Vegetation Type if Present N

Anthropogenic Changes Present? N
Color 10YR 4/1
Debris Presence N

Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? N

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-A	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:23	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07A-15

2015-05-05-10-14-46_SDU-07A-15_TECK2.JPG



sample

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2015-05-05-10-12-37_SDU-07A-15_TECK2.JPG



overview facing east

2015-05-05-10-12-45_SDU-07A-15_TECK2.JPG



groundsurface

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Station Id	SDU-07A-16	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 9:50	Sample Team Initials	MS
Sample Collected?	Y		
X	425031.5458 m		
Y	5392764.025 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-A	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:23	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07A-16

2015-05-05-09-55-55_SDU-07A-16_TECK2.JPG



sample

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Station Id	SDU-07A-17	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 9:14	Sample Team Initials	MS

Sample Collected? Y
X 425058.0265 m
Y 5392832.7579 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N

Texture Silty fine sand
Vegetation Type if Present N

Anthropogenic Changes Present? N
Color 10YR 4/1
Debris Presence N

Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? N

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-A	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:23	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07A-17

2015-05-05-09-21-49_SDU-07A-17_TECK2.JPG



groundsurface

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2015-05-05-09-21-57_SDU-07A-17_TECK2.JPG



overview facing east

2015-05-05-09-22-09_SDU-07A-17_TECK2.JPG



sample

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07A-18	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-04 11:25	Sample Team Initials	MS
Sample Collected?	Y		
X	425081.3393 m		
Y	5392672.1257 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-A	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:23	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07A-18

2015-05-04-11-29-06_SDU-07A-18_TECK2.JPG



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2015-05-04-11-29-14_SDU-07A-18_TECK2.JPG



groundsurface

2015-05-04-11-29-21_SDU-07A-18_TECK2.JPG



overview facing south

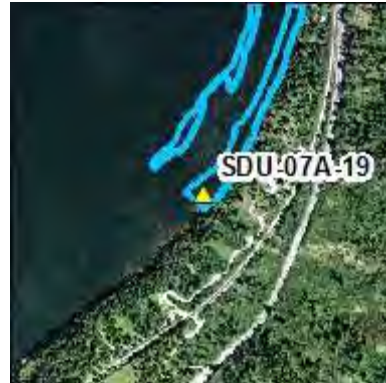
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Station Id	SDU-07A-19	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-04 11:37	Sample Team Initials	MS

Sample Collected? Y
X 425076.1735 m
Y 5392631.4623 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N

Texture Silty fine sand
Vegetation Type if Present N

Anthropogenic Changes Present? N
Color 10YR 4/2
Debris Presence N

Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? N

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-A	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:23	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07A-19

2015-05-04-11-40-38_SDU-07A-19_TECK2.JPG



sample

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2015-05-04-11-40-45_SDU-07A-19_TECK2.JPG



overview facing south

2015-05-04-11-40-55_SDU-07A-19_TECK2.JPG



groundsurface

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Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07A-20	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-04 11:07	Sample Team Initials	MS
Sample Collected?	Y		
X	425144.6036 m		
Y	5392745.356 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-A	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:23	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07A-20

2015-05-04-11-10-19_SDU-07A-20_TECK2.JPG



sample

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2015-05-04-11-10-37_SDU-07A-20_TECK2.JPG



groundsurface

2015-05-04-11-10-43_SDU-07A-20_TECK2.JPG



overview facing north

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Station Id	SDU-07A-21	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 9:58	Sample Team Initials	MS

Sample Collected? Y
X 425009.6691 m
Y 5392737.3741 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N
Texture Silty fine sand
Vegetation Type if Present N

Anthropogenic Changes Present? N
Color 10YR 4/1
Debris Presence N
Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? N

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-A	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:23	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07A-21

2015-05-05-10-03-20_SDU-07A-21_TECK2.JPG



overview facing east

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2015-05-05-10-03-25_SDU-07A-21_TECK2.JPG



groudsurface

2015-05-05-10-04-08_SDU-07A-21_TECK2.JPG



sample

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Station Id	SDU-07A-22	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-04 10:03	Sample Team Initials	MS
Sample Collected?	Y		
X	425246.7737 m		
Y	5392921.4927 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-A	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:23	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07A-22

2015-05-04-10-10-13_SDU-07A-22_TECK2.JPG



sample

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2015-05-04-10-10-21_SDU-07A-22_TECK2.JPG



groundsurface

2015-05-04-10-10-27_SDU-07A-22_TECK2.JPG



overview facing south

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Station Id	SDU-07A-23	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-04 9:30	Sample Team Initials	MS
Sample Collected?	Y		
X	425288.3712 m		
Y	5393045.5958 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments Recovered 40% and used scoop to collect remaining sample.

Sample Collected from Station

Sample Id	SDU-07-ICS-A	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:23	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07A-23

2015-05-04-09-33-36_SDU-07A-23_TECK2.JPG



groundsurface

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2015-05-04-09-33-42_SDU-07A-23_TECK2.JPG



2015-05-04-09-35-52_SDU-07A-23_TECK2.JPG



sample

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Station Id	SDU-07A-24	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-04 9:54	Sample Team Initials	MS
Sample Collected?	Y		
X	425269.6569 m		
Y	5392951.0893 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments Used scoop to recover about 25%

Sample Collected from Station

Sample Id	SDU-07-ICS-A	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:23	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07A-24

2015-05-04-09-58-54_SDU-07A-24_TECK2.JPG



overview facing north

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2015-05-04-09-59-01_SDU-07A-24_TECK2.JPG



groundsurface

2015-05-04-10-00-11_SDU-07A-24_TECK2.JPG



sample; this baggie was mislabelled. Based on the date and time stamp of this photo compared with the log book and database entry form, this sample is SDU-07A-24 not SDU-04-24.

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Station Id	SDU-07A-25	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-04 11:17	Sample Team Initials	MS
Sample Collected?	Y		
X	425104.2935 m		
Y	5392683.8673 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-A	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:23	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07A-25

2015-05-04-11-20-48_SDU-07A-25_TECK2.JPG



groundsurface

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2015-05-04-11-20-55_SDU-07A-25_TECK2.JPG



overview facing south

2015-05-04-11-21-17_SDU-07A-25_TECK2.JPG



sample

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Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07A-26	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-04 9:45	Sample Team Initials	MS

Sample Collected? Y
X 425267.7695 m
Y 5393002.6313 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-A	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:23	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07A-26

2015-05-04-09-47-31_SDU-07A-26_TECK2.JPG



groundsurface

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2015-05-04-09-47-35_SDU-07A-26_TECK2.JPG



overview facing north

2015-05-04-09-49-33_SDU-07A-26_TECK2.JPG



sample

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Station Id	SDU-07A-27	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-04 10:32	Sample Team Initials	MS
Sample Collected?	Y		
X	425202.0354 m		
Y	5392838.9224 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments scoop used to collect about 20%

Sample Collected from Station

Sample Id	SDU-07-ICS-A	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:23	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station SDU-07A-27

2015-05-04-10-35-59_SDU-07A-27_TECK2.JPG



sample

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2015-05-04-10-36-08_SDU-07A-27_TECK2.JPG



groundsurface

2015-05-04-10-36-11_SDU-07A-27_TECK2.JPG



overview facing north

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Station Id	SDU-07A-28	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-04 10:50	Sample Team Initials	MS
Sample Collected?	Y		
X	425160.7387 m		
Y	5392797.7609 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-A	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:23	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07A-28

2015-05-04-10-55-16_SDU-07A-28_1619LP-WA70047.JPG

ground surface

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2015-05-04-10-55-19_SDU-07A-28_TECK2.JPG



overview facing south

2015-05-04-10-55-42_SDU-07A-28_TECK2.JPG



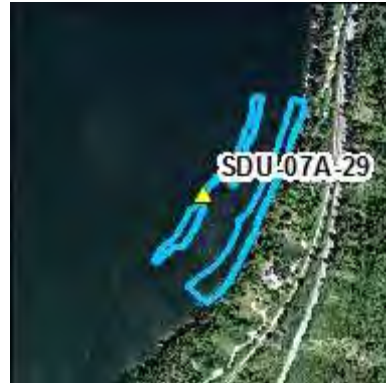
sample

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Station Id	SDU-07A-29	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 9:04	Sample Team Initials	MS
Sample Collected?	Y		
X	425070.686 m		
Y	5392857.6011 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-A	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:23	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07A-29

2015-05-05-09-10-10_SDU-07A-29_TECK2.JPG



overview facing east

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2015-05-05-09-10-18_SDU-07A-29_TECK2.JPG



sample

2015-05-05-09-10-22_SDU-07A-29_TECK2.JPG



groundsurface

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Station Id	SDU-07A-30	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 8:43	Sample Team Initials	MS

Sample Collected? Y
X 425160.977 m
Y 5392931.9404 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N

Texture Silty fine sand
Vegetation Type if Present N

Anthropogenic Changes Present? N
Color 10YR 4/1
Debris Presence N

Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? N

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-A	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:23	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07A-30

2015-05-05-08-49-17_SDU-07A-30_TECK2.JPG



overview facing south

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2015-05-05-08-49-22_SDU-07A-30_TECK2.JPG



groundsurface

2015-05-05-08-49-51_SDU-07A-30_TECK2.JPG



sample

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Station Id	SDU-07A-R01	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-07-ICS-A	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:23	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station SDU-07A-R01

No photos taken at this station. See station comments for more details.

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Station Id	SDU-07A-R02	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-07-ICS-A	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:23	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station SDU-07A-R02

No photos taken at this station. See station comments for more details.

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Station Id	SDU-07A-R03	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-07-ICS-A	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:23	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station SDU-07A-R03

No photos taken at this station. See station comments for more details.

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Station Id	SDU-07A-R04	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-07-ICS-A	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:23	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07A-R04

No photos taken at this station. See station comments for more details.

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Station Id	SDU-07A-R05	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-07-ICS-A	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:23	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station SDU-07A-R05

No photos taken at this station. See station comments for more details.

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Station Id	SDU-07A-R06	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-07-ICS-A	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:23	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station SDU-07A-R06

No photos taken at this station. See station comments for more details.

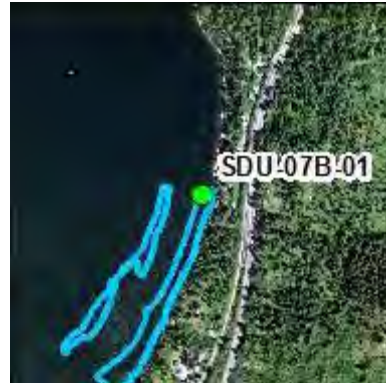
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Station Id	SDU-07B-01	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-04 13:20	Sample Team Initials	MS

Sample Collected? Y
X 425288.2228 m
Y 5393071.4666 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments used scoop to recover 25%

Sample Collected from Station

Sample Id	SDU-07-ICS-B	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:01	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07B-01

2015-05-04-13-24-00_SDU-07B-01_TECK2.JPG



sample

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2015-05-04-13-24-18_SDU-07B-01_TECK2.JPG



groundsurface

2015-05-04-13-24-22_SDU-07B-01_TECK2.JPG



overview facing north

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Station Id	SDU-07B-02	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 10:21	Sample Team Initials	MS

Sample Collected? Y
X 425035.0806 m
Y 5392768.6507 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N

Texture Silty fine sand
Vegetation Type if Present N

Anthropogenic Changes Present? N
Color 10YR 4/1
Debris Presence N

Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? N

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-B	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:01	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07B-02

2015-05-05-10-29-35_SDU-07B-02_TECK2.JPG



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2015-05-05-10-29-39_SDU-07B-02_TECK2.JPG



groundsurface

2015-05-05-10-29-53_SDU-07B-02_TECK2.JPG



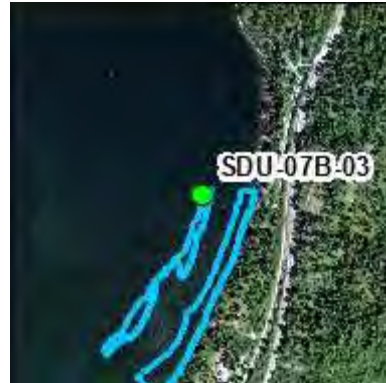
sample

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ICS Sample Collection Report
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Station Id	SDU-07B-03	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 12:01	Sample Team Initials	MS
Sample Collected?	Y		
X	425190.8378 m		
Y	5393075.418 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-B	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:01	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07B-03

2015-05-05-12-07-26_SDU-07B-03_TECK2.JPG



overview facing north

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2015-05-05-12-06-14_SDU-07B-03_TECK2.JPG



groundsurface

2015-05-05-12-06-37_SDU-07B-03_TECK2.JPG



sample

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Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07B-04	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-04 15:42	Sample Team Initials	MS
Sample Collected?	Y		
X	425123.1123 m		
Y	5392678.3471 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand trace fine gravel	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-B	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:01	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07B-04

2015-05-04-15-47-45_SDU-07B-04_TECK2.JPG



sample

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2015-05-04-15-47-59_SDU-07B-04_TECK2.JPG



groundsurface

2015-05-04-15-48-04_SDU-07B-04_TECK2.JPG



overview facing north

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Station Id	SDU-07B-05	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-04 13:54	Sample Team Initials	MS
Sample Collected?	Y		
X	425262.94 m		
Y	5392953.2954 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments scoop used to recover 20%

Sample Collected from Station

Sample Id	SDU-07-ICS-B	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:01	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07B-05

2015-05-04-13-57-06_SDU-07B-05_TECK2.JPG



groundsurface

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2015-05-04-13-57-10_SDU-07B-05_TECK2.JPG



overview facing north

2015-05-04-13-57-47_SDU-07B-05_TECK2.JPG



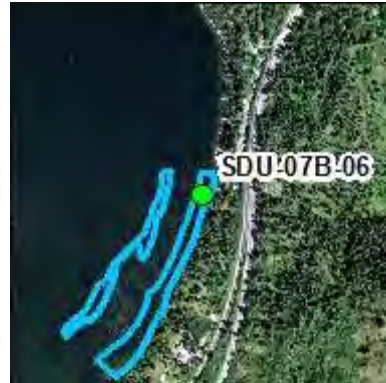
sample

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Station Id	SDU-07B-06	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-04 13:32	Sample Team Initials	MS
Sample Collected?	Y		
X	425285.2143 m		
Y	5393032.4525 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-B	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:01	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07B-06

2015-05-04-13-39-39_SDU-07B-06_TECK2.JPG



groundsurface

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-04-13-39-42_SDU-07B-06_TECK2.JPG



overview facing north

2015-05-04-13-39-47_SDU-07B-06_TECK2.JPG



sample

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07B-07	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-04 14:58	Sample Team Initials	MS
Sample Collected?	Y		
X	425174.8514 m		
Y	5392766.0284 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand fine gravel	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-B	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:01	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07B-07

2015-05-04-15-01-13_SDU-07B-07_TECK2.JPG



groundsurface

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2015-05-04-15-01-27_SDU-07B-07_TECK2.JPG



groundsurface

2015-05-04-15-01-33_SDU-07B-07_TECK2.JPG



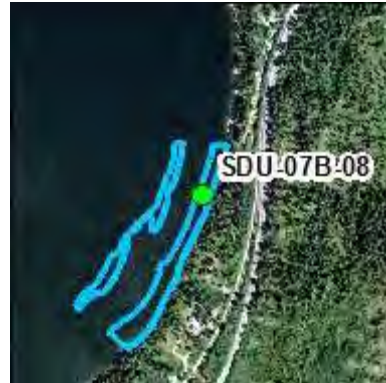
overview facing north

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ICS Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07B-08	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-04 13:44	Sample Team Initials	MS
Sample Collected?	Y		
X	425256.9191 m		
Y	5392966.2383 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	Periwinkle	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments scoop used to recover 20%

Sample Collected from Station

Sample Id	SDU-07-ICS-B	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:01	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07B-08

2015-05-04-13-45-47_SDU-07B-08_TECK2.JPG



sample

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-04-13-46-03_SDU-07B-08_TECK2.JPG



groundsurface

2015-05-04-13-46-07_SDU-07B-08_TECK2.JPG



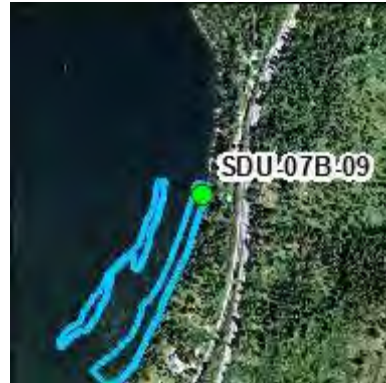
overview facing south

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Station Id	SDU-07B-09	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-04 13:12	Sample Team Initials	MS
Sample Collected?	Y		
X	425298.6504 m		
Y	5393058.743 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse some sand fine gravel	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments scoop used to recover 10%

Sample Collected from Station

Sample Id	SDU-07-ICS-B	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:01	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07B-09

2015-05-04-13-18-07_SDU-07B-09_TECK2.JPG



sample

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2015-05-04-13-15-14_SDU-07B-09_TECK2.JPG



groundsurface

2015-05-04-13-15-22_SDU-07B-09_TECK2.JPG



overview facing south

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Station Id	SDU-07B-10	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-04 15:36	Sample Team Initials	MS
Sample Collected?	Y		
X	425137.9788 m		
Y	5392688.0251 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sandsome fine gravel	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-B	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:01	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07B-10

2015-05-04-15-38-18_SDU-07B-10_TECK2.JPG



overview facing north

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2015-05-04-15-38-27_SDU-07B-10_TECK2.JPG



sample

2015-05-04-15-38-34_SDU-07B-10_TECK2.JPG



groundsurface

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Station Id	SDU-07B-11	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-04 14:51	Sample Team Initials	MS

Sample Collected? Y
X 425185.326 m
Y 5392801.068 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand fine to coarse gravel	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-B	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:01	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07B-11

2015-05-04-14-53-28_SDU-07B-11_TECK2.JPG



sample

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2015-05-04-14-53-41_SDU-07B-11_TECK2.JPG



groundsurface

2015-05-04-14-53-49_SDU-07B-11_TECK2.JPG



overview facing north

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Station Id	SDU-07B-12	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-04 14:04	Sample Team Initials	MS
Sample Collected?	Y		
X	425245.6421 m		
Y	5392930.0527 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments scoop used to recover 80%

Sample Collected from Station

Sample Id	SDU-07-ICS-B	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:01	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07B-12

2015-05-04-14-08-20_SDU-07B-12_TECK2.JPG



sample

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2015-05-04-14-08-30_SDU-07B-12_TECK2.JPG



groundsurface

2015-05-04-14-08-35_SDU-07B-12_TECK2.JPG



overview facinf north

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Station Id	SDU-07B-13	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-04 16:00	Sample Team Initials	MS

Sample Collected? Y
X 425096.1616 m
Y 5392658.2349 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-B	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:01	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07B-13

2015-05-04-16-03-49_SDU-07B-13_TECK2.JPG



sample

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2015-05-04-16-02-48_SDU-07B-13_TECK2.JPG



groundsurface

2015-05-04-16-02-54_SDU-07B-13_TECK2.JPG



groundsurface

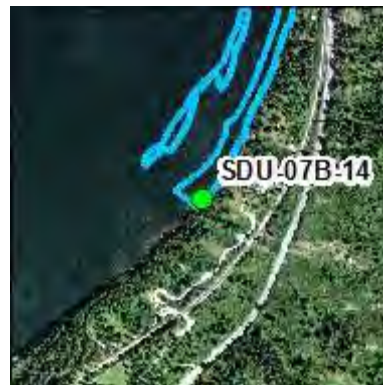
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Station Id	SDU-07B-14	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-04 16:14	Sample Team Initials	MS

Sample Collected? Y
X 425098.0775 m
Y 5392617.6623 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-B	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:01	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07B-14

2015-05-04-16-16-28_SDU-07B-14_TECK2.JPG



sample

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2015-05-04-16-16-40_SDU-07B-14_TECK2.JPG



overview facing north

2015-05-04-16-16-46_SDU-07B-14_TECK2.JPG



groundsurface

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Station Id	SDU-07B-15	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-04 15:28	Sample Team Initials	MS

Sample Collected? Y
X 425164.4124 m
Y 5392721.7315 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand some fine gravel	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments used scoop to recover 10%

Sample Collected from Station

Sample Id	SDU-07-ICS-B	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:01	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07B-15

2015-05-04-15-30-34_SDU-07B-15_TECK2.JPG



sample

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2015-05-04-15-30-52_SDU-07B-15_TECK2.JPG



grundsurface

2015-05-04-15-30-55_SDU-07B-15_TECK2.JPG



overview facing north

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Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07B-16	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 11:14	Sample Team Initials	MS

Sample Collected? Y
X 425138.0514 m
Y 5392928.498 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N

Texture Silty fine sand
Vegetation Type if Present N

Anthropogenic Changes Present? N
Color 10YR 4/1
Debris Presence N

Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? N

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-B	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:01	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07B-16

2015-05-05-11-21-16_SDU-07B-16_TECK2.JPG



overviewfacing east

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-05-11-21-21_SDU-07B-16_TECK2.JPG



groundsurface

2015-05-05-11-21-30_SDU-07B-16_TECK2.JPG



sample

Appendix I
ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07B-17	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-04 15:05	Sample Team Initials	MS
Sample Collected?	Y		
X	425153.1014 m		
Y	5392736.5203 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-B	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:01	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07B-17

2015-05-04-15-09-24_SDU-07B-17_TECK2.JPG



groundsurface

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-04-15-10-08_SDU-07B-17_TECK2.JPG



sample

2015-05-04-15-09-27_SDU-07B-17_TECK2.JPG



overview facing north

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ICS Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07B-18	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 11:24	Sample Team Initials	MS

Sample Collected? Y
X 425141.988 m
Y 5392893.9244 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N

Texture Silty fine sand
Vegetation Type if Present N

Anthropogenic Changes Present? N
Color 10YR 4/2
Debris Presence N

Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? N

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-B	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:01	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07B-18

2015-05-05-11-31-29_SDU-07B-18_TECK2.JPG



overview facing east

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-05-11-31-36_SDU-07B-18_TECK2.JPG



groundsurface

2015-05-05-11-32-00_SDU-07B-18_TECK2.JPG



sample

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ICS Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07B-19	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-04 14:18	Sample Team Initials	MS
Sample Collected?	Y		
X	425247.3641 m		
Y	5392895.8445 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand some fine to coarse gravel	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-B	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:01	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07B-19

2015-05-04-14-21-32_SDU-07B-19_TECK2.JPG



sample

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-04-14-21-44_SDU-07B-19_TECK2.JPG



groundsurface

2015-05-04-14-21-49_SDU-07B-19_TECK2.JPG



overview facing NW

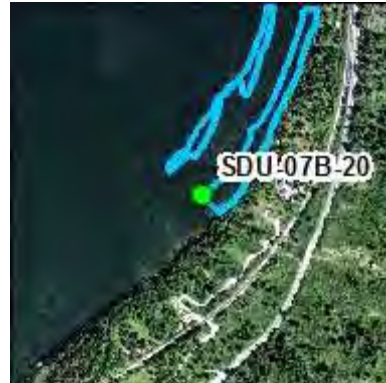
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ICS Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07B-20	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-04 16:20	Sample Team Initials	MS

Sample Collected? Y
X 425040.5575 m
Y 5392641.6577 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N
Texture Silty fine sand
Vegetation Type if Present N

Anthropogenic Changes Present? N
Color 10YR 4/2
Debris Presence N
Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? N

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-B	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:01	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07B-20

2015-05-04-16-26-05_SDU-07B-20_TECK2.JPG



sample

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-04-16-23-26_SDU-07B-20_TECK2.JPG



groundsurface

2015-05-04-16-23-39_SDU-07B-20_TECK2.JPG



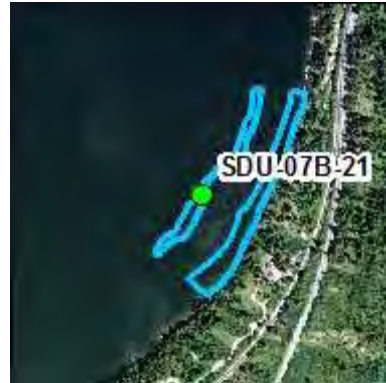
overview facing south

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Station Id	SDU-07B-21	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 10:40	Sample Team Initials	MS
Sample Collected?	Y		
X	425070.0944 m		
Y	5392839.4958 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-B	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:01	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07B-21

2015-05-05-10-46-26_SDU-07B-21_TECK2.JPG



overview facing east

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2015-05-05-10-46-31_SDU-07B-21_TECK2.JPG



groundsurface

2015-05-05-10-46-43_SDU-07B-21_TECK2.JPG



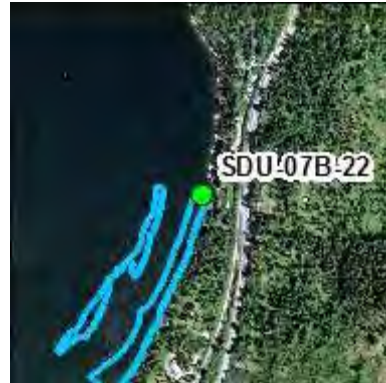
sample

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ICS Sample Collection Report
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Station Id	SDU-07B-22	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-04 13:04	Sample Team Initials	MS
Sample Collected?	Y		
X	425301.8537 m		
Y	5393073.9461 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-B	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:01	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07B-22

2015-05-04-13-07-28_SDU-07B-22_TECK2.JPG



sample

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2015-05-04-13-06-45_SDU-07B-22_TECK2.JPG



groundsurface

2015-05-04-13-06-51_SDU-07B-22_TECK2.JPG



overview facing north

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Station Id	SDU-07B-23	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-04 13:29	Sample Team Initials	MS
Sample Collected?	Y		
X	425277.9858 m		
Y	5393059.994 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-B	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:01	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07B-23

2015-05-04-13-30-22_SDU-07B-23_TECK2.JPG



sample

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2015-05-04-13-30-26_SDU-07B-23_TECK2.JPG



groundsrface

2015-05-04-13-30-28_SDU-07B-23_TECK2.JPG



overview facing north

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Station Id	SDU-07B-24	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-04 15:50	Sample Team Initials	MS

Sample Collected? Y
X 425142.0307 m
Y 5392671.6474 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-B	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:01	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07B-24

2015-05-04-15-54-29_SDU-07B-24_TECK2.JPG



groundsurface

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2015-05-04-15-54-33_SDU-07B-24_TECK2.JPG



overview facing north

2015-05-04-15-54-37_SDU-07B-24_TECK2.JPG



sample

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ICS Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07B-25	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 11:49	Sample Team Initials	MS
Sample Collected?	Y		
X	425171.4174 m		
Y	5393013.0797 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-B	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:01	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07B-25

2015-05-05-11-57-10_SDU-07B-25_TECK2.JPG



sample

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2015-05-05-11-55-53_SDU-07B-25_TECK2.JPG



overview facing west

2015-05-05-11-56-02_SDU-07B-25_TECK2.JPG



groundsurface

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Station Id	SDU-07B-26	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-04 14:36	Sample Team Initials	MS
Sample Collected?	Y		
X	425216.423 m		
Y	5392859.3539 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments scoop used to recover 20%

Sample Collected from Station

Sample Id	SDU-07-ICS-B	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:01	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07B-26

2015-05-04-14-46-39_SDU-07B-26_TECK2.JPG



sample

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2015-05-04-14-45-01_SDU-07B-26_TECK2.JPG



ground surface

2015-05-04-14-45-06_SDU-07B-26_TECK2.JPG



overview facing north

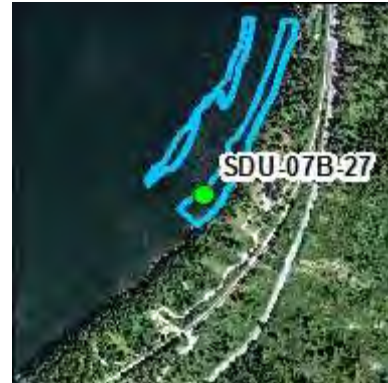
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Station Id	SDU-07B-27	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-04 16:05	Sample Team Initials	MS

Sample Collected? Y
X 425096.1587 m
Y 5392670.7905 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-B	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:01	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07B-27

2015-05-04-16-09-31_SDU-07B-27_TECK2.JPG



sample

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2015-05-04-16-09-37_SDU-07B-27_TECK2.JPG



groundsurface

2015-05-04-16-09-44_SDU-07B-27_TECK2.JPG



overview facing north

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07B-28	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 10:33	Sample Team Initials	MS
Sample Collected?	Y		
X	425028.4416 m		
Y	5392802.0414 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-B	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:01	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07B-28

2015-05-05-10-35-04_SDU-07B-28_TECK2.JPG



overview facing east

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2015-05-05-10-35-09_SDU-07B-28_TECK2.JPG



groundsurface

2015-05-05-10-35-22_SDU-07B-28_TECK2.JPG



sample

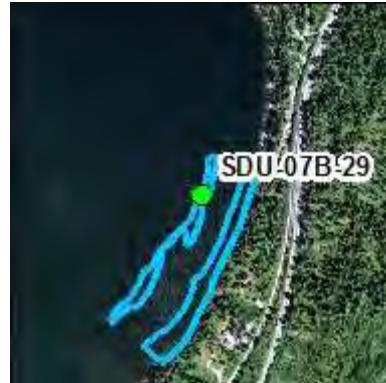
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Station Id	SDU-07B-29	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 11:38	Sample Team Initials	MS

Sample Collected? Y
X 425175.8695 m
Y 5392999.6017 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N

Texture Silty fine sand
Vegetation Type if Present N

Anthropogenic Changes Present? N
Color 10YR 4/1
Debris Presence N

Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? N

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-B	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:01	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07B-29

2015-05-05-11-45-32_SDU-07B-29_TECK2.JPG



sample

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2015-05-05-11-21-21_SDU-07B-29_TECK2.JPG



groundsurface

2015-05-05-11-21-16_SDU-07B-29_TECK2.JPG



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Station Id	SDU-07B-30	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-04 14:12	Sample Team Initials	MS
Sample Collected?	Y		
X	425234.544 m		
Y	5392924.5824 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand fine to coarse gravel	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-B	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:01	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07B-30

2015-05-04-14-13-42_SDU-07B-30_TECK2.JPG



sample

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2015-05-04-14-13-47_SDU-07B-30_TECK2.JPG



groundsurface

2015-05-04-14-13-49_SDU-07B-30_TECK2.JPG



overview facing north

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Station Id	SDU-07B-R01	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-07-ICS-B	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:01	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station SDU-07B-R01

No photos taken at this station. See station comments for more details.

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Station Id	SDU-07B-R02	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-07-ICS-B	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:01	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station SDU-07B-R02

No photos taken at this station. See station comments for more details.

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Station Id	SDU-07B-R03	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-07-ICS-B	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:01	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station SDU-07B-R03

No photos taken at this station. See station comments for more details.

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Station Id	SDU-07B-R04	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-07-ICS-B	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:01	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station SDU-07B-R04

No photos taken at this station. See station comments for more details.

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Station Id	SDU-07B-R05	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-07-ICS-B	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:01	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station SDU-07B-R05

No photos taken at this station. See station comments for more details.

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Station Id	SDU-07B-R06	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-07-ICS-B	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:01	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station SDU-07B-R06

No photos taken at this station. See station comments for more details.

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Station Id	SDU-07C-R01	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-07-ICS-B	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:01	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station SDU-07C-R01

No photos taken at this station. See station comments for more details.

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Station Id	SDU-07C-R02	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-07-ICS-B	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:01	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station SDU-07C-R02

No photos taken at this station. See station comments for more details.

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Station Id	SDU-07C-R03	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-07-ICS-B	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:01	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station SDU-07C-R03

No photos taken at this station. See station comments for more details.

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Station Id	SDU-07C-R04	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-07-ICS-B	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:01	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07C-R04

No photos taken at this station. See station comments for more details.

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Station Id	SDU-07C-R05	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-07-ICS-B	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:01	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station SDU-07C-R05

No photos taken at this station. See station comments for more details.

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Station Id	SDU-07C-R06	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-07-ICS-B	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:01	Collection Method	ICS
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station SDU-07C-R06

No photos taken at this station. See station comments for more details.

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Station Id	SDU-07C-01	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-06 9:34	Sample Team Initials	MS
Sample Collected?	Y		
X	425120.6731 m		
Y	5392700.7839 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-C	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-07 8:03	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07C-01

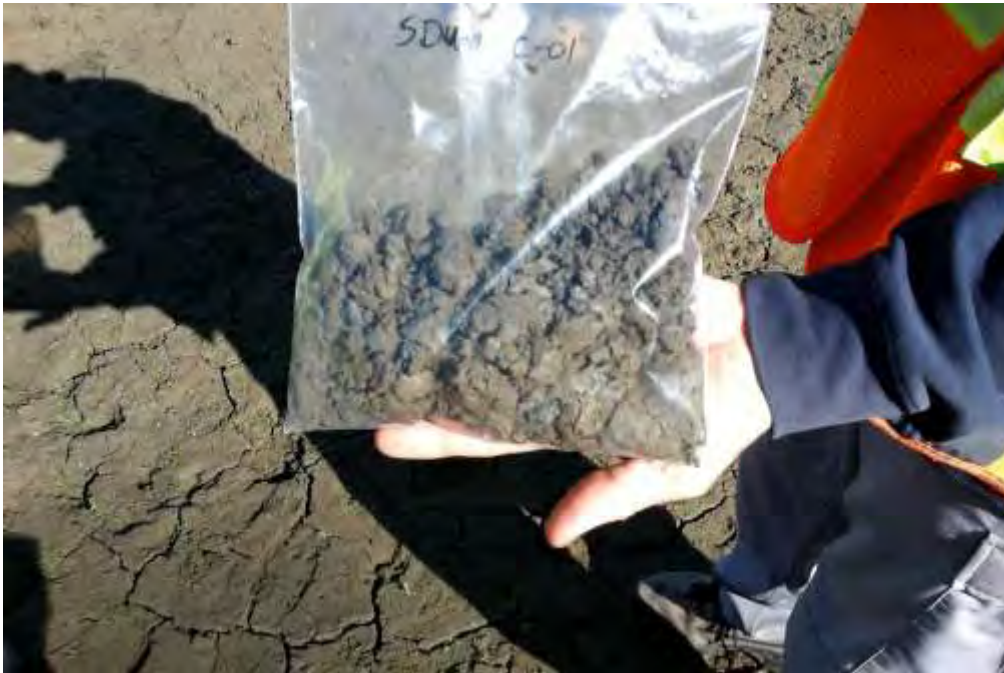
2015-05-06-09-38-21_SDU-07C-01_TECK2.JPG



groundsurface

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-06-09-38-49_SDU-07C-01_TECK2.JPG



sample

2015-05-06-09-36-15_SDU-07C-01_TECK2.JPG



overview facing south

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Station Id	SDU-07C-02	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 13:45	Sample Team Initials	MS
Sample Collected?	Y		
X	425060.8656 m		
Y	5392824.8736 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-C	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-07 8:03	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07C-02

2015-05-05-13-46-44_SDU-07C-02_TECK2.JPG



sample

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2015-05-05-13-46-50_SDU-07C-02_TECK2.JPG



groundsurface

2015-05-05-13-46-54_SDU-07C-02_TECK2.JPG



overview facing north

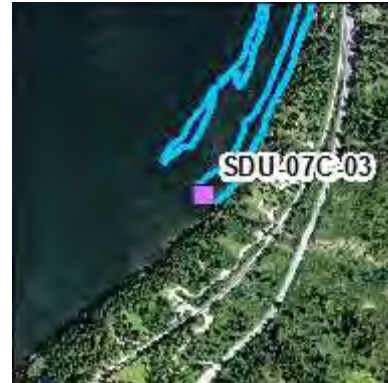
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Station Id	SDU-07C-03	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-06 9:12	Sample Team Initials	MS

Sample Collected? Y
X 425058.7696 m
Y 5392620.9373 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-C	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-07 8:03	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07C-03

2015-05-06-09-13-13_SDU-07C-03_TECK2.JPG



sample

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2015-05-06-09-13-42_SDU-07C-03_TECK2.JPG



groundsurface

2015-05-06-09-13-44_SDU-07C-03_TECK2.JPG



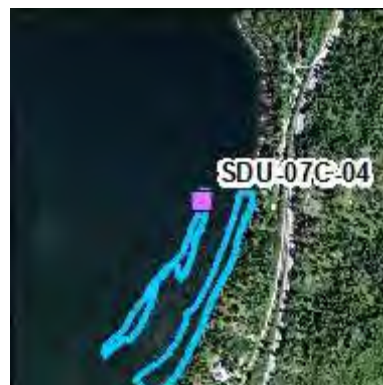
overview facing south

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Station Id	SDU-07C-04	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 12:39	Sample Team Initials	MS
Sample Collected?	Y		
X	425193.7053 m		
Y	5393065.4814 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-C	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-07 8:03	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07C-04

2015-05-05-12-47-13_SDU-07C-04_TECK2.JPG



groundsurface

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2015-05-05-12-47-38_SDU-07C-04_TECK2.JPG



sample

2015-05-05-12-42-07_SDU-07C-04_TECK2.JPG



overview facing east

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Station Id	SDU-07C-05	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 15:41	Sample Team Initials	MS
Sample Collected?	Y		
X	425166.2171 m		
Y	5392771.2161 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-C	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-07 8:03	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07C-05

2015-05-05-15-42-12_SDU-07C-05_TECK2.JPG



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2015-05-05-15-42-19_SDU-07C-05_TECK2.JPG



2015-05-05-15-42-22_SDU-07C-05_TECK2.JPG



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Station Id	SDU-07C-06	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 15:19	Sample Team Initials	MS
Sample Collected?	Y		
X	425214.785 m		
Y	5392844.1883 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		
Station Comments	scoop		

Sample Collected from Station

Sample Id	SDU-07-ICS-C	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-07 8:03	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07C-06

2015-05-05-15-21-26_SDU-07C-06_TECK2.JPG



sample

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ICS Sample Collection Report
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2015-05-05-15-21-30_SDU-07C-06_TECK2.JPG



groundsurface

2015-05-05-15-21-33_SDU-07C-06_TECK2.JPG



overview facing south

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ICS Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07C-07	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 16:09	Sample Team Initials	MS

Sample Collected? Y
X 425124.2799 m
Y 5392661.1478 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-C	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-07 8:03	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07C-07

2015-05-06-17-03-20_SDU-07C-07_TECK2.JPG



sample

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07C-08	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 13:36	Sample Team Initials	MS

Sample Collected? Y
X 425073.0202 m
Y 5392853.8681 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N

Texture Silty fine sand
Vegetation Type if Present N

Anthropogenic Changes Present? N
Color 10YR 4/2
Debris Presence N

Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? N

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-C	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-07 8:03	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07C-08

2015-05-05-13-38-49_SDU-07C-08_TECK2.JPG



groundsurface

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2015-05-05-13-38-51_SDU-07C-08_TECK2.JPG



overview facing north

2015-05-05-13-39-26_SDU-07C-08_TECK2.JPG



sample

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ICS Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07C-09	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 15:57	Sample Team Initials	MS
Sample Collected?	Y		
X	425148.4973 m		
Y	5392725.2898 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		
Station Comments	scoop		

Sample Collected from Station

Sample Id	SDU-07-ICS-C	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-07 8:03	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07C-09

2015-05-06-17-03-20_SDU-07C-09_TECK2.JPG



sample

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-06-09-45-39_SDU-07C-09_TECK2.JPG



groundsurface

2015-05-06-09-45-45_SDU-07C-09_TECK2.JPG



Overview facing south

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ICS Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07C-10	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 14:01	Sample Team Initials	MS

Sample Collected? Y
X 424971.817 m
Y 5392731.5699 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N

Texture Silty fine sand
Vegetation Type if Present N

Anthropogenic Changes Present? N
Color 10YR 4/2
Debris Presence N

Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? N

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-C	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-07 8:03	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07C-10

2015-05-05-14-03-35_SDU-07C-10_TECK2.JPG



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2015-05-05-14-03-40_SDU-07C-10_TECK2.JPG



groundsurface

2015-05-05-14-03-42_SDU-07C-10_TECK2.JPG



overview facing east

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Station Id	SDU-07C-11	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 14:41	Sample Team Initials	MS

Sample Collected? Y
X 425286.6455 m
Y 5393048.4587 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N

Texture Silty fine sand
Vegetation Type if Present N

Anthropogenic Changes Present? N
Color 10YR 4/2
Debris Presence N

Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? N

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-C	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-07 8:03	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07C-11

2015-05-05-14-48-17_SDU-07C-11_TECK2.JPG



sample

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-05-14-33-59_SDU-07C-11_TECK2.JPG



groundsurface

2015-05-05-14-34-02_SDU-07C-11_TECK2.JPG



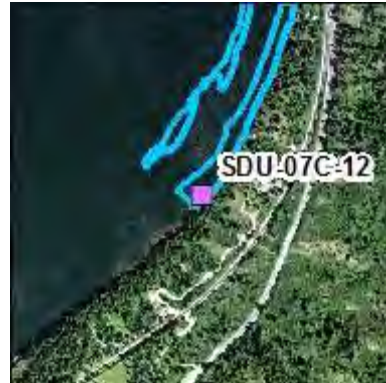
overview fing west

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Station Id	SDU-07C-12	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-06 9:21	Sample Team Initials	MS
Sample Collected?	Y		
X	425095.7458 m		
Y	5392627.0732 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-C	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-07 8:03	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07C-12

2015-05-06-09-23-11_SDU-07C-12_TECK2.JPG



groundsurface

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-06-09-22-15_SDU-07C-12_TECK2.JPG



sample

2015-05-06-09-22-31_SDU-07C-12_TECK2.JPG



overview facing north

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Station Id	SDU-07C-13	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 15:33	Sample Team Initials	MS
Sample Collected?	Y		
X	425151.976 m		
Y	5392779.7071 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-C	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-07 8:03	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07C-13

2015-05-05-15-38-00_SDU-07C-13_TECK2.JPG



sample

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2015-05-05-15-32-41_SDU-07C-13_TECK2.JPG



groundsurface

2015-05-05-15-32-44_SDU-07C-13_TECK2.JPG



overview facing north

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Station Id	SDU-07C-14	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 15:46	Sample Team Initials	MS
Sample Collected?	Y		
X	425161.5078 m		
Y	5392737.3841 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-C	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-07 8:03	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07C-14

2015-05-06-17-03-20_SDU-07C-14_TECK2.JPG



sample

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2015-05-06-09-52-10_SDU-07C-14_TECK2.JPG



groundsurface

2015-05-06-09-52-13_SDU-07C-14_TECK2.JPG



overview facing south

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Station Id	SDU-07C-15	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 15:12	Sample Team Initials	MS
Sample Collected?	Y		
X	425208.1508 m		
Y	5392855.4738 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		
Station Comments	scoop		

Sample Collected from Station

Sample Id	SDU-07-ICS-C	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-07 8:03	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07C-15

2015-05-05-15-15-12_SDU-07C-15_TECK2.JPG



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2015-05-05-15-15-27_SDU-07C-15_TECK2.JPG



2015-05-05-15-15-31_SDU-07C-15_TECK2.JPG



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Station Id	SDU-07C-16	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 16:14	Sample Team Initials	MS
Sample Collected?	Y		
X	425113.3558 m		
Y	5392660.2567 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-C	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-07 8:03	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07C-16

2015-05-06-17-03-20_SDU-07C-16_TECK2.JPG



sample

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2015-05-06-09-43-49_SDU-07C-16_TECK2.JPG



groundsurface

2015-05-06-09-43-52_SDU-07C-16_TECK2.JPG



overview facing north

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Station Id	SDU-07C-17	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 13:14	Sample Team Initials	MS

Sample Collected? Y
X 425169.3446 m
Y 5392949.5279 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N

Texture Silty fine sand
Vegetation Type if Present N

Anthropogenic Changes Present? N
Color 10YR 4/1
Debris Presence N

Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? N

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-C	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-07 8:03	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07C-17

2015-05-05-13-19-10_SDU-07C-17_1619LP-WA70047.JPG



sample

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2015-05-05-13-19-24_SDU-07C-17_1619LP-WA70047.JPG



ground surface

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Station Id	SDU-07C-18	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-06 9:04	Sample Team Initials	MS
Sample Collected?	Y		
X	425052.9514 m		
Y	5392635.9886 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-C	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-07 8:03	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07C-18

2015-05-06-09-05-58_SDU-07C-18_TECK2.JPG



overview facing south

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2015-05-06-09-06-22_SDU-07C-18_TECK2.JPG



groundsurface

2015-05-06-09-06-28_SDU-07C-18_TECK2.JPG



sample

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Station Id	SDU-07C-19	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 14:52	Sample Team Initials	MS
Sample Collected?	Y		
X	425282.1949 m		
Y	5393027.2372 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand some fine gravel	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-C	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-07 8:03	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07C-19

2015-05-05-14-47-40_SDU-07C-19_TECK2.JPG



groundsurface

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2015-05-05-14-47-45_SDU-07C-19_TECK2.JPG



overview facing south

2015-05-05-14-55-55_SDU-07C-19_TECK2.JPG



sample

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Station Id	SDU-07C-20	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 16:02	Sample Team Initials	MS
Sample Collected?	Y		
X	425156.8683 m		
Y	5392713.7608 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-C	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-07 8:03	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07C-20

2015-05-06-17-03-20_SDU-07C-20_TECK2.JPG



sample

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ICS Sample Collection Report
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2015-05-06-09-41-41_SDU-07C-20_TECK2.JPG



groundsurface

2015-05-06-09-41-44_SDU-07C-20_TECK2.JPG



overview facing south

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Station Id	SDU-07C-21	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 12:51	Sample Team Initials	MS
Sample Collected?	Y		
X	425180.7905 m		
Y	5393028.3086 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-C	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-07 8:03	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07C-21

2015-05-05-12-50-32_SDU-07C-21_1619LP-WA70047.JPG



ground surface

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2015-05-05-12-50-36_SDU-07C-21_1619LP-WA70047.JPG



overview facing east

2015-05-05-12-56-45_SDU-07C-21_TECK2.JPG



sample

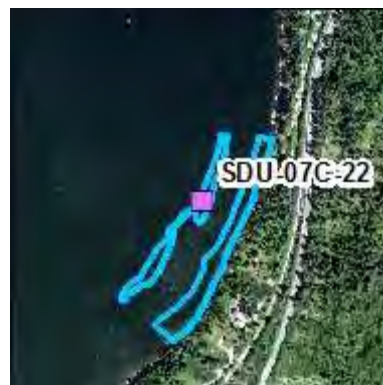
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Station Id	SDU-07C-22	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 13:23	Sample Team Initials	MS

Sample Collected? Y
X 425149.94 m
Y 5392933.6657 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N

Texture Silty fine sand
Vegetation Type if Present N

Anthropogenic Changes Present? N
Color 10YR 4/1
Debris Presence N

Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? N

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-C	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-07 8:03	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07C-22

2015-05-05-13-31-23_SDU-07C-22_TECK2.JPG



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2015-05-05-13-31-26_SDU-07C-22_TECK2.JPG



2015-05-05-13-30-09_SDU-07C-22_TECK2.JPG



sample

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ICS Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07C-23	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 14:07	Sample Team Initials	MS

Sample Collected? Y
X 424963.6173 m
Y 5392701.5763 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N

Texture Silty fine sand
Vegetation Type if Present N

Anthropogenic Changes Present? N
Color 10YR 4/2
Debris Presence N

Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? N

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-C	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-07 8:03	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07C-23

2015-05-05-14-11-06_SDU-07C-23_1619LP-WA70047.JPG

ground surface

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2015-05-05-14-12-23_SDU-07C-23_TECK2.JPG



sample

2015-05-05-14-09-01_SDU-07C-23_TECK2.JPG



overview facing east

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Station Id	SDU-07C-24	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 15:03	Sample Team Initials	MS

Sample Collected? Y
X 425265.1229 m
Y 5392941.4356 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N

Texture Silty fine sand
Vegetation Type if Present N

Anthropogenic Changes Present? N
Color 10YR 4/2
Debris Presence N

Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? N

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-C	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-07 8:03	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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ICS Sample Collection Report
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Photos Collected from Station SDU-07C-24

2015-05-05-15-07-00_SDU-07C-24_TECK2.JPG



sample

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-05-15-02-03_SDU-07C-24_TECK2.JPG



groundsurface

2015-05-05-15-02-12_SDU-07C-24_TECK2.JPG



overview facing south

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ICS Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07C-25	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 16:18	Sample Team Initials	MS
Sample Collected?	Y		
X	425096.8506 m		
Y	5392669.3741 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-C	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-07 8:03	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07C-25

2015-05-06-17-03-20_SDU-07C-25_TECK2.JPG



sample

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ICS Sample Collection Report
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2015-05-06-09-49-57_SDU-07C-25_TECK2.JPG



groundsurface

2015-05-06-09-50-01_SDU-07C-25_TECK2.JPG



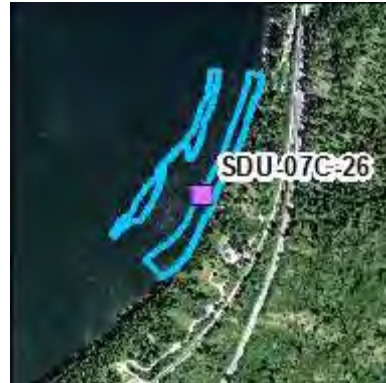
overview facing north

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ICS Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07C-26	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 15:27	Sample Team Initials	MS
Sample Collected?	Y		
X	425171.9548 m		
Y	5392796.0052 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-C	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-07 8:03	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07C-26

2015-05-05-15-29-25_SDU-07C-26_TECK2.JPG



sample

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-05-15-29-34_SDU-07C-26_TECK2.JPG



groundsurface

2015-05-05-15-29-38_SDU-07C-26_TECK2.JPG



overview facng east

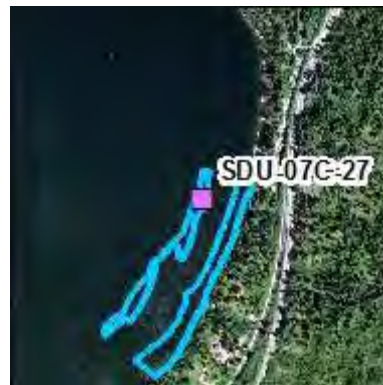
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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07C-27	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 12:58	Sample Team Initials	MS

Sample Collected? Y
X 425193.334 m
Y 5393023.0975 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N

Texture Silty fine sand
Vegetation Type if Present N

Anthropogenic Changes Present? N
Color 10YR 4/1
Debris Presence N

Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? N

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-C	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-07 8:03	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07C-27

2015-05-05-13-01-36_SDU-07C-27_1619LP-WA70047.JPG



ground surface

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-05-13-03-08_SDU-07C-27_TECK2.JPG



sample

2015-05-05-13-01-30_SDU-07C-27_TECK2.JPG



overview facing east

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ICS Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07C-28	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 13:05	Sample Team Initials	MS
Sample Collected?	Y		
X	425187.4549 m		
Y	5393009.3077 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-C	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-07 8:03	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07C-28

2015-05-05-13-13-32_SDU-07C-28_1619LP-WA70047.JPG



overview facing east

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2015-05-05-13-13-38_SDU-07C-28_1619LP-WA70047.JPG



ground surface

2015-05-05-13-11-22_SDU-07C-28_TECK2.JPG



sample

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ICS Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study

Station Id	SDU-07C-29	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-06 9:26	Sample Team Initials	MS

Sample Collected? Y
X 425115.1705 m
Y 5392630.8965 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N	
Biological Visual Presence	N	Color	10YR 4/2	
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N	
Odor	N	Percent Canopy Coverage	0	
Percent Ground Coverage	0	Sheen Presence	N	
Shells Presence	N	Substrate Type	Sediment	
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N	
Texture	Silty fine to coarse sand some fine to coarse gravel		Vegetation Present?	N
Vegetation Type if Present	N			

Station Comments used scoop to recover approx 50%

Sample Collected from Station

Sample Id	SDU-07-ICS-C	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-07 8:03	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07C-29

2015-05-06-09-29-30_SDU-07C-29_TECK2.JPG



sample

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-06-09-29-42_SDU-07C-29_TECK2.JPG



groundsurface

2015-05-06-09-28-17_SDU-07C-29_TECK2.JPG



overview facing north

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07C-30	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 13:52	Sample Team Initials	MS
Sample Collected?	Y		
X	425007.8119 m		
Y	5392742.3218 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-07-ICS-C	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-07 8:03	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-07C-30

2015-05-05-13-55-50_SDU-07C-30_TECK2.JPG



sample

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2015-05-05-13-46-50_SDU-07C-30_TECK2.JPG



groundsurface

2015-05-05-13-55-53_SDU-07C-30_TECK2.JPG



overview facing east

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Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-08-01	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 14:44	Sample Team Initials	AP
Sample Collected?	Y		
X	423147.6206 m		
Y	5401854.7802 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	Angular rock from road above	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located mid beach

Sample Collected from Station

Sample Id	SDU-08-ICS	Decision Unit	Sediment Decision Unit 8
Sample Date Time	2015-05-07 8:26	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-08-01

2015-05-05-14-33-13_SDU-08-01_TECK3.JPG



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2015-05-05-14-33-42_SDU-08-01_TECK3.JPG



vn

2015-05-05-14-39-11_SDU-08-01_TECK3.JPG



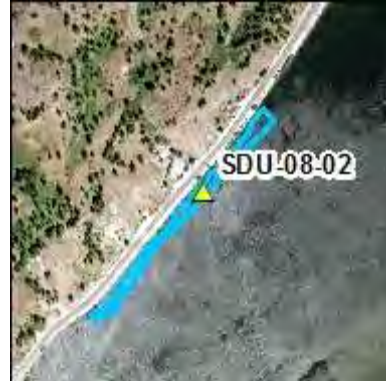
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Station Id	SDU-08-02	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 13:42	Sample Team Initials	AP

Sample Collected? Y
X 423124.3983 m
Y 5401816.038 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description Angular rock from road cut above
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N

Texture Sandy silt
Vegetation Type if Present N

Anthropogenic Changes Present? N
Color 7.5YR 3/2
Debris Presence N

Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? N

Station Comments located mid beach below road

Sample Collected from Station

Sample Id	SDU-08-ICS	Decision Unit	Sediment Decision Unit 8
Sample Date Time	2015-05-07 8:26	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-08-02

2015-05-05-13-33-19_SDU-08-02_TECK3.JPG



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2015-05-05-13-33-42_SDU-08-02_TECK3.JPG



vn

2015-05-05-13-38-17_SDU-08-02_TECK3.JPG



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Station Id	SDU-08-03	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 11:43	Sample Team Initials	AP

Sample Collected? Y
X 423035.8745 m
Y 5401717.5393 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description Angular rocks from road cut above
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 30
Shells Presence N
Surface Debris Present? N
Texture Gravelly, silty very fine sand
Vegetation Type if Present N

Anthropogenic Changes Present? N
Color 7.5YR 3/2
Debris Presence Cobbles
Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? N

Station Comments located mid beach below road

Sample Collected from Station

Sample Id	SDU-08-ICS	Decision Unit	Sediment Decision Unit 8
Sample Date Time	2015-05-07 8:26	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-08-03

2015-05-05-11-37-25_SDU-08-03_TECK3.JPG



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2015-05-05-11-37-45_SDU-08-03_TECK3.JPG



vn

2015-05-05-11-40-11_SDU-08-03_TECK3.JPG



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Station Id	SDU-08-04	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-06 10:09	Sample Team Initials	AP
Sample Collected?	Y		
X	423209.8015 m		
Y	5401908.7414 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	Angular rock from road cut above	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles and boulders
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	80	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Sand silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on lower beach

Sample Collected from Station

Sample Id	SDU-08-ICS	Decision Unit	Sediment Decision Unit 8
Sample Date Time	2015-05-07 8:26	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-08-04

2015-05-06-10-01-30_SDU-08-04_TECK3.JPG



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2015-05-06-10-01-52_SDU-08-04_TECK3.JPG



vne

2015-05-06-10-05-57_SDU-08-04_TECK3.JPG



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Station Id	SDU-08-05	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 10:24	Sample Team Initials	AP
Sample Collected?	Y		
X	422974.3338 m		
Y	5401637.2739 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	Angular rock from road cut above	Anthropogenic Changes Present?	N
Biological Visual Presence	Bird tracks	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles and boulders
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on beach below road

Sample Collected from Station

Sample Id	SDU-08-ICS	Decision Unit	Sediment Decision Unit 8
Sample Date Time	2015-05-07 8:26	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-08-05

2015-05-05-10-15-10_SDU-08-05_TECK3.JPG



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2015-05-05-10-15-46_SDU-08-05_TECK3.JPG



vn

2015-05-05-10-22-23_SDU-08-05_TECK3.JPG



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Station Id	SDU-08-06	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 11:27	Sample Team Initials	AP
Sample Collected?	Y		
X	423026.3784 m		
Y	5401699.1565 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	Angular rock from road cut above	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand with gravel	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on lower beach below slope

Sample Collected from Station

Sample Id	SDU-08-ICS	Decision Unit	Sediment Decision Unit 8
Sample Date Time	2015-05-07 8:26	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-08-06

2015-05-05-11-20-29_SDU-08-06_TECK3.JPG



gs

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2015-05-05-11-20-43_SDU-08-06_TECK3.JPG



vn

2015-05-05-11-25-12_SDU-08-06_TECK3.JPG



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Station Id	SDU-08-07	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-06 10:53	Sample Team Initials	AP
Sample Collected?	Y		
X	423223.0661 m		
Y	5401943.5638 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	Angular rock from road cut above	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles and boulders
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	40	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly, silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on upper beach

Sample Collected from Station

Sample Id	SDU-08-ICS	Decision Unit	Sediment Decision Unit 8
Sample Date Time	2015-05-07 8:26	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-08-07

2015-05-06-10-50-11_SDU-08-07_TECK3.JPG



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2015-05-06-10-46-19_SDU-08-07_TECK3.JPG



vne

2015-05-06-10-45-45_SDU-08-07_TECK3.JPG



gs

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Station Id	SDU-08-08	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 13:28	Sample Team Initials	AP
Sample Collected?	Y		
X	423115.6043 m		
Y	5401799.1842 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	Angular rock from road cut above	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand with trace gravel	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on mid beach

Sample Collected from Station

Sample Id	SDU-08-ICS	Decision Unit	Sediment Decision Unit 8
Sample Date Time	2015-05-07 8:26	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-08-08

2015-05-05-13-17-00_SDU-08-08_TECK3.JPG



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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-05-13-17-34_SDU-08-08_TECK3.JPG



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2015-05-05-13-25-10_SDU-08-08_TECK3.JPG



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ICS Sample Collection Report
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Station Id	SDU-08-09	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 11:01	Sample Team Initials	AP

Sample Collected? Y
X 423010.8421 m
Y 5401682.4521 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	Angular rock from road cut above	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand with gravel	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located mid beach below road

Sample Collected from Station

Sample Id	SDU-08-ICS	Decision Unit	Sediment Decision Unit 8
Sample Date Time	2015-05-07 8:26	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-08-09

2015-05-05-10-52-53_SDU-08-09_TECK3.JPG



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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-05-10-53-18_SDU-08-09_TECK3.JPG



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2015-05-05-10-59-15_SDU-08-09_TECK3.JPG



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Station Id	SDU-08-10	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-06 9:47	Sample Team Initials	AP
Sample Collected?	Y		
X	423177.2152 m		
Y	5401874.3402 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	Angular rock from road cut above	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles and boulders
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine sand with silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on lower beach

Sample Collected from Station

Sample Id	SDU-08-ICS	Decision Unit	Sediment Decision Unit 8
Sample Date Time	2015-05-07 8:26	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-08-10

2015-05-06-09-36-48_SDU-08-10_TECK3.JPG



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Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-06-09-37-15_SDU-08-10_TECK3.JPG



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2015-05-06-09-42-36_SDU-08-10_TECK3.JPG



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Station Id	SDU-08-11	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 13:53	Sample Team Initials	AP
Sample Collected?	Y		
X	423114.9562 m		
Y	5401819.6186 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	Angular rock from road cut above	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand with gravel	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on upper beach

Sample Collected from Station

Sample Id	SDU-08-ICS	Decision Unit	Sediment Decision Unit 8
Sample Date Time	2015-05-07 8:26	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-08-11

2015-05-05-13-44-57_SDU-08-11_TECK3.JPG



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2015-05-05-13-45-25_SDU-08-11_TECK3.JPG



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2015-05-05-13-50-44_SDU-08-11_TECK3.JPG



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Station Id	SDU-08-12	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 12:34	Sample Team Initials	AP

Sample Collected? Y
X 423052.221 m
Y 5401735.9244 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Gravel
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine to coarse sand with silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on lower beach

Sample Collected from Station

Sample Id	SDU-08-ICS	Decision Unit	Sediment Decision Unit 8
Sample Date Time	2015-05-07 8:26	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-08-12

2015-05-05-12-22-59_SDU-08-12_TECK3.JPG



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2015-05-05-12-23-42_SDU-08-12_TECK3.JPG



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2015-05-05-12-32-56_SDU-08-12_TECK3.JPG



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Station Id	SDU-08-13	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 13:02	Sample Team Initials	AP

Sample Collected? Y
X 423083.8989 m
Y 5401772.4296 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description Angular rock from road cut above
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N
Texture Silty fine sand
Vegetation Type if Present N

Anthropogenic Changes Present? N
Color 10YR 3/2
Debris Presence N
Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? N

Station Comments located on lower beach

Sample Collected from Station

Sample Id	SDU-08-ICS	Decision Unit	Sediment Decision Unit 8
Sample Date Time	2015-05-07 8:26	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-08-13

2015-05-05-12-52-09_SDU-08-13_TECK3.JPG



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2015-05-05-12-52-30_SDU-08-13_TECK3.JPG



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2015-05-05-12-59-39_SDU-08-13_TECK3.JPG



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ICS Sample Collection Report
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Station Id	SDU-08-14	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-06 10:35	Sample Team Initials	AP
Sample Collected?	Y		
X	423213.0433 m		
Y	5401933.9326 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	Angular rock from road cut above	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly, silty fine sand	Vegetation Present?	Y
Vegetation Type if Present	Some grass		
Station Comments	located on upper beach		

Sample Collected from Station

Sample Id	SDU-08-ICS	Decision Unit	Sediment Decision Unit 8
Sample Date Time	2015-05-07 8:26	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-08-14

2015-05-06-10-26-04_SDU-08-14_TECK3.JPG



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2015-05-06-10-32-40_SDU-08-14_TECK3.JPG



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2015-05-06-10-30-41_SDU-08-14_TECK3.JPG



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Station Id	SDU-08-15	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 10:38	Sample Team Initials	AP

Sample Collected? Y
X 422993.2809 m
Y 5401666.0625 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	Angular rock from road cut above	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on beach below road

Sample Collected from Station

Sample Id	SDU-08-ICS	Decision Unit	Sediment Decision Unit 8
Sample Date Time	2015-05-07 8:26	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-08-15

2015-05-05-10-28-31_SDU-08-15_TECK3.JPG



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2015-05-05-10-29-04_SDU-08-15_TECK3.JPG



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2015-05-05-10-36-09_SDU-08-15_TECK3.JPG

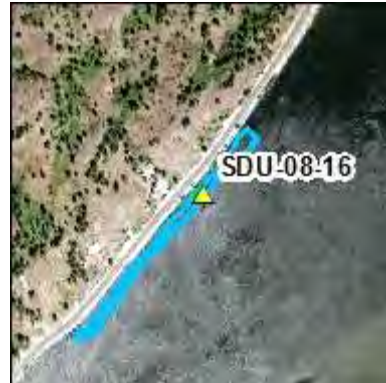


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Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-08-16	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 14:19	Sample Team Initials	AP
Sample Collected?	Y		
X	423151.1049 m		
Y	5401844.6098 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	Angular rocks from road cut above	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on lower beach

Sample Collected from Station

Sample Id	SDU-08-ICS	Decision Unit	Sediment Decision Unit 8
Sample Date Time	2015-05-07 8:26	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-08-16

2015-05-05-14-09-17_SDU-08-16_TECK3.JPG



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2015-05-05-14-09-35_SDU-08-16_TECK3.JPG



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2015-05-05-14-15-15_SDU-08-16_TECK3.JPG



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Station Id	SDU-08-17	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-06 9:30	Sample Team Initials	AP
Sample Collected?	Y		
X	423163.2996 m		
Y	5401875.5998 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	Angular rock from road cut above	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles and boulders
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine to coarse sand with silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on upper beach

Sample Collected from Station

Sample Id	SDU-08-ICS	Decision Unit	Sediment Decision Unit 8
Sample Date Time	2015-05-07 8:26	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station SDU-08-17

2015-05-06-09-23-10_SDU-08-17_TECK3.JPG



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2015-05-06-09-23-51_SDU-08-17_TECK3.JPG



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2015-05-06-09-27-16_SDU-08-17_TECK3.JPG

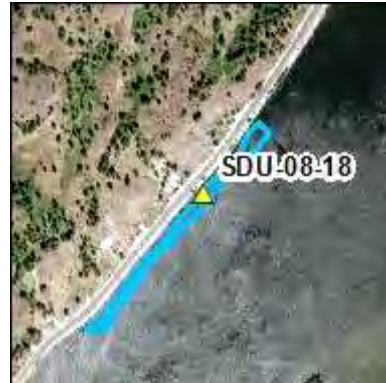


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Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-08-18	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 14:05	Sample Team Initials	AP
Sample Collected?	Y		
X	423132.1043 m		
Y	5401834.6709 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	Angular rocks from road cut above	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles and boulders
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	50	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Sandy silt with gravel	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located mid beach

Sample Collected from Station

Sample Id	SDU-08-ICS	Decision Unit	Sediment Decision Unit 8
Sample Date Time	2015-05-07 8:26	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-08-18

2015-05-05-13-57-13_SDU-08-18_TECK3.JPG



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2015-05-05-13-57-51_SDU-08-18_TECK3.JPG



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2015-05-05-14-02-04_SDU-08-18_TECK3.JPG



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Station Id	SDU-08-19	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-06 9:58	Sample Team Initials	AP

Sample Collected? Y
X 423197.3903 m
Y 5401907.9084 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description Angular rock from road cut above
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N
Texture Sandy silt
Vegetation Type if Present N

Anthropogenic Changes Present? N
Color 10YR 3/2
Debris Presence N
Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? N

Station Comments located mid beach

Sample Collected from Station

Sample Id	SDU-08-ICS	Decision Unit	Sediment Decision Unit 8
Sample Date Time	2015-05-07 8:26	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-08-19

2015-05-06-09-51-20_SDU-08-19_TECK3.JPG



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2015-05-06-09-51-43_SDU-08-19_TECK3.JPG



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2015-05-06-09-54-03_SDU-08-19_TECK3.JPG



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Station Id	SDU-08-20	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 12:48	Sample Team Initials	AP
Sample Collected?	Y		
X	423070.574 m		
Y	5401753.9248 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on lower beach

Sample Collected from Station

Sample Id	SDU-08-ICS	Decision Unit	Sediment Decision Unit 8
Sample Date Time	2015-05-07 8:26	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-08-20

2015-05-05-12-38-11_SDU-08-20_TECK3.JPG



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2015-05-05-12-38-50_SDU-08-20_TECK3.JPG



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2015-05-05-12-42-54_SDU-08-20_TECK3.JPG

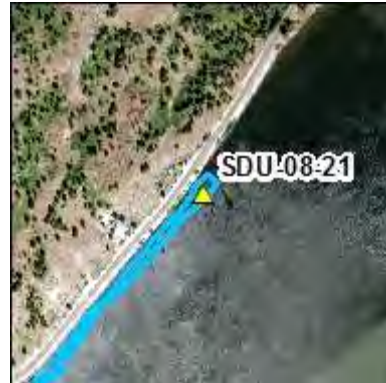


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Station Id	SDU-08-21	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-06 10:23	Sample Team Initials	AP
Sample Collected?	Y		
X	423219.093 m		
Y	5401919.6043 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	Angular rock from road cut above	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles and boulders
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Sandy silt with gravel	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on lower beach

Sample Collected from Station

Sample Id	SDU-08-ICS	Decision Unit	Sediment Decision Unit 8
Sample Date Time	2015-05-07 8:26	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-08-21

2015-05-06-10-13-09_SDU-08-21_TECK3.JPG



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2015-05-06-10-18-21_SDU-08-21_TECK3.JPG



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Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-08-22	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 14:54	Sample Team Initials	AP
Sample Collected?	Y		
X	423153.2654 m		
Y	5401863.1828 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	Angular roack from road cut above	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on upper beach

Sample Collected from Station

Sample Id	SDU-08-ICS	Decision Unit	Sediment Decision Unit 8
Sample Date Time	2015-05-07 8:26	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-08-22

2015-05-05-14-52-38_SDU-08-22_TECK3.JPG



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2015-05-05-14-48-45_SDU-08-22_TECK3.JPG



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2015-05-05-14-48-14_SDU-08-22_TECK3.JPG



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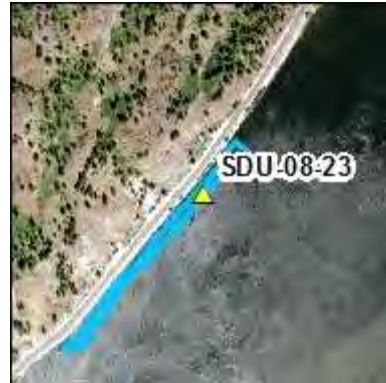
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Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-08-23	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-06 9:19	Sample Team Initials	AP

Sample Collected? Y
X 423169.6434 m
Y 5401865.4357 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	Angular rock from road cut above	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles and boulders
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly, silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on lower beach

Sample Collected from Station

Sample Id	SDU-08-ICS	Decision Unit	Sediment Decision Unit 8
Sample Date Time	2015-05-07 8:26	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-08-23

2015-05-06-09-06-01_SDU-08-23_TECK3.JPG



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ICS Sample Collection Report
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2015-05-06-09-06-34_SDU-08-23_TECK3.JPG



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2015-05-06-09-17-08_SDU-08-23_TECK3.JPG



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Station Id	SDU-08-24	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 10:49	Sample Team Initials	AP
Sample Collected?	Y		
X	423004.8543 m		
Y	5401673.199 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	Angular roack from road cut above	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand with gravel	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located mid beach below road

Sample Collected from Station

Sample Id	SDU-08-ICS	Decision Unit	Sediment Decision Unit 8
Sample Date Time	2015-05-07 8:26	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-08-24

2015-05-05-10-41-07_SDU-08-24_TECK3.JPG



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2015-05-05-10-42-20_SDU-08-24_TECK3.JPG



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2015-05-05-10-48-03_SDU-08-24_TECK3.JPG



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Station Id	SDU-08-25	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 14:29	Sample Team Initials	AP
Sample Collected?	Y		
X	423139.5512 m		
Y	5401848.8345 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	Angular rock from above road cut	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Sandy silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on upper beach

Sample Collected from Station

Sample Id	SDU-08-ICS	Decision Unit	Sediment Decision Unit 8
Sample Date Time	2015-05-07 8:26	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-08-25

2015-05-05-14-22-43_SDU-08-25_TECK3.JPG



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Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-05-14-25-50_SDU-08-25_TECK3.JPG

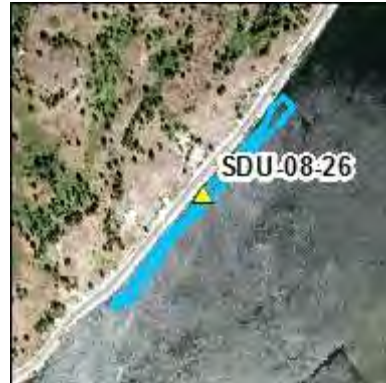


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Station Id	SDU-08-26	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 13:13	Sample Team Initials	AP
Sample Collected?	Y		
X	423092.3019 m		
Y	5401791.2061 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	Angular rock from road cut above	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located mid beach below road

Sample Collected from Station

Sample Id	SDU-08-ICS	Decision Unit	Sediment Decision Unit 8
Sample Date Time	2015-05-07 8:26	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station SDU-08-26

2015-05-05-13-06-27_SDU-08-26_TECK3.JPG



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2015-05-13-07-04_SDU-08-26_TECK3.JPG



vn

2015-05-05-13-11-09_SDU-08-26_TECK3.JPG



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ICS Sample Collection Report
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Station Id	SDU-08-27	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 10:10	Sample Team Initials	AP
Sample Collected?	Y		
X	422966.2968 m		
Y	5401621.8766 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	Angular rock from road cut above	Anthropogenic Changes Present?	N
Biological Visual Presence	Raccoon tracks	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles and boulders
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	50	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on beach below road

Sample Collected from Station

Sample Id	SDU-08-ICS	Decision Unit	Sediment Decision Unit 8
Sample Date Time	2015-05-07 8:26	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station SDU-08-27

2015-05-05-10-01-40_SDU-08-27_TECK3.JPG



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2015-05-05-10-02-13_SDU-08-27_TECK3.JPG



vne

2015-05-05-10-07-04_SDU-08-27_TECK3.JPG



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Station Id	SDU-08-28	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-06 10:43	Sample Team Initials	AP

Sample Collected? Y
X 423232.1169 m
Y 5401932.3547 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description Angular rocks from rock cut above

Biological Visual Presence N

Cultural Oversight Inspection Conducted? Y

Odor N

Percent Ground Coverage 75

Shells Presence N

Surface Debris Present? N

Texture Gravelly fine to coarse sand with silt

Vegetation Type if Present N

Anthropogenic Changes Present? N

Color 10YR 3/2

Debris Presence Cobbles and boulders

Percent Canopy Coverage 0

Sheen Presence N

Substrate Type Sediment

Surface Debris Removed Prior to Sampling? N

Vegetation Present? N

Station Comments located on lower beach

Sample Collected from Station

Sample Id	SDU-08-ICS	Decision Unit	Sediment Decision Unit 8
Sample Date Time	2015-05-07 8:26	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-08-28

2015-05-06-10-40-27_SDU-08-28_TECK3.JPG



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2015-05-06-10-38-00_SDU-08-28_TECK3.JPG



vne

2015-05-06-10-37-38_SDU-08-28_TECK3.JPG



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Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-08-29	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 11:12	Sample Team Initials	AP
Sample Collected?	Y		
X	423012.8744 m		
Y	5401696.3675 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	Angular rock from road cut above	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand with gravel	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on upper beach below road

Sample Collected from Station

Sample Id	SDU-08-ICS	Decision Unit	Sediment Decision Unit 8
Sample Date Time	2015-05-07 8:26	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-08-29

2015-05-05-11-05-32_SDU-08-29_TECK3.JPG



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2015-05-05-11-09-25_SDU-08-29_TECK3.JPG



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Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-08-30	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-05 9:56	Sample Team Initials	AP

Sample Collected? Y
X 422943.9872 m
Y 5401613.4557 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description None
Biological Visual Presence Raccoon tracks

Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N

Texture Silty clay
Vegetation Type if Present N

Station Comments located on beach directly under slope

Anthropogenic Changes Present? N
Color 7.5YR 3/2
Debris Presence N
Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? N

Sample Collected from Station

Sample Id	SDU-08-ICS	Decision Unit	Sediment Decision Unit 8
Sample Date Time	2015-05-07 8:26	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station SDU-08-30

2015-05-05-09-47-45_SDU-08-30_TECK3.JPG



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2015-05-05-09-50-48_SDU-08-30_TECK3.JPG



vne

2015-05-05-09-53-24_SDU-08-30_TECK3.JPG



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Station Id	SDU-08-R01	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-08-ICS	Decision Unit	Sediment Decision Unit 8
Sample Date Time	2015-05-07 8:26	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station SDU-08-R01

No photos taken at this station. See station comments for more details.

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Station Id	SDU-08-R02	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-08-ICS	Decision Unit	Sediment Decision Unit 8
Sample Date Time	2015-05-07 8:26	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station SDU-08-R02

No photos taken at this station. See station comments for more details.

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Station Id	SDU-08-R03	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-08-ICS	Decision Unit	Sediment Decision Unit 8
Sample Date Time	2015-05-07 8:26	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station SDU-08-R03

No photos taken at this station. See station comments for more details.

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Station Id	SDU-08-R04	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-08-ICS	Decision Unit	Sediment Decision Unit 8
Sample Date Time	2015-05-07 8:26	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station SDU-08-R04

No photos taken at this station. See station comments for more details.

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Station Id	SDU-08-R05	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-08-ICS	Decision Unit	Sediment Decision Unit 8
Sample Date Time	2015-05-07 8:26	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station SDU-08-R05

No photos taken at this station. See station comments for more details.

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Station Id	SDU-08-R06	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-08-ICS	Decision Unit	Sediment Decision Unit 8
Sample Date Time	2015-05-07 8:26	Collection Method	ICS
Initials on CoC	AT/ALD	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station SDU-08-R06

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09A-01	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-01 14:51	Sample Team Initials	MS

Sample Collected? Y
X 422430.7636 m
Y 5401037.5878 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments Relocated new sample location 9m approximately at 297 degrees from original location based on the procedure agreeded to by EPA and TAI.

Sample Collected from Station

Sample Id	SDU-09-ICS-A	Decision Unit	Sediment Decision Unit 9
Sample Date Time	2015-05-02 8:05	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-09A-R02, R03, R04) were collected for SDU-09A-18, 21, 30.		

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Photos Collected from Station SDU-09A-01

2015-05-01-14-57-12_SDU-09A-01_1619LP-WA70047.JPG



sample

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2015-05-01-14-57-18_SDU-09A-01_1619LP-WA70047.JPG



ground surface

2015-05-01-14-57-22_SDU-09A-01_1619LP-WA70047.JPG



overview facing north

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2015-05-28-10-09-07_SDU-09A-01_1619LP-WA70047.jpg



in situ XRF location analyzed 5/6/15 facing west

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Station Id	SDU-09A-02	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-30 15:12	Sample Team Initials	MS

Sample Collected? Y
X 422435.6106 m
Y 5401082.554 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-09-ICS-A	Decision Unit	Sediment Decision Unit 9
Sample Date Time	2015-05-02 8:05	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-09A-R02, R03, R04) were collected for SDU-09A-18, 21, 30.		

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Photos Collected from Station SDU-09A-02

2015-05-28-10-04-32_SDU-09A-02_1619LP-WA70047.jpg



in situ XRF location analyzed 5/6/15 facing west

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2015-04-30-15-18-07_SDU-09A-02_TECK2.JPG



groundsurface

2015-04-30-15-18-13_SDU-09A-02_TECK2.JPG



sample

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2015-04-30-15-18-19_SDU-09A-02_TECK2.JPG



Overview facing south

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Station Id	SDU-09A-03	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-01 15:37	Sample Team Initials	MS

Sample Collected? Y
X 422351.0405 m
Y 5400897.2474 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments Relocated new sample location approximately 11m at 295 degrees from original location based on the procedure agreed to by EPA and TAI.

Sample Collected from Station

Sample Id	SDU-09-ICS-A	Decision Unit	Sediment Decision Unit 9
Sample Date Time	2015-05-02 8:05	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-09A-R02, R03, R04) were collected for SDU-09A-18, 21, 30.		

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Photos Collected from Station SDU-09A-03

2015-05-28-10-02-17_SDU-09A-03_1619LP-WA70047.jpg



in situ XRF location analyzed 5/6/15 facing west

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2015-05-01-15-41-21_SDU-09A-03_TECK2.JPG



sample

2015-05-01-15-41-24_SDU-09A-03_TECK2.JPG



groundsurface

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2015-05-01-15-41-28_SDU-09A-03_TECK2.JPG



overview facing north

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Station Id	SDU-09A-04	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-01 14:36	Sample Team Initials	MS

Sample Collected? Y
X 422437.9978 m
Y 5401050.1682 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments Relocated new sample location approximately 24m at 294 degrees from original location based on the procedure agreed to by EPA and TAI.

Sample Collected from Station

Sample Id	SDU-09-ICS-A	Decision Unit	Sediment Decision Unit 9
Sample Date Time	2015-05-02 8:05	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-09A-R02, R03, R04) were collected for SDU-09A-18, 21, 30.		

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Photos Collected from Station SDU-09A-04

2015-05-28-10-06-02_SDU-09A-04_1619LP-WA70047.jpg



in situ XRF location analyzed 5/6/15 facing west

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2015-05-01-14-42-10_SDU-09A-04_TECK2.JPG



groundsurface

2015-05-01-14-42-19_SDU-09A-04_TECK2.JPG



overview facing north

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2015-05-01-14-42-40_SDU-09A-04_TECK2.JPG



sample

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Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-09A-05	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-30 13:07	Sample Team Initials	MS
Sample Collected?	Y		
X	422294.1175 m		
Y	5400879.792 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-09-ICS-A	Decision Unit	Sediment Decision Unit 9
Sample Date Time	2015-05-02 8:05	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-09A-R02, R03, R04) were collected for SDU-09A-18, 21, 30.		

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Photos Collected from Station SDU-09A-05

2015-04-30-13-08-50_SDU-09A-05_1619LP-WA70047.JPG



sample

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2015-05-28-10-01-54_SDU-09A-05_1619LP-WA70047.jpg



in situ XRF location analyzed 5/6/15 facing west

2015-04-30-13-08-52_SDU-09A-05_TECK2.JPG



groundsurface

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2015-04-30-13-08-56_SDU-09A-05_TECK2.JPG



overview facing north

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Station Id	SDU-09A-06	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-30 14:00	Sample Team Initials	MS
Sample Collected?	Y		
X	422360.1926 m		
Y	5400968.437 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-09-ICS-A	Decision Unit	Sediment Decision Unit 9
Sample Date Time	2015-05-02 8:05	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-09A-R02, R03, R04) were collected for SDU-09A-18, 21, 30.		

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Photos Collected from Station SDU-09A-06

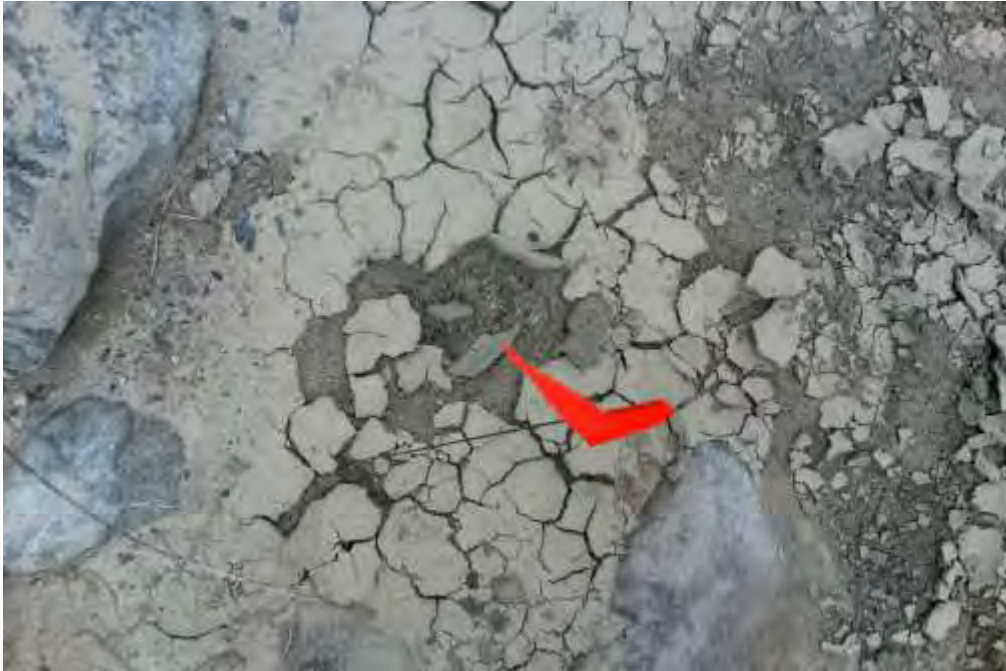
2015-05-28-10-10-26_SDU-09A-06_1619LP-WA70047.jpg



in situ XRF location analyzed 5/6/15 facing west

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2015-04-30-14-03-28_SDU-09A-06_TECK2.JPG



groundsurface

2015-04-30-14-03-32_SDU-09A-06_TECK2.JPG



overview facing north

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2015-04-30-14-03-46_SDU-09A-06_TECK2.JPG



sample

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Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-09A-07	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-01 13:39	Sample Team Initials	MS
Sample Collected?	Y		
X	422458.269 m		
Y	5401072.975 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

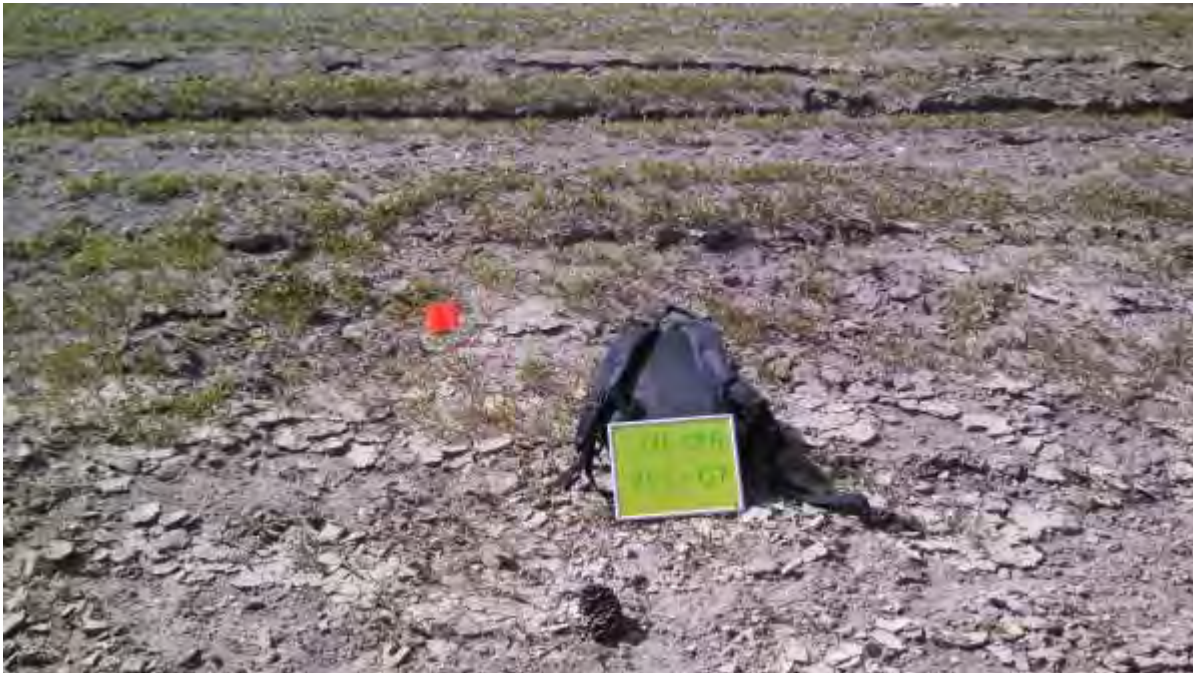
Sample Collected from Station

Sample Id	SDU-09-ICS-A	Decision Unit	Sediment Decision Unit 9
Sample Date Time	2015-05-02 8:05	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-09A-R02, R03, R04) were collected for SDU-09A-18, 21, 30.		

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Photos Collected from Station SDU-09A-07

2015-05-28-10-04-20_SDU-09A-07_1619LP-WA70047.jpg



in situ XRF location analyzed 5/6/15 facing west

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2015-05-01-13-43-51_SDU-09A-07_TECK2.JPG



sample

2015-05-01-13-44-03_SDU-09A-07_TECK2.JPG



groundsurface

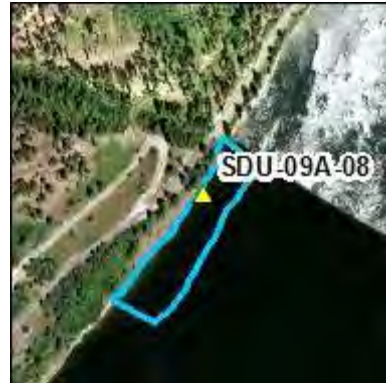
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Station Id	SDU-09A-08	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-30 14:44	Sample Team Initials	MS

Sample Collected? Y
X 422409.5177 m
Y 5401039.95 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-09-ICS-A	Decision Unit	Sediment Decision Unit 9
Sample Date Time	2015-05-02 8:05	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-09A-R02, R03, R04) were collected for SDU-09A-18, 21, 30.		

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Photos Collected from Station SDU-09A-08

2015-05-28-10-09-22_SDU-09A-08_1619LP-WA70047.jpg



in situ XRF location analyzed 5/6/15 facing west

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2015-04-30-14-47-39_SDU-09A-08_TECK2.JPG



groundsurface

2015-04-30-14-47-43_SDU-09A-08_TECK2.JPG



overview facing north

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2015-04-30-14-47-55_SDU-09A-08_TECK2.JPG



sample

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Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-09A-09	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-30 13:30	Sample Team Initials	MS

Sample Collected? Y
X 422341.436 m
Y 5400925.96 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments No in situ XRF analysis performed at this location.

Sample Collected from Station

Sample Id	SDU-09-ICS-A	Decision Unit	Sediment Decision Unit 9
Sample Date Time	2015-05-02 8:05	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-09A-R02, R03, R04) were collected for SDU-09A-18, 21, 30.		

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Photos Collected from Station SDU-09A-09

2015-04-30-13-35-15_SDU-09A-09_TECK2.JPG



sample

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2015-04-30-13-34-15_SDU-09A-09_TECK2.JPG



groundsurface

2015-04-30-13-34-18_SDU-09A-09_TECK2.JPG



overview facing north

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Station Id	SDU-09A-10	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-01 12:04	Sample Team Initials	MS

Sample Collected? Y
X 422362.0262 m
Y 5400928.07 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments moved 1.9m west of centroid due to cultural concerns

Sample Collected from Station

Sample Id	SDU-09-ICS-A	Decision Unit	Sediment Decision Unit 9
Sample Date Time	2015-05-02 8:05	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-09A-R02, R03, R04) were collected for SDU-09A-18, 21, 30.		

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Photos Collected from Station SDU-09A-10

2015-05-28-10-11-27_SDU-09A-10_1619LP-WA70047.jpg



in situ XRF location analyzed 5/6/15 facing west

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2015-05-01-12-06-22_SDU-09A-10_TECK2.JPG



groundsurface

2015-05-01-12-06-28_SDU-09A-10_TECK2.JPG



overview facing north

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2015-05-01-12-06-37_SDU-09A-10_TECK2.JPG



sample

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Station Id	SDU-09A-11	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-30 15:36	Sample Team Initials	MS

Sample Collected? Y
X 422443.0525 m
Y 5401115.469 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N

Texture Silty fine sand
Vegetation Type if Present N

Anthropogenic Changes Present? N
Color 10YR 4/2
Debris Presence N

Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? N

Station Comments

Sample Collected from Station

Sample Id	SDU-09-ICS-A	Decision Unit	Sediment Decision Unit 9
Sample Date Time	2015-05-02 8:05	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-09A-R02, R03, R04) were collected for SDU-09A-18, 21, 30.		

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Photos Collected from Station SDU-09A-11

2015-05-28-10-03-42_SDU-09A-11_1619LP-WA70047.jpg



in situ XRF location analyzed 5/6/15 facing west

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2015-04-30-15-38-46_SDU-09A-11_TECK2.JPG



sample

2015-04-30-15-33-23_SDU-09A-11_TECK2.JPG



overview facing north

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Station Id	SDU-09A-12	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-30 13:22	Sample Team Initials	MS
Sample Collected?	Y		
X	422348.8373 m		
Y	5400915.491 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-09-ICS-A	Decision Unit	Sediment Decision Unit 9
Sample Date Time	2015-05-02 8:05	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-09A-R02, R03, R04) were collected for SDU-09A-18, 21, 30.		

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Photos Collected from Station SDU-09A-12

2015-05-28-10-12-04_SDU-09A-12_1619LP-WA70047.jpg



in situ XRF location analyzed 5/6/15 facing west

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2015-04-30-13-25-12_SDU-09A-12_TECK2.JPG



groundsurface

2015-04-30-13-25-22_SDU-09A-12_TECK2.JPG



sample

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2015-04-30-13-25-27_SDU-09A-12_TECK2.JPG



overview facing north

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Station Id	SDU-09A-13	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-30 13:16	Sample Team Initials	MS

Sample Collected? Y
X 422337.5125 m
Y 5400903.973 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-09-ICS-A	Decision Unit	Sediment Decision Unit 9
Sample Date Time	2015-05-02 8:05	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-09A-R02, R03, R04) were collected for SDU-09A-18, 21, 30.		

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Photos Collected from Station SDU-09A-13

2015-05-28-10-12-15_SDU-09A-13_1619LP-WA70047.jpg



in situ XRF location analyzed 5/6/15 facing west

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2015-04-30-13-17-54_SDU-09A-13_TECK2.JPG



2015-04-30-13-18-06_SDU-09A-13_TECK2.JPG



groundsurface

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2015-04-30-13-18-11_SDU-09A-13_TECK2.JPG



overview facing north

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Station Id	SDU-09A-14	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-01 11:38	Sample Team Initials	MS
Sample Collected?	Y		
X	422344.5869 m		
Y	5400889.354 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments location 5.5m from shoreline. Moved 1m west from centroid.

Sample Collected from Station

Sample Id	SDU-09-ICS-A	Decision Unit	Sediment Decision Unit 9
Sample Date Time	2015-05-02 8:05	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-09A-R02, R03, R04) were collected for SDU-09A-18, 21, 30.		

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Photos Collected from Station SDU-09A-14

2015-05-28-10-12-54_SDU-09A-14_1619LP-WA70047.jpg



in situ XRF location analyzed 5/6/15 facing east

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2015-05-01-11-43-22_SDU-09A-14_TECK2.JPG



groundsurface

2015-05-01-11-42-13_SDU-09A-14_TECK2.JPG



sample

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2015-05-01-11-42-34_SDU-09A-14_TECK2.JPG



overview facing north

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Station Id	SDU-09A-15	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-01 14:19	Sample Team Initials	MS

Sample Collected? Y
X 422465.9911 m
Y 5401094.8656 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments Relocated new sample location approximately 27m at 305 degrees from original location based on the procedure agreed to by EPA and TAI.

Sample Collected from Station

Sample Id	SDU-09-ICS-A	Decision Unit	Sediment Decision Unit 9
Sample Date Time	2015-05-02 8:05	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-09A-R02, R03, R04) were collected for SDU-09A-18, 21, 30.		

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Photos Collected from Station SDU-09A-15

2015-05-28-10-04-07_SDU-09A-15_1619LP-WA70047.jpg



in situ XRF location analyzed 5/6/15 facing west

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2015-05-01-14-15-43_SDU-09A-15_TECK2.JPG



sample

2015-05-01-14-15-51_SDU-09A-15_TECK2.JPG



groundsurface

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-01-14-15-57_SDU-09A-15_TECK2.JPG



overview facing north

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Station Id	SDU-09A-16	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-01 15:04	Sample Team Initials	MS

Sample Collected? Y
X 422422.6346 m
Y 5401024.468 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments Relocated new sample location approximately 22m at 308 degrees from original location based on the procedure agreed to by EPA and TAI.

Sample Collected from Station

Sample Id	SDU-09-ICS-A	Decision Unit	Sediment Decision Unit 9
Sample Date Time	2015-05-02 8:05	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-09A-R02, R03, R04) were collected for SDU-09A-18, 21, 30.		

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ICS Sample Collection Report
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Photos Collected from Station SDU-09A-16

2015-05-28-10-04-41_SDU-09A-16_1619LP-WA70047.jpg



in situ XRF location analyzed 5/6/15 facing west

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-01-15-08-54_SDU-09A-16_TECK2.JPG



sample

2015-05-01-15-08-58_SDU-09A-16_TECK2.JPG



groundsurface

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-01-15-09-02_SDU-09A-16_TECK2.JPG



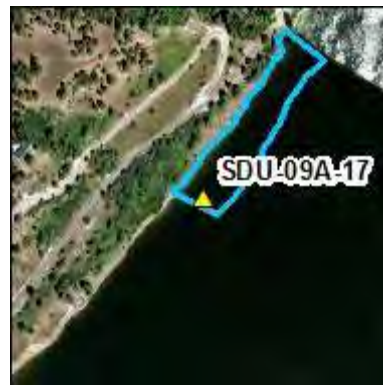
overview facing north

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ICS Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study

Station Id	SDU-09A-17	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-01 15:46	Sample Team Initials	MS

Sample Collected? Y
X 422320.5578 m
Y 5400876.041 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments Relocated new sample location 25m at 300 degrees from original location based on the procedure agreed to by EPA and TAI.

Sample Collected from Station

Sample Id	SDU-09-ICS-A	Decision Unit	Sediment Decision Unit 9
Sample Date Time	2015-05-02 8:05	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-09A-R02, R03, R04) were collected for SDU-09A-18, 21, 30.		

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-09A-17

2015-05-28-10-12-27_SDU-09A-17_1619LP-WA70047.jpg



in situ XRF location analyzed 5/6/15 facing west

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-01-15-50-12_SDU-09A-17_TECK2.JPG



sample

2015-05-01-15-50-17_SDU-09A-17_TECK2.JPG



groundsurface

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-01-15-50-21_SDU-09A-17_TECK2.JPG



overview facing north

Appendix I
ICS Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-09A-18	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	MS
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments not sampled

Sample Collected from Station

Sample Id	SDU-09-ICS-A	Decision Unit	Sediment Decision Unit 9
Sample Date Time	2015-05-02 8:05	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-09A-R02, R03, R04) were collected for SDU-09A-18, 21, 30.		

Photos Collected from Station SDU-09A-18

No photos taken at this station. See station comments for more details.

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Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-09A-19	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-30 13:52	Sample Team Initials	MS

Sample Collected? Y
X 422375.4509 m
Y 5400953.3 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-09-ICS-A	Decision Unit	Sediment Decision Unit 9
Sample Date Time	2015-05-02 8:05	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-09A-R02, R03, R04) were collected for SDU-09A-18, 21, 30.		

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Photos Collected from Station SDU-09A-19

2015-05-28-10-10-38_SDU-09A-19_1619LP-WA70047.jpg



in situ XRF location analyzed 5/6/15 facing west

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2015-04-30-13-56-08_SDU-09A-19_TECK2.JPG



groundsurface

2015-04-30-13-56-14_SDU-09A-19_TECK2.JPG



overview facing north

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-30-13-56-24_SDU-09A-19_TECK2.JPG



sample

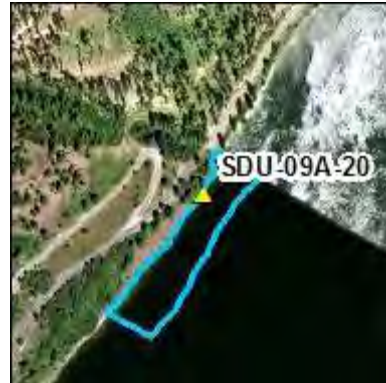
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ICS Sample Collection Report
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Station Id	SDU-09A-20	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-30 14:59	Sample Team Initials	MS

Sample Collected? Y
X 422417.3294 m
Y 5401057.801 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to very fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments moved 1.77m from centroid due to cultural concerns. Cleared cobbles on surface. Used scoop to collect 50%

Sample Collected from Station

Sample Id	SDU-09-ICS-A	Decision Unit	Sediment Decision Unit 9
Sample Date Time	2015-05-02 8:05	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-09A-R02, R03, R04) were collected for SDU-09A-18, 21, 30.		

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-09A-20

2015-05-28-10-05-30_SDU-09A-20_1619LP-WA70047.jpg



in situ XRF location analyzed 5/6/15 facing west

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-30-15-04-26_SDU-09A-20_TECK2.JPG



sample

2015-04-30-15-04-40_SDU-09A-20_TECK2.JPG



groundsurface

Appendix I
ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-30-15-04-44_SDU-09A-20_TECK2.JPG



overview facing north

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-09A-21	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	MS
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments not sampled

Sample Collected from Station

Sample Id	SDU-09-ICS-A	Decision Unit	Sediment Decision Unit 9
Sample Date Time	2015-05-02 8:05	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-09A-R02, R03, R04) were collected for SDU-09A-18, 21, 30.		

Photos Collected from Station SDU-09A-21

No photos taken at this station. See station comments for more details.

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Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-09A-22	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-30 14:24	Sample Team Initials	MS

Sample Collected? Y
X 422401.0317 m
Y 5400997.911 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments Carp wallows at sample centroid , move 0.5m east of center point.

Sample Collected from Station

Sample Id	SDU-09-ICS-A	Decision Unit	Sediment Decision Unit 9
Sample Date Time	2015-05-02 8:05	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-09A-R02, R03, R04) were collected for SDU-09A-18, 21, 30.		

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Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-09A-22

2015-05-28-10-10-03_SDU-09A-22_1619LP-WA70047.jpg



in situ XRF location analyzed 5/6/15 facing west

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-30-14-26-42_SDU-09A-22_TECK2.JPG



sample

2015-04-30-14-25-11_SDU-09A-22_TECK2.JPG



groundsurface

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-30-14-25-15_SDU-09A-22_TECK2.JPG



overviewfacing north

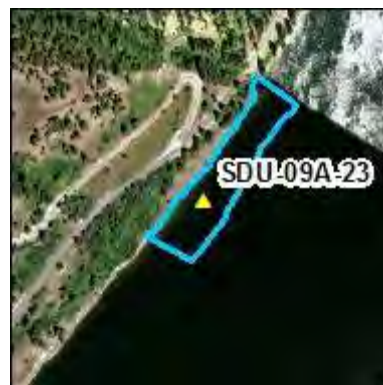
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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-09A-23	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-30 13:45	Sample Team Initials	MS

Sample Collected? Y
X 422359.6428 m
Y 5400939.418 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to very fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-09-ICS-A	Decision Unit	Sediment Decision Unit 9
Sample Date Time	2015-05-02 8:05	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-09A-R02, R03, R04) were collected for SDU-09A-18, 21, 30.		

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Photos Collected from Station SDU-09A-23

2015-05-28-10-11-03_SDU-09A-23_1619LP-WA70047.jpg



in situ XRF location analyzed 5/6/15 facing west

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2015-04-30-13-46-16_SDU-09A-23_TECK2.JPG



surface

2015-04-30-13-46-25_SDU-09A-23_TECK2.JPG



groundsurface

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-30-13-46-28_SDU-09A-23_TECK2.JPG



overview facing north

Appendix I
ICS Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-09A-24	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-30 15:35	Sample Team Initials	MS

Sample Collected? Y
X 422450.742 m
Y 5401108.367 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand some fine to coarse gravel	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-09-ICS-A	Decision Unit	Sediment Decision Unit 9
Sample Date Time	2015-05-02 8:05	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-09A-R02, R03, R04) were collected for SDU-09A-18, 21, 30.		

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Photos Collected from Station SDU-09A-24

2015-05-28-10-03-58_SDU-09A-24_1619LP-WA70047.jpg



in situ XRF location analyzed 5/6/15 facing north

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2015-04-30-15-39-00_SDU-09A-24_TECK2.JPG



2015-04-30-15-33-32_SDU-09A-24_TECK2.JPG



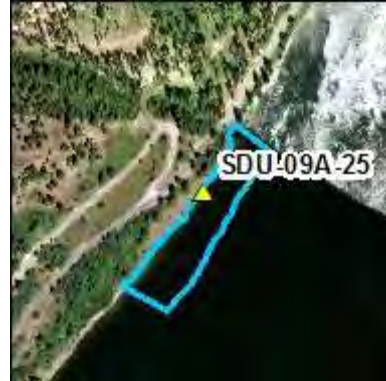
overview facing north

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Station Id	SDU-09A-25	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-30 14:34	Sample Team Initials	MS
Sample Collected?	Y		
X	422393.6667 m		
Y	5401022.949 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-09-ICS-A	Decision Unit	Sediment Decision Unit 9
Sample Date Time	2015-05-02 8:05	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-09A-R02, R03, R04) were collected for SDU-09A-18, 21, 30.		

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Photos Collected from Station SDU-09A-25

2015-05-28-10-09-52_SDU-09A-25_1619LP-WA70047.jpg



in situ XRF location analyzed 5/6/15 facing west

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2015-04-30-14-37-43_SDU-09A-25_TECK2.JPG



groundsurface

2015-04-30-14-38-29_SDU-09A-25_TECK2.JPG



sample

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-30-14-38-35_SDU-09A-25_TECK2.JPG



overview facing north

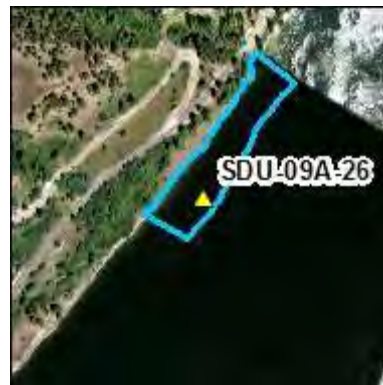
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Station Id	SDU-09A-26	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-01 15:28	Sample Team Initials	MS

Sample Collected? Y
X 422363.4426 m
Y 5400909.4894 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments Relocated new sample location approximately 15m at 295 degrees from original location based on the procedure agreed to by EPA and TAI.

Sample Collected from Station

Sample Id	SDU-09-ICS-A	Decision Unit	Sediment Decision Unit 9
Sample Date Time	2015-05-02 8:05	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-09A-R02, R03, R04) were collected for SDU-09A-18, 21, 30.		

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ICS Sample Collection Report
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Photos Collected from Station SDU-09A-26

2015-05-28-10-11-54_SDU-09A-26_1619LP-WA70047.jpg



in situ XRF location analyzed 5/6/15 facing east

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2015-05-01-15-34-07_SDU-09A-26_TECK2.JPG



groundsurface

2015-05-01-15-34-13_SDU-09A-26_TECK2.JPG



overview facing north

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-01-15-34-35_SDU-09A-26_TECK2.JPG



sample

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-09A-27	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-01 13:28	Sample Team Initials	MS

Sample Collected? Y
X 422431.1459 m
Y 5401041.067 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-09-ICS-A	Decision Unit	Sediment Decision Unit 9
Sample Date Time	2015-05-02 8:05	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-09A-R02, R03, R04) were collected for SDU-09A-18, 21, 30.		

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Photos Collected from Station SDU-09A-27

2015-05-28-10-08-51_SDU-09A-27_1619LP-WA70047.jpg



in situ XRF location analyzed 5/6/15 facing west

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2015-05-01-13-33-35_SDU-09A-27_TECK2.JPG



sample

2015-05-01-13-30-51_SDU-09A-27_TECK2.JPG



groundsurface

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-01-13-30-58_SDU-09A-27_TECK2.JPG



overview facing north

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ICS Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-09A-28	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-30 14:14	Sample Team Initials	MS
Sample Collected?	Y		
X	422382.9195 m		
Y	5400982.825 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-09-ICS-A	Decision Unit	Sediment Decision Unit 9
Sample Date Time	2015-05-02 8:05	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-09A-R02, R03, R04) were collected for SDU-09A-18, 21, 30.		

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Photos Collected from Station SDU-09A-28

2015-05-28-10-10-15_SDU-09A-28_1619LP-WA70047.jpg



in situ XRF location analyzed 5/6/15 facing west

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2015-04-30-14-17-27_SDU-09A-28_TECK2.JPG



sample

2015-04-30-14-17-32_SDU-09A-28_TECK2.JPG



groundsurface

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-30-14-17-36_SDU-09A-28_TECK2.JPG



overview facing north

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ICS Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-09A-29	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-01 15:16	Sample Team Initials	MS
Sample Collected?	Y		
X	422376.7617 m		
Y	5400938.2581 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments Relocated new sample location approximately 15m at 300 degrees from original location based on the procedure agreed to by EPA and TAI.

Sample Collected from Station

Sample Id	SDU-09-ICS-A	Decision Unit	Sediment Decision Unit 9
Sample Date Time	2015-05-02 8:05	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-09A-R02, R03, R04) were collected for SDU-09A-18, 21, 30.		

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Photos Collected from Station SDU-09A-29

2015-05-28-10-10-49_SDU-09A-29_1619LP-WA70047.jpg



in situ XRF location analyzed 5/6/15 facing east

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2015-05-01-15-21-10_SDU-09A-29_TECK2.JPG



sample

2015-05-01-15-21-15_SDU-09A-29_TECK2.JPG



groundsurface

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2015-05-01-15-21-19_SDU-09A-29_TECK2.JPG



sample

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Station Id	SDU-09A-30	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime	2015-05-01 13:46	Sample Team Initials	MS
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments not sampled due to cultural concerns

Sample Collected from Station

Sample Id	SDU-09-ICS-A	Decision Unit	Sediment Decision Unit 9
Sample Date Time	2015-05-02 8:05	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-09A-R02, R03, R04) were collected for SDU-09A-18, 21, 30.		

Photos Collected from Station SDU-09A-30

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09A-R01	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime	2015-05-01 13:26	Sample Team Initials	MS
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments not sampled due to cultural concerns

Sample Collected from Station

Sample Id	SDU-09-ICS-A	Decision Unit	Sediment Decision Unit 9
Sample Date Time	2015-05-02 8:05	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-09A-R02, R03, R04) were collected for SDU-09A-18, 21, 30.		

Photos Collected from Station SDU-09A-R01

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09A-R02	Start Depth	0 cm
Station Type	Reserve	End Depth	15 cm
Collection DateTime	2015-05-01 11:49	Sample Team Initials	MS

Sample Collected? Y
X 422321.409 m
Y 5400886.159 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-09-ICS-A	Decision Unit	Sediment Decision Unit 9
Sample Date Time	2015-05-02 8:05	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-09A-R02, R03, R04) were collected for SDU-09A-18, 21, 30.		

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Photos Collected from Station SDU-09A-R02

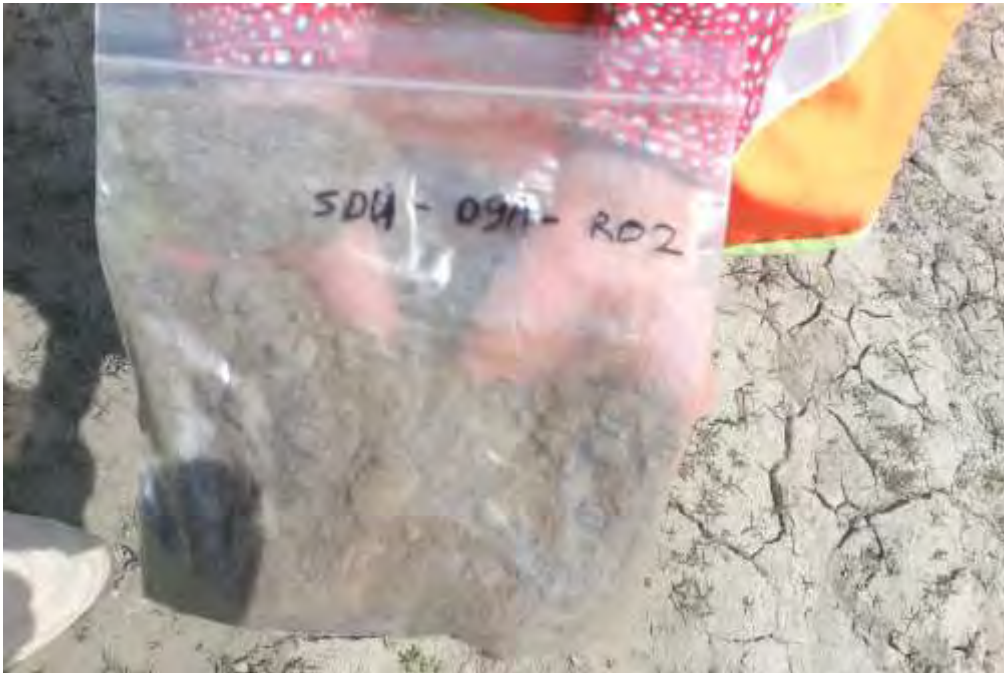
2015-05-28-10-13-04_SDU-09A-R02_1619LP-WA70047.jpg



in situ XRF location analyzed 5/6/15 facing west

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2015-05-01-11-51-05_SDU-09A-R02_TECK2.JPG



sample

2015-05-01-11-51-12_SDU-09A-R02_TECK2.JPG



overview facing north

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2015-05-01-11-51-21_SDU-09A-R02_TECK2.JPG



groundsurface

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Station Id	SDU-09A-R03	Start Depth	0 cm
Station Type	Reserve	End Depth	15 cm
Collection DateTime	2015-05-01 11:28	Sample Team Initials	MS

Sample Collected? Y
X 422343.1854 m
Y 5400892.219 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand trace fine gravel	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-09-ICS-A	Decision Unit	Sediment Decision Unit 9
Sample Date Time	2015-05-02 8:05	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-09A-R02, R03, R04) were collected for SDU-09A-18, 21, 30.		

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Photos Collected from Station SDU-09A-R03

2015-05-28-10-12-40_SDU-09A-R03_1619LP-WA70047.jpg



in situ XRF location analyzed 5/6/15 facing west

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2015-05-01-11-32-07_SDU-09A-R03_TECK2.JPG



sample

2015-05-01-11-32-10_SDU-09A-R03_TECK2.JPG



groundsurface

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2015-05-01-11-32-19_SDU-09A-R03_TECK2.JPG



overview facing north

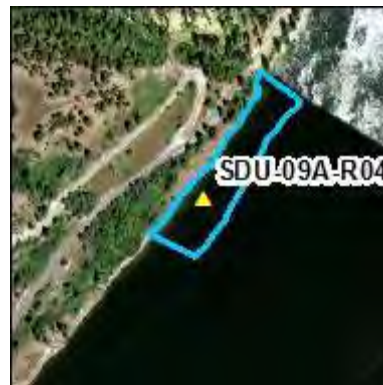
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Station Id	SDU-09A-R04	Start Depth	0 cm
Station Type	Reserve	End Depth	15 cm
Collection DateTime	2015-05-01 12:16	Sample Team Initials	MS

Sample Collected? Y
X 422354.0222 m
Y 5400936.835 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-09-ICS-A	Decision Unit	Sediment Decision Unit 9
Sample Date Time	2015-05-02 8:05	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-09A-R02, R03, R04) were collected for SDU-09A-18, 21, 30.		

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Photos Collected from Station SDU-09A-R04

2015-05-28-10-11-17_SDU-09A-R04_1619LP-WA70047.jpg



in situ XRF location analyzed 5/6/15 facing west

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2015-05-01-12-17-40_SDU-09A-R04_TECK2.JPG



sample

2015-05-01-12-17-47_SDU-09A-R04_TECK2.JPG



groundsurface

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2015-05-01-12-17-52_SDU-09A-R04_TECK2.JPG



overview facing north

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Station Id	SDU-09A-R05	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-09-ICS-A	Decision Unit	Sediment Decision Unit 9
Sample Date Time	2015-05-02 8:05	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-09A-R02, R03, R04) were collected for SDU-09A-18, 21, 30.		

Photos Collected from Station SDU-09A-R05

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09A-R06	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime	2015-05-01 13:57	Sample Team Initials	MS
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Sample attempted but rejected due to cultural concerns.
 In situ XRF analysis performed at this location.

Sample Collected from Station

Sample Id	SDU-09-ICS-A	Decision Unit	Sediment Decision Unit 9
Sample Date Time	2015-05-02 8:05	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	None	Replicate	Replicate A
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (SDU-09A-R02, R03, R04) were collected for SDU-09A-18, 21, 30.		

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Photos Collected from Station SDU-09A-R06

2015-05-28-10-02-38_SDU-09A-R06_1619LP-WA70047.jpg



in situ XRF location analyzed 5/6/15 facing west

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Station Id	SDU-09B-01	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-B	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments			

Photos Collected from Station SDU-09B-01

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09B-02	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-B	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments			

Photos Collected from Station SDU-09B-02

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09B-03	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-B	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments			

Photos Collected from Station SDU-09B-03

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09B-04	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-B	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments			

Photos Collected from Station SDU-09B-04

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09B-05	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-B	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments			

Photos Collected from Station SDU-09B-05

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09B-06	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-B	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments			

Photos Collected from Station SDU-09B-06

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09B-07	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-B	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments			

Photos Collected from Station SDU-09B-07

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09B-08	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-B	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments			

Photos Collected from Station SDU-09B-08

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09B-09	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-B	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments			

Photos Collected from Station SDU-09B-09

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09B-10	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-B	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments			

Photos Collected from Station SDU-09B-10

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09B-11	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-B	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments			

Photos Collected from Station SDU-09B-11

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09B-12	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-B	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments			

Photos Collected from Station SDU-09B-12

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09B-13	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-B	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments			

Photos Collected from Station SDU-09B-13

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09B-14	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-B	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments			

Photos Collected from Station SDU-09B-14

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09B-15	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-B	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments			

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Photos Collected from Station SDU-09B-15

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09B-16	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-B	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments			

Photos Collected from Station SDU-09B-16

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09B-17	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-B	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments			

Photos Collected from Station SDU-09B-17

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09B-18	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-B	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments			

Photos Collected from Station SDU-09B-18

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09B-19	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-B	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments			

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Photos Collected from Station SDU-09B-19

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09B-20	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-B	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments			

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Photos Collected from Station SDU-09B-20

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09B-21	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-B	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments			

Photos Collected from Station SDU-09B-21

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09B-22	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-B	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments			

Photos Collected from Station SDU-09B-22

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09B-23	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-B	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments			

Photos Collected from Station SDU-09B-23

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09B-24	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-B	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments			

Photos Collected from Station SDU-09B-24

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09B-25	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-B	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments			

Photos Collected from Station SDU-09B-25

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09B-26	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-B	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments			

Photos Collected from Station SDU-09B-26

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09B-27	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-B	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments			

Photos Collected from Station SDU-09B-27

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09B-28	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-B	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments			

Photos Collected from Station SDU-09B-28

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09B-29	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-B	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments			

Photos Collected from Station SDU-09B-29

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09B-30	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-B	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments			

Photos Collected from Station SDU-09B-30

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09B-R01	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-B	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments			

Photos Collected from Station SDU-09B-R01

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09B-R02	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-B	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments			

Photos Collected from Station SDU-09B-R02

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09B-R03	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-B	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments			

Photos Collected from Station SDU-09B-R03

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09B-R04	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-B	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments			

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Photos Collected from Station SDU-09B-R04

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09B-R05	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-B	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments			

Photos Collected from Station SDU-09B-R05

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09B-R06	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-B	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate B
Sample Comments			

Photos Collected from Station SDU-09B-R06

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09C-01	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-C	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments			

Photos Collected from Station SDU-09C-01

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09C-02	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-C	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments			

Photos Collected from Station SDU-09C-02

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09C-03	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-C	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments			

Photos Collected from Station SDU-09C-03

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09C-04	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-C	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments			

Photos Collected from Station SDU-09C-04

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09C-05	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-C	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments			

Photos Collected from Station SDU-09C-05

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09C-06	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-C	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments			

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Photos Collected from Station SDU-09C-06

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09C-07	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-C	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments			

Photos Collected from Station SDU-09C-07

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09C-08	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-C	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments			

Photos Collected from Station SDU-09C-08

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09C-09	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-C	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments			

Photos Collected from Station SDU-09C-09

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09C-10	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-C	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments			

Photos Collected from Station SDU-09C-10

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09C-11	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-C	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments			

Photos Collected from Station SDU-09C-11

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09C-12	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-C	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments			

Photos Collected from Station SDU-09C-12

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09C-13	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-C	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments			

Photos Collected from Station SDU-09C-13

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09C-14	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-C	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments			

Photos Collected from Station SDU-09C-14

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09C-15	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-C	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments			

Photos Collected from Station SDU-09C-15

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09C-16	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-C	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments			

Photos Collected from Station SDU-09C-16

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09C-17	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-C	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments			

Photos Collected from Station SDU-09C-17

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09C-18	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-C	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments			

Photos Collected from Station SDU-09C-18

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09C-19	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-C	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments			

Photos Collected from Station SDU-09C-19

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09C-20	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-C	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments			

Photos Collected from Station SDU-09C-20

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09C-21	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-C	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments			

Photos Collected from Station SDU-09C-21

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09C-22	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-C	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments			

Photos Collected from Station SDU-09C-22

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09C-23	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-C	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments			

Photos Collected from Station SDU-09C-23

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09C-24	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-C	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments			

Photos Collected from Station SDU-09C-24

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09C-25	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-C	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments			

Photos Collected from Station SDU-09C-25

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09C-26	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-C	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments			

Photos Collected from Station SDU-09C-26

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09C-27	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-C	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments			

Photos Collected from Station SDU-09C-27

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09C-28	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-C	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments			

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Photos Collected from Station SDU-09C-28

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09C-29	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-C	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments			

Photos Collected from Station SDU-09C-29

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09C-30	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-C	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments			

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Photos Collected from Station SDU-09C-30

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09C-R01	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-C	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments			

Photos Collected from Station SDU-09C-R01

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09C-R02	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-C	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments			

Photos Collected from Station SDU-09C-R02

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09C-R03	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-C	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments			

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Photos Collected from Station SDU-09C-R03

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09C-R04	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-C	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments			

Photos Collected from Station SDU-09C-R04

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09C-R05	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-C	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments			

Photos Collected from Station SDU-09C-R05

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09C-R06	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Replicate ICS samples were not collected for SDU-09 due to cultural concerns in the area.

Sample Collected from Station

Sample Id	SDU-09-ICS-C	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	ICS
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	Replicate C
Sample Comments			

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Photos Collected from Station SDU-09C-R06

No photos taken at this station. See station comments for more details.

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Station Id	SDU-10-01	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-27 10:41	Sample Team Initials	MS

Sample Collected? Y
X 422121.3605 m
Y 5400672.617 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine to coarse sand trace silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-10-ICS	Decision Unit	Sediment Decision Unit 10
Sample Date Time	2015-05-04 7:49	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	29 increments composited into 1 bucket. 4 reserve locations (SDU-10-R02, R04, R05, R06) collected for SDU-10-04, 05, 08, 09. SDU-10-R05 was saturated so baggie was sent separately in small container.		

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Photos Collected from Station SDU-10-01

2015-05-28-11-58-58_SDU-10-01_1619LP-WA70047.jpg



in situ XRF location analyzed 5/8/15 facing west. ID incorrectly labelled in photo as SDU-10-10, should be SDU-10-01.

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2015-04-27-10-40-39_SDU-10-01_TECK2.JPG



sample

2015-04-27-10-40-54_SDU-10-01_TECK2.JPG



groundsurface

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2015-04-27-10-41-06_SDU-10-01_TECK2.JPG



overview facing north

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Station Id	SDU-10-02	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-30 11:45	Sample Team Initials	MS

Sample Collected? Y
X 422238.0001 m
Y 5400804.411 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-10-ICS	Decision Unit	Sediment Decision Unit 10
Sample Date Time	2015-05-04 7:49	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	29 increments composited into 1 bucket. 4 reserve locations (SDU-10-R02, R04, R05, R06) collected for SDU-10-04, 05, 08, 09. SDU-10-R05 was saturated so baggie was sent separately in small container.		

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Photos Collected from Station SDU-10-02

2015-05-28-13-28-16_SDU-10-02_1619LP-WA70047.jpg



in situ XRF location analyzed 5/8/15 facing west

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2015-04-30-11-48-02_SDU-10-02_TECK2.JPG



sample

2015-04-30-11-48-14_SDU-10-02_TECK2.JPG



sample

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2015-04-30-11-48-23_SDU-10-02_TECK2.JPG



overview facing west

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Station Id	SDU-10-03	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-27 10:14	Sample Team Initials	MS

Sample Collected? Y
X 422100.0431 m
Y 5400634.555 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine to coarse sand trace fine gravel silt	Vegetation Present?	N
Vegetation Type if Present	Pond weeds		

Station Comments

Sample Collected from Station

Sample Id	SDU-10-ICS	Decision Unit	Sediment Decision Unit 10
Sample Date Time	2015-05-04 7:49	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	29 increments composited into 1 bucket. 4 reserve locations (SDU-10-R02, R04, R05, R06) collected for SDU-10-04, 05, 08, 09. SDU-10-R05 was saturated so baggie was sent separately in small container.		

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Photos Collected from Station SDU-10-03

2015-04-27-10-15-16_SDU-10-03_1619LP-WA70047.JPG



sample

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2015-04-27-10-15-26_SDU-10-03_1619LP-WA70047.JPG



sample location

2015-04-27-10-15-36_SDU-10-03_1619LP-WA70047.JPG



overview facing south

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2015-05-28-13-16-11_SDU-10-03_1619LP-WA70047.jpg



in situ XRF location analyzed on 5/8/15 facing west

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Station Id	SDU-10-04	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime	2015-04-27 17:59	Sample Team Initials	MS
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984

Station Comments Sample not collected; in water approximately 4.5m from shoreline.

Sample Collected from Station

Sample Id	SDU-10-ICS	Decision Unit	Sediment Decision Unit 10
Sample Date Time	2015-05-04 7:49	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	29 increments composited into 1 bucket. 4 reserve locations (SDU-10-R02, R04, R05, R06) collected for SDU-10-04, 05, 08, 09. SDU-10-R05 was saturated so baggie was sent separately in small container.		

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Photos Collected from Station SDU-10-04

2015-04-27-10-51-06_SDU-10-04_TECK2.JPG



Sample not collected; in water approximately 4.5m from shoreline.

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Station Id	SDU-10-05	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime	2015-05-01 17:59	Sample Team Initials	MS
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984

Station Comments Sample not collected; in water approximately 6m from shoreline.

Sample Collected from Station

Sample Id	SDU-10-ICS	Decision Unit	Sediment Decision Unit 10
Sample Date Time	2015-05-04 7:49	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	29 increments composited into 1 bucket. 4 reserve locations (SDU-10-R02, R04, R05, R06) collected for SDU-10-04, 05, 08, 09. SDU-10-R05 was saturated so baggie was sent separately in small container.		

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Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-10-05

2015-04-27-10-26-32_SDU-10-05_TECK2.JPG



Sample not collected; in water approximately 6m from shoreline.

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ICS Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study

Station Id	SDU-10-06	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-02 14:31	Sample Team Initials	AP

Sample Collected? Y
X 422266.0461 m
Y 5400779.234 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand with trace silt and trace fine rounded gravel	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments relocated approx. 32 meters west of original location

Sample Collected from Station

Sample Id	SDU-10-ICS	Decision Unit	Sediment Decision Unit 10
Sample Date Time	2015-05-04 7:49	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	29 increments composited into 1 bucket. 4 reserve locations (SDU-10-R02, R04, R05, R06) collected for SDU-10-04, 05, 08, 09. SDU-10-R05 was saturated so baggie was sent separately in small container.		

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Photos Collected from Station SDU-10-06

2015-05-28-13-28-39_SDU-10-06_1619LP-WA70047.jpg



in situ XRF location analyzed on 5/8/15 facing west

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2015-05-02-14-23-00_SDU-10-06_TECK3.JPG



gs

2015-05-02-14-23-20_SDU-10-06_TECK3.JPG



vne

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2015-05-02-14-28-55_SDU-10-06_TECK3.JPG



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Station Id	SDU-10-07	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-02 14:10	Sample Team Initials	AP

Sample Collected? Y
X 422226.713 m
Y 5400755.856 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine to coarse sand with trace silt and trace fine rounded gravel	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments offset approx. 14 meters west of original location

Sample Collected from Station

Sample Id	SDU-10-ICS	Decision Unit	Sediment Decision Unit 10
Sample Date Time	2015-05-04 7:49	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	29 increments composited into 1 bucket. 4 reserve locations (SDU-10-R02, R04, R05, R06) collected for SDU-10-04, 05, 08, 09. SDU-10-R05 was saturated so baggie was sent separately in small container.		

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Photos Collected from Station SDU-10-07

2015-05-28-13-26-34_SDU-10-07_1619LP-WA70047.jpg



in situ XRF location analyzed on 5/8/15 facing west

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2015-05-02-14-03-34_SDU-10-07_TECK3.JPG



gs

2015-05-02-14-03-52_SDU-10-07_TECK3.JPG



vne

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2015-05-02-14-08-10_SDU-10-07_TECK3.JPG



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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-10-08	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime	2015-04-27 17:53	Sample Team Initials	MS
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments not sampled, in water 10m

Sample Collected from Station

Sample Id	SDU-10-ICS	Decision Unit	Sediment Decision Unit 10
Sample Date Time	2015-05-04 7:49	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	29 increments composited into 1 bucket. 4 reserve locations (SDU-10-R02, R04, R05, R06) collected for SDU-10-04, 05, 08, 09. SDU-10-R05 was saturated so baggie was sent separately in small container.		

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Photos Collected from Station SDU-10-08

2015-04-27-10-20-41_SDU-10-08_TECK2.JPG



Sample not collected; underwater about 10m from shoreline.

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Station Id	SDU-10-09	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime	2015-04-27 18:09	Sample Team Initials	MS
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Sample not collected; in water approximately 3.2m from shoreline.

Sample Collected from Station

Sample Id	SDU-10-ICS	Decision Unit	Sediment Decision Unit 10
Sample Date Time	2015-05-04 7:49	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	29 increments composited into 1 bucket. 4 reserve locations (SDU-10-R02, R04, R05, R06) collected for SDU-10-04, 05, 08, 09. SDU-10-R05 was saturated so baggie was sent separately in small container.		

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Photos Collected from Station SDU-10-09

2015-04-27-10-56-22_SDU-10-09_TECK2.JPG



Sample not collected; in water approximately 3.2m from shoreline.

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Station Id	SDU-10-10	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-27 10:31	Sample Team Initials	MS

Sample Collected? Y
X 422104.9948 m
Y 5400659.232 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 5/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine to coarse sand trace fine to medium gravel trace silt	Vegetation Present?	N
Vegetation Type if Present	Pond weeds		

Station Comments

Sample Collected from Station

Sample Id	SDU-10-ICS	Decision Unit	Sediment Decision Unit 10
Sample Date Time	2015-05-04 7:49	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	29 increments composited into 1 bucket. 4 reserve locations (SDU-10-R02, R04, R05, R06) collected for SDU-10-04, 05, 08, 09. SDU-10-R05 was saturated so baggie was sent separately in small container.		

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Photos Collected from Station SDU-10-10

2015-05-28-13-14-27_SDU-10-10_1619LP-WA70047.jpg



in situ XRF location analyzed on 5/8/15 facing west

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2015-04-27-10-32-53_SDU-10-10_TECK2.JPG



sample

2015-04-27-10-33-03_SDU-10-10_TECK2.JPG



groundsurface

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-27-10-33-06_SDU-10-10_TECK2.JPG



overview facing north

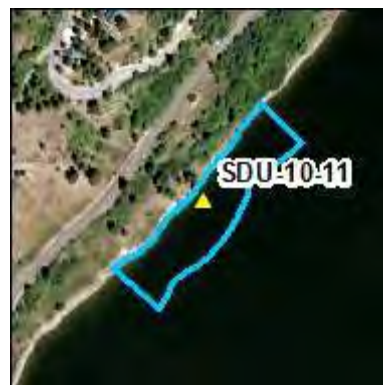
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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-10-11	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-27 11:20	Sample Team Initials	MS

Sample Collected? Y
X 422165.7037 m
Y 5400721.005 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand trace silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-10-ICS	Decision Unit	Sediment Decision Unit 10
Sample Date Time	2015-05-04 7:49	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	29 increments composited into 1 bucket. 4 reserve locations (SDU-10-R02, R04, R05, R06) collected for SDU-10-04, 05, 08, 09. SDU-10-R05 was saturated so baggie was sent separately in small container.		

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Photos Collected from Station SDU-10-11

2015-05-28-13-24-26_SDU-10-11_1619LP-WA70047.jpg



in situ XRF location analyzed on 5/8/15 facing west

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2015-04-27-11-30-44_SDU-10-11_TECK2.JPG



overview facing north

2015-04-27-11-31-38_SDU-10-11_TECK2.JPG



groundsurface

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-27-11-32-07_SDU-10-11_TECK2.JPG



sample

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ICS Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study

Station Id	SDU-10-12	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-27 11:05	Sample Team Initials	MS

Sample Collected? Y
X 422165.5994 m
Y 5400702.184 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand some silt trace coarse sand some organic	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-10-ICS	Decision Unit	Sediment Decision Unit 10
Sample Date Time	2015-05-04 7:49	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	29 increments composited into 1 bucket. 4 reserve locations (SDU-10-R02, R04, R05, R06) collected for SDU-10-04, 05, 08, 09. SDU-10-R05 was saturated so baggie was sent separately in small container.		

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Photos Collected from Station SDU-10-12

2015-05-28-13-21-39_SDU-10-12_1619LP-WA70047.jpg



in situ XRF location analyzed on 5/8/15 facing west

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2015-04-27-11-04-32_SDU-10-12_TECK2.JPG



sample

2015-04-27-11-04-39_SDU-10-12_TECK2.JPG



groundsurface

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-27-11-04-42_SDU-10-12_TECK2.JPG



overview facing west

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Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-10-13	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-27 11:13	Sample Team Initials	MS
Sample Collected?	Y		
X	422181.997 m		
Y	5400720.144 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-10-ICS	Decision Unit	Sediment Decision Unit 10
Sample Date Time	2015-05-04 7:49	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	29 increments composited into 1 bucket. 4 reserve locations (SDU-10-R02, R04, R05, R06) collected for SDU-10-04, 05, 08, 09. SDU-10-R05 was saturated so baggie was sent separately in small container.		

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Photos Collected from Station SDU-10-13

2015-05-28-13-24-40_SDU-10-13_1619LP-WA70047.jpg



in situ XRF location analyzed on 5/8/15 facing west

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2015-04-27-11-15-00_SDU-10-13_TECK2.JPG



sample

2015-04-27-11-15-14_SDU-10-13_TECK2.JPG



groundsurface

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-27-11-15-18_SDU-10-13_TECK2.JPG



overview facing north

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Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-10-14	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-27 11:39	Sample Team Initials	MS
Sample Collected?	Y		
X	422208.5704 m		
Y	5400755.721 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine to coarse sand trace silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-10-ICS	Decision Unit	Sediment Decision Unit 10
Sample Date Time	2015-05-04 7:49	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	29 increments composited into 1 bucket. 4 reserve locations (SDU-10-R02, R04, R05, R06) collected for SDU-10-04, 05, 08, 09. SDU-10-R05 was saturated so baggie was sent separately in small container.		

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Photos Collected from Station SDU-10-14

2015-05-28-13-26-57_SDU-10-14_1619LP-WA70047.jpg



in situ XRF location analyzed on 5/8/15 facing west

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2015-04-27-11-41-41_SDU-10-14_TECK2.JPG



sample

2015-04-27-11-41-53_SDU-10-14_TECK2.JPG



groundsurface

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-27-11-41-58_SDU-10-14_TECK2.JPG



overview facing north

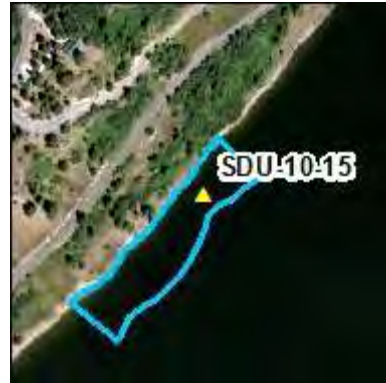
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Station Id	SDU-10-15	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-27 11:47	Sample Team Initials	MS

Sample Collected? Y
X 422216.0162 m
Y 5400767.96 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-10-ICS	Decision Unit	Sediment Decision Unit 10
Sample Date Time	2015-05-04 7:49	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	29 increments composited into 1 bucket. 4 reserve locations (SDU-10-R02, R04, R05, R06) collected for SDU-10-04, 05, 08, 09. SDU-10-R05 was saturated so baggie was sent separately in small container.		

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Photos Collected from Station SDU-10-15

2015-05-28-13-27-12_SDU-10-15_1619LP-WA70047.jpg



in situ XRF location analyzed on 5/8/15 facing west

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-27-11-49-07_SDU-10-15_TECK2.JPG



sample

2015-04-27-11-49-16_SDU-10-15_TECK2.JPG



groundsurface

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-27-11-49-20_SDU-10-15_TECK2.JPG



overview facing north

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Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-10-16	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-30 11:23	Sample Team Initials	MS

Sample Collected? Y
X 422184.5798 m
Y 5400743.906 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-10-ICS	Decision Unit	Sediment Decision Unit 10
Sample Date Time	2015-05-04 7:49	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	29 increments composited into 1 bucket. 4 reserve locations (SDU-10-R02, R04, R05, R06) collected for SDU-10-04, 05, 08, 09. SDU-10-R05 was saturated so baggie was sent separately in small container.		

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Photos Collected from Station SDU-10-16

2015-05-28-13-25-41_SDU-10-16_1619LP-WA70047.jpg



in situ XRF location analyzed on 5/8/15 facing west

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2015-04-30-11-25-18_SDU-10-16_TECK2.JPG



sample

2015-04-30-11-25-28_SDU-10-16_TECK2.JPG



groundsurface

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-30-11-25-31_SDU-10-16_TECK2.JPG



overview facing south

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ICS Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-10-17	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-30 9:24	Sample Team Initials	MS

Sample Collected? Y
X 422090.1874 m
Y 5400640.862 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments scoop used for approx. 20%

Sample Collected from Station

Sample Id	SDU-10-ICS	Decision Unit	Sediment Decision Unit 10
Sample Date Time	2015-05-04 7:49	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	29 increments composited into 1 bucket. 4 reserve locations (SDU-10-R02, R04, R05, R06) collected for SDU-10-04, 05, 08, 09. SDU-10-R05 was saturated so baggie was sent separately in small container.		

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Photos Collected from Station SDU-10-17

2015-05-28-13-15-11_SDU-10-17_1619LP-WA70047.jpg



in situ XRF location analyzed on 5/8/15 facing west

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2015-04-30-09-26-58_SDU-10-17_TECK2.JPG



sample

2015-04-30-09-27-39_SDU-10-17_TECK2.JPG



overview facing west

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-30-09-28-03_SDU-10-17_TECK2.JPG

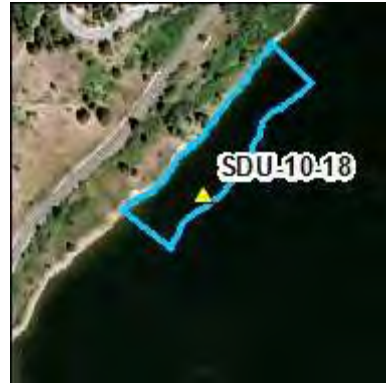


groundsurface

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ICS Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study

Station Id	SDU-10-18	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-02 13:17	Sample Team Initials	AP
Sample Collected?	Y		
X	422152.8146 m		
Y	5400657.008 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand with silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments relocated approx. 28 meters west of original location.

Sample Collected from Station

Sample Id	SDU-10-ICS	Decision Unit	Sediment Decision Unit 10
Sample Date Time	2015-05-04 7:49	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	29 increments composited into 1 bucket. 4 reserve locations (SDU-10-R02, R04, R05, R06) collected for SDU-10-04, 05, 08, 09. SDU-10-R05 was saturated so baggie was sent separately in small container.		

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Photos Collected from Station SDU-10-18

2015-05-28-13-18-03_SDU-10-18_1619LP-WA70047.jpg



in situ XRF location analyzed on 5/8/15 facing west

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2015-05-02-13-08-43_SDU-10-18_TECK3.JPG



gs

2015-05-02-13-08-55_SDU-10-18_TECK3.JPG



vne

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2015-05-02-13-12-17_SDU-10-18_TECK3.JPG



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Station Id	SDU-10-19	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-02 12:56	Sample Team Initials	AP

Sample Collected? Y
X 422104.3904 m
Y 5400631.4264 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand with trace silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments location was offset 18 meters west of original location
Two in situ XRF results (192.0 ppm and 161.3 ppm) were collected for this increment approximately 15 feet apart. It is unclear which XRF location represents the ICS sample location. The RPD between the two results is 17.4%.

Sample Collected from Station

Sample Id	SDU-10-ICS	Decision Unit	Sediment Decision Unit 10
Sample Date Time	2015-05-04 7:49	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	29 increments composited into 1 bucket. 4 reserve locations (SDU-10-R02, R04, R05, R06) collected for SDU-10-04, 05, 08, 09. SDU-10-R05 was saturated so baggie was sent separately in small container.		

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Photos Collected from Station SDU-10-19

2015-05-28-13-17-17_SDU-10-19_1619LP-WA70047.jpg



in situ XRF location analyzed on 5/8/15 facing west; location identified by Team B on 5/7/15, approximately 15 feet north of location flagged on 5/8/15 by Mark Vetter.

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2015-05-28-13-16-42_SDU-10-19_1619LP-WA70047.jpg



in situ XRF location analyzed on 5/8/15 facing west; location identified by Mark Vetter on 5/8/15, approximately 15 feet south of location flagged on 5/7/15 by Team B.

2015-05-02-12-51-54_SDU-10-19_TECK3.JPG



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2015-05-02-12-52-03_SDU-10-19_TECK3.JPG



gs

2015-05-02-12-52-13_SDU-10-19_TECK3.JPG



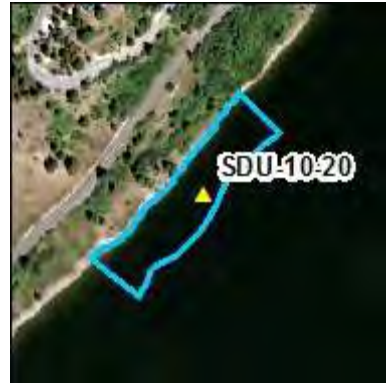
vne

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-10-20	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-27 12:01	Sample Team Initials	AP
Sample Collected?	Y		
X	422191.3392 m		
Y	5400715.338 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on slope towards water

Sample Collected from Station

Sample Id	SDU-10-ICS	Decision Unit	Sediment Decision Unit 10
Sample Date Time	2015-05-04 7:49	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	29 increments composited into 1 bucket. 4 reserve locations (SDU-10-R02, R04, R05, R06) collected for SDU-10-04, 05, 08, 09. SDU-10-R05 was saturated so baggie was sent separately in small container.		

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Photos Collected from Station SDU-10-20

2015-05-28-13-24-56_SDU-10-20_1619LP-WA70047.jpg



in situ XRF location analyzed on 5/8/15 facing west

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2015-04-27-11-51-26_SDU-10-20_TECK1.JPG



ground surface

2015-04-27-11-53-19_SDU-10-20_TECK1.JPG



view north

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2015-04-27-11-58-47_SDU-10-20_TECK1.JPG



sample

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ICS Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study

Station Id	SDU-10-21	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-01 10:21	Sample Team Initials	MS

Sample Collected? Y
X 422109.417 m
Y 5400641.252 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments Relocated new sample location approximately 27m at 300 degrees from original location based on the procedured agreeded to by EPA and TAI.

Sample Collected from Station

Sample Id	SDU-10-ICS	Decision Unit	Sediment Decision Unit 10
Sample Date Time	2015-05-04 7:49	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	29 increments composited into 1 bucket. 4 reserve locations (SDU-10-R02, R04, R05, R06) collected for SDU-10-04, 05, 08, 09. SDU-10-R05 was saturated so baggie was sent separately in small container.		

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Photos Collected from Station SDU-10-21

2015-05-28-13-17-41_SDU-10-21_1619LP-WA70047.jpg



in situ XRF location analyzed on 5/8/15 facing west

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2015-05-01-10-24-38_SDU-10-21_TECK2.JPG



sample

2015-05-01-10-24-44_SDU-10-21_TECK2.JPG



groundsurface

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2015-05-01-10-24-53_SDU-10-21_TECK2.JPG



overview facing north

2015-05-01-10-24-57_SDU-10-21_TECK2.JPG



overview facing south

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2015-05-01-10-25-01_SDU-10-21_TECK2.JPG



overview facing west

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Station Id	SDU-10-22	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-30 11:29	Sample Team Initials	MS
Sample Collected?	Y		
X	422180.6612 m		
Y	5400755.084 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-10-ICS	Decision Unit	Sediment Decision Unit 10
Sample Date Time	2015-05-04 7:49	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	29 increments composited into 1 bucket. 4 reserve locations (SDU-10-R02, R04, R05, R06) collected for SDU-10-04, 05, 08, 09. SDU-10-R05 was saturated so baggie was sent separately in small container.		

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Photos Collected from Station SDU-10-22

2015-05-28-13-25-56_SDU-10-22_1619LP-WA70047.jpg



in situ XRF location analyzed on 5/8/15 facing west

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2015-04-30-11-31-24_SDU-10-22_TECK2.JPG



sample

2015-04-30-11-25-31_SDU-10-22_TECK2.JPG



facing south

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2015-04-30-11-31-30_SDU-10-22_TECK2.JPG



groundsurface

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Station Id	SDU-10-23	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-30 10:05	Sample Team Initials	MS

Sample Collected? Y
X 422148.2051 m
Y 5400712.798 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly silty sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-10-ICS	Decision Unit	Sediment Decision Unit 10
Sample Date Time	2015-05-04 7:49	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	29 increments composited into 1 bucket. 4 reserve locations (SDU-10-R02, R04, R05, R06) collected for SDU-10-04, 05, 08, 09. SDU-10-R05 was saturated so baggie was sent separately in small container.		

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Photos Collected from Station SDU-10-23

2015-05-28-13-24-12_SDU-10-23_1619LP-WA70047.jpg



in situ XRF location analyzed on 5/8/15 facing west

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2015-04-30-10-11-49_SDU-10-23_TECK2.JPG



sample

2015-04-30-10-12-05_SDU-10-23_TECK2.JPG



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2015-04-30-10-12-08_SDU-10-23_TECK2.JPG



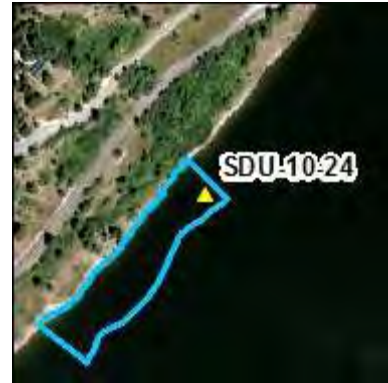
overview facing south

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Station Id	SDU-10-24	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-30 12:00	Sample Team Initials	MS
Sample Collected?	Y		
X	422255.9786 m		
Y	5400794.058 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-10-ICS	Decision Unit	Sediment Decision Unit 10
Sample Date Time	2015-05-04 7:49	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	29 increments composited into 1 bucket. 4 reserve locations (SDU-10-R02, R04, R05, R06) collected for SDU-10-04, 05, 08, 09. SDU-10-R05 was saturated so baggie was sent separately in small container.		

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Photos Collected from Station SDU-10-24

2015-05-28-13-29-33_SDU-10-24_1619LP-WA70047.jpg



in situ XRF location analyzed on 5/8/15 facing west

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2015-04-30-12-04-49_SDU-10-24_TECK2.JPG



sample

2015-04-30-12-03-37_SDU-10-24_TECK2.JPG



groundsurface

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2015-04-30-12-03-40_SDU-10-24_TECK2.JPG



overview facing north

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Station Id	SDU-10-25	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-30 10:41	Sample Team Initials	MS

Sample Collected? Y
X 422180.2197 m
Y 5400730.266 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-10-ICS	Decision Unit	Sediment Decision Unit 10
Sample Date Time	2015-05-04 7:49	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	29 increments composited into 1 bucket. 4 reserve locations (SDU-10-R02, R04, R05, R06) collected for SDU-10-04, 05, 08, 09. SDU-10-R05 was saturated so baggie was sent separately in small container.		

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Photos Collected from Station SDU-10-25

2015-05-28-13-25-22_SDU-10-25_1619LP-WA70047.jpg



in situ XRF location analyzed on 5/8/15 facing west

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2015-04-30-10-44-44_SDU-10-25_TECK2.JPG



sample

2015-04-30-10-45-03_SDU-10-25_TECK2.JPG



groundsurface

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-30-10-45-07_SDU-10-25_TECK2.JPG



overview facing east

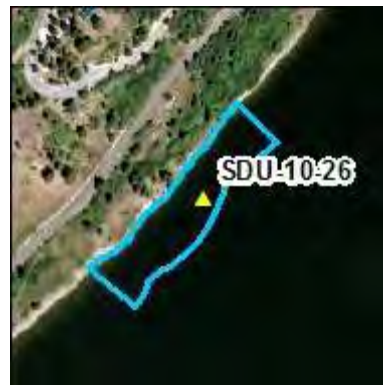
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Station Id	SDU-10-26	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-01 9:30	Sample Team Initials	MS

Sample Collected? Y
X 422194.4007 m
Y 5400722.1476 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments Relocated new sample location approximately 7m at 301 degrees from original location based on the procedured agreeded to by EPA and TAI.

Sample Collected from Station

Sample Id	SDU-10-ICS	Decision Unit	Sediment Decision Unit 10
Sample Date Time	2015-05-04 7:49	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	29 increments composited into 1 bucket. 4 reserve locations (SDU-10-R02, R04, R05, R06) collected for SDU-10-04, 05, 08, 09. SDU-10-R05 was saturated so baggie was sent separately in small container.		

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Photos Collected from Station SDU-10-26

2015-05-28-13-25-10_SDU-10-26_1619LP-WA70047.jpg



in situ XRF location analyzed on 5/8/15 facing west

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2015-05-01-09-36-34_SDU-10-26_TECK2.JPG



overview facing south

2015-05-01-09-36-13_SDU-10-26_TECK2.JPG



groundsurface

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-01-09-36-24_SDU-10-26_TECK2.JPG



sample

2015-05-01-09-36-30_SDU-10-26_TECK2.JPG



overview facing east

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2015-05-01-09-36-38_SDU-10-26_TECK2.JPG



overview facing west

2015-05-01-09-36-41_SDU-10-26_TECK2.JPG



overview facing north

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Station Id	SDU-10-27	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-01 10:02	Sample Team Initials	MS

Sample Collected? Y
X 422129.8765 m
Y 5400669.2795 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments Relocated new sample location approximately 37.4m at 300 degrees from original location based on the procedured agreeded to by EPA and TAI. Used scoop to complete sample.

Sample Collected from Station

Sample Id	SDU-10-ICS	Decision Unit	Sediment Decision Unit 10
Sample Date Time	2015-05-04 7:49	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	29 increments composited into 1 bucket. 4 reserve locations (SDU-10-R02, R04, R05, R06) collected for SDU-10-04, 05, 08, 09. SDU-10-R05 was saturated so baggie was sent separately in small container.		

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Photos Collected from Station SDU-10-27

2015-05-28-13-18-49_SDU-10-27_1619LP-WA70047.jpg



in situ XRF location analyzed on 5/8/15 facing west

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2015-05-01-10-14-52_SDU-10-27_TECK2.JPG



sample

2015-05-01-10-14-56_SDU-10-27_TECK2.JPG



groundsurface

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2015-05-01-10-15-00_SDU-10-27_TECK2.JPG



overview facing east

2015-05-01-10-15-03_SDU-10-27_TECK2.JPG



overview facing south

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2015-05-01-10-15-07_SDU-10-27_TECK2.JPG



overview facing west

2015-05-01-10-15-11_SDU-10-27_TECK2.JPG



overview facing north

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Station Id	SDU-10-28	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-01 9:16	Sample Team Initials	MS

Sample Collected? Y
X 422206.8722 m
Y 5400748.1605 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments Relocated new sample location approximately 14m at 299 degrees from original location based on the procedured agreeded to by EPA and TAI.

Sample Collected from Station

Sample Id	SDU-10-ICS	Decision Unit	Sediment Decision Unit 10
Sample Date Time	2015-05-04 7:49	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	29 increments composited into 1 bucket. 4 reserve locations (SDU-10-R02, R04, R05, R06) collected for SDU-10-04, 05, 08, 09. SDU-10-R05 was saturated so baggie was sent separately in small container.		

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Photos Collected from Station SDU-10-28

2015-05-28-13-26-11_SDU-10-28_1619LP-WA70047.jpg



in situ XRF location analyzed on 5/8/15 facing west

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2015-05-01-09-19-53_SDU-10-28_TECK2.JPG



groundsurface

2015-05-01-09-20-10_SDU-10-28_TECK2.JPG



sample

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2015-05-01-09-20-17_SDU-10-28_TECK2.JPG



overview facing east

2015-05-01-09-20-21_SDU-10-28_TECK2.JPG



overview facing north

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2015-05-01-09-20-26_SDU-10-28_TECK2.JPG



overview facing west

2015-05-01-09-20-31_SDU-10-28_TECK2.JPG



overview facing south

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Station Id	SDU-10-29	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-30 11:41	Sample Team Initials	MS

Sample Collected? Y
X 422238.0556 m
Y 5400791.042 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-10-ICS	Decision Unit	Sediment Decision Unit 10
Sample Date Time	2015-05-04 7:49	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	29 increments composited into 1 bucket. 4 reserve locations (SDU-10-R02, R04, R05, R06) collected for SDU-10-04, 05, 08, 09. SDU-10-R05 was saturated so baggie was sent separately in small container.		

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Photos Collected from Station SDU-10-29

2015-05-28-13-28-00_SDU-10-29_1619LP-WA70047.jpg



in situ XRF location analyzed on 5/8/15 facing west

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2015-04-30-11-41-43_SDU-10-29_TECK2.JPG



sample

2015-04-30-11-41-58_SDU-10-29_TECK2.JPG



groundsurface

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2015-04-30-11-42-02_SDU-10-29_TECK2.JPG



overview facing north

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Station Id	SDU-10-30	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-01 9:46	Sample Team Initials	MS

Sample Collected? Y
X 422177.3215 m
Y 5400699.7658 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments Relocated new sample location approximately 17m at 297 degrees from original location based on the procedured agreeded to by EPA and TAI.

Sample Collected from Station

Sample Id	SDU-10-ICS	Decision Unit	Sediment Decision Unit 10
Sample Date Time	2015-05-04 7:49	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	29 increments composited into 1 bucket. 4 reserve locations (SDU-10-R02, R04, R05, R06) collected for SDU-10-04, 05, 08, 09. SDU-10-R05 was saturated so baggie was sent separately in small container.		

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Photos Collected from Station SDU-10-30

2015-05-28-13-19-13_SDU-10-30_1619LP-WA70047.jpg



in situ XRF location analyzed on 5/8/15 facing west

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2015-05-01-09-49-34_SDU-10-30_TECK2.JPG



groundsurface

2015-05-01-09-49-38_SDU-10-30_TECK2.JPG



overview facing east

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2015-05-01-09-49-41_SDU-10-30_TECK2.JPG



overview facing north

2015-05-01-09-49-45_SDU-10-30_TECK2.JPG



overview facing south

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2015-05-01-09-49-48_SDU-10-30_TECK2.JPG



overview facing west

2015-05-01-09-50-01_SDU-10-30_TECK2.JPG



sample

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Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-10-R01	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime	2015-05-01 17:54	Sample Team Initials	MS
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments not sampled, in water

Sample Collected from Station

Sample Id	SDU-10-ICS	Decision Unit	Sediment Decision Unit 10
Sample Date Time	2015-05-04 7:49	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	29 increments composited into 1 bucket. 4 reserve locations (SDU-10-R02, R04, R05, R06) collected for SDU-10-04, 05, 08, 09. SDU-10-R05 was saturated so baggie was sent separately in small container.		

Photos Collected from Station SDU-10-R01

No photos taken at this station. See station comments for more details.

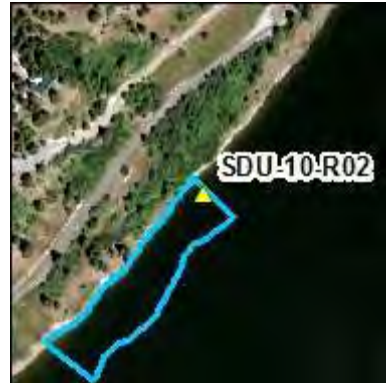
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Station Id	SDU-10-R02	Start Depth	0 cm
Station Type	Reserve	End Depth	15 cm
Collection DateTime	2015-04-30 11:51	Sample Team Initials	MS

Sample Collected? Y
X 422245.1857 m
Y 5400815.12 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-10-ICS	Decision Unit	Sediment Decision Unit 10
Sample Date Time	2015-05-04 7:49	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	29 increments composited into 1 bucket. 4 reserve locations (SDU-10-R02, R04, R05, R06) collected for SDU-10-04, 05, 08, 09. SDU-10-R05 was saturated so baggie was sent separately in small container.		

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Photos Collected from Station SDU-10-R02

2015-05-28-13-29-07_SDU-10-R02_1619LP-WA70047.jpg



in situ XRF location analyzed on 5/8/15 facing west

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2015-04-30-11-54-07_SDU-10-R02_TECK2.JPG



sample

2015-04-30-11-54-13_SDU-10-R02_TECK2.JPG



groundsurface

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2015-04-30-11-54-21_SDU-10-R02_TECK2.JPG



overview facing south

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Station Id	SDU-10-R03	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime	2015-04-30 10:25	Sample Team Initials	MS
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Not sampled due to cultural concerns

Sample Collected from Station

Sample Id	SDU-10-ICS	Decision Unit	Sediment Decision Unit 10
Sample Date Time	2015-05-04 7:49	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	29 increments composited into 1 bucket. 4 reserve locations (SDU-10-R02, R04, R05, R06) collected for SDU-10-04, 05, 08, 09. SDU-10-R05 was saturated so baggie was sent separately in small container.		

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Photos Collected from Station SDU-10-R03

2015-04-30-10-24-23_SDU-10-R03_TECK2.JPG



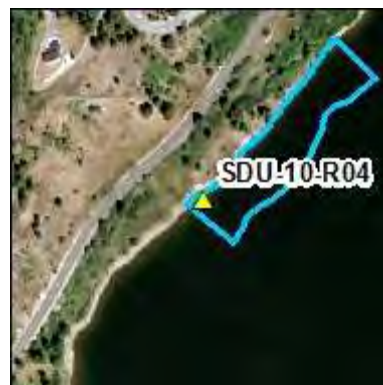
overview

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Station Id	SDU-10-R04	Start Depth	0 cm
Station Type	Reserve	End Depth	15 cm
Collection DateTime	2015-04-30 9:50	Sample Team Initials	MS

Sample Collected? Y
X 422077.6007 m
Y 5400642.89 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-10-ICS	Decision Unit	Sediment Decision Unit 10
Sample Date Time	2015-05-04 7:49	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	29 increments composited into 1 bucket. 4 reserve locations (SDU-10-R02, R04, R05, R06) collected for SDU-10-04, 05, 08, 09. SDU-10-R05 was saturated so baggie was sent separately in small container.		

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Photos Collected from Station SDU-10-R04

2015-05-28-13-14-43_SDU-10-R04_1619LP-WA70047.jpg



in situ XRF location analyzed on 5/8/15 facing west

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2015-04-30-09-52-44_SDU-10-R04_TECK2.JPG



groundsurface

2015-04-30-09-52-49_SDU-10-R04_TECK2.JPG



overview facing north

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2015-04-30-09-53-31_SDU-10-R04_TECK2.JPG



sample

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Bosburg Flat Beach Refined Sediment and Soil Study

Station Id	SDU-10-R05	Start Depth	0 cm
Station Type	Reserve	End Depth	15 cm
Collection DateTime	2015-04-27 11:33	Sample Team Initials	AP

Sample Collected? Y
X 422222.8989 m
Y 5400761.886 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine to coarse sand with silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments No in situ XRF analysis performed at this location.

Sample Collected from Station

Sample Id	SDU-10-ICS	Decision Unit	Sediment Decision Unit 10
Sample Date Time	2015-05-04 7:49	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	29 increments composited into 1 bucket. 4 reserve locations (SDU-10-R02, R04, R05, R06) collected for SDU-10-04, 05, 08, 09. SDU-10-R05 was saturated so baggie was sent separately in small container.		

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Photos Collected from Station SDU-10-R05

2015-04-27-11-23-57_SDU-10-R05_TECK1.JPG



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2015-04-27-11-24-50_SDU-10-R05_TECK1.JPG



view n

2015-04-27-11-28-59_SDU-10-R05_TECK1.JPG

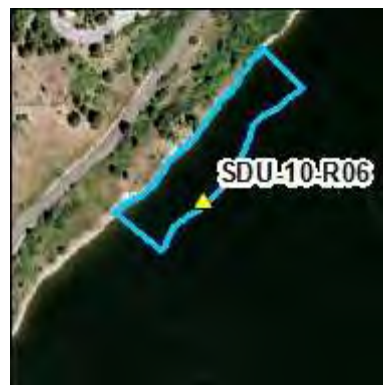


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Station Id	SDU-10-R06	Start Depth	0 cm
Station Type	Reserve	End Depth	15 cm
Collection DateTime	2015-05-02 13:53	Sample Team Initials	AP

Sample Collected? Y
X 422163.6555 m
Y 5400653.814 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand with trace rounded gravel	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments relocated approx. 30 meters west and 2 meters north of original location

Sample Collected from Station

Sample Id	SDU-10-ICS	Decision Unit	Sediment Decision Unit 10
Sample Date Time	2015-05-04 7:49	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments	29 increments composited into 1 bucket. 4 reserve locations (SDU-10-R02, R04, R05, R06) collected for SDU-10-04, 05, 08, 09. SDU-10-R05 was saturated so baggie was sent separately in small container.		

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Photos Collected from Station SDU-10-R06

2015-05-28-13-18-25_SDU-10-R06_1619LP-WA70047.jpg



in situ XRF location analyzed on 5/8/15 facing west

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2015-05-02-13-24-07_SDU-10-R06_TECK3.JPG



gs

2015-05-02-13-24-20_SDU-10-R06_TECK3.JPG



vne

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2015-05-02-13-50-25_SDU-10-R06_TECK3.JPG



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Station Id	UDU-01-01	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-15 14:22	Sample Team Initials	DC

Sample Collected? Y
X 422967.3406 m
Y 5400915.3994 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Present?	N	Biological Visual Presence	N
Color	7.5YR 3/2	Cultural Oversight Inspection Conducted?	Y
Debris Presence	N	Odor	N
Percent Canopy Coverage	0	Percent Ground Coverage	100
Sheen Presence	N	Shells Presence	N
Substrate Type	Soil	Surface Debris Present?	N
Surface Debris Removed Prior to Sampling?	N	Texture	Fine sand with clay
Vegetation Present?	Y	Vegetation Type if Present	Grass
Station Comments	none		

Sample Collected from Station

Sample Id	UDU-01-ICS	Decision Unit	Soil Decision Unit 1
Sample Date Time	2015-04-16 11:20	Collection Method	ICS
Initials on CoC	ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	All 30 increments checked and composited into 2 buckets.		

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Photos Collected from Station UDU-01-01

2015-04-15-14-15-53_UDU-01-01_TECK1.JPG



view n

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2015-04-15-14-15-44_UDU-01-01_TECK1.JPG



2015-04-15-14-12-24_UDU-01-01_TECK1.JPG



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Station Id	UDU-01-02	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-16 8:19	Sample Team Initials	AP

Sample Collected? Y
X 422955.2648 m
Y 5400946.7691 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with clay and fine rounded gravel	Vegetation Present?	Y
Vegetation Type if Present	Grass and tree (apple?)		
Station Comments	location directly under apple? tree.		

Sample Collected from Station

Sample Id	UDU-01-ICS	Decision Unit	Soil Decision Unit 1
Sample Date Time	2015-04-16 11:20	Collection Method	ICS
Initials on CoC	ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	All 30 increments checked and composited into 2 buckets.		

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Photos Collected from Station UDU-01-02

2015-04-16-08-15-35_UDU-01-02_TECK1.JPG



view north

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2015-04-16-08-15-18_UDU-01-02_TECK1.JPG



2015-04-16-08-11-54_UDU-01-02_TECK1.JPG



view n

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Station Id	UDU-01-03	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-16 8:36	Sample Team Initials	AP

Sample Collected? Y
X 422945.6207 m
Y 5400955.2165 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	20
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	Y	Surface Debris Removed Prior to Sampling?	Y
Texture	Gravelly fine sand with clay	Vegetation Present?	Y
Vegetation Type if Present	Grass and small trees (apple?)		

Station Comments located on hilln side adjacent to small apple? tree

Sample Collected from Station

Sample Id	UDU-01-ICS	Decision Unit	Soil Decision Unit 1
Sample Date Time	2015-04-16 11:20	Collection Method	ICS
Initials on CoC	ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	All 30 increments checked and composited into 2 buckets.		

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Photos Collected from Station UDU-01-03

2015-04-15-09-48-59_UDU-01-03_TECK2.JPG



groundsurface

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2015-04-16-08-32-59_UDU-01-03_TECK1.JPG



view north

2015-04-16-08-32-38_UDU-01-03_TECK1.JPG



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2015-04-16-08-26-42_UDU-01-03_TECK1.JPG



view north

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Station Id	UDU-01-04	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-15 16:13	Sample Team Initials	AP

Sample Collected? Y
X 422943.9644 m
Y 5400925.2906 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	10
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with clay and rounded gravel	Vegetation Present?	Y
Vegetation Type if Present	Grass and pine trees		
Station Comments	none		

Sample Collected from Station

Sample Id	UDU-01-ICS	Decision Unit	Soil Decision Unit 1
Sample Date Time	2015-04-16 11:20	Collection Method	ICS
Initials on CoC	ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	All 30 increments checked and composited into 2 buckets.		

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Photos Collected from Station UDU-01-04

2015-04-15-16-08-38_UDU-01-04_TECK1.JPG



view n

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2015-04-15-16-08-30_UDU-01-04_TECK1.JPG



2015-04-15-16-06-00_UDU-01-04_TECK1.JPG



view n

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Station Id	UDU-01-05	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-16 9:49	Sample Team Initials	AP

Sample Collected? Y
X 422895.3529 m
Y 5400941.0478 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	50
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with trace clay and rounded gravel	Vegetation Present?	Y
Vegetation Type if Present	Grass and small pine trees		

Station Comments on hillside between beach access road and beach.

Sample Collected from Station

Sample Id	UDU-01-ICS	Decision Unit	Soil Decision Unit 1
Sample Date Time	2015-04-16 11:20	Collection Method	ICS
Initials on CoC	ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	All 30 increments checked and composited into 2 buckets.		

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Photos Collected from Station UDU-01-05

2015-04-16-09-46-00_UDU-01-05_TECK1.JPG



view northwest

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2015-04-16-09-45-50_UDU-01-05_TECK1.JPG



2015-04-16-09-43-18_UDU-01-05_TECK1.JPG



view west

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Station Id	UDU-01-06	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-15 10:15	Sample Team Initials	AP

Sample Collected? Y
X 423017.2933 m
Y 5400912.5415 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with clay	Vegetation Present?	Y
Vegetation Type if Present	Grass, trees		

Station Comments

Sample Collected from Station

Sample Id	UDU-01-ICS	Decision Unit	Soil Decision Unit 1
Sample Date Time	2015-04-16 11:20	Collection Method	ICS
Initials on CoC	ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	All 30 increments checked and composited into 2 buckets.		

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Photos Collected from Station UDU-01-06

2015-04-15-09-54-42_UDU-01-06_TECK1.JPG



view n

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2015-04-15-09-54-33_UDU-01-06_TECK1.JPG



2015-04-15-09-47-27_UDU-01-06_TECK1.JPG



view n

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Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-01-07	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-15 10:50	Sample Team Initials	AP

Sample Collected? Y
X 422984.7273 m
Y 5400905.7944 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	20
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with clay and rounded gravel	Vegetation Present?	Y
Vegetation Type if Present	Grass and pine trees		
Station Comments	none		

Sample Collected from Station

Sample Id	UDU-01-ICS	Decision Unit	Soil Decision Unit 1
Sample Date Time	2015-04-16 11:20	Collection Method	ICS
Initials on CoC	ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	All 30 increments checked and composited into 2 buckets.		

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-01-07

2015-04-15-10-46-47_UDU-01-07_TECK1.JPG



view n

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-15-10-46-39_UDU-01-07_TECK1.JPG



2015-04-15-10-43-12_UDU-01-07_TECK1.JPG



view n

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id UDU-01-08 **Start Depth** 0 cm
Station Type Primary **End Depth** 15 cm
Collection DateTime 2015-04-15 13:56 **Sample Team Initials** DC

Sample Collected? Y
X 422963.8413 m
Y 5400902.6367 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Texture	Fine sand with clay
Vegetation Present?	Y	Vegetation Type if Present	Grass and trees

Station Comments none

Sample Collected from Station

Sample Id	UDU-01-ICS	Decision Unit	Soil Decision Unit 1
Sample Date Time	2015-04-16 11:20	Collection Method	ICS
Initials on CoC	ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	All 30 increments checked and composited into 2 buckets.		

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Photos Collected from Station UDU-01-08

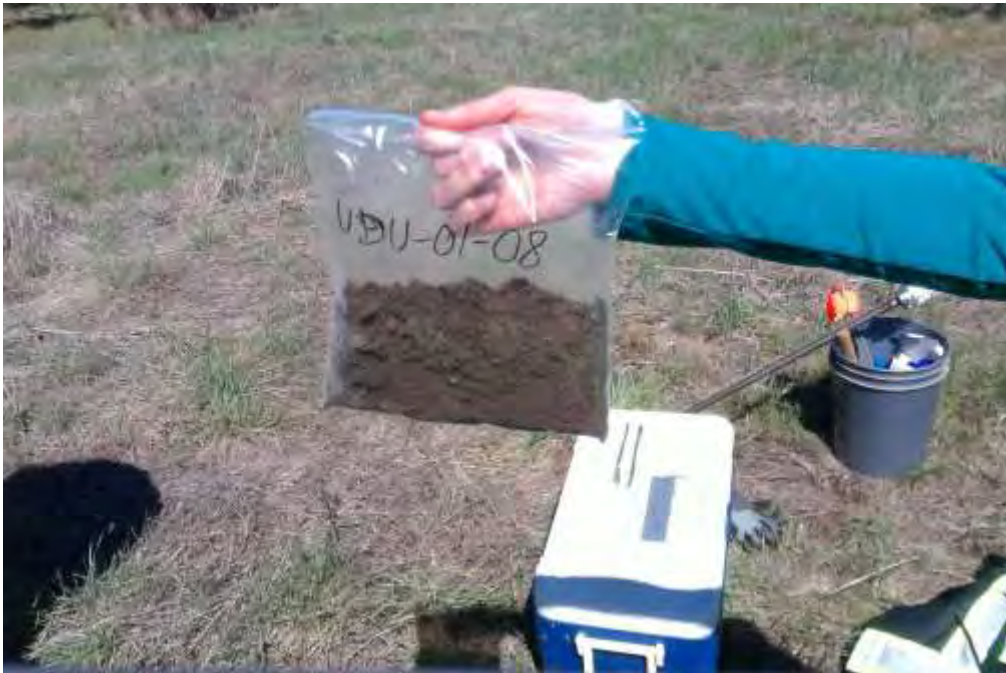
2015-04-15-13-47-01_UDU-01-08_TECK1.JPG



v north

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2015-04-15-13-46-50_UDU-01-08_TECK1.JPG



2015-04-15-13-42-54_UDU-01-08_TECK1.JPG



v north

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Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-01-09	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-15 9:30	Sample Team Initials	EL

Sample Collected? Y
X 422925.687 m
Y 5400930.5282 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	None	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	80
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine clayey sand with coarse gravel	Vegetation Present?	Y
Vegetation Type if Present	Pine duff		

Station Comments

Sample Collected from Station

Sample Id	UDU-01-ICS	Decision Unit	Soil Decision Unit 1
Sample Date Time	2015-04-16 11:20	Collection Method	ICS
Initials on CoC	ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	All 30 increments checked and composited into 2 buckets.		

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Photos Collected from Station UDU-01-09

2015-04-15-09-05-04_UDU-01-09_TECK2.JPG



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2015-04-15-09-05-09_UDU-01-09_TECK2.JPG



2015-04-15-09-17-05_UDU-01-09_TECK2.JPG



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Station Id	UDU-01-10	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-16 9:16	Sample Team Initials	AP

Sample Collected? Y
X 422927.8282 m
Y 5400966.6744 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	Barbed wire fence adjacent to location	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with clay, high % organic matter	Vegetation Present?	Y
Vegetation Type if Present	Large pine trees		
Station Comments	on hillside above beach access road, nest to barbed wire fence		

Sample Collected from Station

Sample Id	UDU-01-ICS	Decision Unit	Soil Decision Unit 1
Sample Date Time	2015-04-16 11:20	Collection Method	ICS
Initials on CoC	ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	All 30 increments checked and composited into 2 buckets.		

Photos Collected from Station UDU-01-10

2015-04-16-09-12-03_UDU-01-10_TECK1.JPG



view north

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2015-04-16-09-11-31_UDU-01-10_TECK1.JPG



2015-04-16-09-06-29_UDU-01-10_TECK1.JPG



view north

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-01-11	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-15 9:41	Sample Team Initials	AP

Sample Collected? Y
X 423035.897 m
Y 5400903.5943 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with clay	Vegetation Present?	Y
Vegetation Type if Present	Grass, trees		

Station Comments none23443

Sample Collected from Station

Sample Id	UDU-01-ICS	Decision Unit	Soil Decision Unit 1
Sample Date Time	2015-04-16 11:20	Collection Method	ICS
Initials on CoC	ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	All 30 increments checked and composited into 2 buckets.		

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Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-01-11

2015-04-15-09-35-28_UDU-01-11_TECK1.JPG



view n

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-15-09-35-17_UDU-01-11_TECK1.JPG



2015-04-15-09-32-13_UDU-01-11_TECK1.JPG



view w

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Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-01-12	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-15 11:05	Sample Team Initials	AP

Sample Collected? Y
X 422974.1292 m
Y 5400894.2763 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with clay and gravel	Vegetation Present?	Y
Vegetation Type if Present	Grass and pine trees		
Station Comments	none		

Sample Collected from Station

Sample Id	UDU-01-ICS	Decision Unit	Soil Decision Unit 1
Sample Date Time	2015-04-16 11:20	Collection Method	ICS
Initials on CoC	ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	All 30 increments checked and composited into 2 buckets.		

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Photos Collected from Station UDU-01-12

2015-04-15-10-59-55_UDU-01-12_TECK1.JPG



view n

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2015-04-15-10-59-45_UDU-01-12_TECK1.JPG



2015-04-15-10-57-15_UDU-01-12_TECK1.JPG



view n

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Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-01-13	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-15 9:57	Sample Team Initials	EL

Sample Collected? Y
X 422915.944 m
Y 5400935.2882 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine to fine clayey sand with fine gravel	Vegetation Present?	Y
Vegetation Type if Present	Pine trees		

Station Comments

Sample Collected from Station

Sample Id	UDU-01-ICS	Decision Unit	Soil Decision Unit 1
Sample Date Time	2015-04-16 11:20	Collection Method	ICS
Initials on CoC	ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	All 30 increments checked and composited into 2 buckets.		

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Photos Collected from Station UDU-01-13

2015-04-15-09-55-56_UDU-01-13_TECK2.JPG



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2015-04-15-09-49-07_UDU-01-13_TECK2.JPG



overview facing west

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Station Id	UDU-01-14	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-15 10:34	Sample Team Initials	AP

Sample Collected? Y
X 422992.4362 m
Y 5400900.7137 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	10
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with clay	Vegetation Present?	Y
Vegetation Type if Present	Grass, pine trees		
Station Comments	none		

Sample Collected from Station

Sample Id	UDU-01-ICS	Decision Unit	Soil Decision Unit 1
Sample Date Time	2015-04-16 11:20	Collection Method	ICS
Initials on CoC	ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	All 30 increments checked and composited into 2 buckets.		

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Photos Collected from Station UDU-01-14

2015-04-15-10-28-48_UDU-01-14_TECK1.JPG



view n

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2015-04-15-10-28-35_UDU-01-14_TECK1.JPG



2015-04-15-10-22-35_UDU-01-14_TECK1.JPG



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Station Id	UDU-01-15	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-14 16:49	Sample Team Initials	AP

Sample Collected? Y
X 423051.2931 m
Y 5400883.9896 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sandy clay	Vegetation Present?	Y
Vegetation Type if Present	Grasses		

Station Comments There was a GPS duplicate point collected here with Pro6

Sample Collected from Station

Sample Id	UDU-01-ICS	Decision Unit	Soil Decision Unit 1
Sample Date Time	2015-04-16 11:20	Collection Method	ICS
Initials on CoC	ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	All 30 increments checked and composited into 2 buckets.		

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Photos Collected from Station UDU-01-15

2015-04-14-16-50-12_UDU-01-15_TECK1.JPG



looking north, sample location

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-14-16-49-40_UDU-01-15_TECK1.JPG



soil at udu-01_15

2015-04-14-16-42-01_UDU-01-15_TECK1.JPG



looking north, prior to sampling

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Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-01-16	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-15 11:21	Sample Team Initials	AP

Sample Collected? Y
X 422966.3191 m
Y 5400886.8228 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with clay and gravel	Vegetation Present?	Y
Vegetation Type if Present	Grass and pine trees		
Station Comments	none		

Sample Collected from Station

Sample Id	UDU-01-ICS	Decision Unit	Soil Decision Unit 1
Sample Date Time	2015-04-16 11:20	Collection Method	ICS
Initials on CoC	ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	All 30 increments checked and composited into 2 buckets.		

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Photos Collected from Station UDU-01-16

2015-04-15-11-14-53_UDU-01-16_TECK1.JPG



view north

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-15-11-14-44_UDU-01-16_TECK1.JPG



2015-04-15-11-12-42_UDU-01-16_TECK1.JPG



view n

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Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-01-17	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-15 14:57	Sample Team Initials	DC

Sample Collected? Y
X 422989.1345 m
Y 5400934.0534 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Present?	N	Biological Visual Presence	N
Color	7.5YR 3/2	Cultural Oversight Inspection Conducted?	Y
Debris Presence	N	Odor	N
Percent Canopy Coverage	10	Percent Ground Coverage	100
Sheen Presence	N	Shells Presence	N
Substrate Type	Soil	Surface Debris Present?	N
Surface Debris Removed Prior to Sampling?	Y	Texture	Fine sand with clay
Vegetation Present?	Y	Vegetation Type if Present	Grass, pine trees
Station Comments	none		

Sample Collected from Station

Sample Id	UDU-01-ICS	Decision Unit	Soil Decision Unit 1
Sample Date Time	2015-04-16 11:20	Collection Method	ICS
Initials on CoC	ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	All 30 increments checked and composited into 2 buckets.		

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Photos Collected from Station UDU-01-17

2015-04-15-14-52-12_UDU-01-17_TECK1.JPG



view n

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2015-04-15-14-53-24_UDU-01-17_TECK1.JPG



2015-04-15-14-53-32_UDU-01-17_TECK1.JPG



view n

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Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-01-18	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-15 10:59	Sample Team Initials	EL

Sample Collected? Y
X 422932.7178 m
Y 5400942.0224 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty clayey very fine sand trace fine to coarse sand	Vegetation Present?	Y
Vegetation Type if Present	Pine		

Station Comments

Sample Collected from Station

Sample Id	UDU-01-ICS	Decision Unit	Soil Decision Unit 1
Sample Date Time	2015-04-16 11:20	Collection Method	ICS
Initials on CoC	ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	All 30 increments checked and composited into 2 buckets.		

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Photos Collected from Station UDU-01-18

2015-06-18-17-06-32_UDU-01-18_1619LP-WA70047.JPG



ground surface

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2015-04-15-10-51-52_UDU-01-18_TECK2.JPG



overview facing west

2015-04-15-10-56-06_UDU-01-18_TECK2.JPG



soil sample

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Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-01-19	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-15 15:24	Sample Team Initials	DC

Sample Collected? Y
X 422966.5912 m
Y 5400930.1338 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Present?	N	Biological Visual Presence	N
Color	7.5YR 3/5	Cultural Oversight Inspection Conducted?	Y
Debris Presence	N	Odor	N
Percent Canopy Coverage	80	Percent Ground Coverage	100
Sheen Presence	N	Shells Presence	N
Substrate Type	Soil	Surface Debris Present?	N
Surface Debris Removed Prior to Sampling?	Y	Texture	Fine sand with clay
Vegetation Present?	Y	Vegetation Type if Present	Grass, pine trees

Station Comments First location was rejected due to presence of a 1-inch glass shard. Moved sample location 1-meter to the north.

Sample Collected from Station

Sample Id	UDU-01-ICS	Decision Unit	Soil Decision Unit 1
Sample Date Time	2015-04-16 11:20	Collection Method	ICS
Initials on CoC	ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	All 30 increments checked and composited into 2 buckets.		

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Photos Collected from Station UDU-01-19

2015-04-15-15-18-23_UDU-01-19_TECK1.JPG



v north

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2015-04-15-15-18-05_UDU-01-19_TECK1.JPG



2015-04-15-15-05-39_UDU-01-19_TECK1.JPG



v north

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Bossburg Flat Beach Refined Sediment and Soil Study

Station Id	UDU-01-20	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-16 9:29	Sample Team Initials	AP

Sample Collected? Y
X 422908.9472 m
Y 5400950.6985 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Grass and pine duff
Odor	N	Percent Canopy Coverage	30
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with trace clay	Vegetation Present?	Y
Vegetation Type if Present	Grass, briar, pine trees		

Station Comments location on hillside between beach access road and beach.

Sample Collected from Station

Sample Id	UDU-01-ICS	Decision Unit	Soil Decision Unit 1
Sample Date Time	2015-04-16 11:20	Collection Method	ICS
Initials on CoC	ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	All 30 increments checked and composited into 2 buckets.		

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Photos Collected from Station UDU-01-20

2015-04-16-09-24-36_UDU-01-20_TECK1.JPG



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2015-04-16-09-24-22_UDU-01-20_TECK1.JPG



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Station Id	UDU-01-21	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-15 11:21	Sample Team Initials	EL

Sample Collected? Y
X 422927.9337 m
Y 5400945.4797 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty clayey very fine sand trace coarse sand trace fine gravel	Vegetation Present?	Y
Vegetation Type if Present	Pine duff		

Station Comments

Sample Collected from Station

Sample Id	UDU-01-ICS	Decision Unit	Soil Decision Unit 1
Sample Date Time	2015-04-16 11:20	Collection Method	ICS
Initials on CoC	ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	All 30 increments checked and composited into 2 buckets.		

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Photos Collected from Station UDU-01-21

2015-04-15-11-17-12_UDU-01-21_TECK2.JPG



overview facing west

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2015-04-15-11-17-32_UDU-01-21_TECK2.JPG



2015-04-15-11-17-07_UDU-01-21_TECK2.JPG



groundsurface

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Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-01-22	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-15 9:26	Sample Team Initials	AP

Sample Collected? Y
X 423045.3155 m
Y 5400902.6685 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with clay	Vegetation Present?	Y
Vegetation Type if Present	Grass, trees		

Station Comments none

Sample Collected from Station

Sample Id	UDU-01-ICS	Decision Unit	Soil Decision Unit 1
Sample Date Time	2015-04-16 11:20	Collection Method	ICS
Initials on CoC	ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	All 30 increments checked and composited into 2 buckets.		

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Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-01-22

2015-04-15-09-21-18_UDU-01-22_TECK1.JPG



view n

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-15-09-21-03_UDU-01-22_TECK1.JPG



2015-04-15-09-17-08_UDU-01-22_TECK1.JPG



vieww

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Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-01-23	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-15 10:20	Sample Team Initials	EL

Sample Collected? Y
X 422906.9218 m
Y 5400935.8862 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Tree duff
Odor	N	Percent Canopy Coverage	80
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty clayey very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pine		

Station Comments moved 1 m south of centeroid due to tree and slope
 Time to Now stamp was not entered, sqample collected 04/15/2015 at 10:20:52 am

Sample Collected from Station

Sample Id	UDU-01-ICS	Decision Unit	Soil Decision Unit 1
Sample Date Time	2015-04-16 11:20	Collection Method	ICS
Initials on CoC	ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	All 30 increments checked and composited into 2 buckets.		

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Photos Collected from Station UDU-01-23

2015-04-15-09-49-07_UDU-01-23_TECK2.JPG



overview west

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-15-10-20-52_UDU-01-23_TECK2.JPG



groundsurface

2015-04-15-10-24-11_UDU-01-23_TECK2.JPG



sample

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-01-24	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-14 16:20	Sample Team Initials	AP

Sample Collected? Y
X 423058.0771 m
Y 5400890.1882 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes N
Description
Biological Visual Presence N
Debris Presence N
Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Soil
Surface Debris Removed N
Prior to Sampling?
Vegetation Present? Y

Anthropogenic Changes N
Present?
Color 7.5YR 3/1
Odor N
Percent Ground Coverage 100
Shells Presence N
Surface Debris Present? N
Texture Fine sand with clay
Vegetation Type if Present Grass

Station Comments

Sample Collected from Station

Sample Id	UDU-01-ICS	Decision Unit	Soil Decision Unit 1
Sample Date Time	2015-04-16 11:20	Collection Method	ICS
Initials on CoC	ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	All 30 increments checked and composited into 2 buckets.		

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Photos Collected from Station UDU-01-24

2015-04-14-16-25-24_UDU-01-24_1619LP-WA70047.JPG



ground surface

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-14-16-25-12_UDU-01-24_1619LP-WA70047.JPG



sample

2015-04-14-16-13-17_UDU-01-24_TECK1.JPG



Facing south, prior to sampling

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Station Id	UDU-01-25	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-15 8:57	Sample Team Initials	AP

Sample Collected? Y
X 423032.9356 m
Y 5400860.1169 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 100
Shells Presence N
Surface Debris Present? N

Texture Fine sand with clay
Vegetation Type if Present Grass, trees

Station Comments no

Sample Collected from Station

Sample Id	UDU-01-ICS	Decision Unit	Soil Decision Unit 1
Sample Date Time	2015-04-16 11:20	Collection Method	ICS
Initials on CoC	ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	All 30 increments checked and composited into 2 buckets.		

Anthropogenic Changes Present? N
Color 10YR 3/1
Debris Presence N

Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Soil
Surface Debris Removed Prior to Sampling? N
Vegetation Present? Y

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Photos Collected from Station UDU-01-25

2015-04-15-08-50-22_UDU-01-25_1619LP-WA70047.JPG



sample

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-15-08-44-49_UDU-01-25_TECK1.JPG



sample location prior to sampling view w

2015-04-15-08-50-40_UDU-01-25_TECK1.JPG



sample location view n

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Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-01-26	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-15 15:57	Sample Team Initials	AP

Sample Collected? Y
X 422954.6337 m
Y 5400929.5093 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with clay and rounded gravel	Vegetation Present?	Y
Vegetation Type if Present	Grass and pine trees		

Station Comments

Sample Collected from Station

Sample Id	UDU-01-ICS	Decision Unit	Soil Decision Unit 1
Sample Date Time	2015-04-16 11:20	Collection Method	ICS
Initials on CoC	ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	All 30 increments checked and composited into 2 buckets.		

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Photos Collected from Station UDU-01-26

2015-04-15-15-52-06_UDU-01-26_TECK1.JPG



view n

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-15-15-51-54_UDU-01-26_TECK1.JPG



2015-04-15-15-46-43_UDU-01-26_TECK1.JPG



view n

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Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-01-27	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-15 14:40	Sample Team Initials	DC

Sample Collected? Y
X 422996.2982 m
Y 5400925.1606 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Present?	N	Biological Visual Presence	N
Color	7.5YR 3/2	Cultural Oversight Inspection Conducted?	Y
Debris Presence	N	Odor	N
Percent Canopy Coverage	30	Percent Ground Coverage	100
Sheen Presence	N	Shells Presence	N
Substrate Type	Soil	Surface Debris Present?	N
Surface Debris Removed Prior to Sampling?	Y	Texture	Fine sand with clay
Vegetation Present?	Y	Vegetation Type if Present	Grass, pine trees
Station Comments	none		

Sample Collected from Station

Sample Id	UDU-01-ICS	Decision Unit	Soil Decision Unit 1
Sample Date Time	2015-04-16 11:20	Collection Method	ICS
Initials on CoC	ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	All 30 increments checked and composited into 2 buckets.		

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Photos Collected from Station UDU-01-27

2015-04-15-14-35-16_UDU-01-27_TECK1.JPG



view n

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2015-04-15-14-35-08_UDU-01-27_TECK1.JPG



2015-04-15-14-31-01_UDU-01-27_TECK1.JPG



view n

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Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-01-28	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-15 15:38	Sample Team Initials	DC

Sample Collected? Y
X 422960.3754 m
Y 5400933.1349 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Present?	N	Biological Visual Presence	N
Color	7.5YR 3/5	Cultural Oversight Inspection Conducted?	Y
Debris Presence	N	Odor	N
Percent Canopy Coverage	20	Percent Ground Coverage	100
Sheen Presence	N	Shells Presence	N
Substrate Type	Soil	Surface Debris Present?	N
Surface Debris Removed Prior to Sampling?	Y	Texture	Fine sand with clay and trace gravel
Vegetation Present?	Y	Vegetation Type if Present	Grass, pine trees
Station Comments	none		

Sample Collected from Station

Sample Id	UDU-01-ICS	Decision Unit	Soil Decision Unit 1
Sample Date Time	2015-04-16 11:20	Collection Method	ICS
Initials on CoC	ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	All 30 increments checked and composited into 2 buckets.		

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Photos Collected from Station UDU-01-28

2015-04-15-15-34-55_UDU-01-28_TECK1.JPG



v north

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2015-04-15-15-34-45_UDU-01-28_TECK1.JPG



2015-04-15-15-31-59_UDU-01-28_TECK1.JPG



v north

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Bosburg Flat Beach Refined Sediment and Soil Study

Station Id	UDU-01-29	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-16 8:59	Sample Team Initials	AP

Sample Collected? Y
X 422942.2206 m
Y 5400970.9707 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with clay, high % organic matter	Vegetation Present?	Y
Vegetation Type if Present	Small trees and pine trees		
Station Comments	on hillside just above beach		

Sample Collected from Station

Sample Id	UDU-01-ICS	Decision Unit	Soil Decision Unit 1
Sample Date Time	2015-04-16 11:20	Collection Method	ICS
Initials on CoC	ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	All 30 increments checked and composited into 2 buckets.		

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Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-01-29

2015-04-16-08-56-03_UDU-01-29_TECK1.JPG



view north

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2015-04-16-08-55-47_UDU-01-29_TECK1.JPG



2015-04-16-08-52-53_UDU-01-29_TECK1.JPG



view north

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ICS Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study

Station Id	UDU-01-30	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-15 9:05	Sample Team Initials	AP
Sample Collected?	Y		
X	423032.7792 m		
Y	5400892.8996 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Present?	N	Biological Visual Presence	Some bioturbation
Color	10YR 4/2	Cultural Oversight Inspection Conducted?	Y
Debris Presence	N	Odor	N
Percent Canopy Coverage	0	Percent Ground Coverage	100
Sheen Presence	N	Shells Presence	N
Substrate Type	Soil	Surface Debris Present?	N
Surface Debris Removed Prior to Sampling?	N	Texture	Fine sand with clay, high percent organic material
Vegetation Present?	Y	Vegetation Type if Present	Grass
Station Comments	Located in open field		

Sample Collected from Station

Sample Id	UDU-01-ICS	Decision Unit	Soil Decision Unit 1
Sample Date Time	2015-04-16 11:20	Collection Method	ICS
Initials on CoC	ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	All 30 increments checked and composited into 2 buckets.		

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Photos Collected from Station UDU-01-30

2015-04-15-09-09-11_UDU-01-30_TECK1.JPG



view n

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2015-04-15-09-09-00_UDU-01-30_TECK1.JPG



2015-04-15-09-06-03_UDU-01-30_TECK1.JPG



view west

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Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-01-R01	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-01-ICS	Decision Unit	Soil Decision Unit 1
Sample Date Time	2015-04-16 11:20	Collection Method	ICS
Initials on CoC	ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	All 30 increments checked and composited into 2 buckets.		

Photos Collected from Station UDU-01-R01

No photos taken at this station. See station comments for more details.

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Station Id	UDU-01-R02	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-01-ICS	Decision Unit	Soil Decision Unit 1
Sample Date Time	2015-04-16 11:20	Collection Method	ICS
Initials on CoC	ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	All 30 increments checked and composited into 2 buckets.		

Photos Collected from Station UDU-01-R02

No photos taken at this station. See station comments for more details.

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Station Id	UDU-01-R03	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-01-ICS	Decision Unit	Soil Decision Unit 1
Sample Date Time	2015-04-16 11:20	Collection Method	ICS
Initials on CoC	ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	All 30 increments checked and composited into 2 buckets.		

Photos Collected from Station UDU-01-R03

No photos taken at this station. See station comments for more details.

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Station Id	UDU-01-R04	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-01-ICS	Decision Unit	Soil Decision Unit 1
Sample Date Time	2015-04-16 11:20	Collection Method	ICS
Initials on CoC	ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	All 30 increments checked and composited into 2 buckets.		

Photos Collected from Station UDU-01-R04

No photos taken at this station. See station comments for more details.

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Station Id	UDU-01-R05	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-01-ICS	Decision Unit	Soil Decision Unit 1
Sample Date Time	2015-04-16 11:20	Collection Method	ICS
Initials on CoC	ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	All 30 increments checked and composited into 2 buckets.		

Photos Collected from Station UDU-01-R05

No photos taken at this station. See station comments for more details.

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Station Id	UDU-01-R06	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-01-ICS	Decision Unit	Soil Decision Unit 1
Sample Date Time	2015-04-16 11:20	Collection Method	ICS
Initials on CoC	ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	All 30 increments checked and composited into 2 buckets.		

Photos Collected from Station UDU-01-R06

No photos taken at this station. See station comments for more details.

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Station Id	UDU-01-R07	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-01-ICS	Decision Unit	Soil Decision Unit 1
Sample Date Time	2015-04-16 11:20	Collection Method	ICS
Initials on CoC	ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	All 30 increments checked and composited into 2 buckets.		

Photos Collected from Station UDU-01-R07

No photos taken at this station. See station comments for more details.

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Station Id	UDU-01-R08	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-01-ICS	Decision Unit	Soil Decision Unit 1
Sample Date Time	2015-04-16 11:20	Collection Method	ICS
Initials on CoC	ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	All 30 increments checked and composited into 2 buckets.		

Photos Collected from Station UDU-01-R08

No photos taken at this station. See station comments for more details.

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Station Id	UDU-01-R09	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-01-ICS	Decision Unit	Soil Decision Unit 1
Sample Date Time	2015-04-16 11:20	Collection Method	ICS
Initials on CoC	ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	All 30 increments checked and composited into 2 buckets.		

Photos Collected from Station UDU-01-R09

No photos taken at this station. See station comments for more details.

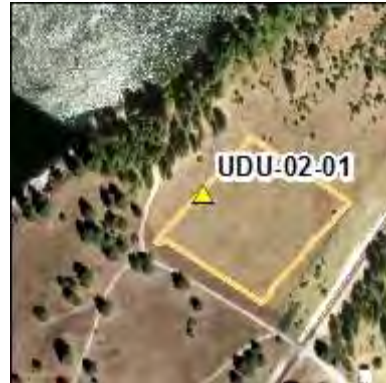
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Station Id	UDU-02-01	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-16 13:22	Sample Team Initials	EL

Sample Collected? Y
X 422911.8094 m
Y 5400849.3648 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes N
Description
Biological Visual Presence N
Cultural Oversight Y
Inspection Conducted?
Odor N
Percent Ground Coverage 100
Shells Presence N
Surface Debris Present? N

Texture Silty clayey very fine sand
Vegetation Type if Present Pasture grasses

Anthropogenic Changes Present? N
Color 2.5Y 4/2
Debris Presence N

Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Soil
Surface Debris Removed Prior to Sampling? N

Vegetation Present? Y

Station Comments

Sample Collected from Station

Sample Id	UDU-02-ICS	Decision Unit	Soil Decision Unit 2
Sample Date Time	2015-04-17 8:30	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 2 buckets.		

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Photos Collected from Station UDU-02-01

2015-04-16-13-20-26_UDU-02-01_TECK2.JPG



groundsurface

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-16-13-20-31_UDU-02-01_TECK2.JPG



overview facing west

2015-04-16-13-24-52_UDU-02-01_TECK2.JPG



sample

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-02-02	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-16 10:53	Sample Team Initials	EL

Sample Collected? Y
X 422949.0861 m
Y 5400833.2352 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silt clay very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pasture grasses		

Station Comments

Sample Collected from Station

Sample Id	UDU-02-ICS	Decision Unit	Soil Decision Unit 2
Sample Date Time	2015-04-17 8:30	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 2 buckets.		

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Photos Collected from Station UDU-02-02

2015-04-16-10-55-50_UDU-02-02_TECK2.JPG



sample

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-16-10-51-55_UDU-02-02_TECK2.JPG



overview facing west

2015-04-16-10-51-50_UDU-02-02_TECK2.JPG



groundsurface

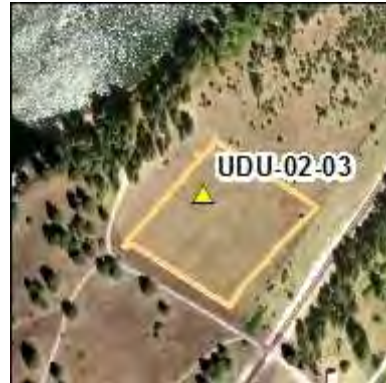
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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-02-03	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-16 10:08	Sample Team Initials	EL

Sample Collected? Y
X 422938.0598 m
Y 5400852.221 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sandy silt and clay little coarse gravel	Vegetation Present?	Y
Vegetation Type if Present	Pasture grasses		

Station Comments

Sample Collected from Station

Sample Id	UDU-02-ICS	Decision Unit	Soil Decision Unit 2
Sample Date Time	2015-04-17 8:30	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 2 buckets.		

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Photos Collected from Station UDU-02-03

2015-04-16-10-06-20_UDU-02-03_TECK2.JPG



sample

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2015-04-16-10-01-56_UDU-02-03_TECK2.JPG



groundsurface

2015-04-16-10-02-00_UDU-02-03_TECK2.JPG



ovrrview facing west

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Station Id	UDU-02-04	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-16 13:13	Sample Team Initials	EL

Sample Collected? Y
X 422912.1123 m
Y 5400839.4083 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand little clay	Vegetation Present?	Y
Vegetation Type if Present	Pasture grasses		

Station Comments

Sample Collected from Station

Sample Id	UDU-02-ICS	Decision Unit	Soil Decision Unit 2
Sample Date Time	2015-04-17 8:30	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 2 buckets.		

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Photos Collected from Station UDU-02-04

2015-04-16-13-11-30_UDU-02-04_TECK2.JPG



groundsurface

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2015-04-16-13-11-37_UDU-02-04_TECK2.JPG



overview facing west

2015-04-16-13-16-16_UDU-02-04_TECK2.JPG



sample

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Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-02-05	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-16 16:04	Sample Team Initials	EL

Sample Collected? Y
X 422927.7833 m
Y 5400787.1333 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 100
Shells Presence N
Surface Debris Present? N
Texture Very fine sand little silt and clay trace fine gravel
Vegetation Type if Present Pasture grasses

Anthropogenic Changes Present? N
Color 10YR 4/1
Debris Presence N
Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Soil
Surface Debris Removed Prior to Sampling? N
Vegetation Present? Y

Station Comments

Sample Collected from Station

Sample Id	UDU-02-ICS	Decision Unit	Soil Decision Unit 2
Sample Date Time	2015-04-17 8:30	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 2 buckets.		

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Photos Collected from Station UDU-02-05

2015-04-16-16-02-40_UDU-02-05_TECK2.JPG



groundsurface

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2015-04-16-16-02-44_UDU-02-05_TECK2.JPG



overview facing west

2015-04-16-16-04-50_UDU-02-05_TECK2.JPG



sample

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Station Id	UDU-02-06	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-16 10:39	Sample Team Initials	EL

Sample Collected? Y
X 422930.3976 m
Y 5400841.8655 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 100
Shells Presence N
Surface Debris Present? N

Texture Clayey silt little very fine sand
Vegetation Type if Present Pasture grasses

Anthropogenic Changes Present? N
Color 10YR
Debris Presence N

Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Soil
Surface Debris Removed Prior to Sampling? N
Vegetation Present? Y

Station Comments

Sample Collected from Station

Sample Id	UDU-02-ICS	Decision Unit	Soil Decision Unit 2
Sample Date Time	2015-04-17 8:30	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 2 buckets.		

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Photos Collected from Station UDU-02-06

2015-04-16-10-41-49_UDU-02-06_TECK2.JPG



sample

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2015-04-16-10-31-46_UDU-02-06_TECK2.JPG



groundsurface

2015-04-16-10-31-50_UDU-02-06_TECK2.JPG



overview facing west

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Station Id	UDU-02-07	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-16 12:40	Sample Team Initials	EL

Sample Collected? Y
X 422950.3877 m
Y 5400812.3298 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silt clay very fine sand trace coarse gravel	Vegetation Present?	Y
Vegetation Type if Present	Pasture grasses		

Station Comments

Sample Collected from Station

Sample Id	UDU-02-ICS	Decision Unit	Soil Decision Unit 2
Sample Date Time	2015-04-17 8:30	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 2 buckets.		

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Photos Collected from Station UDU-02-07

2015-04-16-12-46-20_UDU-02-07_TECK2.JPG



sample

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2015-04-16-12-39-13_UDU-02-07_TECK2.JPG



groundsurface

2015-04-16-12-39-19_UDU-02-07_TECK2.JPG



overview facing west

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Station Id	UDU-02-08	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-16 11:39	Sample Team Initials	EL

Sample Collected? Y
X 422968.0015 m
Y 5400803.328 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 100
Shells Presence N
Surface Debris Present? N

Texture Silty clayey very fine sand
little coarse gravel
Vegetation Type if Present Pasture grasses

Anthropogenic Changes Present? N
Color 10YR 4/3
Debris Presence N

Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Soil
Surface Debris Removed Prior to Sampling? N
Vegetation Present? Y

Station Comments

Sample Collected from Station

Sample Id	UDU-02-ICS	Decision Unit	Soil Decision Unit 2
Sample Date Time	2015-04-17 8:30	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 2 buckets.		

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Photos Collected from Station UDU-02-08

2015-04-16-11-43-54_UDU-02-08_TECK2.JPG



sample

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2015-04-16-11-36-26_UDU-02-08_TECK2.JPG



groundsurface

2015-04-16-11-36-30_UDU-02-08_TECK2.JPG



overview facing west

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Station Id	UDU-02-09	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-16 13:43	Sample Team Initials	EL

Sample Collected? Y
X 422886.321 m
Y 5400822.8776 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand some silt and clay	Vegetation Present?	Y
Vegetation Type if Present	Pasture grasses		

Station Comments

Sample Collected from Station

Sample Id	UDU-02-ICS	Decision Unit	Soil Decision Unit 2
Sample Date Time	2015-04-17 8:30	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 2 buckets.		

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Photos Collected from Station UDU-02-09

2015-04-16-13-42-41_UDU-02-09_TECK2.JPG



groundsurface

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2015-04-16-13-42-46_UDU-02-09_TECK2.JPG



overview facing west

2015-04-16-13-45-20_UDU-02-09_TECK2.JPG



sample

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Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-02-10	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-16 15:06	Sample Team Initials	EL

Sample Collected? Y
X 422939.0085 m
Y 5400792.1187 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pasture grasses		

Station Comments

Sample Collected from Station

Sample Id	UDU-02-ICS	Decision Unit	Soil Decision Unit 2
Sample Date Time	2015-04-17 8:30	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 2 buckets.		

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Photos Collected from Station UDU-02-10

2015-04-16-15-09-32_UDU-02-10_TECK2.JPG



sample

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2015-04-16-14-40-34_UDU-02-10_TECK2.JPG



groundsurface

2015-04-16-14-40-38_UDU-02-10_TECK2.JPG



overview facing west

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Station Id	UDU-02-11	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-16 8:56	Sample Team Initials	EL

Sample Collected? Y
X 422969.9322 m
Y 5400841.5587 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty clayey very fine sand trace fine gravel	Vegetation Present?	Y
Vegetation Type if Present	Pasture grasses		

Station Comments

Sample Collected from Station

Sample Id	UDU-02-ICS	Decision Unit	Soil Decision Unit 2
Sample Date Time	2015-04-17 8:30	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 2 buckets.		

Photos Collected from Station UDU-02-11

2015-04-16-08-59-42_UDU-02-11_TECK2.JPG



sample

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2015-04-16-08-54-48_UDU-02-11_TECK2.JPG



groundsurface

2015-04-16-08-54-54_UDU-02-11_TECK2.JPG



overview facing west

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Station Id	UDU-02-12	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-16 13:04	Sample Team Initials	EL

Sample Collected? Y
X 422939.3281 m
Y 5400822.3842 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand some silt and clay some fine gravel	Vegetation Present?	Y
Vegetation Type if Present	Pasture grasses		

Station Comments

Sample Collected from Station

Sample Id	UDU-02-ICS	Decision Unit	Soil Decision Unit 2
Sample Date Time	2015-04-17 8:30	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 2 buckets.		

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Photos Collected from Station UDU-02-12

2015-04-16-13-02-38_UDU-02-12_TECK2.JPG



groundsurface

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2015-04-16-13-02-48_UDU-02-12_TECK2.JPG



overview facing west

2015-04-16-13-05-46_UDU-02-12_TECK2.JPG



sample

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Station Id	UDU-02-13	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-16 9:44	Sample Team Initials	EL

Sample Collected? Y
X 422921.3428 m
Y 5400860.7068 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty clayey very fine sand trace coarse gravel	Vegetation Present?	Y
Vegetation Type if Present	Pasture grasses		

Station Comments

Sample Collected from Station

Sample Id	UDU-02-ICS	Decision Unit	Soil Decision Unit 2
Sample Date Time	2015-04-17 8:30	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 2 buckets.		

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Photos Collected from Station UDU-02-13

2015-04-16-09-47-15_UDU-02-13_TECK2.JPG



sample

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2015-04-16-09-42-23_UDU-02-13_TECK2.JPG



overview facing west

2015-04-16-09-42-25_UDU-02-13_TECK2.JPG



groundsurface

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Station Id	UDU-02-14	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-16 9:25	Sample Team Initials	EL

Sample Collected? Y
X 422963.4641 m
Y 5400883.5456 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 100
Shells Presence N
Surface Debris Present? N

Texture Silty clayey very fine sand
little fine gravel
Vegetation Type if Present Pasture grasses

Anthropogenic Changes Present? N
Color 10YR 3/3
Debris Presence N

Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Soil
Surface Debris Removed Prior to Sampling? N
Vegetation Present? Y

Station Comments

Sample Collected from Station

Sample Id	UDU-02-ICS	Decision Unit	Soil Decision Unit 2
Sample Date Time	2015-04-17 8:30	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 2 buckets.		

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Photos Collected from Station UDU-02-14

2015-04-16-09-23-38_UDU-02-14_TECK2.JPG



groundsurface

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2015-04-16-09-23-44_UDU-02-14_TECK2.JPG



overview facing west

2015-04-16-09-26-57_UDU-02-14_TECK2.JPG



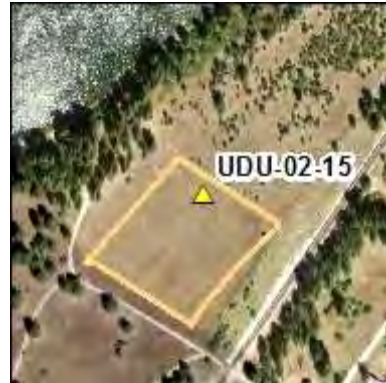
sample

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Station Id	UDU-02-15	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-16 9:16	Sample Team Initials	EL
Sample Collected?	Y		
X	422968.1359 m		
Y	5400866.1523 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty clayey very fine gravel	Vegetation Present?	Y
Vegetation Type if Present	Pasture grasses		

Station Comments

Sample Collected from Station

Sample Id	UDU-02-ICS	Decision Unit	Soil Decision Unit 2
Sample Date Time	2015-04-17 8:30	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 2 buckets.		

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Photos Collected from Station UDU-02-15

2015-04-16-09-18-54_UDU-02-15_TECK2.JPG



sample

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2015-04-16-09-15-12_UDU-02-15_TECK2.JPG



groundsurface

2015-04-16-09-15-18_UDU-02-15_TECK2.JPG



overview facing west

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Station Id	UDU-02-16	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-16 9:06	Sample Team Initials	EL

Sample Collected? Y
X 422964.1231 m
Y 5400859.3319 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2.5
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silt and clay with little very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pasture grasses		

Station Comments

Sample Collected from Station

Sample Id	UDU-02-ICS	Decision Unit	Soil Decision Unit 2
Sample Date Time	2015-04-17 8:30	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 2 buckets.		

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Photos Collected from Station UDU-02-16

2015-04-16-09-09-08_UDU-02-16_TECK2.JPG



sample

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2015-04-16-09-05-32_UDU-02-16_TECK2.JPG



groundsurface

2015-04-16-09-05-39_UDU-02-16_TECK2.JPG



overview facing west

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Station Id	UDU-02-17	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-16 14:30	Sample Team Initials	EL

Sample Collected? Y
X 422947.6759 m
Y 5400797.3635 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty clayey very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pasture grasses		

Station Comments

Sample Collected from Station

Sample Id	UDU-02-ICS	Decision Unit	Soil Decision Unit 2
Sample Date Time	2015-04-17 8:30	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 2 buckets.		

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Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-02-17

2015-04-16-14-36-39_UDU-02-17_TECK2.JPG



sample

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-16-14-29-41_UDU-02-17_TECK2.JPG



groundsurface

2015-04-16-14-29-46_UDU-02-17_TECK2.JPG



overview facing west

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-02-18	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-16 9:33	Sample Team Initials	EL

Sample Collected? Y
X 422945.1053 m
Y 5400871.4403 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silt clay very fine sand trace fine gravel	Vegetation Present?	Y
Vegetation Type if Present	Pasture grasses		

Station Comments

Sample Collected from Station

Sample Id	UDU-02-ICS	Decision Unit	Soil Decision Unit 2
Sample Date Time	2015-04-17 8:30	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 2 buckets.		

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Photos Collected from Station UDU-02-18

2015-04-16-09-31-37_UDU-02-18_TECK2.JPG



groundsurface

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2015-04-16-09-31-43_UDU-02-18_TECK2.JPG



overview facing west

2015-04-16-09-34-36_UDU-02-18_TECK2.JPG



sample

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Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-02-19	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-16 14:03	Sample Team Initials	EL

Sample Collected? Y
X 422925.9966 m
Y 5400807.2685 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine to fine sand little silt and clay	Vegetation Present?	Y
Vegetation Type if Present	Pasture grasses		

Station Comments

Sample Collected from Station

Sample Id	UDU-02-ICS	Decision Unit	Soil Decision Unit 2
Sample Date Time	2015-04-17 8:30	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 2 buckets.		

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Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-02-19

2015-04-16-14-02-04_UDU-02-19_TECK2.JPG



groundsurface

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-16-14-02-08_UDU-02-19_TECK2.JPG



overview facing west

2015-04-16-14-04-49_UDU-02-19_TECK2.JPG



sample

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ICS Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study

Station Id	UDU-02-20	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-16 8:33	Sample Team Initials	EL

Sample Collected? Y
X 423004.2236 m
Y 5400844.001 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 100
Shells Presence N
Surface Debris Present? N

Texture Very fine to fine sand little silt little clay coarse gravel
Vegetation Type if Present Pasture grasses

Anthropogenic Changes Present? N
Color 10YR 3/1
Debris Presence N

Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Soil
Surface Debris Removed Prior to Sampling? N
Vegetation Present? Y

Station Comments

Sample Collected from Station

Sample Id	UDU-02-ICS	Decision Unit	Soil Decision Unit 2
Sample Date Time	2015-04-17 8:30	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 2 buckets.		

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Photos Collected from Station UDU-02-20

2015-04-16-08-40-00_UDU-02-20_TECK2.JPG



sample

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-16-08-31-45_UDU-02-20_TECK2.JPG



groundsurface

2015-04-16-08-31-53_UDU-02-20_TECK2.JPG



overview facing west

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Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-02-21	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-16 13:54	Sample Team Initials	EL

Sample Collected? Y
X 422913.1429 m
Y 5400819.7364 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 100
Shells Presence N
Surface Debris Present? N

Texture Very fine to fine sand little medium coarse sand little silt and clay
Vegetation Type if Present Pasture grasses

Anthropogenic Changes Present? N
Color 2.5Y 4/5
Debris Presence N

Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Soil
Surface Debris Removed Prior to Sampling? N
Vegetation Present? Y

Station Comments

Sample Collected from Station

Sample Id	UDU-02-ICS	Decision Unit	Soil Decision Unit 2
Sample Date Time	2015-04-17 8:30	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 2 buckets.		

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Photos Collected from Station UDU-02-21

2015-04-16-13-57-01_UDU-02-21_TECK2.JPG



sample

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-16-13-52-44_UDU-02-21_TECK2.JPG



groundsurface

2015-04-16-13-52-51_UDU-02-21_TECK2.JPG



overview facing west

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Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-02-22	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-16 8:45	Sample Team Initials	EL

Sample Collected? Y
X 422974.4395 m
Y 5400855.2449 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty clayey fine to very fine sand trace coarse gravel	Vegetation Present?	Y
Vegetation Type if Present	Pasture grasses		

Station Comments

Sample Collected from Station

Sample Id	UDU-02-ICS	Decision Unit	Soil Decision Unit 2
Sample Date Time	2015-04-17 8:30	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 2 buckets.		

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Photos Collected from Station UDU-02-22

2015-04-16-08-48-20_UDU-02-22_TECK2.JPG



sample

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-16-08-43-50_UDU-02-22_TECK2.JPG



groundsurface

2015-04-16-08-43-58_UDU-02-22_TECK2.JPG



overview facing west

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Station Id	UDU-02-23	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-16 11:02	Sample Team Initials	EL

Sample Collected? Y
X 422964.8581 m
Y 5400828.3868 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty clayey very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pasture grasses		

Station Comments

Sample Collected from Station

Sample Id	UDU-02-ICS	Decision Unit	Soil Decision Unit 2
Sample Date Time	2015-04-17 8:30	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 2 buckets.		

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Photos Collected from Station UDU-02-23

2015-04-16-11-04-46_UDU-02-23_TECK2.JPG



sample

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2015-04-16-11-00-56_UDU-02-23_TECK2.JPG



groundsurface

2015-04-16-11-01-00_UDU-02-23_TECK2.JPG



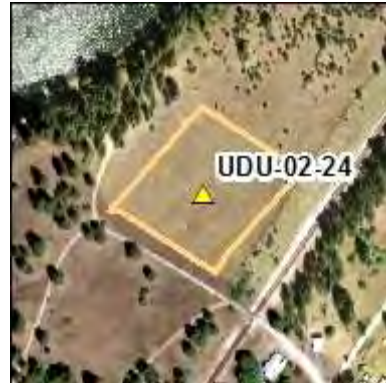
overview facing west

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Station Id	UDU-02-24	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-16 12:53	Sample Team Initials	EL
Sample Collected?	Y		
X	422949.5764 m		
Y	5400824.7078 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR
Debris Presence	N	Odor	N
Percent Canopy Coverage	0	Percent Ground Coverage	100
Sheen Presence	N	Shells Presence	N
Substrate Type	Soil	Surface Debris Present?	N
Surface Debris Removed Prior to Sampling?	N	Texture	Very fine sand some clay and silt
Vegetation Present?	Y	Vegetation Type if Present	Pasture grasses

Station Comments

Sample Collected from Station

Sample Id	UDU-02-ICS	Decision Unit	Soil Decision Unit 2
Sample Date Time	2015-04-17 8:30	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 2 buckets.		

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Photos Collected from Station UDU-02-24

2015-04-16-12-55-40_UDU-02-24_TECK2.JPG



sample

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-16-12-51-36_UDU-02-24_TECK2.JPG



groundsurface

2015-04-16-12-51-40_UDU-02-24_TECK2.JPG



overview facing west

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Station Id	UDU-02-25	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-16 13:33	Sample Team Initials	EL

Sample Collected? Y
X 422899.1605 m
Y 5400830.0597 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand some silt and clay trace coarse sand	Vegetation Present?	Y
Vegetation Type if Present	Pasture grasses		

Station Comments

Sample Collected from Station

Sample Id	UDU-02-ICS	Decision Unit	Soil Decision Unit 2
Sample Date Time	2015-04-17 8:30	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 2 buckets.		

Photos Collected from Station UDU-02-25

2015-04-16-13-31-31_UDU-02-25_TECK2.JPG



groundsurface

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2015-04-16-13-31-36_UDU-02-25_TECK2.JPG



overview facing west

2015-04-16-13-35-11_UDU-02-25_TECK2.JPG



sample

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-02-26	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-16 14:13	Sample Team Initials	EL

Sample Collected? Y
X 422921.4437 m
Y 5400803.6393 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand little silt and clay	Vegetation Present?	Y
Vegetation Type if Present	Pasture grasses		

Station Comments

Sample Collected from Station

Sample Id	UDU-02-ICS	Decision Unit	Soil Decision Unit 2
Sample Date Time	2015-04-17 8:30	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 2 buckets.		

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Photos Collected from Station UDU-02-26

2015-04-16-14-11-59_UDU-02-26_TECK2.JPG



groundsurface

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2015-04-16-14-12-08_UDU-02-26_TECK2.JPG



overview facing west

2015-04-16-14-15-16_UDU-02-26_TECK2.JPG



sample

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Station Id	UDU-02-27	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-16 11:11	Sample Team Initials	EL

Sample Collected? Y
X 422966.5131 m
Y 5400798.0754 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty clayey very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pasture grasses		

Station Comments probable shotgun pellet within 0_6in. no oxidation. Not included in sample.

Sample Collected from Station

Sample Id	UDU-02-ICS	Decision Unit	Soil Decision Unit 2
Sample Date Time	2015-04-17 8:30	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 2 buckets.		

Photos Collected from Station UDU-02-27

2015-04-16-11-19-51_UDU-02-27_TECK2.JPG



lead shotgun pellet

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-16-11-20-32_UDU-02-27_TECK2.JPG



sample

2015-04-16-11-10-35_UDU-02-27_TECK2.JPG



groundsurface

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-16-11-10-40_UDU-02-27_TECK2.JPG



overview facing west

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Bosburg Flat Beach Refined Sediment and Soil Study

Station Id	UDU-02-28	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-16 8:25	Sample Team Initials	EL

Sample Collected? Y
X 423020.2721 m
Y 5400841.385 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine to fine sand little silt trace fine gravel	Vegetation Present?	Y
Vegetation Type if Present	Pasture grasses		

Station Comments

Sample Collected from Station

Sample Id	UDU-02-ICS	Decision Unit	Soil Decision Unit 2
Sample Date Time	2015-04-17 8:30	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 2 buckets.		

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Photos Collected from Station UDU-02-28

2015-04-16-08-23-12_UDU-02-28_TECK2.JPG



sample

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-16-08-16-50_UDU-02-28_TECK2.JPG



groundsurface

2015-04-16-08-16-56_UDU-02-28_TECK2.JPG



overview facing west

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Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-02-29	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-16 9:53	Sample Team Initials	EL

Sample Collected? Y
X 422928.0125 m
Y 5400854.8539 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty clayey very fine sand little medium to coarse sand trace fine gravel	Vegetation Present?	N
Vegetation Type if Present	Pasture grasses		

Station Comments

Sample Collected from Station

Sample Id	UDU-02-ICS	Decision Unit	Soil Decision Unit 2
Sample Date Time	2015-04-17 8:30	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 2 buckets.		

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Photos Collected from Station UDU-02-29

2015-04-16-09-51-40_UDU-02-29_TECK2.JPG



groundsurface

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-16-09-51-46_UDU-02-29_TECK2.JPG



overview facing west

2015-04-16-09-55-30_UDU-02-29_TECK2.JPG



sample

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-02-30	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-16 14:21	Sample Team Initials	EL

Sample Collected? Y
X 422935.4415 m
Y 5400804.2641 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand little coarse sand	Vegetation Present?	Y
Vegetation Type if Present	Pasture grasses		

Station Comments

Sample Collected from Station

Sample Id	UDU-02-ICS	Decision Unit	Soil Decision Unit 2
Sample Date Time	2015-04-17 8:30	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 2 buckets.		

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Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-02-30

2015-04-16-14-20-22_UDU-02-30_TECK2.JPG



groundsurface

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-16-14-20-28_UDU-02-30_TECK2.JPG



overview facing west

2015-04-16-14-23-22_UDU-02-30_TECK2.JPG



sample

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-03-01	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-17 9:31	Sample Team Initials	AP

Sample Collected? Y
X 422892.2548 m
Y 5400764.1788 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with clay and rounded gravel	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments south of bossburg in open field between pine tree clusters.

Sample Collected from Station

Sample Id	UDU-03-ICS	Decision Unit	Soil Decision Unit 3
Sample Date Time	2015-04-18 10:10	Collection Method	ICS
Initials on CoC	KY	Matrix	Soil
Sample Split	EPA	Replicate	No Replicate
Sample Comments	Ken Yang checked all 30 increments and composited into 1 bucket.		

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Photos Collected from Station UDU-03-01

2015-04-17-09-25-58_UDU-03-01_TECK1.JPG



view north

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-17-09-27-24_UDU-03-01_TECK1.JPG



2015-04-17-09-27-37_UDU-03-01_TECK1.JPG



view north

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Bossburg Flat Beach Refined Sediment and Soil Study

Station Id	UDU-03-02	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-17 13:16	Sample Team Initials	AP

Sample Collected? Y
X 422854.899 m
Y 5400796.9402 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description Sample in middle of south fork bossburg access road

Biological Visual Presence N

Cultural Oversight Inspection Conducted? Y

Odor N

Percent Ground Coverage 0

Shells Presence N

Surface Debris Present? Y

Texture Fine sand with trace clay and trace fine gravel

Vegetation Type if Present N

Anthropogenic Changes Present? N

Color 7.5YR 4/2

Debris Presence Some pine duff

Percent Canopy Coverage 40

Sheen Presence N

Substrate Type Soil

Surface Debris Removed Prior to Sampling? N

Vegetation Present? N

Station Comments sample location is located in the middle of the south fork of the bossburg access road

Sample Collected from Station

Sample Id	UDU-03-ICS	Decision Unit	Soil Decision Unit 3
Sample Date Time	2015-04-18 10:10	Collection Method	ICS
Initials on CoC	KY	Matrix	Soil
Sample Split	EPA	Replicate	No Replicate
Sample Comments	Ken Yang checked all 30 increments and composited into 1 bucket.		

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Photos Collected from Station UDU-03-02

2015-04-17-13-11-11_UDU-03-02_TECK1.JPG



view north

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2015-04-17-13-13-04_UDU-03-02_TECK1.JPG



2015-04-17-13-13-19_UDU-03-02_TECK1.JPG



view north

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Station Id	UDU-03-03	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-17 13:53	Sample Team Initials	AP

Sample Collected? Y
X 422852.3964 m
Y 5400816.5004 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	75
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with clay and trace rounded gravel	Vegetation Present?	Y
Vegetation Type if Present	Some moss and pine trees		

Station Comments sample location just west of the T in the bossburg access road, also adjacent to barbed wire fence

Sample Collected from Station

Sample Id	UDU-03-ICS	Decision Unit	Soil Decision Unit 3
Sample Date Time	2015-04-18 10:10	Collection Method	ICS
Initials on CoC	KY	Matrix	Soil
Sample Split	EPA	Replicate	No Replicate
Sample Comments	Ken Yang checked all 30 increments and composited into 1 bucket.		

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Photos Collected from Station UDU-03-03

2015-04-17-13-49-17_UDU-03-03_TECK1.JPG



view north

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2015-04-17-13-50-30_UDU-03-03_TECK1.JPG



2015-04-17-13-50-45_UDU-03-03_TECK1.JPG



view north

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Station Id	UDU-03-04	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-17 11:46	Sample Team Initials	AP

Sample Collected? Y
X 422911.5205 m
Y 5400792.3698 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with clay and trace rounded fine gravels	Vegetation Present?	N
Vegetation Type if Present	Grass		

Station Comments Located in open field just north of barbed wire fence and bossburg access road.

Sample Collected from Station

Sample Id	UDU-03-ICS	Decision Unit	Soil Decision Unit 3
Sample Date Time	2015-04-18 10:10	Collection Method	ICS
Initials on CoC	KY	Matrix	Soil
Sample Split	EPA	Replicate	No Replicate
Sample Comments	Ken Yang checked all 30 increments and composited into 1 bucket.		

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Photos Collected from Station UDU-03-04

2015-04-17-11-40-23_UDU-03-04_TECK1.JPG



view north

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2015-04-17-11-41-55_UDU-03-04_TECK1.JPG



view north

2015-04-17-11-41-59_UDU-03-04_TECK1.JPG



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2015-04-17-11-42-10_UDU-03-04_TECK1.JPG



view north

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Station Id	UDU-03-05	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-16 15:31	Sample Team Initials	AP

Sample Collected? Y
X 422790.7509 m
Y 5400866.1934 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 6/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Some grass
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	5	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments location on steep bank leading down to river.

Sample Collected from Station

Sample Id	UDU-03-ICS	Decision Unit	Soil Decision Unit 3
Sample Date Time	2015-04-18 10:10	Collection Method	ICS
Initials on CoC	KY	Matrix	Soil
Sample Split	EPA	Replicate	No Replicate
Sample Comments	Ken Yang checked all 30 increments and composited into 1 bucket.		

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Photos Collected from Station UDU-03-05

2015-04-16-15-20-56_UDU-03-05_TECK1.JPG



view east

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2015-04-16-15-25-22_UDU-03-05_TECK1.JPG



2015-04-16-15-25-29_UDU-03-05_TECK1.JPG



view north

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Station Id	UDU-03-06	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-17 14:31	Sample Team Initials	AP

Sample Collected? Y
X 422802.5046 m
Y 5400821.1634 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with trace clay and gravel	Vegetation Present?	Y
Vegetation Type if Present	Grass and pine trees		

Station Comments located in open field west of south fork of bossburg access road

Sample Collected from Station

Sample Id	UDU-03-ICS	Decision Unit	Soil Decision Unit 3
Sample Date Time	2015-04-18 10:10	Collection Method	ICS
Initials on CoC	KY	Matrix	Soil
Sample Split	EPA	Replicate	No Replicate
Sample Comments	Ken Yang checked all 30 increments and composited into 1 bucket.		

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Photos Collected from Station UDU-03-06

2015-04-17-14-24-17_UDU-03-06_TECK1.JPG



view north

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2015-04-17-14-27-12_UDU-03-06_TECK1.JPG



2015-04-17-14-27-26_UDU-03-06_TECK1.JPG



view north

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Station Id	UDU-03-07	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-17 8:32	Sample Team Initials	AP

Sample Collected? Y
X 422937.2044 m
Y 5400762.2352 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description Immediately adjacent to barbed wire fence
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 100
Shells Presence N
Surface Debris Present? N
Texture Fine sand with clay and trace rounded gravel
Vegetation Type if Present Grass

Anthropogenic Changes Present? N
Color 7.5YR 3/2
Debris Presence N
Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Soil
Surface Debris Removed Prior to Sampling? N
Vegetation Present? Y

Station Comments sample is immediately adjacent to bossburg access road, north of road, south of barbed wire fence.

Sample Collected from Station

Sample Id	UDU-03-ICS	Decision Unit	Soil Decision Unit 3
Sample Date Time	2015-04-18 10:10	Collection Method	ICS
Initials on CoC	KY	Matrix	Soil
Sample Split	EPA	Replicate	No Replicate
Sample Comments	Ken Yang checked all 30 increments and composited into 1 bucket.		

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Photos Collected from Station UDU-03-07

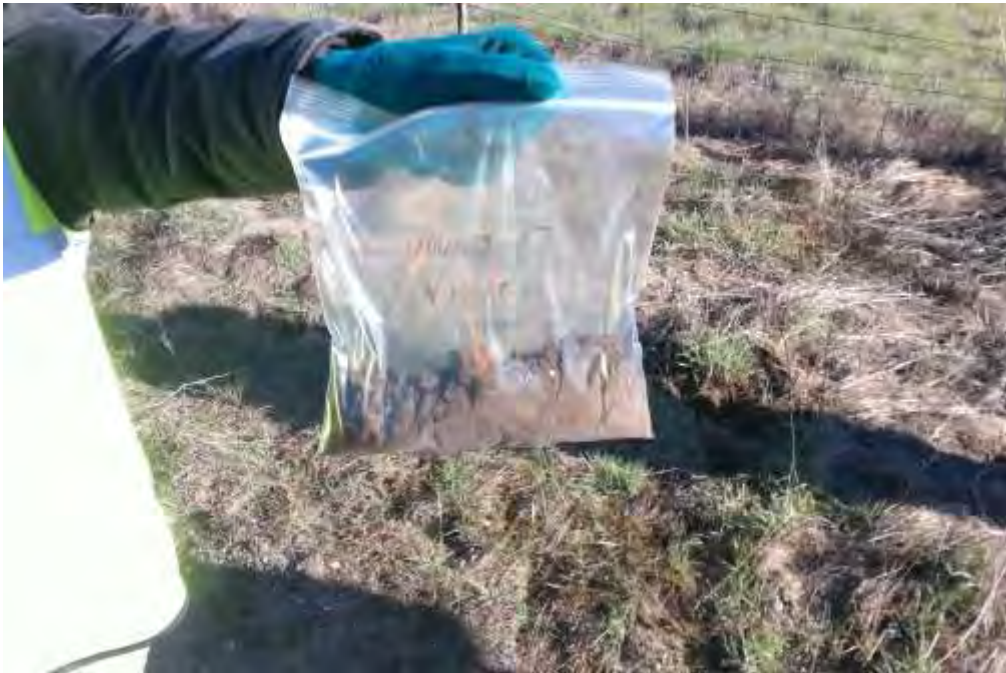
2015-04-17-08-26-44_UDU-03-07_TECK1.JPG



view north

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2015-04-17-08-28-01_UDU-03-07_TECK1.JPG



2015-04-17-08-28-14_UDU-03-07_TECK1.JPG



view north

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Station Id	UDU-03-08	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-17 8:08	Sample Team Initials	AP

Sample Collected? Y
X 422915.2941 m
Y 5400768.9773 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with clay	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments sample location is immediately adjacent to bossburg access road, on the south side.

Sample Collected from Station

Sample Id	UDU-03-ICS	Decision Unit	Soil Decision Unit 3
Sample Date Time	2015-04-18 10:10	Collection Method	ICS
Initials on CoC	KY	Matrix	Soil
Sample Split	EPA	Replicate	No Replicate
Sample Comments	Ken Yang checked all 30 increments and composited into 1 bucket.		

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Photos Collected from Station UDU-03-08

2015-04-17-07-57-51_UDU-03-08_TECK1.JPG



view north

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2015-04-17-08-03-26_UDU-03-08_TECK1.JPG



2015-04-17-08-03-39_UDU-03-08_TECK1.JPG



view north

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Station Id	UDU-03-09	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-17 9:17	Sample Team Initials	AP

Sample Collected? Y
X 422901.2414 m
Y 5400748.3267 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	10
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with clay and trace rounded fine gravel	Vegetation Present?	Y
Vegetation Type if Present	Grass and pine trees		

Station Comments located immediately adjacent to large pine tree, south of bossburg access road.

Sample Collected from Station

Sample Id	UDU-03-ICS	Decision Unit	Soil Decision Unit 3
Sample Date Time	2015-04-18 10:10	Collection Method	ICS
Initials on CoC	KY	Matrix	Soil
Sample Split	EPA	Replicate	No Replicate
Sample Comments	Ken Yang checked all 30 increments and composited into 1 bucket.		

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Photos Collected from Station UDU-03-09

2015-04-17-09-10-49_UDU-03-09_TECK1.JPG



view north

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2015-04-17-09-12-26_UDU-03-09_TECK1.JPG



2015-04-17-09-12-46_UDU-03-09_TECK1.JPG



view north

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Station Id	UDU-03-10	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-16 16:02	Sample Team Initials	DC

Sample Collected? Y
X 422806.344 m
Y 5400858.5687 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Present?	N	Biological Visual Presence	N
Color	7.5YR 3/2	Cultural Oversight Inspection Conducted?	Y
Debris Presence	N	Odor	N
Percent Canopy Coverage	15	Percent Ground Coverage	100
Sheen Presence	N	Shells Presence	N
Substrate Type	Soil	Surface Debris Present?	N
Surface Debris Removed Prior to Sampling?	Y	Texture	Fine sand with silt and cla
Vegetation Present?	Y	Vegetation Type if Present	Grass, pine trees
Station Comments	none		

Sample Collected from Station

Sample Id	UDU-03-ICS	Decision Unit	Soil Decision Unit 3
Sample Date Time	2015-04-18 10:10	Collection Method	ICS
Initials on CoC	KY	Matrix	Soil
Sample Split	EPA	Replicate	No Replicate
Sample Comments	Ken Yang checked all 30 increments and composited into 1 bucket.		

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Photos Collected from Station UDU-03-10

2015-04-16-15-50-28_UDU-03-10_TECK1.JPG



view west

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2015-04-16-15-54-29_UDU-03-10_TECK1.JPG



delete

2015-04-16-15-54-37_UDU-03-10_TECK1.JPG



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2015-04-16-15-54-56_UDU-03-10_TECK1.JPG



view north

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Station Id	UDU-03-11	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-17 14:17	Sample Team Initials	AP

Sample Collected? Y
X 422830.2799 m
Y 5400806.1278 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Location appears to be affected by bioturbation	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	50
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with trace silt and trace rounded gravel	Vegetation Present?	Y
Vegetation Type if Present	Pine trees and grass		

Station Comments located in open field west of south fork of bossburg access road

Sample Collected from Station

Sample Id	UDU-03-ICS	Decision Unit	Soil Decision Unit 3
Sample Date Time	2015-04-18 10:10	Collection Method	ICS
Initials on CoC	KY	Matrix	Soil
Sample Split	EPA	Replicate	No Replicate
Sample Comments	Ken Yang checked all 30 increments and composited into 1 bucket.		

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Photos Collected from Station UDU-03-11

2015-04-17-14-10-48_UDU-03-11_TECK1.JPG



view north

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2015-04-17-14-13-03_UDU-03-11_TECK1.JPG



2015-04-17-14-13-19_UDU-03-11_TECK1.JPG



view north

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Station Id	UDU-03-12	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-17 14:05	Sample Team Initials	AP

Sample Collected? Y
X 422838.8685 m
Y 5400807.3791 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	80
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with trace clay and rounded gravel	Vegetation Present?	Y
Vegetation Type if Present	Pine trees		

Station Comments located just west of south fork of bossburg access road

Sample Collected from Station

Sample Id	UDU-03-ICS	Decision Unit	Soil Decision Unit 3
Sample Date Time	2015-04-18 10:10	Collection Method	ICS
Initials on CoC	KY	Matrix	Soil
Sample Split	EPA	Replicate	No Replicate
Sample Comments	Ken Yang checked all 30 increments and composited into 1 bucket.		

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Photos Collected from Station UDU-03-12

2015-04-17-13-59-42_UDU-03-12_TECK1.JPG



view north

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2015-04-17-14-02-18_UDU-03-12_TECK1.JPG



2015-04-17-14-02-31_UDU-03-12_TECK1.JPG



view north

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Station Id	UDU-03-13	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-17 8:53	Sample Team Initials	AP

Sample Collected? Y
X 422913.6852 m
Y 5400738.3778 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with clay and rounded gravel	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments sample location in open field south of bossburg access road

Sample Collected from Station

Sample Id	UDU-03-ICS	Decision Unit	Soil Decision Unit 3
Sample Date Time	2015-04-18 10:10	Collection Method	ICS
Initials on CoC	KY	Matrix	Soil
Sample Split	EPA	Replicate	No Replicate
Sample Comments	Ken Yang checked all 30 increments and composited into 1 bucket.		

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Photos Collected from Station UDU-03-13

2015-04-17-08-38-18_UDU-03-13_TECK1.JPG



view north

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2015-04-17-08-39-46_UDU-03-13_TECK1.JPG



2015-04-17-08-39-59_UDU-03-13_TECK1.JPG



view north

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Station Id	UDU-03-14	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-17 11:34	Sample Team Initials	AP

Sample Collected? Y
X 422901.6594 m
Y 5400784.7492 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description Immediately adjacent to barbed wire fence and bossberg access road

Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 100
Shells Presence N
Surface Debris Present? N

Texture Fine sand with clay
Vegetation Type if Present Grass

Station Comments sample between barbed wire fence and bossburg access road

Sample Collected from Station

Sample Id	UDU-03-ICS	Decision Unit	Soil Decision Unit 3
Sample Date Time	2015-04-18 10:10	Collection Method	ICS
Initials on CoC	KY	Matrix	Soil
Sample Split	EPA	Replicate	No Replicate
Sample Comments	Ken Yang checked all 30 increments and composited into 1 bucket.		

Anthropogenic Changes Present? N
Color 7.5YR 3/2
Debris Presence N
Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Soil
Surface Debris Removed Prior to Sampling? N
Vegetation Present? Y

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Photos Collected from Station UDU-03-14

2015-04-17-11-28-41_UDU-03-14_TECK1.JPG



north

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2015-04-17-11-30-07_UDU-03-14_TECK1.JPG



2015-04-17-11-30-18_UDU-03-14_TECK1.JPG



view north

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Station Id	UDU-03-15	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-17 11:57	Sample Team Initials	AP

Sample Collected? Y
X 422898.8829 m
Y 5400795.7081 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with clay	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments located in open field north of barbed wire fence north of bossburg access road.

Sample Collected from Station

Sample Id	UDU-03-ICS	Decision Unit	Soil Decision Unit 3
Sample Date Time	2015-04-18 10:10	Collection Method	ICS
Initials on CoC	KY	Matrix	Soil
Sample Split	EPA	Replicate	No Replicate
Sample Comments	Ken Yang checked all 30 increments and composited into 1 bucket.		

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Photos Collected from Station UDU-03-15

2015-04-17-11-51-37_UDU-03-15_TECK1.JPG



view north

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2015-04-17-11-53-47_UDU-03-15_TECK1.JPG



2015-04-17-11-53-57_UDU-03-15_TECK1.JPG



view north

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Station Id	UDU-03-16	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-17 10:00	Sample Team Initials	AP

Sample Collected? Y
X 422888.585 m
Y 5400779.5741 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	40
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with clay	Vegetation Present?	Y
Vegetation Type if Present	Grass and pine trees		

Station Comments south of bossburg access road in open field, adjacent to large pine tree.

Sample Collected from Station

Sample Id	UDU-03-ICS	Decision Unit	Soil Decision Unit 3
Sample Date Time	2015-04-18 10:10	Collection Method	ICS
Initials on CoC	KY	Matrix	Soil
Sample Split	EPA	Replicate	No Replicate
Sample Comments	Ken Yang checked all 30 increments and composited into 1 bucket.		

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Photos Collected from Station UDU-03-16

2015-04-17-09-53-06_UDU-03-16_TECK1.JPG



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2015-04-17-09-55-48_UDU-03-16_TECK1.JPG



2015-04-17-09-56-00_UDU-03-16_TECK1.JPG



view north

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Station Id	UDU-03-17	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-17 15:35	Sample Team Initials	AP

Sample Collected? Y
X 422788.3657 m
Y 5400817.9356 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 4/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Clayet fine sand with rounded gravel	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments located just south of gully located on west side of decision unit.

Sample Collected from Station

Sample Id	UDU-03-ICS	Decision Unit	Soil Decision Unit 3
Sample Date Time	2015-04-18 10:10	Collection Method	ICS
Initials on CoC	KY	Matrix	Soil
Sample Split	EPA	Replicate	No Replicate
Sample Comments	Ken Yang checked all 30 increments and composited into 1 bucket.		

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Photos Collected from Station UDU-03-17

2015-04-17-14-36-34_UDU-03-17_TECK1.JPG



view north

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2015-04-17-15-28-57_UDU-03-17_TECK1.JPG



2015-04-17-15-29-07_UDU-03-17_TECK1.JPG



view north

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Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-03-18	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-17 9:46	Sample Team Initials	AP

Sample Collected? Y
X 422894.0406 m
Y 5400777.4856 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with clay	Vegetation Present?	Y
Vegetation Type if Present	Grass and pine tree		

Station Comments sample located directly under large pine tree, immediately south of bossburg access road.

Sample Collected from Station

Sample Id	UDU-03-ICS	Decision Unit	Soil Decision Unit 3
Sample Date Time	2015-04-18 10:10	Collection Method	ICS
Initials on CoC	KY	Matrix	Soil
Sample Split	EPA	Replicate	No Replicate
Sample Comments	Ken Yang checked all 30 increments and composited into 1 bucket.		

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Photos Collected from Station UDU-03-18

2015-04-17-09-39-08_UDU-03-18_TECK1.JPG



view north

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2015-04-17-09-43-00_UDU-03-18_TECK1.JPG



2015-04-17-09-43-15_UDU-03-18_TECK1.JPG



view north

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Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-03-19	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-16 16:23	Sample Team Initials	AP
Sample Collected?	Y		
X	422818.5587 m		
Y	5400827.8321 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	10
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with trace clay	Vegetation Present?	Y
Vegetation Type if Present	Grass and pine trees		

Station Comments UDU-03-19 was moved to reserse station UDU-03-R03 after consultation with the EPA. The original location was on a 46 degree slope consisting of unconsolidated sand and cobbles, which made it unsafe to sample.

Sample Collected from Station

Sample Id	UDU-03-ICS	Decision Unit	Soil Decision Unit 3
Sample Date Time	2015-04-18 10:10	Collection Method	ICS
Initials on CoC	KY	Matrix	Soil
Sample Split	EPA	Replicate	No Replicate
Sample Comments	Ken Yang checked all 30 increments and composited into 1 bucket.		

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Photos Collected from Station UDU-03-19

2015-04-16-16-09-09_UDU-03-19_TECK1.JPG



view north

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2015-04-16-16-18-52_UDU-03-19_TECK1.JPG



2015-04-16-16-19-07_UDU-03-19_TECK1.JPG



view north

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Station Id	UDU-03-20	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-16 15:13	Sample Team Initials	AP

Sample Collected? Y
X 422761.016 m
Y 5400835.0516 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments sample located on steep slope adjacent to river, in possible landslide deposit.

Sample Collected from Station

Sample Id	UDU-03-ICS	Decision Unit	Soil Decision Unit 3
Sample Date Time	2015-04-18 10:10	Collection Method	ICS
Initials on CoC	KY	Matrix	Soil
Sample Split	EPA	Replicate	No Replicate
Sample Comments	Ken Yang checked all 30 increments and composited into 1 bucket.		

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Photos Collected from Station UDU-03-20

2015-04-16-15-04-14_UDU-03-20_TECK1.JPG



view east

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2015-04-16-15-06-12_UDU-03-20_TECK1.JPG



2015-04-16-15-07-05_UDU-03-20_TECK1.JPG



view north

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Station Id	UDU-03-21	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-17 12:51	Sample Team Initials	AP

Sample Collected? Y
X 422871.3904 m
Y 5400787.094 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with clay	Vegetation Present?	Y
Vegetation Type if Present	Pine trees		

Station Comments directly under large pine tree, just south of T in bossburg access road

Sample Collected from Station

Sample Id	UDU-03-ICS	Decision Unit	Soil Decision Unit 3
Sample Date Time	2015-04-18 10:10	Collection Method	ICS
Initials on CoC	KY	Matrix	Soil
Sample Split	EPA	Replicate	No Replicate
Sample Comments	Ken Yang checked all 30 increments and composited into 1 bucket.		

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Photos Collected from Station UDU-03-21

2015-04-17-12-46-39_UDU-03-21_TECK1.JPG



view north

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2015-04-17-12-48-07_UDU-03-21_TECK1.JPG



2015-04-17-12-48-17_UDU-03-21_TECK1.JPG



view north

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Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-03-22	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-17 13:42	Sample Team Initials	AP

Sample Collected? Y
X 422847.3536 m
Y 5400802.1999 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with clay and trace fine rounded gravel	Vegetation Present?	Y
Vegetation Type if Present	Pine trees and some grass		

Station Comments sample location just west of the south fork of bossburg access road

Sample Collected from Station

Sample Id	UDU-03-ICS	Decision Unit	Soil Decision Unit 3
Sample Date Time	2015-04-18 10:10	Collection Method	ICS
Initials on CoC	KY	Matrix	Soil
Sample Split	EPA	Replicate	No Replicate
Sample Comments	Ken Yang checked all 30 increments and composited into 1 bucket.		

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Photos Collected from Station UDU-03-22

2015-04-17-13-37-27_UDU-03-22_TECK1.JPG



view north

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2015-04-17-13-39-17_UDU-03-22_TECK1.JPG



2015-04-17-13-39-26_UDU-03-22_TECK1.JPG



view north

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Station Id	UDU-03-23	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-17 16:12	Sample Team Initials	AP

Sample Collected? Y
X 422778.8371 m
Y 5400826.7082 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description Man made gully

Biological Visual Presence N

Cultural Oversight Inspection Conducted? Y

Odor N

Percent Ground Coverage 100

Shells Presence N

Surface Debris Present? N

Texture Silty fine to coarse sand with rounded gravel

Vegetation Type if Present Grass

Station Comments sample location moved 1.5 meters west of proposed location. located within what appears to be a man made gully on the west side of the decision unit.

Anthropogenic Changes Present? N

Color 7.5YR 3/1

Debris Presence Pine duff

Percent Canopy Coverage 0

Sheen Presence N

Substrate Type Soil

Surface Debris Removed Prior to Sampling? N

Vegetation Present? Y

Sample Collected from Station

Sample Id	UDU-03-ICS	Decision Unit	Soil Decision Unit 3
Sample Date Time	2015-04-18 10:10	Collection Method	ICS
Initials on CoC	KY	Matrix	Soil
Sample Split	EPA	Replicate	No Replicate
Sample Comments	Ken Yang checked all 30 increments and composited into 1 bucket.		

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Photos Collected from Station UDU-03-23

2015-04-17-15-56-15_UDU-03-23_TECK1.JPG



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2015-04-17-15-59-50_UDU-03-23_TECK1.JPG



2015-04-17-16-00-02_UDU-03-23_TECK1.JPG



view north

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Station Id	UDU-03-24	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-17 13:31	Sample Team Initials	AP

Sample Collected? Y
X 422859.202 m
Y 5400779.2629 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with trace clay	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments in open field SE of T in bossburg access road

Sample Collected from Station

Sample Id	UDU-03-ICS	Decision Unit	Soil Decision Unit 3
Sample Date Time	2015-04-18 10:10	Collection Method	ICS
Initials on CoC	KY	Matrix	Soil
Sample Split	EPA	Replicate	No Replicate
Sample Comments	Ken Yang checked all 30 increments and composited into 1 bucket.		

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Photos Collected from Station UDU-03-24

2015-04-17-13-24-25_UDU-03-24_TECK1.JPG



view north

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2015-04-17-13-26-52_UDU-03-24_TECK1.JPG



2015-04-17-13-26-59_UDU-03-24_TECK1.JPG



view north

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Station Id	UDU-03-25	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-17 15:48	Sample Team Initials	AP

Sample Collected? Y
X 422786.4337 m
Y 5400823.0176 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description Constructed gully

Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 100
Shells Presence N
Surface Debris Present? N

Texture Gravelly fine sand with clay
Vegetation Type if Present Grass

Station Comments sample location is immediately south of what looks like a man made gully lined with cobbles and boulders. location was moved approximately 2 meters south due to refusal.

Anthropogenic Changes Present? N
Color 7.5YR 3/1
Debris Presence N
Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Soil
Surface Debris Removed Prior to Sampling? N
Vegetation Present? Y

Sample Collected from Station

Sample Id	UDU-03-ICS	Decision Unit	Soil Decision Unit 3
Sample Date Time	2015-04-18 10:10	Collection Method	ICS
Initials on CoC	KY	Matrix	Soil
Sample Split	EPA	Replicate	No Replicate
Sample Comments	Ken Yang checked all 30 increments and composited into 1 bucket.		

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Photos Collected from Station UDU-03-25

2015-04-17-15-42-53_UDU-03-25_TECK1.JPG



view north

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2015-04-17-15-44-48_UDU-03-25_TECK1.JPG



2015-04-17-15-44-54_UDU-03-25_TECK1.JPG



VIEW NORTH

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Station Id	UDU-03-26	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-17 13:03	Sample Team Initials	AP

Sample Collected? Y
X 422863.1524 m
Y 5400800.8871 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description Sample is in middle of bossburg access road
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 10
Shells Presence N
Surface Debris Present? N
Texture Fine sand with clay and trace rounded gravel
Vegetation Type if Present N

Anthropogenic Changes Present? N
Color 10YR 4/2
Debris Presence N
Percent Canopy Coverage 50
Sheen Presence N
Substrate Type Soil
Surface Debris Removed Prior to Sampling? N
Vegetation Present? N

Station Comments sample is located in middle of road on south fork of bossburg access road

Sample Collected from Station

Sample Id	UDU-03-ICS	Decision Unit	Soil Decision Unit 3
Sample Date Time	2015-04-18 10:10	Collection Method	ICS
Initials on CoC	KY	Matrix	Soil
Sample Split	EPA	Replicate	No Replicate
Sample Comments	Ken Yang checked all 30 increments and composited into 1 bucket.		

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Photos Collected from Station UDU-03-26

2015-04-17-12-58-30_UDU-03-26_TECK1.JPG



view north

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2015-04-17-12-59-59_UDU-03-26_TECK1.JPG



2015-04-17-13-00-14_UDU-03-26_TECK1.JPG



view north

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Station Id	UDU-03-27	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-17 11:24	Sample Team Initials	AP

Sample Collected? Y
X 422906.2723 m
Y 5400778.4071 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description Sample in middle of bossburg access road
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 100
Shells Presence N
Surface Debris Present? N
Texture Fine sand with clay
Vegetation Type if Present Grass

Anthropogenic Changes Present? N
Color 7.5YR 3/2
Debris Presence N
Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Soil
Surface Debris Removed Prior to Sampling? N
Vegetation Present? Y

Station Comments sample located in middle of bossburg access road, move 1 meter south to grass on side of road.

Sample Collected from Station

Sample Id	UDU-03-ICS	Decision Unit	Soil Decision Unit 3
Sample Date Time	2015-04-18 10:10	Collection Method	ICS
Initials on CoC	KY	Matrix	Soil
Sample Split	EPA	Replicate	No Replicate
Sample Comments	Ken Yang checked all 30 increments and composited into 1 bucket.		

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Photos Collected from Station UDU-03-27

2015-04-17-11-18-41_UDU-03-27_TECK1.JPG



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2015-04-17-11-20-16_UDU-03-27_TECK1.JPG



2015-04-17-11-20-23_UDU-03-27_TECK1.JPG



view north

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Station Id	UDU-03-28	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-16 15:43	Sample Team Initials	AP

Sample Collected? Y
X 422776.6748 m
Y 5400848.6856 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	50
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments located on north side of steep gully leading down to beach, adjacent to tree.

Sample Collected from Station

Sample Id	UDU-03-ICS	Decision Unit	Soil Decision Unit 3
Sample Date Time	2015-04-18 10:10	Collection Method	ICS
Initials on CoC	KY	Matrix	Soil
Sample Split	EPA	Replicate	No Replicate
Sample Comments	Ken Yang checked all 30 increments and composited into 1 bucket.		

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Photos Collected from Station UDU-03-28

2015-04-16-15-35-31_UDU-03-28_TECK1.JPG



view north

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2015-04-16-15-38-54_UDU-03-28_TECK1.JPG



view north

2015-04-16-15-39-14_UDU-03-28_TECK1.JPG



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Station Id	UDU-03-29	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-17 12:07	Sample Team Initials	AP

Sample Collected? Y
X 422871.6127 m
Y 5400801.1441 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description Immediately adjacent to barbed wire fence
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 100
Shells Presence N
Surface Debris Present? N
Texture Fine sand with clay
Vegetation Type if Present Pine trees and grass

Anthropogenic Changes Present? N
Color 7.5YR 3/2
Debris Presence Pine duff
Percent Canopy Coverage 100
Sheen Presence N
Substrate Type Soil
Surface Debris Removed Prior to Sampling? N
Vegetation Present? Y

Station Comments immediately north of bosburg access road adjacent to barbed wire fence.

Sample Collected from Station

Sample Id	UDU-03-ICS	Decision Unit	Soil Decision Unit 3
Sample Date Time	2015-04-18 10:10	Collection Method	ICS
Initials on CoC	KY	Matrix	Soil
Sample Split	EPA	Replicate	No Replicate
Sample Comments	Ken Yang checked all 30 increments and composited into 1 bucket.		

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Photos Collected from Station UDU-03-29

2015-04-17-12-02-54_UDU-03-29_TECK1.JPG



view east

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2015-04-17-12-04-05_UDU-03-29_TECK1.JPG



2015-04-17-12-04-19_UDU-03-29_TECK1.JPG



view north

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Station Id	UDU-03-30	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-17 9:05	Sample Team Initials	AP

Sample Collected? Y
X 422914.2269 m
Y 5400756.4747 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with clay and fine rounded gravel	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments location is south of bossburg access road, adjacent to large pine tree.

Sample Collected from Station

Sample Id	UDU-03-ICS	Decision Unit	Soil Decision Unit 3
Sample Date Time	2015-04-18 10:10	Collection Method	ICS
Initials on CoC	KY	Matrix	Soil
Sample Split	EPA	Replicate	No Replicate
Sample Comments	Ken Yang checked all 30 increments and composited into 1 bucket.		

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Photos Collected from Station UDU-03-30

2015-04-17-08-59-08_UDU-03-30_TECK1.JPG



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2015-04-17-08-59-21_UDU-03-30_TECK1.JPG



view north

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-03-R01	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-03-ICS	Decision Unit	Soil Decision Unit 3
Sample Date Time	2015-04-18 10:10	Collection Method	ICS
Initials on CoC	KY	Matrix	Soil
Sample Split	EPA	Replicate	No Replicate
Sample Comments	Ken Yang checked all 30 increments and composited into 1 bucket.		

Photos Collected from Station UDU-03-R01

No photos taken at this station. See station comments for more details.

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Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-03-R02	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-03-ICS	Decision Unit	Soil Decision Unit 3
Sample Date Time	2015-04-18 10:10	Collection Method	ICS
Initials on CoC	KY	Matrix	Soil
Sample Split	EPA	Replicate	No Replicate
Sample Comments	Ken Yang checked all 30 increments and composited into 1 bucket.		

Photos Collected from Station UDU-03-R02

No photos taken at this station. See station comments for more details.

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Station Id	UDU-03-R03	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-03-ICS	Decision Unit	Soil Decision Unit 3
Sample Date Time	2015-04-18 10:10	Collection Method	ICS
Initials on CoC	KY	Matrix	Soil
Sample Split	EPA	Replicate	No Replicate
Sample Comments	Ken Yang checked all 30 increments and composited into 1 bucket.		

Photos Collected from Station UDU-03-R03

No photos taken at this station. See station comments for more details.

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Station Id	UDU-03-R04	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-03-ICS	Decision Unit	Soil Decision Unit 3
Sample Date Time	2015-04-18 10:10	Collection Method	ICS
Initials on CoC	KY	Matrix	Soil
Sample Split	EPA	Replicate	No Replicate
Sample Comments	Ken Yang checked all 30 increments and composited into 1 bucket.		

Photos Collected from Station UDU-03-R04

No photos taken at this station. See station comments for more details.

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Station Id	UDU-03-R05	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-03-ICS	Decision Unit	Soil Decision Unit 3
Sample Date Time	2015-04-18 10:10	Collection Method	ICS
Initials on CoC	KY	Matrix	Soil
Sample Split	EPA	Replicate	No Replicate
Sample Comments	Ken Yang checked all 30 increments and composited into 1 bucket.		

Photos Collected from Station UDU-03-R05

No photos taken at this station. See station comments for more details.

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Station Id	UDU-04A-01	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-17 9:22	Sample Team Initials	EL

Sample Collected? Y
X 422878.6391 m
Y 5400824.2272 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pasture grasses		

Station Comments

Sample Collected from Station

Sample Id	UDU-04-ICS-A	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-18 17:38	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	Replicate A
Sample Comments	29 increments composited at 11:45 on 4/18/15. Increment UDU-04A-02 was accidentally discarded in the waste bucket and had to be re-collected. Sample time is when the last increment was added.		

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Photos Collected from Station UDU-04A-01

2015-04-17-09-20-00_UDU-04A-01_TECK2.JPG



overview facing west

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-17-09-25-16_UDU-04A-01_TECK2.JPG



sample

2015-04-17-09-20-22_UDU-04A-01_TECK2.JPG



groundsurface

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Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-04A-02	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-18 13:23	Sample Team Initials	EL

Sample Collected? Y
X 422898.3367 m
Y 5400906.7084 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	50
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand high in decomposed organic matter	Vegetation Present?	Y

Vegetation Type if Present Pine needles and grasses

Station Comments resampled original sample collected at 09:57am due to spillage

Sample Collected from Station

Sample Id	UDU-04-ICS-A	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-18 17:38	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	Replicate A
Sample Comments	29 increments composited at 11:45 on 4/18/15. Increment UDU-04A-02 was accidentally discarded in the waste bucket and had to be re-collected. Sample time is when the last increment was added.		

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Photos Collected from Station UDU-04A-02

2015-04-18-13-23-56_UDU-04A-02_TECK2.JPG



resampled groundsurface

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-18-09-57-38_UDU-04A-02_TECK2.JPG



groundsurface

2015-04-18-09-57-42_UDU-04A-02_TECK2.JPG



ovrrview facing

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-18-09-58-42_UDU-04A-02_TECK2.JPG



sample

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ICS Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-04A-03	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-17 14:37	Sample Team Initials	EL

Sample Collected? Y
X 422823.6935 m
Y 5400875.8177 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 3/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	80
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pine needles and grasses		

Station Comments

Sample Collected from Station

Sample Id	UDU-04-ICS-A	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-18 17:38	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	Replicate A
Sample Comments	29 increments composited at 11:45 on 4/18/15. Increment UDU-04A-02 was accidentally discarded in the waste bucket and had to be re-collected. Sample time is when the last increment was added.		

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Photos Collected from Station UDU-04A-03

2015-04-17-14-40-08_UDU-04A-03_TECK2.JPG



sample; this baggie was mislabelled. Based on the log book and database entry form, this sample is UDU-04A-03 not UDU-04A-17.

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2015-04-17-14-34-02_UDU-04A-03_TECK2.JPG



groundsurface

2015-04-17-14-34-12_UDU-04A-03_TECK2.JPG



overview facing west

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Station Id	UDU-04A-04	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-17 16:07	Sample Team Initials	EL

Sample Collected? Y
X 422872.1644 m
Y 5400903.81 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	80
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine to coarse sand some fine to coarse gravel	Vegetation Present?	Y
Vegetation Type if Present	Pine needles		
Station Comments	moved 1m north due to tree root		

Sample Collected from Station

Sample Id	UDU-04-ICS-A	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-18 17:38	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	Replicate A
Sample Comments	29 increments composited at 11:45 on 4/18/15. Increment UDU-04A-02 was accidentally discarded in the waste bucket and had to be re-collected. Sample time is when the last increment was added.		

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Photos Collected from Station UDU-04A-04

2015-04-17-16-21-08_UDU-04A-04_TECK2.JPG



sample

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-17-16-18-00_UDU-04A-04_TECK2.JPG



groundsurface

2015-04-17-16-03-58_UDU-04A-04_TECK2.JPG



groundsurface

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-17-16-04-02_UDU-04A-04_TECK2.JPG



overview facing west

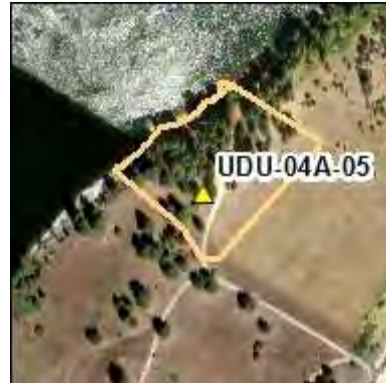
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Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-04A-05	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-17 13:39	Sample Team Initials	EL

Sample Collected? Y
X 422862.7603 m
Y 5400857.9046 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Cultural Oversight Inspection Conducted?	Y
Debris Presence	N	Odor	N
Percent Canopy Coverage	80	Percent Ground Coverage	100
Sheen Presence	N	Shells Presence	N
Substrate Type	Soil	Surface Debris Present?	N
Surface Debris Removed Prior to Sampling?	N	Texture	Very fine sand
Vegetation Present?	Y	Vegetation Type if Present	Pine needles and grasses

Station Comments

Sample Collected from Station

Sample Id	UDU-04-ICS-A	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-18 17:38	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	Replicate A
Sample Comments	29 increments composited at 11:45 on 4/18/15. Increment UDU-04A-02 was accidentally discarded in the waste bucket and had to be re-collected. Sample time is when the last increment was added.		

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Photos Collected from Station UDU-04A-05

2015-04-17-13-21-14_UDU-04A-05_TECK2.JPG



overview facing west

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-17-13-46-25_UDU-04A-05_TECK2.JPG



groundsurface

2015-04-17-13-46-20_UDU-04A-05_TECK2.JPG



sample

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-04A-06	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-17 13:10	Sample Team Initials	EL

Sample Collected? Y
X 422875.0553 m
Y 5400863.0484 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description Two_track road

Biological Visual Presence N

Cultural Oversight Inspection Conducted? Y

Odor N

Percent Ground Coverage 80

Shells Presence N

Surface Debris Present? N

Texture Very fine sand

Vegetation Type if Present Pine needles and grasses

Station Comments

Sample Collected from Station

Sample Id	UDU-04-ICS-A	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-18 17:38	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	Replicate A
Sample Comments	29 increments composited at 11:45 on 4/18/15. Increment UDU-04A-02 was accidentally discarded in the waste bucket and had to be re-collected. Sample time is when the last increment was added.		

Anthropogenic Changes Present? N

Color 2.5Y 4/2

Debris Presence N

Percent Canopy Coverage 30

Sheen Presence N

Substrate Type Soil

Surface Debris Removed Prior to Sampling? N

Vegetation Present? Y

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Photos Collected from Station UDU-04A-06

2015-04-17-13-16-06_UDU-04A-06_TECK2.JPG



sample

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-17-13-09-21_UDU-04A-06_TECK2.JPG



groundsurface

2015-04-17-13-09-26_UDU-04A-06_TECK2.JPG



overview facing west

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-04A-07	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime	2015-04-17 16:30	Sample Team Initials	EL
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments not sampled, unstable conditions

Sample Collected from Station

Sample Id	UDU-04-ICS-A	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-18 17:38	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	Replicate A
Sample Comments	29 increments composited at 11:45 on 4/18/15. Increment UDU-04A-02 was accidentally discarded in the waste bucket and had to be re-collected. Sample time is when the last increment was added.		

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Photos Collected from Station UDU-04A-07

No photos taken at this station. See station comments for more details.

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Station Id	UDU-04A-08	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-17 14:48	Sample Team Initials	EL

Sample Collected? Y
X 422838.1077 m
Y 5400872.3993 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	80
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine to fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pine needles and grasses		

Station Comments

Sample Collected from Station

Sample Id	UDU-04-ICS-A	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-18 17:38	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	Replicate A
Sample Comments	29 increments composited at 11:45 on 4/18/15. Increment UDU-04A-02 was accidentally discarded in the waste bucket and had to be re-collected. Sample time is when the last increment was added.		

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Photos Collected from Station UDU-04A-08

2015-04-17-14-53-47_UDU-04A-08_TECK2.JPG



sample

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2015-04-17-14-45-47_UDU-04A-08_TECK2.JPG



groundsurface

2015-04-17-14-45-51_UDU-04A-08_TECK2.JPG



overview facing west

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Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-04A-09	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-17 11:57	Sample Team Initials	EL

Sample Collected? Y
X 422886.208 m
Y 5400847.4109 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pine needles and grasses		

Station Comments moved 2m north due to potential lithic debitage

Sample Collected from Station

Sample Id	UDU-04-ICS-A	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-18 17:38	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	Replicate A
Sample Comments	29 increments composited at 11:45 on 4/18/15. Increment UDU-04A-02 was accidentally discarded in the waste bucket and had to be re-collected. Sample time is when the last increment was added.		

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Photos Collected from Station UDU-04A-09

2015-04-17-11-50-12_UDU-04A-09_TECK2.JPG



groundsurface

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2015-04-17-11-58-34_UDU-04A-09_TECK2.JPG



sample

2015-04-17-11-22-14_UDU-04A-09_TECK2.JPG



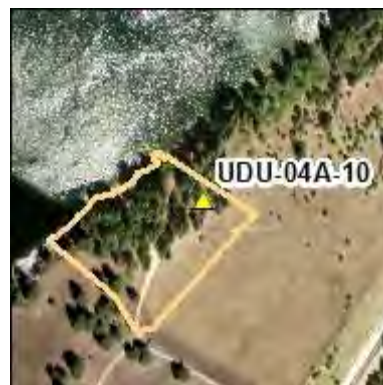
overview facing west

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Station Id	UDU-04A-10	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-18 9:50	Sample Team Initials	EL
Sample Collected?	Y		
X	422910.5282 m		
Y	5400904.9142 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/2.5
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	40
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pine needles and grasses		

Station Comments

Sample Collected from Station

Sample Id	UDU-04-ICS-A	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-18 17:38	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	Replicate A
Sample Comments	29 increments composited at 11:45 on 4/18/15. Increment UDU-04A-02 was accidentally discarded in the waste bucket and had to be re-collected. Sample time is when the last increment was added.		

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Photos Collected from Station UDU-04A-10

2015-04-18-09-47-06_UDU-04A-10_TECK2.JPG



groundsurface

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2015-04-18-09-47-12_UDU-04A-10_TECK2.JPG



overview facing west

2015-04-18-09-48-47_UDU-04A-10_TECK2.JPG



sample

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-04A-11	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-17 9:11	Sample Team Initials	EL

Sample Collected? Y
X 422883.049 m
Y 5400833.877 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine to fine sand trace medium to coarse sand trace coarse gravel	Vegetation Present?	Y
Vegetation Type if Present	Pasture grasses		

Station Comments

Sample Collected from Station

Sample Id	UDU-04-ICS-A	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-18 17:38	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	Replicate A
Sample Comments	29 increments composited at 11:45 on 4/18/15. Increment UDU-04A-02 was accidentally discarded in the waste bucket and had to be re-collected. Sample time is when the last increment was added.		

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Photos Collected from Station UDU-04A-11

2015-04-17-09-09-28_UDU-04A-11_TECK2.JPG



overview facing west

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-17-09-10-57_UDU-04A-11_TECK2.JPG



groundsurface

2015-04-17-09-14-45_UDU-04A-11_TECK2.JPG



sample

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-04A-12	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-17 13:54	Sample Team Initials	EL

Sample Collected? Y
X 422858.6192 m
Y 5400846.8903 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	20
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Fruit tree pine needles grasses		

Station Comments

Sample Collected from Station

Sample Id	UDU-04-ICS-A	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-18 17:38	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	Replicate A
Sample Comments	29 increments composited at 11:45 on 4/18/15. Increment UDU-04A-02 was accidentally discarded in the waste bucket and had to be re-collected. Sample time is when the last increment was added.		

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Photos Collected from Station UDU-04A-12

2015-04-17-13-59-14_UDU-04A-12_1619LP-WA70047.JPG



ground surface

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2015-04-17-13-59-10_UDU-04A-12_1619LP-WA70047.JPG



sample

2015-04-17-13-52-36_UDU-04A-12_TECK2.JPG



overview facing west

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Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-04A-13	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-17 15:48	Sample Team Initials	EL

Sample Collected? Y
X 422862.401 m
Y 5400879.5993 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	70
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine to fine sand high in decomposed organic matter high in trace sand and little fine gravel	Vegetation Present?	Y
Vegetation Type if Present	Pine needles		

Station Comments

Sample Collected from Station

Sample Id	UDU-04-ICS-A	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-18 17:38	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	Replicate A
Sample Comments	29 increments composited at 11:45 on 4/18/15. Increment UDU-04A-02 was accidentally discarded in the waste bucket and had to be re-collected. Sample time is when the last increment was added.		

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Photos Collected from Station UDU-04A-13

2015-04-17-15-56-04_UDU-04A-13_TECK2.JPG



overview facing west

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-17-15-56-13_UDU-04A-13_TECK2.JPG



2015-04-17-15-55-12_UDU-04A-13_TECK2.JPG



sample

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-04A-14	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-17 10:29	Sample Team Initials	EL

Sample Collected? Y
X 422862.7147 m
Y 5400825.4145 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand some silt and clay little fine gravel	Vegetation Present?	Y
Vegetation Type if Present	Pasture grasses		

Station Comments

Sample Collected from Station

Sample Id	UDU-04-ICS-A	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-18 17:38	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	Replicate A
Sample Comments	29 increments composited at 11:45 on 4/18/15. Increment UDU-04A-02 was accidentally discarded in the waste bucket and had to be re-collected. Sample time is when the last increment was added.		

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Photos Collected from Station UDU-04A-14

2015-04-17-10-28-19_UDU-04A-14_TECK2.JPG



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2015-04-17-10-28-27_UDU-04A-14_TECK2.JPG



overview facing west

2015-04-17-10-31-36_UDU-04A-14_TECK2.JPG



sample

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-04A-15	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-17 8:59	Sample Team Initials	EL

Sample Collected? Y
X 422903.0507 m
Y 5400847.049 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pasture grasses		

Station Comments

Sample Collected from Station

Sample Id	UDU-04-ICS-A	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-18 17:38	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	Replicate A
Sample Comments	29 increments composited at 11:45 on 4/18/15. Increment UDU-04A-02 was accidentally discarded in the waste bucket and had to be re-collected. Sample time is when the last increment was added.		

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Photos Collected from Station UDU-04A-15

2015-04-17-08-58-02_UDU-04A-15_TECK2.JPG



groundsurface

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2015-04-17-08-58-14_UDU-04A-15_TECK2.JPG



view facing west

2015-04-17-09-02-40_UDU-04A-15_TECK2.JPG



sample

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-04A-16	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-17 10:07	Sample Team Initials	EL

Sample Collected? Y
X 422869.785 m
Y 5400820.6498 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand little fine clay	Vegetation Present?	Y
Vegetation Type if Present	Pasture grasses		

Station Comments

Sample Collected from Station

Sample Id	UDU-04-ICS-A	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-18 17:38	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	Replicate A
Sample Comments	29 increments composited at 11:45 on 4/18/15. Increment UDU-04A-02 was accidentally discarded in the waste bucket and had to be re-collected. Sample time is when the last increment was added.		

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Photos Collected from Station UDU-04A-16

2015-04-17-10-05-48_UDU-04A-16_1619LP-WA70047.JPG



ground surface

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-17-10-05-51_UDU-04A-16_TECK2.JPG



overview facing west

2015-04-17-10-07-56_UDU-04A-16_TECK2.JPG



sample; this baggie was mislabelled. Based on the date and time stamp of this photo compared with the database entry form, this sample is UDU-04A-16 not UDU-04A-01.

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Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-04A-17	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime	2015-04-17 14:28	Sample Team Initials	EL
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments not sampled, 75° slope

Sample Collected from Station

Sample Id	UDU-04-ICS-A	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-18 17:38	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	Replicate A
Sample Comments	29 increments composited at 11:45 on 4/18/15. Increment UDU-04A-02 was accidentally discarded in the waste bucket and had to be re-collected. Sample time is when the last increment was added.		

Photos Collected from Station UDU-04A-17

No photos taken at this station. See station comments for more details.

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Station Id	UDU-04A-18	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-17 10:58	Sample Team Initials	EL

Sample Collected? Y
X 422876.8577 m
Y 5400852.1739 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine to very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pine needles and grasses		

Station Comments

Sample Collected from Station

Sample Id	UDU-04-ICS-A	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-18 17:38	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	Replicate A
Sample Comments	29 increments composited at 11:45 on 4/18/15. Increment UDU-04A-02 was accidentally discarded in the waste bucket and had to be re-collected. Sample time is when the last increment was added.		

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Photos Collected from Station UDU-04A-18

2015-04-17-10-56-56_UDU-04A-18_TECK2.JPG



groundsurface

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2015-04-17-10-57-02_UDU-04A-18_TECK2.JPG



overview facing west

2015-04-17-11-01-39_UDU-04A-18_TECK2.JPG



sample

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Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-04A-19	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-17 10:47	Sample Team Initials	EL

Sample Collected? Y
X 422872.4926 m
Y 5400838.1845 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/2 and 2.5Y 5/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	80	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silt and clay some very fine sand some trace find gravel and very fine to fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pine needles and grasses		

Station Comments moved 2m north due to dense cobbles

Sample Collected from Station

Sample Id	UDU-04-ICS-A	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-18 17:38	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	Replicate A
Sample Comments	29 increments composited at 11:45 on 4/18/15. Increment UDU-04A-02 was accidentally discarded in the waste bucket and had to be re-collected. Sample time is when the last increment was added.		

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Photos Collected from Station UDU-04A-19

2015-04-17-10-52-06_UDU-04A-19_TECK2.JPG



sample

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2015-04-17-10-40-05_UDU-04A-19_TECK2.JPG



overview facing west

2015-04-17-10-44-28_UDU-04A-19_TECK2.JPG



groundsurface

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Station Id	UDU-04A-20	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-18 9:38	Sample Team Initials	EL

Sample Collected? Y
X 422904.9232 m
Y 5400900.1747 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	80
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine to fine sand little fine gravel	Vegetation Present?	Y
Vegetation Type if Present	Pine needles and grasses		

Station Comments

Sample Collected from Station

Sample Id	UDU-04-ICS-A	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-18 17:38	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	Replicate A
Sample Comments	29 increments composited at 11:45 on 4/18/15. Increment UDU-04A-02 was accidentally discarded in the waste bucket and had to be re-collected. Sample time is when the last increment was added.		

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Photos Collected from Station UDU-04A-20

2015-04-18-09-37-18_UDU-04A-20_TECK2.JPG



groundsurface

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-18-09-37-24_UDU-04A-20_TECK2.JPG



overview facing west

2015-04-18-09-41-06_UDU-04A-20_TECK2.JPG



sample

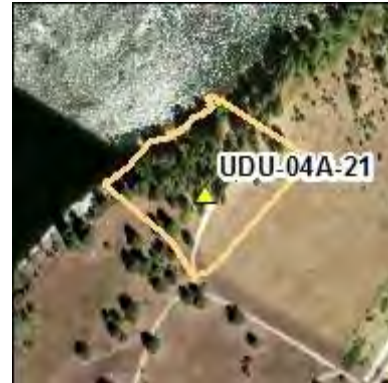
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Station Id	UDU-04A-21	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-17 13:22	Sample Team Initials	EL

Sample Collected? Y
X 422872.1551 m
Y 5400868.4357 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description Two-track road
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 100
Shells Presence N
Surface Debris Present? N
Texture Very fine sand
Vegetation Type if Present Pine needles and grasses

Anthropogenic Changes Present? N
Color 2.5Y 5/4
Debris Presence N
Percent Canopy Coverage 50
Sheen Presence N
Substrate Type Soil
Surface Debris Removed Prior to Sampling? N
Vegetation Present? Y

Station Comments

Sample Collected from Station

Sample Id	UDU-04-ICS-A	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-18 17:38	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	Replicate A
Sample Comments	29 increments composited at 11:45 on 4/18/15. Increment UDU-04A-02 was accidentally discarded in the waste bucket and had to be re-collected. Sample time is when the last increment was added.		

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Photos Collected from Station UDU-04A-21

2015-04-17-13-21-14_UDU-04A-21_TECK2.JPG



ovrrview facing west

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2015-04-17-13-30-00_UDU-04A-21_TECK2.JPG



sample

2015-04-17-13-30-04_UDU-04A-21_TECK2.JPG



groundsurface

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Station Id	UDU-04A-22	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-17 12:58	Sample Team Initials	EL

Sample Collected? Y
X 422883.3539 m
Y 5400860.2817 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	90	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silt clay very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pine needles and pasture grasses		

Station Comments

Sample Collected from Station

Sample Id	UDU-04-ICS-A	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-18 17:38	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	Replicate A
Sample Comments	29 increments composited at 11:45 on 4/18/15. Increment UDU-04A-02 was accidentally discarded in the waste bucket and had to be re-collected. Sample time is when the last increment was added.		

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Photos Collected from Station UDU-04A-22

2015-04-17-13-03-45_UDU-04A-22_TECK2.JPG



sample

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2015-04-17-12-57-10_UDU-04A-22_TECK2.JPG



groundsurface

2015-04-17-12-57-17_UDU-04A-22_TECK2.JPG



overview facing west

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Station Id	UDU-04A-23	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-18 8:27	Sample Team Initials	EL

Sample Collected? Y
X 422864.1803 m
Y 5400834.6705 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine to fine sand with little coarse gravel	Vegetation Present?	Y
Vegetation Type if Present	Pine needles		
Station Comments	possible fill		

Sample Collected from Station

Sample Id	UDU-04-ICS-A	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-18 17:38	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	Replicate A
Sample Comments	29 increments composited at 11:45 on 4/18/15. Increment UDU-04A-02 was accidentally discarded in the waste bucket and had to be re-collected. Sample time is when the last increment was added.		

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Photos Collected from Station UDU-04A-23

2015-04-18-08-23-05_UDU-04A-23_TECK2.JPG



overview facing west

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2015-04-18-08-23-19_UDU-04A-23_TECK2.JPG



groundsurface

2015-04-18-08-25-11_UDU-04A-23_TECK2.JPG



sample

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Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-04A-24	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-17 14:05	Sample Team Initials	EL

Sample Collected? Y
X 422846.052 m
Y 5400859.8976 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	50
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pine needles and grasses		

Station Comments

Sample Collected from Station

Sample Id	UDU-04-ICS-A	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-18 17:38	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	Replicate A
Sample Comments	29 increments composited at 11:45 on 4/18/15. Increment UDU-04A-02 was accidentally discarded in the waste bucket and had to be re-collected. Sample time is when the last increment was added.		

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Photos Collected from Station UDU-04A-24

2015-04-17-14-10-44_UDU-04A-24_TECK2.JPG



sample

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2015-04-17-14-04-22_UDU-04A-24_TECK2.JPG



groundsurface

2015-04-17-14-04-27_UDU-04A-24_TECK2.JPG



overview facing west

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Station Id	UDU-04A-25	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-18 9:14	Sample Team Initials	EL

Sample Collected? Y
X 422883.2464 m
Y 5400931.6691 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 6/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	20
Percent Ground Coverage	50	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand trace medium to coarse sand little fine to coarse gravel	Vegetation Present?	Y
Vegetation Type if Present	Willow grasses moss arrow leaf		

Station Comments cutbank

Sample Collected from Station

Sample Id	UDU-04-ICS-A	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-18 17:38	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	Replicate A
Sample Comments	29 increments composited at 11:45 on 4/18/15. Increment UDU-04A-02 was accidentally discarded in the waste bucket and had to be re-collected. Sample time is when the last increment was added.		

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Photos Collected from Station UDU-04A-25

2015-04-18-09-12-31_UDU-04A-25_TECK2.JPG



overview facing east

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2015-04-18-09-12-36_UDU-04A-25_TECK2.JPG



groundsurface

2015-04-18-09-12-45_UDU-04A-25_TECK2.JPG



overview facing west

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2015-04-18-09-15-22_UDU-04A-25_TECK2.JPG



sample

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-04A-26	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-17 14:16	Sample Team Initials	EL

Sample Collected? Y
X 422837.1481 m
Y 5400862.9965 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 3/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	20
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pine needles and grasses		

Station Comments

Sample Collected from Station

Sample Id	UDU-04-ICS-A	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-18 17:38	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	Replicate A
Sample Comments	29 increments composited at 11:45 on 4/18/15. Increment UDU-04A-02 was accidentally discarded in the waste bucket and had to be re-collected. Sample time is when the last increment was added.		

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Photos Collected from Station UDU-04A-26

2015-04-17-14-20-59_UDU-04A-26_TECK2.JPG



sample

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2015-04-17-14-14-21_UDU-04A-26_TECK2.JPG



groundsurface

2015-04-17-14-14-26_UDU-04A-26_TECK2.JPG



overview facing west

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Station Id	UDU-04A-27	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-17 8:23	Sample Team Initials	EL

Sample Collected? Y
X 422913.8425 m
Y 5400887.5543 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand trace silt and clay	Vegetation Present?	Y
Vegetation Type if Present	Pine needles		

Station Comments

Sample Collected from Station

Sample Id	UDU-04-ICS-A	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-18 17:38	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	Replicate A
Sample Comments	29 increments composited at 11:45 on 4/18/15. Increment UDU-04A-02 was accidentally discarded in the waste bucket and had to be re-collected. Sample time is when the last increment was added.		

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Photos Collected from Station UDU-04A-27

2015-04-17-08-26-38_UDU-04A-27_TECK2.JPG



sample

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-17-08-21-19_UDU-04A-27_TECK2.JPG



groundsurface

2015-04-17-08-21-24_UDU-04A-27_TECK2.JPG



overview facing west

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Station Id	UDU-04A-28	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-17 8:39	Sample Team Initials	EL

Sample Collected? Y
X 422902.2359 m
Y 5400889.3319 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N	
Biological Visual Presence	N	Color	2.5YR 2/1	
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N	
Odor	N	Percent Canopy Coverage	50	
Percent Ground Coverage	80	Sheen Presence	N	
Shells Presence	N	Substrate Type	Soil	
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N	
Texture	Very fine sand little silt and clay little coarse gravel		Vegetation Present?	Y
Vegetation Type if Present	Pine needles and grasses			

Station Comments

Sample Collected from Station

Sample Id	UDU-04-ICS-A	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-18 17:38	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	Replicate A
Sample Comments	29 increments composited at 11:45 on 4/18/15. Increment UDU-04A-02 was accidentally discarded in the waste bucket and had to be re-collected. Sample time is when the last increment was added.		

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Photos Collected from Station UDU-04A-28

2015-04-17-08-38-24_UDU-04A-28_TECK2.JPG



groundsurface

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2015-04-17-08-38-27_UDU-04A-28_TECK2.JPG



overview facing west

2015-04-17-08-41-42_UDU-04A-28_TECK2.JPG



sample

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Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-04A-29	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-17 8:50	Sample Team Initials	EL

Sample Collected? Y
X 422905.2253 m
Y 5400855.5547 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty clayey very fine sand little coarse gravel	Vegetation Present?	Y
Vegetation Type if Present	Pasture grasses		

Station Comments

Sample Collected from Station

Sample Id	UDU-04-ICS-A	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-18 17:38	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	Replicate A
Sample Comments	29 increments composited at 11:45 on 4/18/15. Increment UDU-04A-02 was accidentally discarded in the waste bucket and had to be re-collected. Sample time is when the last increment was added.		

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Photos Collected from Station UDU-04A-29

2015-04-17-08-49-00_UDU-04A-29_TECK2.JPG



groundsurface

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2015-04-17-08-49-06_UDU-04A-29_TECK2.JPG



overview facing west

2015-04-17-08-52-58_UDU-04A-29_TECK2.JPG



sample

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Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-04A-30	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-17 8:11	Sample Team Initials	EL

Sample Collected? Y
X 422944.696 m
Y 5400893.6897 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty clayey very fine sand one coarse gravel	Vegetation Present?	Y
Vegetation Type if Present	Pasture grasses		

Station Comments

Sample Collected from Station

Sample Id	UDU-04-ICS-A	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-18 17:38	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	Replicate A
Sample Comments	29 increments composited at 11:45 on 4/18/15. Increment UDU-04A-02 was accidentally discarded in the waste bucket and had to be re-collected. Sample time is when the last increment was added.		

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Photos Collected from Station UDU-04A-30

2015-04-17-08-14-21_UDU-04A-30_TECK2.JPG



sample

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2015-04-17-08-08-49_UDU-04A-30_TECK2.JPG



groundsurface

2015-04-17-08-08-54_UDU-04A-30_TECK2.JPG



overview facing west

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Station Id	UDU-04A-R01	Start Depth	0 cm
Station Type	Reserve	End Depth	15 cm
Collection DateTime	2015-04-18 8:38	Sample Team Initials	EL

Sample Collected? Y
X 422896.9074 m
Y 5400837.347 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 5/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand little silt and clay	Vegetation Present?	Y
Vegetation Type if Present	Grasses		

Station Comments this station replaces udu-04a-17 due to steep slope

Sample Collected from Station

Sample Id	UDU-04-ICS-A	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-18 17:38	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	Replicate A
Sample Comments	29 increments composited at 11:45 on 4/18/15. Increment UDU-04A-02 was accidentally discarded in the waste bucket and had to be re-collected. Sample time is when the last increment was added.		

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Photos Collected from Station UDU-04A-R01

2015-04-18-08-33-50_UDU-04A-R01_TECK2.JPG



groundsurface

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2015-04-18-08-33-56_UDU-04A-R01_TECK2.JPG



ovrrview facing west

2015-04-18-08-36-15_UDU-04A-R01_TECK2.JPG



sample

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Station Id	UDU-04A-R02	Start Depth	0 cm
Station Type	Reserve	End Depth	15 cm
Collection DateTime	2015-04-18 8:45	Sample Team Initials	EL

Sample Collected? Y
X 422871.4315 m
Y 5400813.9536 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very finevsad little to some silt and clay some fine gravel	Vegetation Present?	Y
Vegetation Type if Present	Grasses		

Station Comments replaces udu-04a-07 due to unstable slope

Sample Collected from Station

Sample Id	UDU-04-ICS-A	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-18 17:38	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	Replicate A
Sample Comments	29 increments composited at 11:45 on 4/18/15. Increment UDU-04A-02 was accidentally discarded in the waste bucket and had to be re-collected. Sample time is when the last increment was added.		

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Photos Collected from Station UDU-04A-R02

2015-04-18-08-44-21_UDU-04A-R02_TECK2.JPG



overview facing west

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2015-04-18-08-44-28_UDU-04A-R02_TECK2.JPG



groundsurface

2015-04-18-08-47-14_UDU-04A-R02_TECK2.JPG



sample

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Station Id	UDU-04A-R03	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-04-ICS-A	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-18 17:38	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	Replicate A
Sample Comments	29 increments composited at 11:45 on 4/18/15. Increment UDU-04A-02 was accidentally discarded in the waste bucket and had to be re-collected. Sample time is when the last increment was added.		

Photos Collected from Station UDU-04A-R03

No photos taken at this station. See station comments for more details.

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Station Id	UDU-04A-R04	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-04-ICS-A	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-18 17:38	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	Replicate A
Sample Comments	29 increments composited at 11:45 on 4/18/15. Increment UDU-04A-02 was accidentally discarded in the waste bucket and had to be re-collected. Sample time is when the last increment was added.		

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Photos Collected from Station UDU-04A-R04

No photos taken at this station. See station comments for more details.

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Station Id	UDU-04A-R05	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-04-ICS-A	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-18 17:38	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	Replicate A
Sample Comments	29 increments composited at 11:45 on 4/18/15. Increment UDU-04A-02 was accidentally discarded in the waste bucket and had to be re-collected. Sample time is when the last increment was added.		

Photos Collected from Station UDU-04A-R05

No photos taken at this station. See station comments for more details.

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Station Id	UDU-04A-R06	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-04-ICS-A	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-18 17:38	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	Replicate A
Sample Comments	29 increments composited at 11:45 on 4/18/15. Increment UDU-04A-02 was accidentally discarded in the waste bucket and had to be re-collected. Sample time is when the last increment was added.		

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Photos Collected from Station UDU-04A-R06

No photos taken at this station. See station comments for more details.

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Station Id	UDU-04A-R07	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-04-ICS-A	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-18 17:38	Collection Method	ICS
Initials on CoC	ALD/KY	Matrix	Soil
Sample Split	None	Replicate	Replicate A
Sample Comments	29 increments composited at 11:45 on 4/18/15. Increment UDU-04A-02 was accidentally discarded in the waste bucket and had to be re-collected. Sample time is when the last increment was added.		

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Photos Collected from Station UDU-04A-R07

No photos taken at this station. See station comments for more details.

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Station Id	UDU-04B-01	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-20 11:04	Sample Team Initials	EL
Sample Collected?	Y		
X	422878.7625 m		
Y	5400925.2056 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	80
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pine needles and willow		

Station Comments

Sample Collected from Station

Sample Id	UDU-04-ICS-B	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 7:57	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. 2 reserve locations (UDU-04B-R01, R02) used for UDU-04B-11, 19.		

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Photos Collected from Station UDU-04B-01

2015-04-20-11-11-16_UDU-04B-01_TECK2.JPG



sample

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2015-04-20-11-08-29_UDU-04B-01_TECK2.JPG



groundsurface

2015-04-20-11-08-46_UDU-04B-01_TECK2.JPG



overview facing west

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Station Id UDU-04B-02 **Start Depth** 0 cm
Station Type Primary **End Depth** 15 cm
Collection DateTime 2015-04-18 11:42 **Sample Team Initials** EL

Sample Collected? Y
X 422874.7125 m
Y 5400859.996 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description Two-track road
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 100
Shells Presence N
Surface Debris Present? N
Texture Very fine sand little silt little fine and coarse gravel
Vegetation Type if Present Pine needles

Anthropogenic Changes Present? N
Color 10YR 5/6 lower 10YR 3/1 upper
Debris Presence N
Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Soil
Surface Debris Removed Prior to Sampling? N
Vegetation Present? Y

Station Comments

Sample Collected from Station

Sample Id	UDU-04-ICS-B	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 7:57	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. 2 reserve locations (UDU-04B-R01, R02) used for UDU-04B-11, 19.		

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Photos Collected from Station UDU-04B-02

2015-04-18-11-40-26_UDU-04B-02_TECK2.JPG



sample

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2015-04-18-11-38-14_UDU-04B-02_TECK2.JPG



groundsurface

2015-04-18-11-38-17_UDU-04B-02_TECK2.JPG



overview facing west

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Station Id	UDU-04B-03	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-18 14:50	Sample Team Initials	EL

Sample Collected? Y
X 422837.2121 m
Y 5400862.3542 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	50
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very finre sand some silt and clay two coarse gravel	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments

Sample Collected from Station

Sample Id	UDU-04-ICS-B	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 7:57	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. 2 reserve locations (UDU-04B-R01, R02) used for UDU-04B-11, 19.		

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Photos Collected from Station UDU-04B-03

2015-04-18-14-47-32_UDU-04B-03_TECK2.JPG



groundsurface

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2015-04-18-14-47-37_UDU-04B-03_TECK2.JPG



ovrrview facing west

2015-04-18-14-49-22_UDU-04B-03_TECK2.JPG



sample

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Station Id	UDU-04B-04	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-20 10:11	Sample Team Initials	EL

Sample Collected? Y
X 422876.3574 m
Y 5400840.1891 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand some silt sand and little medium sand	Vegetation Present?	Y
Vegetation Type if Present	Grasses		

Station Comments

Sample Collected from Station

Sample Id	UDU-04-ICS-B	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 7:57	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. 2 reserve locations (UDU-04B-R01, R02) used for UDU-04B-11, 19.		

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Photos Collected from Station UDU-04B-04

2015-04-20-10-15-04_UDU-04B-04_TECK2.JPG



sample

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2015-04-20-10-15-12_UDU-04B-04_TECK2.JPG



overview facing west

2015-04-20-10-15-30_UDU-04B-04_TECK2.JPG



groundsurface

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Station Id	UDU-04B-05	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-20 9:47	Sample Team Initials	EL

Sample Collected? Y
X 422841.7227 m
Y 5400874.933 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	90
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand little silt and clay	Vegetation Present?	Y
Vegetation Type if Present	Pine needles		

Station Comments

Sample Collected from Station

Sample Id	UDU-04-ICS-B	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 7:57	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. 2 reserve locations (UDU-04B-R01, R02) used for UDU-04B-11, 19.		

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Photos Collected from Station UDU-04B-05

2015-04-20-09-48-02_UDU-04B-05_TECK2.JPG



groundsurface

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2015-04-20-09-48-08_UDU-04B-05_TECK2.JPG



overview facing west

2015-04-20-09-49-35_UDU-04B-05_TECK2.JPG



sample

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Station Id	UDU-04B-06	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-18 13:48	Sample Team Initials	EL

Sample Collected? Y
X 422864.0325 m
Y 5400831.6356 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 100
Shells Presence N
Surface Debris Present? N

Texture Very fine sand
Vegetation Type if Present Pine tree

Anthropogenic Changes Present? N
Color 10YR 4/2
Debris Presence N

Percent Canopy Coverage 80
Sheen Presence N
Substrate Type Soil
Surface Debris Removed Prior to Sampling? N
Vegetation Present? Y

Station Comments

Sample Collected from Station

Sample Id	UDU-04-ICS-B	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 7:57	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. 2 reserve locations (UDU-04B-R01, R02) used for UDU-04B-11, 19.		

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Photos Collected from Station UDU-04B-06

2015-04-18-14-00-00_UDU-04B-06_1619LP-WA70047.JPG



sample

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2015-04-18-13-47-17_UDU-04B-06_TECK2.JPG



overview facing west

2015-04-18-13-54-26_UDU-04B-06_TECK2.JPG



groundsurface

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Station Id	UDU-04B-07	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-20 10:04	Sample Team Initials	EL

Sample Collected? Y
X 422897.7437 m
Y 5400850.6477 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes N
Description
Biological Visual Presence N
Cultural Oversight Y
Inspection Conducted?
Odor N
Percent Ground Coverage 100
Shells Presence N
Surface Debris Present? N

Texture Very fine sand
Vegetation Type if Present Grasses

Anthropogenic Changes N
Present?
Color 10YR 4/2
Debris Presence N

Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Soil
Surface Debris Removed N
Prior to Sampling?
Vegetation Present? Y

Station Comments

Sample Collected from Station

Sample Id	UDU-04-ICS-B	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 7:57	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. 2 reserve locations (UDU-04B-R01, R02) used for UDU-04B-11, 19.		

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Photos Collected from Station UDU-04B-07

2015-04-20-10-06-21_UDU-04B-07_TECK2.JPG



overview facing west

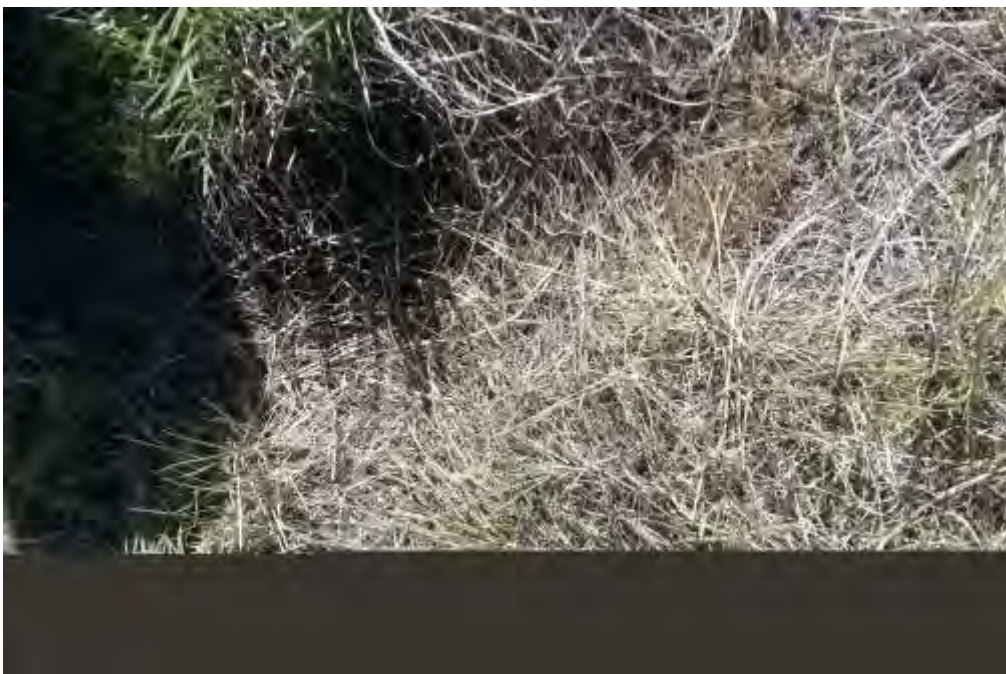
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2015-04-20-10-06-28_UDU-04B-07_TECK2.JPG



sample

2015-04-20-10-06-30_UDU-04B-07_TECK2.JPG



groundsurface

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Station Id	UDU-04B-08	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-18 11:29	Sample Team Initials	EL

Sample Collected? Y
X 422895.5121 m
Y 5400868.1326 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Grasses		

Station Comments

Sample Collected from Station

Sample Id	UDU-04-ICS-B	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 7:57	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. 2 reserve locations (UDU-04B-R01, R02) used for UDU-04B-11, 19.		

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Photos Collected from Station UDU-04B-08

2015-04-18-11-25-14_UDU-04B-08_TECK2.JPG



groundsurface

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2015-04-18-11-25-21_UDU-04B-08_TECK2.JPG



overview facing west

2015-04-18-11-27-18_UDU-04B-08_TECK2.JPG



sample

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Station Id	UDU-04B-09	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-18 14:11	Sample Team Initials	EL
Sample Collected?	Y		
X	422850.1307 m		
Y	5400835.9711 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	70
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments

Sample Collected from Station

Sample Id	UDU-04-ICS-B	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 7:57	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. 2 reserve locations (UDU-04B-R01, R02) used for UDU-04B-11, 19.		

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Photos Collected from Station UDU-04B-09

2015-04-18-14-18-03_UDU-04B-09_TECK2.JPG



sample

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2015-04-18-14-14-39_UDU-04B-09_TECK2.JPG



overview facing west

2015-04-18-14-13-26_UDU-04B-09_TECK2.JPG



groundsurface

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Station Id	UDU-04B-10	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-18 14:27	Sample Team Initials	EL
Sample Collected?	Y		
X	422836.47 m		
Y	5400849.59 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	20
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pine needles and grasses		

Station Comments

Sample Collected from Station

Sample Id	UDU-04-ICS-B	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 7:57	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. 2 reserve locations (UDU-04B-R01, R02) used for UDU-04B-11, 19.		

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Photos Collected from Station UDU-04B-10

2015-04-18-14-30-16_UDU-04B-10_TECK2.JPG



overview facing west

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2015-04-18-14-22-45_UDU-04B-10_TECK2.JPG



groundsurface

2015-04-18-14-29-30_UDU-04B-10_TECK2.JPG



sample

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Station Id	UDU-04B-11	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime	2015-04-20 9:00	Sample Team Initials	EL
Sample Collected?	N		
X	422847.5705 m		
Y	5400909.964 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments not sampled, located below watermark of 1290

Sample Collected from Station

Sample Id	UDU-04-ICS-B	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 7:57	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. 2 reserve locations (UDU-04B-R01, R02) used for UDU-04B-11, 19.		

Photos Collected from Station UDU-04B-11

No photos taken at this station. See station comments for more details.

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Station Id	UDU-04B-12	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-18 11:06	Sample Team Initials	EL

Sample Collected? Y
X 422916.3484 m
Y 5400897.6107 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	50
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand trace silt and clay little decomposed organic matter	Vegetation Present?	Y
Vegetation Type if Present	Pine needles and grasses		

Station Comments

Sample Collected from Station

Sample Id	UDU-04-ICS-B	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 7:57	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. 2 reserve locations (UDU-04B-R01, R02) used for UDU-04B-11, 19.		

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Photos Collected from Station UDU-04B-12

2015-04-18-11-02-48_UDU-04B-12_TECK2.JPG



groundsurface

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2015-04-18-11-02-57_UDU-04B-12_TECK2.JPG



overview facing west

2015-04-18-11-04-26_UDU-04B-12_TECK2.JPG



sample

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Station Id	UDU-04B-13	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-20 9:21	Sample Team Initials	EL

Sample Collected? Y
X 422833.901 m
Y 5400891.3789 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 100
Shells Presence N
Surface Debris Present? N

Texture Coarse gravelly very fine sand
Vegetation Type if Present Pine needles

Anthropogenic Changes Present? N
Color 2.5Y 5/2
Debris Presence N

Percent Canopy Coverage 20
Sheen Presence N
Substrate Type Soil
Surface Debris Removed Prior to Sampling? N
Vegetation Present? Y

Station Comments

Sample Collected from Station

Sample Id	UDU-04-ICS-B	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 7:57	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. 2 reserve locations (UDU-04B-R01, R02) used for UDU-04B-11, 19.		

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Photos Collected from Station UDU-04B-13

2015-04-20-09-22-59_UDU-04B-13_TECK2.JPG



groundsurface

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2015-04-20-09-23-04_UDU-04B-13_TECK2.JPG



overview facing west

2015-04-20-09-23-36_UDU-04B-13_TECK2.JPG



sample

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Station Id	UDU-04B-14	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-18 14:37	Sample Team Initials	EL

Sample Collected? Y
X 422827.6702 m
Y 5400855.5312 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N
Biological Visual Presence	N
Cultural Oversight Inspection Conducted?	Y
Odor	N
Percent Ground Coverage	100
Shells Presence	N
Surface Debris Present?	N
Texture	Very fine sand
Vegetation Type if Present	Grasses and pine needles

Anthropogenic Changes Present?	N
Color	10YR/2
Debris Presence	N
Percent Canopy Coverage	0
Sheen Presence	N
Substrate Type	Soil
Surface Debris Removed Prior to Sampling?	N
Vegetation Present?	Y

Station Comments

Sample Collected from Station

Sample Id	UDU-04-ICS-B	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 7:57	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. 2 reserve locations (UDU-04B-R01, R02) used for UDU-04B-11, 19.		

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Photos Collected from Station UDU-04B-14

2015-04-18-14-33-40_UDU-04B-14_TECK2.JPG



groundsurface

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2015-04-18-14-33-45_UDU-04B-14_TECK2.JPG



overview facing west

2015-04-18-14-40-53_UDU-04B-14_TECK2.JPG



sample

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Station Id	UDU-04B-15	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-20 8:12	Sample Team Initials	EL

Sample Collected? Y
X 422873.3219 m
Y 5400897.4282 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 100
Shells Presence N
Surface Debris Present? N

Texture Very fine sand
Vegetation Type if Present Pine needles

Anthropogenic Changes Present? N
Color 10YR 4/2
Debris Presence N

Percent Canopy Coverage 70
Sheen Presence N
Substrate Type Soil
Surface Debris Removed Prior to Sampling? N
Vegetation Present? Y

Station Comments

Sample Collected from Station

Sample Id	UDU-04-ICS-B	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 7:57	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. 2 reserve locations (UDU-04B-R01, R02) used for UDU-04B-11, 19.		

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Photos Collected from Station UDU-04B-15

2015-04-20-08-10-18_UDU-04B-15_TECK2.JPG



sample

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2015-04-20-08-10-39_UDU-04B-15_TECK2.JPG



overview facing west

2015-04-20-08-10-34_UDU-04B-15_TECK2.JPG



groundsurface

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Station Id	UDU-04B-16	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-20 9:08	Sample Team Initials	EL

Sample Collected? Y
X 422825.9366 m
Y 5400892.7212 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	20
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine gravelly very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Clematis vine pine needles and grasses		

Station Comments 5m south of wood and metal feature

Sample Collected from Station

Sample Id	UDU-04-ICS-B	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 7:57	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. 2 reserve locations (UDU-04B-R01, R02) used for UDU-04B-11, 19.		

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Photos Collected from Station UDU-04B-16

2015-04-20-09-11-16_UDU-04B-16_TECK2.JPG



sample

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2015-04-20-09-11-33_UDU-04B-16_TECK2.JPG



groundsurface

2015-04-20-09-11-36_UDU-04B-16_TECK2.JPG



overview facing west

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Station Id	UDU-04B-17	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-18 11:56	Sample Team Initials	EL

Sample Collected? Y
X 422868.3815 m
Y 5400851.7755 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand some silt clay and trace coarse gravel	Vegetation Present?	Y
Vegetation Type if Present	Grasses		

Station Comments along road berm reworked fill

Sample Collected from Station

Sample Id	UDU-04-ICS-B	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 7:57	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. 2 reserve locations (UDU-04B-R01, R02) used for UDU-04B-11, 19.		

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Photos Collected from Station UDU-04B-17

2015-04-18-11-49-29_UDU-04B-17_TECK2.JPG



overview facing west

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2015-04-18-11-53-18_UDU-04B-17_TECK2.JPG



groundsurface

2015-04-18-11-55-12_UDU-04B-17_TECK2.JPG



sample

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Station Id	UDU-04B-18	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-18 10:55	Sample Team Initials	EL

Sample Collected? Y
X 422921.2238 m
Y 5400899.7002 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	50
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand little silt and clay little decomposed decomposed organic	Vegetation Present?	Y
Vegetation Type if Present	Pine needles and grasses		

Station Comments

Sample Collected from Station

Sample Id	UDU-04-ICS-B	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 7:57	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. 2 reserve locations (UDU-04B-R01, R02) used for UDU-04B-11, 19.		

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Photos Collected from Station UDU-04B-18

2015-04-18-10-50-35_UDU-04B-18_TECK2.JPG



groundsurface

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2015-04-18-10-50-41_UDU-04B-18_TECK2.JPG



overview facing west

2015-04-18-10-52-33_UDU-04B-18_TECK2.JPG



sample

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Station Id	UDU-04B-19	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime	2015-04-20 9:40	Sample Team Initials	EL
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984

Station Comments not sampled, 75° slope

Sample Collected from Station

Sample Id	UDU-04-ICS-B	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 7:57	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. 2 reserve locations (UDU-04B-R01, R02) used for UDU-04B-11, 19.		

Photos Collected from Station UDU-04B-19

No photos taken at this station. See station comments for more details.

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Station Id	UDU-04B-20	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-20 9:31	Sample Team Initials	EL

Sample Collected? Y
X 422829.269 m
Y 5400884.777 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	80
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	A horizon over very fine sand little coarse gravel	Vegetation Present?	Y
Vegetation Type if Present	Pine needles and vine		

Station Comments

Sample Collected from Station

Sample Id	UDU-04-ICS-B	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 7:57	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. 2 reserve locations (UDU-04B-R01, R02) used for UDU-04B-11, 19.		

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Photos Collected from Station UDU-04B-20

2015-04-20-09-34-15_UDU-04B-20_TECK2.JPG



groundsurface

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2015-04-20-09-34-19_UDU-04B-20_TECK2.JPG



view facing west

2015-04-20-09-34-39_UDU-04B-20_TECK2.JPG



sample

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Station Id	UDU-04B-21	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-18 10:44	Sample Team Initials	EL

Sample Collected? Y
X 422933.2404 m
Y 5400885.7123 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine to fine sand little silt and clay trace fine gravel	Vegetation Present?	Y
Vegetation Type if Present	Grasses		

Station Comments

Sample Collected from Station

Sample Id	UDU-04-ICS-B	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 7:57	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. 2 reserve locations (UDU-04B-R01, R02) used for UDU-04B-11, 19.		

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Photos Collected from Station UDU-04B-21

2015-04-18-10-41-28_UDU-04B-21_TECK2.JPG



groundsurface

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2015-04-18-10-41-33_UDU-04B-21_TECK2.JPG



overview facing west

2015-04-18-10-43-02_UDU-04B-21_TECK2.JPG



sample

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Station Id	UDU-04B-22	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-18 16:41	Sample Team Initials	EL

Sample Collected? Y
X 422924.235 m
Y 5400869.4528 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 100
Shells Presence N
Surface Debris Present? N

Texture Very fine sand with little silt and clay

Vegetation Type if Present Grasses

Anthropogenic Changes Present? N
Color 7.5Y 3/2
Debris Presence N

Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Soil
Surface Debris Removed Prior to Sampling? N

Vegetation Present? Y

Station Comments

Sample Collected from Station

Sample Id	UDU-04-ICS-B	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 7:57	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. 2 reserve locations (UDU-04B-R01, R02) used for UDU-04B-11, 19.		

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Photos Collected from Station UDU-04B-22

2015-04-18-11-12-13_UDU-04B-22_TECK2.JPG



overview facing west

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2015-04-18-11-13-36_UDU-04B-22_TECK2.JPG



groundsurface

2015-04-18-11-15-19_UDU-04B-22_TECK2.JPG



sample

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Station Id	UDU-04B-23	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-18 16:49	Sample Team Initials	EL

Sample Collected? Y
X 422879.9305 m
Y 5400892.9087 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	Road berm	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	80
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pine needles		

Station Comments along road berm reworked native soil or fill

Sample Collected from Station

Sample Id	UDU-04-ICS-B	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 7:57	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. 2 reserve locations (UDU-04B-R01, R02) used for UDU-04B-11, 19.		

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Photos Collected from Station UDU-04B-23

2015-04-18-16-44-49_UDU-04B-23_TECK2.JPG



sample

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2015-04-18-16-44-53_UDU-04B-23_TECK2.JPG



overview facing west

2015-04-18-16-45-46_UDU-04B-23_TECK2.JPG



groundsurface

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Station Id	UDU-04B-24	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-18 15:43	Sample Team Initials	EL

Sample Collected? Y
X 422852.6386 m
Y 5400868.1018 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N
Biological Visual Presence	N
Cultural Oversight Inspection Conducted?	Y
Odor	N
Percent Ground Coverage	100
Shells Presence	N
Surface Debris Present?	N
Texture	Fine silty sand
Vegetation Type if Present	Pine needles and grasses

Anthropogenic Changes Present?	N
Color	10YR 4/2
Debris Presence	N
Percent Canopy Coverage	20
Sheen Presence	N
Substrate Type	Soil
Surface Debris Removed Prior to Sampling?	N
Vegetation Present?	Y

Station Comments

Sample Collected from Station

Sample Id	UDU-04-ICS-B	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 7:57	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. 2 reserve locations (UDU-04B-R01, R02) used for UDU-04B-11, 19.		

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Photos Collected from Station UDU-04B-24

2015-04-18-15-47-24_UDU-04B-24_TECK2.JPG



groundsurface

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2015-04-18-15-47-28_UDU-04B-24_TECK2.JPG



overview facing west

2015-04-18-15-47-38_UDU-04B-24_TECK2.JPG



sample

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Station Id	UDU-04B-25	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-18 15:43	Sample Team Initials	EL

Sample Collected? Y
X 422857.322 m
Y 5400844.0191 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N
Biological Visual Presence	N
Cultural Oversight Inspection Conducted?	Y
Odor	N
Percent Ground Coverage	100
Shells Presence	N
Surface Debris Present?	N
Texture	Very fine sand
Vegetation Type if Present	Grasses and pine needles

Anthropogenic Changes Present?	N
Color	10YR 3/2
Debris Presence	N
Percent Canopy Coverage	0
Sheen Presence	N
Substrate Type	Soil
Surface Debris Removed Prior to Sampling?	N
Vegetation Present?	Y

Station Comments

Sample Collected from Station

Sample Id	UDU-04-ICS-B	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 7:57	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. 2 reserve locations (UDU-04B-R01, R02) used for UDU-04B-11, 19.		

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Photos Collected from Station UDU-04B-25

2015-04-18-13-42-42_UDU-04B-25_TECK2.JPG



sample

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2015-04-18-13-37-16_UDU-04B-25_TECK2.JPG



groundsurface

2015-04-18-13-37-21_UDU-04B-25_TECK2.JPG



groundsurface

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Station Id	UDU-04B-26	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-20 8:39	Sample Team Initials	EL

Sample Collected? Y
X 422880.7012 m
Y 5400931.3684 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 5/4
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	50
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine to fine sand trace fine gravel	Vegetation Present?	Y
Vegetation Type if Present	Grasses		

Station Comments

Sample Collected from Station

Sample Id	UDU-04-ICS-B	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 7:57	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. 2 reserve locations (UDU-04B-R01, R02) used for UDU-04B-11, 19.		

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Photos Collected from Station UDU-04B-26

2015-04-20-08-40-34_UDU-04B-26_TECK2.JPG



groundsurface

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2015-04-20-08-40-57_UDU-04B-26_TECK2.JPG



overview facing west

2015-04-20-08-41-50_UDU-04B-26_TECK2.JPG



sample

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Station Id	UDU-04B-27	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-20 11:35	Sample Team Initials	EL

Sample Collected? Y
X 422907.4443 m
Y 5400908.7664 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 5/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	70
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine to fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pine needles		

Station Comments

Sample Collected from Station

Sample Id	UDU-04-ICS-B	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 7:57	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. 2 reserve locations (UDU-04B-R01, R02) used for UDU-04B-11, 19.		

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Photos Collected from Station UDU-04B-27

2015-04-20-11-38-16_UDU-04B-27_TECK2.JPG



sample

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2015-04-20-11-38-24_UDU-04B-27_TECK2.JPG



groundsurface

2015-04-20-11-38-28_UDU-04B-27_TECK2.JPG



overview facing west

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Station Id	UDU-04B-28	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-18 16:07	Sample Team Initials	EL

Sample Collected? Y
X 422875.501 m
Y 5400885.5621 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	60
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pine needles and grasses		

Station Comments

Sample Collected from Station

Sample Id	UDU-04-ICS-B	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 7:57	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. 2 reserve locations (UDU-04B-R01, R02) used for UDU-04B-11, 19.		

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Photos Collected from Station UDU-04B-28

2015-04-18-16-11-07_UDU-04B-28_TECK2.JPG



groundsurface

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2015-04-18-16-11-12_UDU-04B-28_TECK2.JPG



overview facing west

2015-04-18-16-11-41_UDU-04B-28_TECK2.JPG



sample

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Station Id	UDU-04B-29	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-20 8:20	Sample Team Initials	EL

Sample Collected? Y
X 422880.827 m
Y 5400912.6351 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N	
Biological Visual Presence	N	Color	10YR 4/2	
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N	
Odor	N	Percent Canopy Coverage	90	
Percent Ground Coverage	100	Sheen Presence	N	
Shells Presence	N	Substrate Type	Soil	
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N	
Texture	A horizon decomposed organics silty very fine sand one coarse gravel		Vegetation Present?	Y
Vegetation Type if Present	Pine needles			

Station Comments

Sample Collected from Station

Sample Id	UDU-04-ICS-B	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 7:57	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. 2 reserve locations (UDU-04B-R01, R02) used for UDU-04B-11, 19.		

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Photos Collected from Station UDU-04B-29

2015-04-20-08-21-32_UDU-04B-29_TECK2.JPG



sample

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2015-04-20-08-21-48_UDU-04B-29_TECK2.JPG



groundsurface

2015-04-20-08-21-51_UDU-04B-29_TECK2.JPG



overview facing west

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Station Id	UDU-04B-30	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-18 16:29	Sample Team Initials	EL

Sample Collected? Y
X 422881.5105 m
Y 5400886.7115 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	Road	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	50
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pine needles and grasses		

Station Comments along road berm reworked native soil or fill

Sample Collected from Station

Sample Id	UDU-04-ICS-B	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 7:57	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. 2 reserve locations (UDU-04B-R01, R02) used for UDU-04B-11, 19.		

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Photos Collected from Station UDU-04B-30

2015-04-18-16-32-47_UDU-04B-30_TECK2.JPG



overview facing west

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2015-04-18-16-30-40_UDU-04B-30_TECK2.JPG



groundsurface

2015-04-18-16-31-07_UDU-04B-30_TECK2.JPG



sample

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Station Id UDU-04B-R01 **Start Depth** 0 cm
Station Type Reserve **End Depth** 15 cm
Collection DateTime 2015-04-20 11:21 **Sample Team Initials** EL

Sample Collected? Y
X 422880.9972 m
Y 5400896.4574 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description Gravel road

Biological Visual Presence N

Cultural Oversight Inspection Conducted? Y

Odor N

Percent Ground Coverage 100

Shells Presence N

Surface Debris Present? N

Texture Fine to coarse gravelly fine sand trace fine to coarse sand

Vegetation Type if Present Pine needles

Station Comments

Sample Collected from Station

Sample Id	UDU-04-ICS-B	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 7:57	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. 2 reserve locations (UDU-04B-R01, R02) used for UDU-04B-11, 19.		

Anthropogenic Changes Present? N

Color 2.5Y 4/3

Debris Presence N

Percent Canopy Coverage 20

Sheen Presence N

Substrate Type Soil

Surface Debris Removed Prior to Sampling? N

Vegetation Present? Y

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Photos Collected from Station UDU-04B-R01

2015-04-20-11-29-36_UDU-04B-R01_TECK2.JPG



sample

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2015-04-20-11-25-27_UDU-04B-R01_TECK2.JPG



groundsurface

2015-04-20-11-25-40_UDU-04B-R01_TECK2.JPG



ovrrview facing west

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Station Id	UDU-04B-R02	Start Depth	0 cm
Station Type	Reserve	End Depth	15 cm
Collection DateTime	2015-04-20 11:46	Sample Team Initials	EL

Sample Collected? Y
X 422847.2559 m
Y 5400842.0579 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	40
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pine needles		

Station Comments

Sample Collected from Station

Sample Id	UDU-04-ICS-B	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 7:57	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. 2 reserve locations (UDU-04B-R01, R02) used for UDU-04B-11, 19.		

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Photos Collected from Station UDU-04B-R02

2015-04-20-11-48-04_UDU-04B-R02_TECK2.JPG



groundsurface

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2015-04-20-11-48-12_UDU-04B-R02_TECK2.JPG



overview facing west

2015-04-20-11-48-20_UDU-04B-R02_TECK2.JPG



sample

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Station Id	UDU-04B-R03	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-04-ICS-B	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 7:57	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. 2 reserve locations (UDU-04B-R01, R02) used for UDU-04B-11, 19.		

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Photos Collected from Station UDU-04B-R03

No photos taken at this station. See station comments for more details.

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Station Id	UDU-04B-R04	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-04-ICS-B	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 7:57	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. 2 reserve locations (UDU-04B-R01, R02) used for UDU-04B-11, 19.		

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Photos Collected from Station UDU-04B-R04

No photos taken at this station. See station comments for more details.

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Station Id	UDU-04B-R05	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-04-ICS-B	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 7:57	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. 2 reserve locations (UDU-04B-R01, R02) used for UDU-04B-11, 19.		

Photos Collected from Station UDU-04B-R05

No photos taken at this station. See station comments for more details.

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Station Id	UDU-04B-R06	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-04-ICS-B	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 7:57	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. 2 reserve locations (UDU-04B-R01, R02) used for UDU-04B-11, 19.		

Photos Collected from Station UDU-04B-R06

No photos taken at this station. See station comments for more details.

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Station Id	UDU-04B-R07	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-04-ICS-B	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 7:57	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. 2 reserve locations (UDU-04B-R01, R02) used for UDU-04B-11, 19.		

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Photos Collected from Station UDU-04B-R07

No photos taken at this station. See station comments for more details.

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Station Id	UDU-04B-R08	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-04-ICS-B	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 7:57	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. 2 reserve locations (UDU-04B-R01, R02) used for UDU-04B-11, 19.		

Photos Collected from Station UDU-04B-R08

No photos taken at this station. See station comments for more details.

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Station Id	UDU-04B-R09	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-04-ICS-B	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 7:57	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. 2 reserve locations (UDU-04B-R01, R02) used for UDU-04B-11, 19.		

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Photos Collected from Station UDU-04B-R09

No photos taken at this station. See station comments for more details.

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Station Id	UDU-04B-R10	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-04-ICS-B	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 7:57	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. 2 reserve locations (UDU-04B-R01, R02) used for UDU-04B-11, 19.		

Photos Collected from Station UDU-04B-R10

No photos taken at this station. See station comments for more details.

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Station Id	UDU-04B-R11	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-04-ICS-B	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 7:57	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate B
Sample Comments	30 increments checked and composited into 1 bucket. 2 reserve locations (UDU-04B-R01, R02) used for UDU-04B-11, 19.		

Photos Collected from Station UDU-04B-R11

No photos taken at this station. See station comments for more details.

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Station Id	UDU-04C-01	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-20 15:10	Sample Team Initials	AP
Sample Collected?	Y		
X	422912.4 m		
Y	5400905.5 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	40
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with trace silt and trace fine rounded gravel	Vegetation Present?	Y
Vegetation Type if Present	Some grass		

Station Comments located under large pine tree, east of beach access road

Sample Collected from Station

Sample Id	UDU-04-ICS-C	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 8:18	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (UDU-04C-R02, R04, R08) used for UDU-04C-06, 23, 26.		

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Photos Collected from Station UDU-04C-01

2015-04-20-15-06-33_UDU-04C-01_TECK1.JPG



ground surface

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2015-04-20-15-07-43_UDU-04C-01_TECK1.JPG



2015-04-20-15-07-55_UDU-04C-01_TECK1.JPG



view north

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-04C-02	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-18 14:47	Sample Team Initials	AP

Sample Collected? Y
X 422851.2179 m
Y 5400876.7581 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	90
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with clay, high % organic material	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments under pine tree on top of hillside

Sample Collected from Station

Sample Id	UDU-04-ICS-C	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 8:18	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (UDU-04C-R02, R04, R08) used for UDU-04C-06, 23, 26.		

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Photos Collected from Station UDU-04C-02

2015-04-18-14-39-16_UDU-04C-02_TECK1.JPG



ground surface

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2015-04-18-14-41-47_UDU-04C-02_TECK1.JPG



2015-04-18-14-42-05_UDU-04C-02_TECK1.JPG



view north

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Station Id	UDU-04C-03	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-20 14:48	Sample Team Initials	AP

Sample Collected? Y
X 422910.5206 m
Y 5400916.2813 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with trace silt	Vegetation Present?	Y
Vegetation Type if Present	Some grass and pine trees		
Station Comments	located directly under pine tree		

Sample Collected from Station

Sample Id	UDU-04-ICS-C	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 8:18	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (UDU-04C-R02, R04, R08) used for UDU-04C-06, 23, 26.		

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Photos Collected from Station UDU-04C-03

2015-04-20-14-42-39_UDU-04C-03_TECK1.JPG



ground surface

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2015-04-20-14-43-57_UDU-04C-03_TECK1.JPG



2015-04-20-14-44-11_UDU-04C-03_TECK1.JPG



view north

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Station Id	UDU-04C-04	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-18 15:25	Sample Team Initials	AP
Sample Collected?	Y		
X	422870.1706 m		
Y	5400874.8127 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	Appears to be on a man made slope	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with clay and fine rounded gravel, high % organic matter	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments located on berm just west of beach access road

Sample Collected from Station

Sample Id	UDU-04-ICS-C	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 8:18	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (UDU-04C-R02, R04, R08) used for UDU-04C-06, 23, 26.		

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Photos Collected from Station UDU-04C-04

2015-04-18-15-17-53_UDU-04C-04_TECK1.JPG



ground surface

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2015-04-18-15-20-31_UDU-04C-04_TECK1.JPG



2015-04-18-15-20-39_UDU-04C-04_TECK1.JPG



view north

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Station Id	UDU-04C-05	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-20 16:03	Sample Team Initials	AP

Sample Collected? Y
X 422889.0961 m
Y 5400881.2568 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with trace silt and clay	Vegetation Present?	Y
Vegetation Type if Present	Pine trees and some grass		

Station Comments located directly under pine tree, just east of beach access road

Sample Collected from Station

Sample Id	UDU-04-ICS-C	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 8:18	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (UDU-04C-R02, R04, R08) used for UDU-04C-06, 23, 26.		

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Photos Collected from Station UDU-04C-05

2015-04-20-15-59-30_UDU-04C-05_TECK1.JPG



ground surface

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2015-04-20-16-00-39_UDU-04C-05_TECK1.JPG



2015-04-20-16-00-46_UDU-04C-05_TECK1.JPG



view north

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Station Id	UDU-04C-06	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime	2015-04-20 11:15	Sample Team Initials	AP
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments abandoned due to steep terrain, replaced by UDU-04C-R08

Sample Collected from Station

Sample Id	UDU-04-ICS-C	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 8:18	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (UDU-04C-R02, R04, R08) used for UDU-04C-06, 23, 26.		

Photos Collected from Station UDU-04C-06

No photos taken at this station. See station comments for more details.

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Station Id	UDU-04C-07	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-20 12:55	Sample Team Initials	AP

Sample Collected? Y
X 422850.889 m
Y 5400843.3361 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with trace clay and trace fine rounded gravel, high % organic material	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments located just west of beach access road under large pine tree.

Sample Collected from Station

Sample Id	UDU-04-ICS-C	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 8:18	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (UDU-04C-R02, R04, R08) used for UDU-04C-06, 23, 26.		

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Photos Collected from Station UDU-04C-07

2015-04-20-12-50-44_UDU-04C-07_TECK1.JPG



ground surface

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2015-04-20-12-52-01_UDU-04C-07_TECK1.JPG



2015-04-20-12-52-11_UDU-04C-07_TECK1.JPG



view north

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Station Id	UDU-04C-08	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-20 13:07	Sample Team Initials	AP

Sample Collected? Y
X 422859.0075 m
Y 5400826.1093 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	20
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with trace silt and fine rounded gravel	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments sample located immediately south of beach access road.

Sample Collected from Station

Sample Id	UDU-04-ICS-C	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 8:18	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (UDU-04C-R02, R04, R08) used for UDU-04C-06, 23, 26.		

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Photos Collected from Station UDU-04C-08

2015-04-20-13-03-20_UDU-04C-08_TECK1.JPG



ground surface

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2015-04-20-13-04-33_UDU-04C-08_TECK1.JPG



2015-04-20-13-04-45_UDU-04C-08_TECK1.JPG



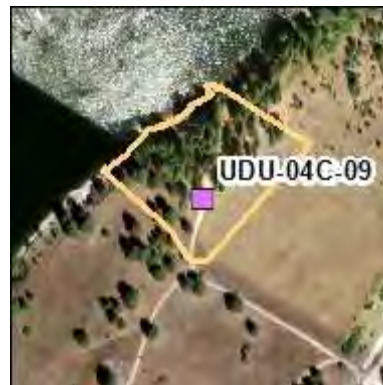
view north

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Station Id	UDU-04C-09	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-18 16:22	Sample Team Initials	AP

Sample Collected? Y
X 422871.6426 m
Y 5400856.1628 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description Sample is immediately adjacent to beach access road

Biological Visual Presence N

Cultural Oversight Inspection Conducted? Y

Odor N

Percent Ground Coverage 100

Shells Presence N

Surface Debris Present? N

Texture Very fine sand with silt and gravel

Vegetation Type if Present Grass and pine trees

Station Comments located on berm immediately west of beach access road.

Anthropogenic Changes Present? N

Color 10YR 4/3

Debris Presence Pine duff

Percent Canopy Coverage 50

Sheen Presence N

Substrate Type Soil

Surface Debris Removed Prior to Sampling? N

Vegetation Present? Y

Sample Collected from Station

Sample Id	UDU-04-ICS-C	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 8:18	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (UDU-04C-R02, R04, R08) used for UDU-04C-06, 23, 26.		

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Photos Collected from Station UDU-04C-09

2015-04-18-16-14-22_UDU-04C-09_TECK1.JPG



ground surface

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2015-04-18-16-18-20_UDU-04C-09_TECK1.JPG



2015-04-18-16-18-29_UDU-04C-09_TECK1.JPG



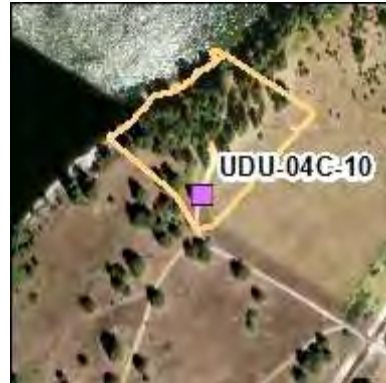
view north

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Station Id	UDU-04C-10	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-20 13:16	Sample Team Initials	AP

Sample Collected? Y
X 422867.613 m
Y 5400834.8312 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description Sample located in middle of beach access road
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 10
Shells Presence N
Surface Debris Present? N
Texture Gravelly fine sand
Vegetation Type if Present N

Anthropogenic Changes Present? N
Color 10YR 4/2
Debris Presence N
Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Soil
Surface Debris Removed Prior to Sampling? N
Vegetation Present? N

Station Comments sample located in middle of beach access road

Sample Collected from Station

Sample Id	UDU-04-ICS-C	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 8:18	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (UDU-04C-R02, R04, R08) used for UDU-04C-06, 23, 26.		

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Photos Collected from Station UDU-04C-10

2015-04-20-13-12-50_UDU-04C-10_TECK1.JPG



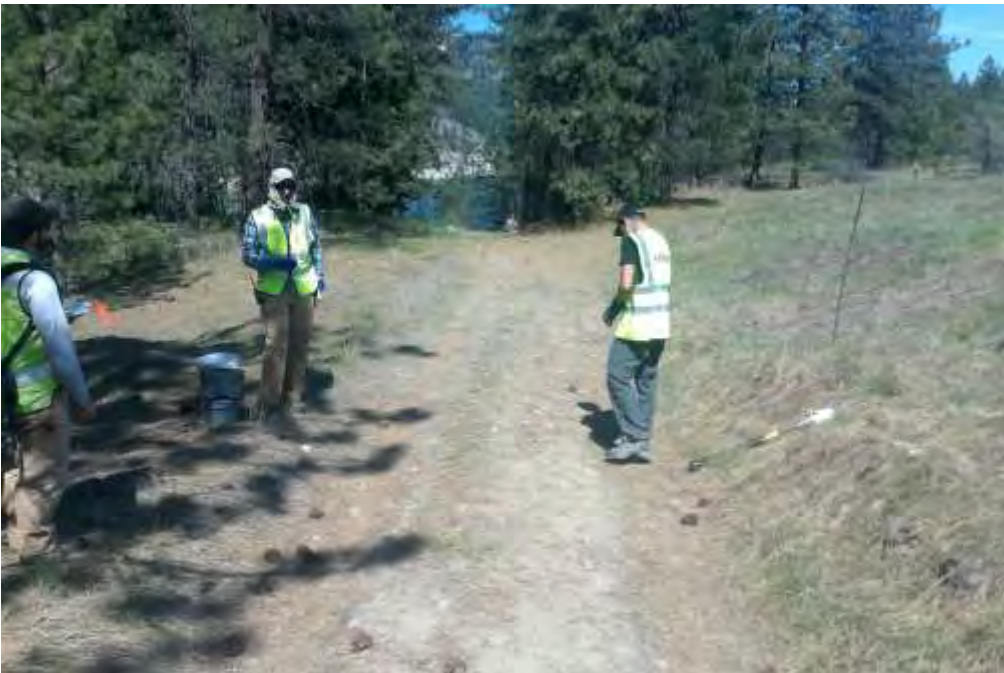
ground surface

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2015-04-20-13-14-05_UDU-04C-10_TECK1.JPG



2015-04-20-13-14-15_UDU-04C-10_TECK1.JPG



view north

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Station Id	UDU-04C-11	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-18 15:12	Sample Team Initials	AP

Sample Collected? Y
X 422865.6577 m
Y 5400881.9485 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with clay, high % organic material	Vegetation Present?	Y
Vegetation Type if Present	Pine trees and small shrubs		

Station Comments located on steep slope south of gully in UDU.

Sample Collected from Station

Sample Id	UDU-04-ICS-C	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 8:18	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (UDU-04C-R02, R04, R08) used for UDU-04C-06, 23, 26.		

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Photos Collected from Station UDU-04C-11

2015-04-18-15-06-04_UDU-04C-11_TECK1.JPG



grond surface

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2015-04-18-15-08-11_UDU-04C-11_TECK1.JPG



2015-04-18-15-08-20_UDU-04C-11_TECK1.JPG



view west

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Station Id	UDU-04C-12	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-18 16:37	Sample Team Initials	AP

Sample Collected? Y
X 422860.2912 m
Y 5400836.2414 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	10
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand with rounded gravel	Vegetation Present?	Y
Vegetation Type if Present	Grass and pine trees		

Station Comments adjacent to pine tree cluster immediately west of beach access road

Sample Collected from Station

Sample Id	UDU-04-ICS-C	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 8:18	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (UDU-04C-R02, R04, R08) used for UDU-04C-06, 23, 26.		

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Photos Collected from Station UDU-04C-12

2015-04-18-16-29-08_UDU-04C-12_TECK1.JPG



ground surface

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2015-04-18-16-33-30_UDU-04C-12_TECK1.JPG



2015-04-18-16-33-41_UDU-04C-12_TECK1.JPG



view north

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Station Id	UDU-04C-13	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-20 15:39	Sample Team Initials	AP

Sample Collected? Y
X 422895.4652 m
Y 5400925.0941 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description Sample located on beach access road
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 50
Shells Presence N
Surface Debris Present? N
Texture Gravelly fine sand with trace silt
Vegetation Type if Present Grass

Anthropogenic Changes Present? N
Color 10YR 3/2
Debris Presence Pine duff
Percent Canopy Coverage 50
Sheen Presence N
Substrate Type Soil
Surface Debris Removed Prior to Sampling? N
Vegetation Present? Y

Station Comments sample located on east side of beach access road.

Sample Collected from Station

Sample Id	UDU-04-ICS-C	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 8:18	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (UDU-04C-R02, R04, R08) used for UDU-04C-06, 23, 26.		

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Photos Collected from Station UDU-04C-13

2015-04-20-15-32-01_UDU-04C-13_TECK1.JPG



ground surface

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2015-04-20-15-36-05_UDU-04C-13_TECK1.JPG



2015-04-20-15-36-20_UDU-04C-13_TECK1.JPG



view north

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Station Id	UDU-04C-14	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-18 14:18	Sample Team Initials	AP

Sample Collected? Y
X 422835.2976 m
Y 5400875.7295 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 4/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with trace silt and fine rounded gravel	Vegetation Present?	Y
Vegetation Type if Present	Pine trees		

Station Comments located on hillside south of beach access road

Sample Collected from Station

Sample Id	UDU-04-ICS-C	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 8:18	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (UDU-04C-R02, R04, R08) used for UDU-04C-06, 23, 26.		

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Photos Collected from Station UDU-04C-14

2015-04-18-14-09-48_UDU-04C-14_TECK1.JPG



ground surface

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2015-04-18-14-15-00_UDU-04C-14_TECK1.JPG



2015-04-18-14-15-04_UDU-04C-14_TECK1.JPG



view west

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Station Id	UDU-04C-15	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-20 14:33	Sample Team Initials	AP

Sample Collected? Y
X 422925.9985 m
Y 5400906.8038 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with trace silt and clay, high % organic material	Vegetation Present?	Y

Vegetation Type if Present Grass and pine trees

Station Comments located directly under pine tree east of beach access road.

Sample Collected from Station

Sample Id	UDU-04-ICS-C	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 8:18	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (UDU-04C-R02, R04, R08) used for UDU-04C-06, 23, 26.		

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Photos Collected from Station UDU-04C-15

2015-04-20-14-28-49_UDU-04C-15_TECK1.JPG



ground surface

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2015-04-20-14-30-11_UDU-04C-15_TECK1.JPG



2015-04-20-14-30-17_UDU-04C-15_TECK1.JPG



view west

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Station Id	UDU-04C-16	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-20 14:57	Sample Team Initials	AP

Sample Collected? Y
X 422904.0954 m
Y 5400921.4547 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with silt and rounded gravel	Vegetation Present?	Y
Vegetation Type if Present	Pine trees		

Station Comments located on top of hill slope east of beach access road

Sample Collected from Station

Sample Id	UDU-04-ICS-C	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 8:18	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (UDU-04C-R02, R04, R08) used for UDU-04C-06, 23, 26.		

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Photos Collected from Station UDU-04C-16

2015-04-20-14-53-07_UDU-04C-16_TECK1.JPG



ground surface

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2015-04-20-14-54-24_UDU-04C-16_TECK1.JPG



2015-04-20-14-54-39_UDU-04C-16_TECK1.JPG



View north

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Station Id	UDU-04C-17	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime	2015-04-20 14:08	Sample Team Initials	AP

Sample Collected? Y
X 422915.4201 m
Y 5400881.0738 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand with trace silt and rounded gravel	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments sample located east of beach access road

Sample Collected from Station

Sample Id	UDU-04-ICS-C	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 8:18	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (UDU-04C-R02, R04, R08) used for UDU-04C-06, 23, 26.		

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Photos Collected from Station UDU-04C-17

2015-04-20-14-04-30_UDU-04C-17_TECK1.JPG



ground surface

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2015-04-20-14-05-52_UDU-04C-17_TECK1.JPG



2015-04-20-14-06-03_UDU-04C-17_TECK1.JPG



view north

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Station Id	UDU-04C-18	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-20 15:51	Sample Team Initials	AP

Sample Collected? Y
X 422872.1631 m
Y 5400901.3562 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 2/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Clayey fine sand, high % organic material	Vegetation Present?	Y
Vegetation Type if Present	Pine trees and small brush		

Station Comments located just northwest of what looks to be old ferry landing access road

Sample Collected from Station

Sample Id	UDU-04-ICS-C	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 8:18	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (UDU-04C-R02, R04, R08) used for UDU-04C-06, 23, 26.		

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Photos Collected from Station UDU-04C-18

2015-04-20-15-46-53_UDU-04C-18_TECK1.JPG



ground surface

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2015-04-20-15-48-03_UDU-04C-18_TECK1.JPG



2015-04-20-15-48-12_UDU-04C-18_TECK1.JPG



view north

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Station Id	UDU-04C-19	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-20 14:17	Sample Team Initials	AP

Sample Collected? Y
X 422907.4985 m
Y 5400880.4482 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with trace silt	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments located in field east of beach access road

Sample Collected from Station

Sample Id	UDU-04-ICS-C	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 8:18	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (UDU-04C-R02, R04, R08) used for UDU-04C-06, 23, 26.		

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Photos Collected from Station UDU-04C-19

2015-04-20-14-13-26_UDU-04C-19_TECK1.JPG



ground surface

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2015-04-20-14-14-52_UDU-04C-19_TECK1.JPG



2015-04-20-14-15-01_UDU-04C-19_TECK1.JPG



view north

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Station Id	UDU-04C-20	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-18 14:32	Sample Team Initials	AP

Sample Collected? Y
X 422840.436 m
Y 5400864.8523 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	40
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with clay and fine rounded gravel	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments under large pine tree just east of hillside.

Sample Collected from Station

Sample Id	UDU-04-ICS-C	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 8:18	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (UDU-04C-R02, R04, R08) used for UDU-04C-06, 23, 26.		

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Photos Collected from Station UDU-04C-20

2015-04-18-14-25-32_UDU-04C-20_TECK1.JPG



ground surface

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2015-04-18-14-28-26_UDU-04C-20_TECK1.JPG



2015-04-18-14-28-40_UDU-04C-20_TECK1.JPG



view north

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Station Id	UDU-04C-21	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-20 13:29	Sample Team Initials	AP

Sample Collected? Y
X 422880.0554 m
Y 5400848.177 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	30	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with rounded gravel	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments located just east of beach access road

Sample Collected from Station

Sample Id	UDU-04-ICS-C	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 8:18	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (UDU-04C-R02, R04, R08) used for UDU-04C-06, 23, 26.		

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Photos Collected from Station UDU-04C-21

2015-04-20-13-24-19_UDU-04C-21_TECK1.JPG



ground surface

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2015-04-20-13-26-07_UDU-04C-21_TECK1.JPG



2015-04-20-13-26-17_UDU-04C-21_TECK1.JPG



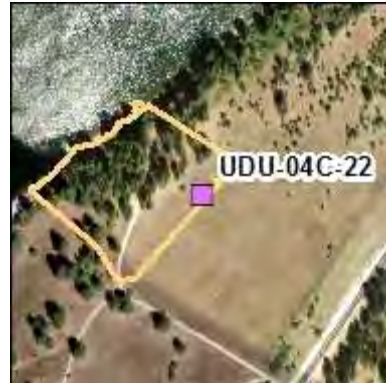
view north

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Station Id	UDU-04C-22	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-20 13:58	Sample Team Initials	AP
Sample Collected?	Y		
X	422924.2168 m		
Y	5400872.6446 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with trace silt and trace fine rounded gravel	Vegetation Present?	N
Vegetation Type if Present	Grass		

Station Comments located in open field east of beach access road.

Sample Collected from Station

Sample Id	UDU-04-ICS-C	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 8:18	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (UDU-04C-R02, R04, R08) used for UDU-04C-06, 23, 26.		

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Photos Collected from Station UDU-04C-22

2015-04-20-13-53-39_UDU-04C-22_TECK1.JPG



ground surface

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2015-04-20-13-54-46_UDU-04C-22_TECK1.JPG



2015-04-20-13-54-56_UDU-04C-22_TECK1.JPG



view north

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Station Id	UDU-04C-23	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime	2015-04-20 11:48	Sample Team Initials	AP
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments This sample location was abandoned due to steep terrain. It was replaced by reserve station UDU-04C-R04.

Sample Collected from Station

Sample Id	UDU-04-ICS-C	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 8:18	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (UDU-04C-R02, R04, R08) used for UDU-04C-06, 23, 26.		

Photos Collected from Station UDU-04C-23

No photos taken at this station. See station comments for more details.

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Station Id	UDU-04C-24	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-18 15:40	Sample Team Initials	AP

Sample Collected? Y
X 422882.1277 m
Y 5400867.8635 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with silt, high % organic matter	Vegetation Present?	Y
Vegetation Type if Present	Pine trees and grass		

Station Comments Located in small cluster of pine trees jsut east of beach access road

Sample Collected from Station

Sample Id	UDU-04-ICS-C	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 8:18	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (UDU-04C-R02, R04, R08) used for UDU-04C-06, 23, 26.		

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Photos Collected from Station UDU-04C-24

2015-04-18-15-33-17_UDU-04C-24_TECK1.JPG



ground surface

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2015-04-18-15-37-26_UDU-04C-24_TECK1.JPG



2015-04-18-15-37-36_UDU-04C-24_TECK1.JPG



view south

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Station Id	UDU-04C-25	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-18 14:59	Sample Team Initials	AP

Sample Collected? Y
X 422857.4093 m
Y 5400890.9569 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with silt and fine rounded gravel	Vegetation Present?	Y
Vegetation Type if Present	Some grass and brush		
Station Comments	immediately adjacent to large pine tree, on southern slope of gully that trends east to west towards river		

Sample Collected from Station

Sample Id	UDU-04-ICS-C	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 8:18	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (UDU-04C-R02, R04, R08) used for UDU-04C-06, 23, 26.		

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Photos Collected from Station UDU-04C-25

2015-04-18-14-54-10_UDU-04C-25_TECK1.JPG



ground surface

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2015-04-18-14-56-28_UDU-04C-25_TECK1.JPG



2015-04-18-14-56-36_UDU-04C-25_TECK1.JPG



view north

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Station Id	UDU-04C-26	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime	2015-04-20 11:30	Sample Team Initials	AP
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments This location was abandoned due to steep terrain and was replaced by reserve station UDU-04C-R02

Sample Collected from Station

Sample Id	UDU-04-ICS-C	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 8:18	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (UDU-04C-R02, R04, R08) used for UDU-04C-06, 23, 26.		

Photos Collected from Station UDU-04C-26

No photos taken at this station. See station comments for more details.

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Station Id	UDU-04C-27	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-18 16:08	Sample Team Initials	AP

Sample Collected? Y
X 422862.6669 m
Y 5400867.1461 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	80
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with clay and rounded gravel	Vegetation Present?	Y
Vegetation Type if Present	Grass, small shrubs, and pine trees		

Station Comments locaetd on west side of beach access roadin cluster of trees

Sample Collected from Station

Sample Id	UDU-04-ICS-C	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 8:18	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (UDU-04C-R02, R04, R08) used for UDU-04C-06, 23, 26.		

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Photos Collected from Station UDU-04C-27

2015-04-18-16-03-10_UDU-04C-27_TECK1.JPG



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2015-04-18-16-05-52_UDU-04C-27_TECK1.JPG



2015-04-18-16-06-06_UDU-04C-27_TECK1.JPG



view north

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Station Id	UDU-04C-28	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-20 13:40	Sample Team Initials	AP

Sample Collected? Y
X 422902.7843 m
Y 5400849.7594 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with trace silt	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments located in open field just east of beach access road

Sample Collected from Station

Sample Id	UDU-04-ICS-C	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 8:18	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (UDU-04C-R02, R04, R08) used for UDU-04C-06, 23, 26.		

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Photos Collected from Station UDU-04C-28

2015-04-20-13-35-25_UDU-04C-28_TECK1.JPG



ground surface

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2015-04-20-13-36-50_UDU-04C-28_TECK1.JPG



2015-04-20-13-36-59_UDU-04C-28_TECK1.JPG



view north

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Station Id	UDU-04C-29	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-20 15:23	Sample Team Initials	AP
Sample Collected?	Y		
X	422902.4267 m		
Y	5400900.8469 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with trace silt	Vegetation Present?	Y
Vegetation Type if Present	Some grass and pine trees		

Station Comments sample located just east of beach access road

Sample Collected from Station

Sample Id	UDU-04-ICS-C	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 8:18	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (UDU-04C-R02, R04, R08) used for UDU-04C-06, 23, 26.		

Photos Collected from Station UDU-04C-29

2015-04-20-15-17-11_UDU-04C-29_TECK1.JPG



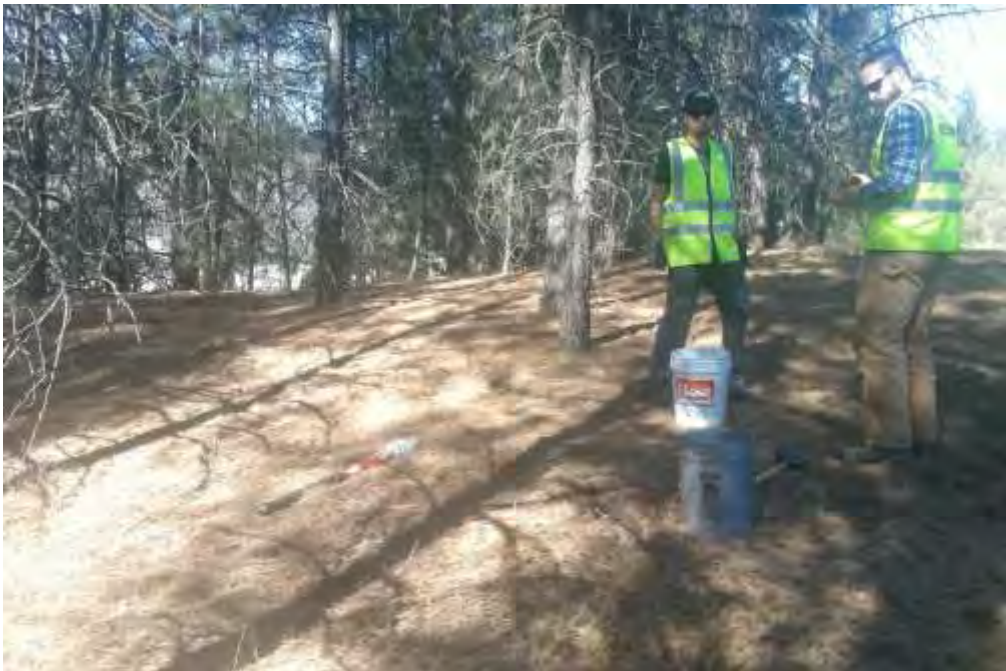
ground surface

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2015-04-20-15-19-36_UDU-04C-29_TECK1.JPG



2015-04-20-15-19-49_UDU-04C-29_TECK1.JPG



view north

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Station Id	UDU-04C-30	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-20 12:00	Sample Team Initials	AP

Sample Collected? Y
X 422826.9897 m
Y 5400866.9675 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description Sample location is on top of a man made berm

Biological Visual Presence N

Cultural Oversight Inspection Conducted? Y

Odor N

Percent Ground Coverage 100

Shells Presence N

Surface Debris Present? N

Texture Fine sand with clay and trace fine rounded gravel

Vegetation Type if Present Grass and pine tree

Anthropogenic Changes Present? N

Color 7.5YR 3/2

Debris Presence Pine duff

Percent Canopy Coverage 100

Sheen Presence N

Substrate Type Soil

Surface Debris Removed Prior to Sampling? N

Vegetation Present? Y

Station Comments sample is located directly on top of soil berm, directly underneath a large pine tree on top of hillside in decision unit

Sample Collected from Station

Sample Id	UDU-04-ICS-C	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 8:18	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (UDU-04C-R02, R04, R08) used for UDU-04C-06, 23, 26.		

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Photos Collected from Station UDU-04C-30

2015-04-20-11-53-22_UDU-04C-30_TECK1.JPG



ground surface

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2015-04-20-11-55-54_UDU-04C-30_TECK1.JPG



2015-04-20-11-56-06_UDU-04C-30_TECK1.JPG



view north

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Station Id	UDU-04C-R01	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-04-ICS-C	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 8:18	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (UDU-04C-R02, R04, R08) used for UDU-04C-06, 23, 26.		

Photos Collected from Station UDU-04C-R01

No photos taken at this station. See station comments for more details.

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Station Id	UDU-04C-R02	Start Depth	0 cm
Station Type	Reserve	End Depth	15 cm
Collection DateTime	2015-04-20 11:26	Sample Team Initials	AP

Sample Collected? Y
X 422883.8343 m
Y 5400865.4135 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 4/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	20
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine to fine sand with trace silt and trace fine rounded gravel	Vegetation Present?	Y
Vegetation Type if Present	Grass and pine trees		

Station Comments located adjacent to large pine tree, just east of beach access road. This reserve location replaces UDU-04C-26, which was abandoned due to steep terrain.

Sample Collected from Station

Sample Id	UDU-04-ICS-C	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 8:18	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (UDU-04C-R02, R04, R08) used for UDU-04C-06, 23, 26.		

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Photos Collected from Station UDU-04C-R02

2015-04-20-11-21-18_UDU-04C-R02_TECK1.JPG



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2015-04-20-11-22-17_UDU-04C-R02_TECK1.JPG



2015-04-20-11-22-30_UDU-04C-R02_TECK1.JPG



view north

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Station Id	UDU-04C-R03	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-04-ICS-C	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 8:18	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (UDU-04C-R02, R04, R08) used for UDU-04C-06, 23, 26.		

Photos Collected from Station UDU-04C-R03

No photos taken at this station. See station comments for more details.

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Station Id	UDU-04C-R04	Start Depth	0 cm
Station Type	Reserve	End Depth	15 cm
Collection DateTime	2015-04-20 11:44	Sample Team Initials	AP

Sample Collected? Y
X 422831.8537 m
Y 5400868.6218 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description Possibly, appears that sample location is located on a man made berm

Anthropogenic Changes Present? N

Biological Visual Presence N

Color 7.5YR 3/2

Cultural Oversight Inspection Conducted? Y

Debris Presence Pine duff

Odor N

Percent Canopy Coverage 40

Percent Ground Coverage 100

Sheen Presence N

Shells Presence N

Substrate Type Soil

Surface Debris Present? N

Surface Debris Removed Prior to Sampling? N

Texture Fine sand with trace silt and rounded gravel

Vegetation Present? Y

Vegetation Type if Present Grass

Station Comments located on berm immediately on top of hillside in UDU-04. This reserve location replaces UDU-04C-23, which was abandoned due to steep terrain.

Sample Collected from Station

Sample Id	UDU-04-ICS-C	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 8:18	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (UDU-04C-R02, R04, R08) used for UDU-04C-06, 23, 26.		

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Photos Collected from Station UDU-04C-R04

2015-04-20-11-38-36_UDU-04C-R04_1619LP-WA70047.JPG



sample

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2015-04-20-11-36-00_UDU-04C-R04_TECK1.JPG



ground surface

2015-04-20-11-38-45_UDU-04C-R04_TECK1.JPG



view north

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Station Id	UDU-04C-R05	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-04-ICS-C	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 8:18	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (UDU-04C-R02, R04, R08) used for UDU-04C-06, 23, 26.		

Photos Collected from Station UDU-04C-R05

No photos taken at this station. See station comments for more details.

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Station Id	UDU-04C-R06	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-04-ICS-C	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 8:18	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (UDU-04C-R02, R04, R08) used for UDU-04C-06, 23, 26.		

Photos Collected from Station UDU-04C-R06

No photos taken at this station. See station comments for more details.

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Station Id	UDU-04C-R07	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-04-ICS-C	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 8:18	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (UDU-04C-R02, R04, R08) used for UDU-04C-06, 23, 26.		

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Photos Collected from Station UDU-04C-R07

No photos taken at this station. See station comments for more details.

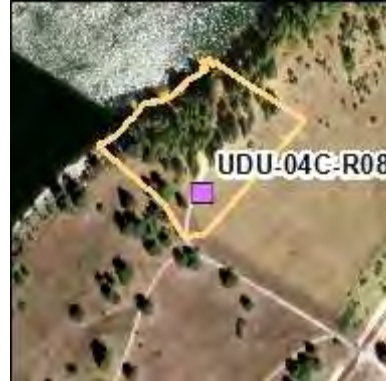
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Station Id	UDU-04C-R08	Start Depth	0 cm
Station Type	Reserve	End Depth	15 cm
Collection DateTime	2015-04-20 11:10	Sample Team Initials	AP

Sample Collected? Y
X 422875.2269 m
Y 5400842.6858 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 4/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with clay, high % organic material	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments sample location is just east of beach access road. This reserve station replaces UDU-04C-06, which was abandoned due to steep terrain

Sample Collected from Station

Sample Id	UDU-04-ICS-C	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-21 8:18	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	Replicate C
Sample Comments	30 increments checked and composited into 1 bucket. 3 reserve locations (UDU-04C-R02, R04, R08) used for UDU-04C-06, 23, 26.		

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Photos Collected from Station UDU-04C-R08

2015-04-20-11-00-08_UDU-04C-R08_1619LP-WA70047.JPG



ground surface

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2015-04-20-11-06-14_UDU-04C-R08_1619LP-WA70047.JPG



sample

2015-04-20-11-06-26_UDU-04C-R08_1619LP-WA70047.JPG



overview

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Station Id	UDU-05-01	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-29 11:46	Sample Team Initials	AP

Sample Collected? Y
X 423584.8247 m
Y 5401448.3472 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description Upslope from rail tie
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 100
Shells Presence N
Surface Debris Present? N

Texture Gravelly fine sand with trace silt, high % organic material

Vegetation Type if Present Pine trees

Station Comments located on slope below rail road

Sample Collected from Station

Sample Id	UDU-05-ICS	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-05-01 7:42	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Anthropogenic Changes Present? N
Color 7.5YR 3/1
Debris Presence Pine duff and cobbles

Percent Canopy Coverage 100
Sheen Presence N
Substrate Type Soil
Surface Debris Removed Prior to Sampling? N
Vegetation Present? Y

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Photos Collected from Station UDU-05-01

2015-04-29-11-33-00_UDU-05-01_1619LP-WA70047.JPG



ground surface

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2015-04-29-11-34-00_UDU-05-01_1619LP-WA70047.JPG



overview

2015-04-29-11-43-25_UDU-05-01_TECK1.JPG



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Station Id	UDU-05-02	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-30 13:03	Sample Team Initials	AP

Sample Collected? Y
X 423571.2635 m
Y 5401434.5686 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand, some organic material	Vegetation Present?	Y
Vegetation Type if Present	Pine tree		
Station Comments	located just upslope of beach		

Sample Collected from Station

Sample Id	UDU-05-ICS	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-05-01 7:42	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station UDU-05-02

2015-04-30-12-59-45_UDU-05-02_TECK1.JPG



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2015-04-30-13-00-49_UDU-05-02_TECK1.JPG



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Station Id	UDU-05-03	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-29 13:42	Sample Team Initials	AP

Sample Collected? Y
X 423565.8136 m
Y 5401393.2524 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	Immediately adjacent to rail road	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff and cobbles
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine to coarse sand with trace silt	Vegetation Present?	Y
Vegetation Type if Present	Pine trees		

Station Comments located immediately adjacent to rail road

Sample Collected from Station

Sample Id	UDU-05-ICS	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-05-01 7:42	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station UDU-05-03

2015-04-29-13-36-27_UDU-05-03_TECK1.JPG



vne

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2015-04-29-13-36-18_UDU-05-03_TECK1.JPG



gs

2015-04-29-13-39-49_UDU-05-03_TECK1.JPG



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Station Id	UDU-05-04	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-30 12:03	Sample Team Initials	AP

Sample Collected? Y
X 423472.0722 m
Y 5401276.7794 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine sand with silt and cobbles	Vegetation Present?	N
Vegetation Type if Present	N		
Station Comments	located below rail road		

Sample Collected from Station

Sample Id	UDU-05-ICS	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-05-01 7:42	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station UDU-05-04

2015-04-30-11-56-53_UDU-05-04_TECK1.JPG



gs

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2015-04-30-11-57-15_UDU-05-04_TECK1.JPG



vn

2015-04-30-12-01-39_UDU-05-04_TECK1.JPG



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Station Id	UDU-05-05	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-29 11:01	Sample Team Initials	AP
Sample Collected?	Y		
X	423607.5978 m		
Y	5401485.9827 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff and cobbles
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with trace silt, high % organic material	Vegetation Present?	Y
Vegetation Type if Present	Trees		

Station Comments located on hillside adjacent to burnt pine tree

Sample Collected from Station

Sample Id	UDU-05-ICS	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-05-01 7:42	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station UDU-05-05

2015-04-29-10-56-45_UDU-05-05_TECK1.JPG



gs

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-29-10-58-04_UDU-05-05_TECK1.JPG



view s

2015-04-29-10-59-12_UDU-05-05_TECK1.JPG



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Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-05-06	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-30 13:12	Sample Team Initials	AP

Sample Collected? Y
X 423562.6813 m
Y 5401425.5521 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand with trace organic material	Vegetation Present?	Y
Vegetation Type if Present	Pine trees and some grass		
Station Comments	located just upslope of beach		

Sample Collected from Station

Sample Id	UDU-05-ICS	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-05-01 7:42	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station UDU-05-06

2015-04-30-13-06-46_UDU-05-06_TECK1.JPG



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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-30-13-07-18_UDU-05-06_TECK1.JPG



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2015-04-30-13-09-28_UDU-05-06_TECK1.JPG



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Station Id	UDU-05-07	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-30 10:59	Sample Team Initials	AP

Sample Collected? Y
X 423559.1276 m
Y 5401407.047 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand with trace silt, high % organic material	Vegetation Present?	Y
Vegetation Type if Present	Pine trees		

Station Comments located below rail road

Sample Collected from Station

Sample Id	UDU-05-ICS	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-05-01 7:42	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station UDU-05-07

2015-04-30-10-52-42_UDU-05-07_1619LP-WA70047.JPG



ground surface

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2015-04-30-10-55-48_UDU-05-07_1619LP-WA70047.JPG



overview

2015-04-30-10-57-28_UDU-05-07_1619LP-WA70047.JPG



sample

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Station Id	UDU-05-08	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-29 14:42	Sample Team Initials	AP

Sample Collected? Y
X 423527.3356 m
Y 5401349.2252 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description Located next to railroad

Biological Visual Presence N

Cultural Oversight Inspection Conducted? Y

Odor N

Percent Ground Coverage 100

Shells Presence N

Surface Debris Present? N

Texture Gravelly silt with sand

Vegetation Type if Present Grass and shrubs

Station Comments located next to railroad

Anthropogenic Changes Present? N

Color 10YR 4/3

Debris Presence Pine duff

Percent Canopy Coverage 0

Sheen Presence N

Substrate Type Soil

Surface Debris Removed Prior to Sampling? N

Vegetation Present? Y

Sample Collected from Station

Sample Id	UDU-05-ICS	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-05-01 7:42	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station UDU-05-08

2015-04-29-14-41-33_UDU-05-08_TECK1.JPG



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2015-04-29-14-37-34_UDU-05-08_TECK1.JPG



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2015-04-29-14-37-13_UDU-05-08_TECK1.JPG



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Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-05-09	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-29 14:16	Sample Team Initials	AP

Sample Collected? Y
X 423545.97 m
Y 5401365.4682 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description Next to rail road

Biological Visual Presence N

Cultural Oversight Inspection Conducted? Y

Odor N

Percent Ground Coverage 100

Shells Presence N

Surface Debris Present? N

Texture Gravelly sandy silt

Vegetation Type if Present Grass

Station Comments located adjacent to rail road

Anthropogenic Changes Present? N

Color 10YR 4/2

Debris Presence Pine duff and cobbles

Percent Canopy Coverage 0

Sheen Presence N

Substrate Type Soil

Surface Debris Removed Prior to Sampling? N

Vegetation Present? Y

Sample Collected from Station

Sample Id	UDU-05-ICS	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-05-01 7:42	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station UDU-05-09

2015-04-29-14-11-11_UDU-05-09_TECK1.JPG



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2015-04-29-14-14-25_UDU-05-09_TECK1.JPG



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Station Id	UDU-05-10	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-30 14:03	Sample Team Initials	AP

Sample Collected? Y
X 423519.2567 m
Y 5401363.8271 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N	
Biological Visual Presence	N	Color	10YR 4/3	
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff	
Odor	N	Percent Canopy Coverage	100	
Percent Ground Coverage	100	Sheen Presence	N	
Shells Presence	N	Substrate Type	Soil	
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N	
Texture	Silty very fine sand, trace gravel and organic material		Vegetation Present?	Y
Vegetation Type if Present	Pine trees			

Station Comments located just upslope of beach

Sample Collected from Station

Sample Id	UDU-05-ICS	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-05-01 7:42	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station UDU-05-10

2015-04-30-13-57-41_UDU-05-10_TECK1.JPG



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2015-04-30-13-57-55_UDU-05-10_TECK1.JPG



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2015-04-30-14-01-37_UDU-05-10_TECK1.JPG



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Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-05-11	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-29 14:07	Sample Team Initials	AP

Sample Collected? Y
X 423556.61 m
Y 5401385.2023 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description Next to rail road

Biological Visual Presence N

Cultural Oversight Inspection Conducted? Y

Odor N

Percent Ground Coverage 100

Shells Presence N

Surface Debris Present? N

Texture Gravelly fine to coarse sand with trace silt

Vegetation Type if Present Pine trees

Station Comments located adjacent to rail road

Anthropogenic Changes Present? N

Color 10YR 4/2

Debris Presence Pine duff and cobbles

Percent Canopy Coverage 0

Sheen Presence N

Substrate Type Soil

Surface Debris Removed Prior to Sampling? N

Vegetation Present? Y

Sample Collected from Station

Sample Id	UDU-05-ICS	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-05-01 7:42	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station UDU-05-11

2015-04-29-14-01-39_UDU-05-11_TECK1.JPG



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2015-04-29-14-02-00_UDU-05-11_TECK1.JPG



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2015-04-29-14-04-52_UDU-05-11_TECK1.JPG



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Station Id	UDU-05-12	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-30 11:13	Sample Team Initials	AP

Sample Collected? Y
X 423529.7235 m
Y 5401358.4368 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Sandy silt, high % organic material	Vegetation Present?	Y
Vegetation Type if Present	Deciduous and pine trees		
Station Comments	located below rail road		

Sample Collected from Station

Sample Id	UDU-05-ICS	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-05-01 7:42	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station UDU-05-12

2015-04-30-11-07-25_UDU-05-12_TECK1.JPG



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2015-04-30-11-08-35_UDU-05-12_TECK1.JPG



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2015-04-30-11-12-39_UDU-05-12_TECK1.JPG



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Station Id	UDU-05-13	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-30 13:24	Sample Team Initials	AP

Sample Collected? Y
X 423553.958 m
Y 5401410.7196 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand, trace organic material	Vegetation Present?	Y
Vegetation Type if Present	Pine trees and scrub brush		
Station Comments	located just above beach		

Sample Collected from Station

Sample Id	UDU-05-ICS	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-05-01 7:42	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station UDU-05-13

2015-04-30-13-17-42_UDU-05-13_TECK1.JPG



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2015-04-30-13-18-34_UDU-05-13_TECK1.JPG



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2015-04-30-13-20-31_UDU-05-13_TECK1.JPG



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Station Id	UDU-05-14	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-30 14:17	Sample Team Initials	AP

Sample Collected? Y
X 423474.6912 m
Y 5401305.8779 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand with silt, some organic material	Vegetation Present?	Y
Vegetation Type if Present	Pine tree		

Station Comments located just upslope from beach

Sample Collected from Station

Sample Id	UDU-05-ICS	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-05-01 7:42	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station UDU-05-14

2015-04-30-14-10-38_UDU-05-14_TECK1.JPG



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2015-04-30-14-11-06_UDU-05-14_TECK1.JPG



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2015-04-30-14-15-20_UDU-05-14_TECK1.JPG



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Station Id	UDU-05-15	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-29 12:00	Sample Team Initials	AP

Sample Collected? Y
X 423580.7591 m
Y 5401431.7828 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine and cobbles
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine to coarse sand with trace silt	Vegetation Present?	Y
Vegetation Type if Present	Pine trees		
Station Comments	located on hill side below railroad		

Sample Collected from Station

Sample Id	UDU-05-ICS	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-05-01 7:42	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station UDU-05-15

2015-04-29-11-53-10_UDU-05-15_TECK1.JPG



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2015-04-29-11-53-47_UDU-05-15_TECK1.JPG



vs

2015-04-29-11-57-26_UDU-05-15_TECK1.JPG



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Station Id	UDU-05-16	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-30 12:13	Sample Team Initials	AP

Sample Collected? Y
X 423468.3539 m
Y 5401273.1656 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff and cobbles
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine sand with silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located below rail road

Sample Collected from Station

Sample Id	UDU-05-ICS	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-05-01 7:42	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station UDU-05-16

2015-04-30-12-07-39_UDU-05-16_TECK1.JPG



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2015-04-30-12-10-57_UDU-05-16_TECK1.JPG



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Station Id	UDU-05-17	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-29 14:29	Sample Team Initials	AP
Sample Collected?	Y		
X	423537.0156 m		
Y	5401362.3684 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	Next to rail road
Biological Visual Presence	N
Cultural Oversight Inspection Conducted?	Y
Odor	N
Percent Ground Coverage	100
Shells Presence	N
Surface Debris Present?	N
Texture	Gravelly silt with sand
Vegetation Type if Present	Grass

Anthropogenic Changes Present?	N
Color	10YR 4/3
Debris Presence	Pine duff and cobbles
Percent Canopy Coverage	0
Sheen Presence	N
Substrate Type	Soil
Surface Debris Removed Prior to Sampling?	N
Vegetation Present?	Y

Station Comments located next to railroad

Sample Collected from Station

Sample Id	UDU-05-ICS	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-05-01 7:42	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station UDU-05-17

2015-04-29-14-23-01_UDU-05-17_TECK1.JPG



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2015-04-29-14-23-25_UDU-05-17_TECK1.JPG



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2015-04-29-14-27-58_UDU-05-17_TECK1.JPG



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Station Id	UDU-05-18	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-30 13:32	Sample Team Initials	AP

Sample Collected? Y
X 423550.1112 m
Y 5401402.2635 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand, trace organic material	Vegetation Present?	Y
Vegetation Type if Present	Pine tree and rose bush		
Station Comments	located just upslope from beach		

Sample Collected from Station

Sample Id	UDU-05-ICS	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-05-01 7:42	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station UDU-05-18

2015-04-30-13-30-38_UDU-05-18_1619LP-WA70047.JPG



sample

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2015-04-30-13-27-37_UDU-05-18_TECK1.JPG



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2015-04-30-13-27-57_UDU-05-18_TECK1.JPG



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Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-05-19	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-30 14:32	Sample Team Initials	AP

Sample Collected? Y
X 423461.0587 m
Y 5401286.2878 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 5/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	Y	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand with silt, matrix is mostly organic material	Vegetation Present?	Y
Vegetation Type if Present	Pine tree		

Station Comments located just upslope of beach

Sample Collected from Station

Sample Id	UDU-05-ICS	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-05-01 7:42	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station UDU-05-19

2015-04-30-14-22-23_UDU-05-19_TECK1.JPG



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2015-04-30-14-26-58_UDU-05-19_TECK1.JPG



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2015-04-30-14-29-33_UDU-05-19_TECK1.JPG



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Station Id	UDU-05-20	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-29 13:17	Sample Team Initials	AP

Sample Collected? Y
X 423569.8734 m
Y 5401418.9219 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff and cobbles
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine to coarse sand with trace silt, some organic material	Vegetation Present?	Y
Vegetation Type if Present	Pine trees		

Station Comments located adjacent to primitive foot trail

Sample Collected from Station

Sample Id	UDU-05-ICS	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-05-01 7:42	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station UDU-05-20

2015-04-29-13-10-04_UDU-05-20_TECK1.JPG



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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-29-13-10-47_UDU-05-20_TECK1.JPG



vs

2015-04-29-13-13-50_UDU-05-20_TECK1.JPG



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Station Id	UDU-05-21	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-29 13:55	Sample Team Initials	AP

Sample Collected? Y
X 423558.2101 m
Y 5401382.483 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description Immediately adjacent to railroad
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 100
Shells Presence N
Surface Debris Present? N
Texture Gravelly fine sand with trace silt
Vegetation Type if Present N

Anthropogenic Changes Present? N
Color 10YR 4/2
Debris Presence Pine duff and cobbles
Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Soil
Surface Debris Removed Prior to Sampling? N
Vegetation Present? N

Station Comments located adjacent to railroad

Sample Collected from Station

Sample Id	UDU-05-ICS	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-05-01 7:42	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station UDU-05-21

2015-04-29-13-48-28_UDU-05-21_TECK1.JPG



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2015-04-29-13-52-10_UDU-05-21_TECK1.JPG



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Station Id	UDU-05-22	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-29 13:31	Sample Team Initials	AP

Sample Collected? Y
X 423568.4005 m
Y 5401412.8241 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff and cobbles
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine to coarse sand with trace silt	Vegetation Present?	Y
Vegetation Type if Present	Pine trees		
Station Comments	located on hillside near primitive foot trail		

Sample Collected from Station

Sample Id	UDU-05-ICS	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-05-01 7:42	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station UDU-05-22

2015-04-29-13-24-10_UDU-05-22_TECK1.JPG



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2015-04-29-13-28-34_UDU-05-22_TECK1.JPG



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Station Id	UDU-05-23	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-29 11:19	Sample Team Initials	AP

Sample Collected? Y
X 423594.7808 m
Y 5401482.2224 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly very fine sand with silt	Vegetation Present?	Y
Vegetation Type if Present	Shrubs		

Station Comments located on hillside just above beach

Sample Collected from Station

Sample Id	UDU-05-ICS	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-05-01 7:42	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station UDU-05-23

2015-04-29-11-08-50_UDU-05-23_1619LP-WA70047.JPG



ground surface

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2015-04-29-11-10-06_UDU-05-23_1619LP-WA70047.JPG



overview facing north

2015-04-29-11-17-01_UDU-05-23_TECK1.JPG



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Station Id	UDU-05-24	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-30 11:52	Sample Team Initials	AP

Sample Collected? Y
X 423483.1304 m
Y 5401305.2838 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine sand with silt, high % organic material	Vegetation Present?	Y
Vegetation Type if Present	Deciduous and pine trees		
Station Comments	located on hillside below rail road		

Sample Collected from Station

Sample Id	UDU-05-ICS	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-05-01 7:42	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station UDU-05-24

2015-04-30-11-43-11_UDU-05-24_TECK1.JPG



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2015-04-30-11-44-48_UDU-05-24_TECK1.JPG



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2015-04-30-11-49-05_UDU-05-24_TECK1.JPG



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Station Id	UDU-05-25	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-29 12:47	Sample Team Initials	AP

Sample Collected? Y
X 423577.1925 m
Y 5401428.8143 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine and cobbles
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine to coarse sand with trace silt	Vegetation Present?	Y
Vegetation Type if Present	Pine trees		
Station Comments	located on hillside below railroad		

Sample Collected from Station

Sample Id	UDU-05-ICS	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-05-01 7:42	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station UDU-05-25

2015-04-29-12-06-05_UDU-05-25_TECK1.JPG



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2015-04-29-12-06-18_UDU-05-25_TECK1.JPG



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2015-04-29-12-11-21_UDU-05-25_TECK1.JPG



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Station Id	UDU-05-26	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-30 13:52	Sample Team Initials	AP

Sample Collected? Y
X 423527.6872 m
Y 5401371.5683 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand with silt, some organic material	Vegetation Present?	Y
Vegetation Type if Present	Pine tree		

Station Comments located just upslope of beach

Sample Collected from Station

Sample Id	UDU-05-ICS	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-05-01 7:42	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station UDU-05-26

2015-04-30-13-47-39_UDU-05-26_TECK1.JPG



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2015-04-30-13-48-03_UDU-05-26_TECK1.JPG



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2015-04-30-13-50-07_UDU-05-26_TECK1.JPG



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Station Id	UDU-05-27	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-30 11:37	Sample Team Initials	AP

Sample Collected? Y
X 423499.2103 m
Y 5401315.6836 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly very fine sand with trace silt, high % organic material	Vegetation Present?	Y
Vegetation Type if Present	Deciduous and pine trees		

Station Comments located below rail road

Sample Collected from Station

Sample Id	UDU-05-ICS	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-05-01 7:42	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station UDU-05-27

2015-04-30-11-31-24_UDU-05-27_TECK1.JPG



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2015-04-30-11-32-05_UDU-05-27_TECK1.JPG



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2015-04-30-11-35-12_UDU-05-27_TECK1.JPG



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Station Id	UDU-05-28	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-30 13:42	Sample Team Initials	AP

Sample Collected? Y
X 423537.6882 m
Y 5401380.3638 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand with high % organic material	Vegetation Present?	Y
Vegetation Type if Present	Pine trees		

Station Comments located just upslope of beach

Sample Collected from Station

Sample Id	UDU-05-ICS	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-05-01 7:42	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station UDU-05-28

2015-04-30-13-37-03_UDU-05-28_TECK1.JPG



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2015-04-30-13-38-07_UDU-05-28_TECK1.JPG



vne

2015-04-30-13-39-44_UDU-05-28_TECK1.JPG



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Station Id	UDU-05-29	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-30 11:25	Sample Team Initials	AP

Sample Collected? Y
X 423521.74 m
Y 5401346.2849 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N	
Biological Visual Presence	N	Color	10YR 3/2	
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff	
Odor	N	Percent Canopy Coverage	100	
Percent Ground Coverage	100	Sheen Presence	N	
Shells Presence	N	Substrate Type	Soil	
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N	
Texture	Very fine sand with trace silt, high % organic material		Vegetation Present?	Y
Vegetation Type if Present	Deciduous and pine trees			
Station Comments	located on hillside below rail road			

Sample Collected from Station

Sample Id	UDU-05-ICS	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-05-01 7:42	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station UDU-05-29

2015-04-30-11-19-28_UDU-05-29_TECK1.JPG



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2015-04-30-11-20-29_UDU-05-29_TECK1.JPG



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2015-04-30-11-23-57_UDU-05-29_TECK1.JPG



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Station Id	UDU-05-30	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-30 14:43	Sample Team Initials	AP

Sample Collected? Y
X 423462.0694 m
Y 5401293.4032 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand with gravel, some organic material	Vegetation Present?	Y
Vegetation Type if Present	Pine trees		

Station Comments located just upslope of beach

Sample Collected from Station

Sample Id	UDU-05-ICS	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-05-01 7:42	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station UDU-05-30

2015-04-30-14-37-19_UDU-05-30_TECK1.JPG



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2015-04-30-14-41-29_UDU-05-30_TECK1.JPG



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Station Id	UDU-05-R01	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-05-ICS	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-05-01 7:42	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station UDU-05-R01

No photos taken at this station. See station comments for more details.

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Station Id	UDU-05-R02	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-05-ICS	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-05-01 7:42	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station UDU-05-R02

2015-04-30-12-58-56_UDU-05R-02_TECK1.JPG



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Station Id	UDU-05-R03	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-05-ICS	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-05-01 7:42	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station UDU-05-R03

No photos taken at this station. See station comments for more details.

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Station Id	UDU-05-R04	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-05-ICS	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-05-01 7:42	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station UDU-05-R04

No photos taken at this station. See station comments for more details.

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Station Id	UDU-05-R05	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-05-ICS	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-05-01 7:42	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station UDU-05-R05

No photos taken at this station. See station comments for more details.

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Station Id	UDU-05-R06	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-05-ICS	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-05-01 7:42	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station UDU-05-R06

No photos taken at this station. See station comments for more details.

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Station Id	UDU-05-R07	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-05-ICS	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-05-01 7:42	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station UDU-05-R07

2015-04-30-10-52-40_UDU-05R-07_TECK1.JPG



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2015-04-30-10-55-46_UDU-05R-07_TECK1.JPG



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2015-04-30-10-57-26_UDU-05R-07_TECK1.JPG



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Station Id	UDU-05-R08	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-05-ICS	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-05-01 7:42	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station UDU-05-R08

No photos taken at this station. See station comments for more details.

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Station Id	UDU-05-R09	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-05-ICS	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-05-01 7:42	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station UDU-05-R09

No photos taken at this station. See station comments for more details.

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Station Id	UDU-05-R10	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-05-ICS	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-05-01 7:42	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station UDU-05-R10

No photos taken at this station. See station comments for more details.

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Station Id	UDU-05-R11	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-05-ICS	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-05-01 7:42	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station UDU-05-R11

No photos taken at this station. See station comments for more details.

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Station Id	UDU-05-R12	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-05-ICS	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-05-01 7:42	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station UDU-05-R12

No photos taken at this station. See station comments for more details.

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Station Id	UDU-05-R13	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-05-ICS	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-05-01 7:42	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station UDU-05-R13

No photos taken at this station. See station comments for more details.

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Station Id	UDU-05-R14	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-05-ICS	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-05-01 7:42	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station UDU-05-R14

No photos taken at this station. See station comments for more details.

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Station Id	UDU-05-R15	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-05-ICS	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-05-01 7:42	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station UDU-05-R15

No photos taken at this station. See station comments for more details.

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ICS Sample Collection Report
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Station Id	UDU-05-R16	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-05-ICS	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-05-01 7:42	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station UDU-05-R16

No photos taken at this station. See station comments for more details.

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ICS Sample Collection Report
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Station Id	UDU-05-R17	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-05-ICS	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-05-01 7:42	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station UDU-05-R17

No photos taken at this station. See station comments for more details.

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Station Id	UDU-05-R18	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-05-ICS	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-05-01 7:42	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station UDU-05-R18

2015-04-30-13-30-37_UDU-05R-18_TECK1.JPG



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ICS Sample Collection Report
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Station Id	UDU-05-R19	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-05-ICS	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-05-01 7:42	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station UDU-05-R19

No photos taken at this station. See station comments for more details.

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Station Id	UDU-05-R20	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-05-ICS	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-05-01 7:42	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station UDU-05-R20

No photos taken at this station. See station comments for more details.

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Station Id	UDU-05-R21	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-05-ICS	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-05-01 7:42	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station UDU-05-R21

No photos taken at this station. See station comments for more details.

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Station Id	UDU-05-R22	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-05-ICS	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-05-01 7:42	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

Photos Collected from Station UDU-05-R22

No photos taken at this station. See station comments for more details.

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Station Id	UDU-05-R23	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-05-ICS	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-05-01 7:42	Collection Method	ICS
Initials on CoC	KY/ALD	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments	30 increments checked and composited into 1 bucket. No reserve locations used.		

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Photos Collected from Station UDU-05-R23

2015-04-29-11-08-48_UDU-05R-23_TECK1.JPG



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Station Id	UDU-06-01	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-07 10:10	Sample Team Initials	AP

Sample Collected? Y
X 422249.2216 m
Y 5400897.9873 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Downed branches
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	60	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty clay with trace fine sand, high % organic material	Vegetation Present?	Y
Vegetation Type if Present	Deciduous trees		
Station Comments	located on upper slope		

Sample Collected from Station

Sample Id	UDU-06-ICS	Decision Unit	Soil Decision Unit 6
Sample Date Time	2015-05-08 7:38	Collection Method	ICS
Initials on CoC	AT	Matrix	Soil
Sample Split	Field	Replicate	No Replicate
Sample Comments	30 increments checked. 26 increments composited into 1 bucket. 4 increments (UDU-06-17, 04, 16, 28) were saturated and the baggies were placed into a 2nd bucket.		

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Photos Collected from Station UDU-06-01

2015-05-07-10-02-55_UDU-06-01_TECK3.JPG



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2015-05-07-10-03-17_UDU-06-01_TECK3.JPG



vn

2015-05-07-10-07-07_UDU-06-01_TECK3.JPG



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Station Id	UDU-06-02	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-07 10:49	Sample Team Initials	AP

Sample Collected? Y
X 422238.218 m
Y 5400883.3806 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Downed branches
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Sandy, silty clay, high % organic material	Vegetation Present?	Y
Vegetation Type if Present	Deciduous trees		
Station Comments	located on upper slope		

Sample Collected from Station

Sample Id	UDU-06-ICS	Decision Unit	Soil Decision Unit 6
Sample Date Time	2015-05-08 7:38	Collection Method	ICS
Initials on CoC	AT	Matrix	Soil
Sample Split	Field	Replicate	No Replicate
Sample Comments	30 increments checked. 26 increments composited into 1 bucket. 4 increments (UDU-06-17, 04, 16, 28) were saturated and the baggies were placed into a 2nd bucket.		

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Photos Collected from Station UDU-06-02

2015-05-07-10-42-00_UDU-06-02_TECK3.JPG



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2015-05-07-10-42-17_UDU-06-02_TECK3.JPG



vn

2015-05-07-10-45-15_UDU-06-02_TECK3.JPG



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Station Id	UDU-06-03	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-07 9:39	Sample Team Initials	MS

Sample Collected? Y
X 422285.4215 m
Y 5400922.1133 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 5/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	80
Percent Ground Coverage	80	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand organics	Vegetation Present?	N
Vegetation Type if Present	Apple alder		

Station Comments

Sample Collected from Station

Sample Id	UDU-06-ICS	Decision Unit	Soil Decision Unit 6
Sample Date Time	2015-05-08 7:38	Collection Method	ICS
Initials on CoC	AT	Matrix	Soil
Sample Split	Field	Replicate	No Replicate
Sample Comments	30 increments checked. 26 increments composited into 1 bucket. 4 increments (UDU-06-17, 04, 16, 28) were saturated and the baggies were placed into a 2nd bucket.		

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Photos Collected from Station UDU-06-03

2015-05-07-09-37-54_UDU-06-03_TECK2.JPG



overview facing west

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2015-05-07-09-38-22_UDU-06-03_TECK2.JPG



groundsurface

2015-05-07-09-40-09_UDU-06-03_TECK2.JPG



sample

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Station Id	UDU-06-04	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-07 12:14	Sample Team Initials	MS

Sample Collected? Y
X 422203.0266 m
Y 5400792.7136 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand organics	Vegetation Present?	Y
Vegetation Type if Present	Grasses		

Station Comments

Sample Collected from Station

Sample Id	UDU-06-ICS	Decision Unit	Soil Decision Unit 6
Sample Date Time	2015-05-08 7:38	Collection Method	ICS
Initials on CoC	AT	Matrix	Soil
Sample Split	Field	Replicate	No Replicate
Sample Comments	30 increments checked. 26 increments composited into 1 bucket. 4 increments (UDU-06-17, 04, 16, 28) were saturated and the baggies were placed into a 2nd bucket.		

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Photos Collected from Station UDU-06-04

2015-05-07-12-12-48_UDU-06-04_TECK2.JPG



sample

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2015-05-07-12-11-34_UDU-06-04_TECK2.JPG



groundsurface

2015-05-07-12-08-59_UDU-06-04_TECK2.JPG



overview facing north

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Station Id	UDU-06-05	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-07 13:31	Sample Team Initials	AP

Sample Collected? Y
X 422218.9053 m
Y 5400841.5531 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Downed branches
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Sandy silt with clay, high % organic material	Vegetation Present?	Y
Vegetation Type if Present	Deciduous trees		
Station Comments	located on upper slope		

Sample Collected from Station

Sample Id	UDU-06-ICS	Decision Unit	Soil Decision Unit 6
Sample Date Time	2015-05-08 7:38	Collection Method	ICS
Initials on CoC	AT	Matrix	Soil
Sample Split	Field	Replicate	No Replicate
Sample Comments	30 increments checked. 26 increments composited into 1 bucket. 4 increments (UDU-06-17, 04, 16, 28) were saturated and the baggies were placed into a 2nd bucket.		

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Photos Collected from Station UDU-06-05

2015-05-07-12-44-03_UDU-06-05_TECK3.JPG



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2015-05-07-12-48-07_UDU-06-05_TECK3.JPG



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Station Id	UDU-06-06	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-07 11:54	Sample Team Initials	MS

Sample Collected? Y
X 422187.4631 m
Y 5400789.0525 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 5/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	20
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand organics	Vegetation Present?	Y
Vegetation Type if Present	Ferns grasses pine apple		

Station Comments

Sample Collected from Station

Sample Id	UDU-06-ICS	Decision Unit	Soil Decision Unit 6
Sample Date Time	2015-05-08 7:38	Collection Method	ICS
Initials on CoC	AT	Matrix	Soil
Sample Split	Field	Replicate	No Replicate
Sample Comments	30 increments checked. 26 increments composited into 1 bucket. 4 increments (UDU-06-17, 04, 16, 28) were saturated and the baggies were placed into a 2nd bucket.		

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Photos Collected from Station UDU-06-06

2015-05-07-11-56-54_UDU-06-06_TECK2.JPG



sample

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2015-05-07-11-56-58_UDU-06-06_TECK2.JPG



groundsurface

2015-05-07-11-57-02_UDU-06-06_TECK2.JPG



overview facing south

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Station Id	UDU-06-07	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-07 11:49	Sample Team Initials	MS

Sample Collected? Y
X 422179.8854 m
Y 5400786.9949 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 5/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand organics	Vegetation Present?	Y
Vegetation Type if Present	Poison ivy Oregon grape grasses		

Station Comments

Sample Collected from Station

Sample Id	UDU-06-ICS	Decision Unit	Soil Decision Unit 6
Sample Date Time	2015-05-08 7:38	Collection Method	ICS
Initials on CoC	AT	Matrix	Soil
Sample Split	Field	Replicate	No Replicate
Sample Comments	30 increments checked. 26 increments composited into 1 bucket. 4 increments (UDU-06-17, 04, 16, 28) were saturated and the baggies were placed into a 2nd bucket.		

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Photos Collected from Station UDU-06-07

2015-05-07-11-50-59_UDU-06-07_TECK2.JPG



sample

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2015-05-07-11-51-08_UDU-06-07_TECK2.JPG



groundsurface

2015-05-07-11-51-13_UDU-06-07_TECK2.JPG



overview facing north

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Station Id	UDU-06-08	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-07 13:47	Sample Team Initials	AP

Sample Collected? Y
X 422225.3524 m
Y 5400829.1058 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty sand with clay, high % organic material	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments located on lower slope just above beach

Sample Collected from Station

Sample Id	UDU-06-ICS	Decision Unit	Soil Decision Unit 6
Sample Date Time	2015-05-08 7:38	Collection Method	ICS
Initials on CoC	AT	Matrix	Soil
Sample Split	Field	Replicate	No Replicate
Sample Comments	30 increments checked. 26 increments composited into 1 bucket. 4 increments (UDU-06-17, 04, 16, 28) were saturated and the baggies were placed into a 2nd bucket.		

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Photos Collected from Station UDU-06-08

2015-05-07-13-43-52_UDU-06-08_TECK3.JPG



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2015-05-07-13-39-22_UDU-06-08_TECK3.JPG



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2015-05-07-13-42-51_UDU-06-08_TECK3.JPG



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Station Id	UDU-06-09	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-07 9:55	Sample Team Initials	MS

Sample Collected? Y
X 422281.5722 m
Y 5400911.1153 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 5/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	80
Percent Ground Coverage	20	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand organics	Vegetation Present?	Y
Vegetation Type if Present	Alder wild rose fern maple apple pine		

Station Comments

Sample Collected from Station

Sample Id	UDU-06-ICS	Decision Unit	Soil Decision Unit 6
Sample Date Time	2015-05-08 7:38	Collection Method	ICS
Initials on CoC	AT	Matrix	Soil
Sample Split	Field	Replicate	No Replicate
Sample Comments	30 increments checked. 26 increments composited into 1 bucket. 4 increments (UDU-06-17, 04, 16, 28) were saturated and the baggies were placed into a 2nd bucket.		

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-06-09

2015-05-07-09-57-16_UDU-06-09_TECK2.JPG



sample

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-07-09-57-21_UDU-06-09_TECK2.JPG



groundsurface

2015-05-07-09-57-25_UDU-06-09_TECK2.JPG



overview facing south

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Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-06-10	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-07 11:59	Sample Team Initials	MS

Sample Collected? Y
X 422193.794 m
Y 5400792.7844 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 5/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand organics	Vegetation Present?	Y
Vegetation Type if Present	Grasses oregon grape		

Station Comments

Sample Collected from Station

Sample Id	UDU-06-ICS	Decision Unit	Soil Decision Unit 6
Sample Date Time	2015-05-08 7:38	Collection Method	ICS
Initials on CoC	AT	Matrix	Soil
Sample Split	Field	Replicate	No Replicate
Sample Comments	30 increments checked. 26 increments composited into 1 bucket. 4 increments (UDU-06-17, 04, 16, 28) were saturated and the baggies were placed into a 2nd bucket.		

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-06-10

2015-05-07-12-02-49_UDU-06-10_TECK2.JPG



sample

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-07-12-01-36_UDU-06-10_TECK2.JPG



overview facing south

2015-05-07-12-02-01_UDU-06-10_TECK2.JPG



groundsurface

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Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-06-11	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-07 9:26	Sample Team Initials	AP

Sample Collected? Y
X 422269.0271 m
Y 5400924.4257 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand, high % organic material	Vegetation Present?	Y
Vegetation Type if Present	Deciduous trees		
Station Comments	located on upper slope		

Sample Collected from Station

Sample Id	UDU-06-ICS	Decision Unit	Soil Decision Unit 6
Sample Date Time	2015-05-08 7:38	Collection Method	ICS
Initials on CoC	AT	Matrix	Soil
Sample Split	Field	Replicate	No Replicate
Sample Comments	30 increments checked. 26 increments composited into 1 bucket. 4 increments (UDU-06-17, 04, 16, 28) were saturated and the baggies were placed into a 2nd bucket.		

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Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-06-11

2015-05-07-09-16-58_UDU-06-11_TECK3.JPG



vn

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2015-05-07-09-16-13_UDU-06-11_TECK3.JPG



gs

2015-05-07-09-21-47_UDU-06-11_TECK3.JPG



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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-06-12	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-07 10:03	Sample Team Initials	MS

Sample Collected? Y
X 422276.6185 m
Y 5400905.6367 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 5/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	90
Percent Ground Coverage	40	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand organics	Vegetation Type if Present	Alder

Station Comments

Sample Collected from Station

Sample Id	UDU-06-ICS	Decision Unit	Soil Decision Unit 6
Sample Date Time	2015-05-08 7:38	Collection Method	ICS
Initials on CoC	AT	Matrix	Soil
Sample Split	Field	Replicate	No Replicate
Sample Comments	30 increments checked. 26 increments composited into 1 bucket. 4 increments (UDU-06-17, 04, 16, 28) were saturated and the baggies were placed into a 2nd bucket.		

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Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-06-12

2015-05-07-10-05-24_UDU-06-12_TECK2.JPG



sample

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-07-10-05-29_UDU-06-12_TECK2.JPG



groundsurface

2015-05-07-10-05-35_UDU-06-12_TECK2.JPG



overview facing east

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ICS Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-06-13	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-07 12:19	Sample Team Initials	AP

Sample Collected? Y
X 422224.9787 m
Y 5400851.853 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Sandy silt with clay, high % organic material	Vegetation Present?	Y
Vegetation Type if Present	Deciduous trees		
Station Comments	located on upper slope		

Sample Collected from Station

Sample Id	UDU-06-ICS	Decision Unit	Soil Decision Unit 6
Sample Date Time	2015-05-08 7:38	Collection Method	ICS
Initials on CoC	AT	Matrix	Soil
Sample Split	Field	Replicate	No Replicate
Sample Comments	30 increments checked. 26 increments composited into 1 bucket. 4 increments (UDU-06-17, 04, 16, 28) were saturated and the baggies were placed into a 2nd bucket.		

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-06-13

2015-05-07-12-11-48_UDU-06-13_TECK3.JPG



gs

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-07-12-12-33_UDU-06-13_TECK3.JPG



vn

2015-05-07-12-16-50_UDU-06-13_TECK3.JPG



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ICS Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-06-14	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-07 10:19	Sample Team Initials	MS
Sample Collected?	Y		
X	422279.6707 m		
Y	5400892.8029 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 5/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	40
Percent Ground Coverage	90	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand organics	Vegetation Type if Present	Pine poison ivy

Station Comments

Sample Collected from Station

Sample Id	UDU-06-ICS	Decision Unit	Soil Decision Unit 6
Sample Date Time	2015-05-08 7:38	Collection Method	ICS
Initials on CoC	AT	Matrix	Soil
Sample Split	Field	Replicate	No Replicate
Sample Comments	30 increments checked. 26 increments composited into 1 bucket. 4 increments (UDU-06-17, 04, 16, 28) were saturated and the baggies were placed into a 2nd bucket.		

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Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-06-14

2015-05-07-10-21-17_UDU-06-14_TECK2.JPG



sample

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-07-10-21-33_UDU-06-14_TECK2.JPG



groundsurface

2015-05-07-10-21-38_UDU-06-14_TECK2.JPG



overview facing west

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ICS Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-06-15	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-07 9:43	Sample Team Initials	AP

Sample Collected? Y
X 422255.7227 m
Y 5400918.2115 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Downed branches
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	50	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty clay with trace fine sand, high % organic material	Vegetation Present?	Y
Vegetation Type if Present	Deciduous trees		
Station Comments	located on upper slope		

Sample Collected from Station

Sample Id	UDU-06-ICS	Decision Unit	Soil Decision Unit 6
Sample Date Time	2015-05-08 7:38	Collection Method	ICS
Initials on CoC	AT	Matrix	Soil
Sample Split	Field	Replicate	No Replicate
Sample Comments	30 increments checked. 26 increments composited into 1 bucket. 4 increments (UDU-06-17, 04, 16, 28) were saturated and the baggies were placed into a 2nd bucket.		

Photos Collected from Station UDU-06-15

2015-05-07-09-35-16_UDU-06-15_TECK3.JPG



gs

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ICS Sample Collection Report
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2015-05-07-09-36-41_UDU-06-15_TECK3.JPG



vn

2015-05-07-09-41-03_UDU-06-15_TECK3.JPG



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Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-06-16	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-07 10:25	Sample Team Initials	MS

Sample Collected? Y
X 422275.7101 m
Y 5400889.6874 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand organics	Vegetation Present?	Y
Vegetation Type if Present	Pine aspen grasses poison ivy		

Station Comments

Sample Collected from Station

Sample Id	UDU-06-ICS	Decision Unit	Soil Decision Unit 6
Sample Date Time	2015-05-08 7:38	Collection Method	ICS
Initials on CoC	AT	Matrix	Soil
Sample Split	Field	Replicate	No Replicate
Sample Comments	30 increments checked. 26 increments composited into 1 bucket. 4 increments (UDU-06-17, 04, 16, 28) were saturated and the baggies were placed into a 2nd bucket.		

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Photos Collected from Station UDU-06-16

2015-05-07-11-50-01_UDU-06-16_TECK3.JPG



vn

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-07-10-29-57_UDU-06-16_TECK2.JPG



sample

2015-05-07-10-28-03_UDU-06-16_TECK2.JPG



overview facing south

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-07-10-28-11_UDU-06-16_TECK2.JPG



groundsurface

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Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-06-17	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-07 12:00	Sample Team Initials	AP

Sample Collected? Y
X 422237.3262 m
Y 5400842.9704 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand with trace gravel	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments at bottom of slope, located in outflow of seep

Sample Collected from Station

Sample Id	UDU-06-ICS	Decision Unit	Soil Decision Unit 6
Sample Date Time	2015-05-08 7:38	Collection Method	ICS
Initials on CoC	AT	Matrix	Soil
Sample Split	Field	Replicate	No Replicate
Sample Comments	30 increments checked. 26 increments composited into 1 bucket. 4 increments (UDU-06-17, 04, 16, 28) were saturated and the baggies were placed into a 2nd bucket.		

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Photos Collected from Station UDU-06-17

2015-05-07-11-56-40_UDU-06-17_TECK3.JPG



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Station Id	UDU-06-18	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-07 9:45	Sample Team Initials	MS

Sample Collected? Y
X 422293.7819 m
Y 5400909.3228 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 5/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	Y
Vegetation Type if Present	Grasses mullen		
Station Comments	scoop		

Sample Collected from Station

Sample Id	UDU-06-ICS	Decision Unit	Soil Decision Unit 6
Sample Date Time	2015-05-08 7:38	Collection Method	ICS
Initials on CoC	AT	Matrix	Soil
Sample Split	Field	Replicate	No Replicate
Sample Comments	30 increments checked. 26 increments composited into 1 bucket. 4 increments (UDU-06-17, 04, 16, 28) were saturated and the baggies were placed into a 2nd bucket.		

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Photos Collected from Station UDU-06-18

2015-05-07-09-49-05_UDU-06-18_TECK2.JPG



sample

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2015-05-07-09-49-13_UDU-06-18_TECK2.JPG



groundsurface

2015-05-07-09-48-10_UDU-06-18_TECK2.JPG



overview facing east

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Station Id	UDU-06-19	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-07 11:45	Sample Team Initials	MS
Sample Collected?	Y		
X	422168.1064 m		
Y	5400769.1262 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 5/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	50
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand organics	Vegetation Type if Present	Oregon grape grasses alder

Station Comments

Sample Collected from Station

Sample Id	UDU-06-ICS	Decision Unit	Soil Decision Unit 6
Sample Date Time	2015-05-08 7:38	Collection Method	ICS
Initials on CoC	AT	Matrix	Soil
Sample Split	Field	Replicate	No Replicate
Sample Comments	30 increments checked. 26 increments composited into 1 bucket. 4 increments (UDU-06-17, 04, 16, 28) were saturated and the baggies were placed into a 2nd bucket.		

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Photos Collected from Station UDU-06-19

2015-05-07-11-42-58_UDU-06-19_TECK2.JPG



overview facing south

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-07-11-44-27_UDU-06-19_TECK2.JPG



sample

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-06-20	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-07 10:10	Sample Team Initials	MS

Sample Collected? Y
X 422271.0609 m
Y 5400904.6096 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 5/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	50
Percent Ground Coverage	50	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand organics	Vegetation Present?	Y
Vegetation Type if Present	Alder maple poison ivy		
Station Comments	scoop to recover 10%		

Sample Collected from Station

Sample Id	UDU-06-ICS	Decision Unit	Soil Decision Unit 6
Sample Date Time	2015-05-08 7:38	Collection Method	ICS
Initials on CoC	AT	Matrix	Soil
Sample Split	Field	Replicate	No Replicate
Sample Comments	30 increments checked. 26 increments composited into 1 bucket. 4 increments (UDU-06-17, 04, 16, 28) were saturated and the baggies were placed into a 2nd bucket.		

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Photos Collected from Station UDU-06-20

2015-05-07-10-13-10_UDU-06-20_TECK2.JPG



sample

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2015-05-07-10-13-14_UDU-06-20_TECK2.JPG



groundsurface

2015-05-07-10-13-18_UDU-06-20_TECK2.JPG



overview facing south

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Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-06-21	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-07 13:28	Sample Team Initials	AP

Sample Collected? Y
X 422226.618 m
Y 5400839.3954 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Downed branches
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Sand silt with clay, high % organic material	Vegetation Present?	Y
Vegetation Type if Present	Deciduous trees		
Station Comments	located on upper slope		

Sample Collected from Station

Sample Id	UDU-06-ICS	Decision Unit	Soil Decision Unit 6
Sample Date Time	2015-05-08 7:38	Collection Method	ICS
Initials on CoC	AT	Matrix	Soil
Sample Split	Field	Replicate	No Replicate
Sample Comments	30 increments checked. 26 increments composited into 1 bucket. 4 increments (UDU-06-17, 04, 16, 28) were saturated and the baggies were placed into a 2nd bucket.		

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Photos Collected from Station UDU-06-21

2015-05-07-12-31-58_UDU-06-21_TECK3.JPG



gs

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-07-12-34-27_UDU-06-21_TECK3.JPG



vs

2015-05-07-12-36-00_UDU-06-21_TECK3.JPG



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ICS Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-06-22	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-07 10:33	Sample Team Initials	AP

Sample Collected? Y
X 422246.5073 m
Y 5400892.0612 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Downed branches
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	70	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty clay with trace fine sand, high % organic material	Vegetation Present?	Y
Vegetation Type if Present	Deciduous trees		
Station Comments	located on upper slope		

Sample Collected from Station

Sample Id	UDU-06-ICS	Decision Unit	Soil Decision Unit 6
Sample Date Time	2015-05-08 7:38	Collection Method	ICS
Initials on CoC	AT	Matrix	Soil
Sample Split	Field	Replicate	No Replicate
Sample Comments	30 increments checked. 26 increments composited into 1 bucket. 4 increments (UDU-06-17, 04, 16, 28) were saturated and the baggies were placed into a 2nd bucket.		

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Photos Collected from Station UDU-06-22

2015-05-07-10-27-52_UDU-06-22_TECK3.JPG



gs

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-07-10-28-14_UDU-06-22_TECK3.JPG



vn

2015-05-07-10-30-33_UDU-06-22_TECK3.JPG



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Station Id	UDU-06-23	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-07 13:29	Sample Team Initials	MS
Sample Collected?	Y		
X	422208.7962 m		
Y	5400810.8602 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 5/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	10
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand organics	Vegetation Present?	Y
Vegetation Type if Present	Grasses		

Station Comments

Sample Collected from Station

Sample Id	UDU-06-ICS	Decision Unit	Soil Decision Unit 6
Sample Date Time	2015-05-08 7:38	Collection Method	ICS
Initials on CoC	AT	Matrix	Soil
Sample Split	Field	Replicate	No Replicate
Sample Comments	30 increments checked. 26 increments composited into 1 bucket. 4 increments (UDU-06-17, 04, 16, 28) were saturated and the baggies were placed into a 2nd bucket.		

Appendix I
ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-06-23

2015-05-07-13-31-06_UDU-06-23_TECK2.JPG



groundsurface

Appendix I
ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-07-13-31-10_UDU-06-23_TECK2.JPG



sample

2015-05-07-13-31-14_UDU-06-23_TECK2.JPG



groundsurface

Appendix I
ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-06-24	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-07 10:38	Sample Team Initials	MS

Sample Collected? Y
X 422262.007 m
Y 5400875.0909 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 5/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	90
Percent Ground Coverage	50	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand organics	Vegetation Present?	Y
Vegetation Type if Present	Alder aspen maple		

Station Comments

Sample Collected from Station

Sample Id	UDU-06-ICS	Decision Unit	Soil Decision Unit 6
Sample Date Time	2015-05-08 7:38	Collection Method	ICS
Initials on CoC	AT	Matrix	Soil
Sample Split	Field	Replicate	No Replicate
Sample Comments	30 increments checked. 26 increments composited into 1 bucket. 4 increments (UDU-06-17, 04, 16, 28) were saturated and the baggies were placed into a 2nd bucket.		

Appendix I
ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-06-24

2015-05-07-10-37-34_UDU-06-24_TECK2.JPG



groundsurface

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-07-10-37-41_UDU-06-24_TECK2.JPG



overview facing south

2015-05-07-10-39-31_UDU-06-24_TECK2.JPG



sample

Appendix I
ICS Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study

Station Id	UDU-06-25	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-07 9:56	Sample Team Initials	AP

Sample Collected? Y
X 422260.94 m
Y 5400909.4409 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty clay with trace fine sand, high % organic material	Vegetation Present?	Y
Vegetation Type if Present	Deciduous trees		
Station Comments	located on upper slope		

Sample Collected from Station

Sample Id	UDU-06-ICS	Decision Unit	Soil Decision Unit 6
Sample Date Time	2015-05-08 7:38	Collection Method	ICS
Initials on CoC	AT	Matrix	Soil
Sample Split	Field	Replicate	No Replicate
Sample Comments	30 increments checked. 26 increments composited into 1 bucket. 4 increments (UDU-06-17, 04, 16, 28) were saturated and the baggies were placed into a 2nd bucket.		

Appendix I
ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-06-25

2015-05-07-09-48-41_UDU-06-25_TECK3.JPG



gs

Appendix I
ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-07-09-48-52_UDU-06-25_TECK3.JPG



vn

2015-05-07-09-51-41_UDU-06-25_TECK3.JPG



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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-06-26	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-07 9:30	Sample Team Initials	MS

Sample Collected? Y
X 422284.8125 m
Y 5400929.9861 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 5/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	90
Percent Ground Coverage	50	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand organic	Vegetation Present?	Y
Vegetation Type if Present	Alder apple maple lilly grass		

Station Comments

Sample Collected from Station

Sample Id	UDU-06-ICS	Decision Unit	Soil Decision Unit 6
Sample Date Time	2015-05-08 7:38	Collection Method	ICS
Initials on CoC	AT	Matrix	Soil
Sample Split	Field	Replicate	No Replicate
Sample Comments	30 increments checked. 26 increments composited into 1 bucket. 4 increments (UDU-06-17, 04, 16, 28) were saturated and the baggies were placed into a 2nd bucket.		

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-06-26

2015-05-07-09-29-20_UDU-06-26_1619LP-WA70047.JPG



sample

Appendix I
ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-07-09-29-22_UDU-06-26_TECK2.JPG



overview facing south

2015-05-07-09-29-36_UDU-06-26_TECK2.JPG



groundsurface

Appendix I
ICS Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-06-27	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-07 14:13	Sample Team Initials	AP

Sample Collected? Y
X 422214.6524 m
Y 5400827.0206 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Sandy silt with clay, high % organic material	Vegetation Present?	Y
Vegetation Type if Present	Deciduous trees		
Station Comments	located just above beach		

Sample Collected from Station

Sample Id	UDU-06-ICS	Decision Unit	Soil Decision Unit 6
Sample Date Time	2015-05-08 7:38	Collection Method	ICS
Initials on CoC	AT	Matrix	Soil
Sample Split	Field	Replicate	No Replicate
Sample Comments	30 increments checked. 26 increments composited into 1 bucket. 4 increments (UDU-06-17, 04, 16, 28) were saturated and the baggies were placed into a 2nd bucket.		

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-06-27

2015-05-07-14-02-00_UDU-06-27_TECK3.JPG



gs

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-07-14-02-05_UDU-06-27_TECK3.JPG



vs

2015-05-07-14-09-08_UDU-06-27_TECK3.JPG



Appendix I
ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-06-28	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-07 10:52	Sample Team Initials	MS

Sample Collected? Y
X 422250.2824 m
Y 5400856.3889 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 5/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	90
Percent Ground Coverage	50	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand organics	Vegetation Type if Present	Alder vine maple grasses
Station Comments	at spring		

Sample Collected from Station

Sample Id	UDU-06-ICS	Decision Unit	Soil Decision Unit 6
Sample Date Time	2015-05-08 7:38	Collection Method	ICS
Initials on CoC	AT	Matrix	Soil
Sample Split	Field	Replicate	No Replicate
Sample Comments	30 increments checked. 26 increments composited into 1 bucket. 4 increments (UDU-06-17, 04, 16, 28) were saturated and the baggies were placed into a 2nd bucket.		

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-06-28

2015-05-07-10-57-39_UDU-06-28_TECK2.JPG



sample

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-07-10-56-13_UDU-06-28_TECK2.JPG



groundsurface

2015-05-07-10-56-18_UDU-06-28_TECK2.JPG



overview facing south

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ICS Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-06-29	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-07 13:39	Sample Team Initials	MS

Sample Collected? Y
X 422213.9887 m
Y 5400812.5932 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 5/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	60
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand organics	Vegetation Present?	Y
Vegetation Type if Present	Grasses		

Station Comments

Sample Collected from Station

Sample Id	UDU-06-ICS	Decision Unit	Soil Decision Unit 6
Sample Date Time	2015-05-08 7:38	Collection Method	ICS
Initials on CoC	AT	Matrix	Soil
Sample Split	Field	Replicate	No Replicate
Sample Comments	30 increments checked. 26 increments composited into 1 bucket. 4 increments (UDU-06-17, 04, 16, 28) were saturated and the baggies were placed into a 2nd bucket.		

Appendix I
ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-06-29

2015-05-07-13-41-33_UDU-06-29_TECK2.JPG



sample

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-07-13-38-20_UDU-06-29_TECK2.JPG



groundsurface

2015-05-07-13-38-33_UDU-06-29_TECK2.JPG



overview facing south

Appendix I
ICS Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-06-30	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-07 12:19	Sample Team Initials	MS

Sample Collected? Y
X 422192.9469 m
Y 5400780.4984 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 5/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand organics	Vegetation Present?	Y
Vegetation Type if Present	Grasses		

Station Comments scoop used to recover 20%

Sample Collected from Station

Sample Id	UDU-06-ICS	Decision Unit	Soil Decision Unit 6
Sample Date Time	2015-05-08 7:38	Collection Method	ICS
Initials on CoC	AT	Matrix	Soil
Sample Split	Field	Replicate	No Replicate
Sample Comments	30 increments checked. 26 increments composited into 1 bucket. 4 increments (UDU-06-17, 04, 16, 28) were saturated and the baggies were placed into a 2nd bucket.		

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-06-30

2015-05-07-12-23-30_UDU-06-30_TECK2.JPG



sample

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-07-12-23-40_UDU-06-30_TECK2.JPG



groundsurface

2015-05-07-12-21-28_UDU-06-30_TECK2.JPG



overview facing north

Appendix I
ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-06-R01	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-06-ICS	Decision Unit	Soil Decision Unit 6
Sample Date Time	2015-05-08 7:38	Collection Method	ICS
Initials on CoC	AT	Matrix	Soil
Sample Split	Field	Replicate	No Replicate
Sample Comments	30 increments checked. 26 increments composited into 1 bucket. 4 increments (UDU-06-17, 04, 16, 28) were saturated and the baggies were placed into a 2nd bucket.		

Photos Collected from Station UDU-06-R01

No photos taken at this station. See station comments for more details.

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-06-R02	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-06-ICS	Decision Unit	Soil Decision Unit 6
Sample Date Time	2015-05-08 7:38	Collection Method	ICS
Initials on CoC	AT	Matrix	Soil
Sample Split	Field	Replicate	No Replicate
Sample Comments	30 increments checked. 26 increments composited into 1 bucket. 4 increments (UDU-06-17, 04, 16, 28) were saturated and the baggies were placed into a 2nd bucket.		

Photos Collected from Station UDU-06-R02

No photos taken at this station. See station comments for more details.

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-06-R03	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-06-ICS	Decision Unit	Soil Decision Unit 6
Sample Date Time	2015-05-08 7:38	Collection Method	ICS
Initials on CoC	AT	Matrix	Soil
Sample Split	Field	Replicate	No Replicate
Sample Comments	30 increments checked. 26 increments composited into 1 bucket. 4 increments (UDU-06-17, 04, 16, 28) were saturated and the baggies were placed into a 2nd bucket.		

Photos Collected from Station UDU-06-R03

No photos taken at this station. See station comments for more details.

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-06-R04	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-06-ICS	Decision Unit	Soil Decision Unit 6
Sample Date Time	2015-05-08 7:38	Collection Method	ICS
Initials on CoC	AT	Matrix	Soil
Sample Split	Field	Replicate	No Replicate
Sample Comments	30 increments checked. 26 increments composited into 1 bucket. 4 increments (UDU-06-17, 04, 16, 28) were saturated and the baggies were placed into a 2nd bucket.		

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Bossburg Flat Beach Refined Sediment and Soil Study



Photos Collected from Station UDU-06-R04

No photos taken at this station. See station comments for more details.

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Station Id	UDU-06-R05	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-06-ICS	Decision Unit	Soil Decision Unit 6
Sample Date Time	2015-05-08 7:38	Collection Method	ICS
Initials on CoC	AT	Matrix	Soil
Sample Split	Field	Replicate	No Replicate
Sample Comments	30 increments checked. 26 increments composited into 1 bucket. 4 increments (UDU-06-17, 04, 16, 28) were saturated and the baggies were placed into a 2nd bucket.		

Photos Collected from Station UDU-06-R05

No photos taken at this station. See station comments for more details.

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ICS Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-06-R06	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-06-ICS	Decision Unit	Soil Decision Unit 6
Sample Date Time	2015-05-08 7:38	Collection Method	ICS
Initials on CoC	AT	Matrix	Soil
Sample Split	Field	Replicate	No Replicate
Sample Comments	30 increments checked. 26 increments composited into 1 bucket. 4 increments (UDU-06-17, 04, 16, 28) were saturated and the baggies were placed into a 2nd bucket.		

Photos Collected from Station UDU-06-R06

No photos taken at this station. See station comments for more details.

Appendix I
Sampling Collection Reports
Part 2 of 3 XRF Samples

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-01-XRF-01	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-20 14:05	Sample Team Initials	EL
Sample Collected?	Y		
X	423555.5647 m		
Y	5401691.3807 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2.5
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-01-XRF-01	Decision Unit	Sediment Decision Unit 1
Sample Date Time	2015-04-20 14:05	Collection Method	XRF
Initials on CoC	EL	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-01-XRF-01

2015-04-20-14-09-03_SDU-01-XRF-01_TECK2.JPG



sample

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-20-14-09-19_SDU-01-XRF-01_TECK2.JPG



groundsurface

2015-04-20-14-09-25_SDU-01-XRF-01_TECK2.JPG



overview facing west

Appendix I
XRF Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-01-XRF-02	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-20 14:29	Sample Team Initials	EL

Sample Collected? Y
X 423473.0647 m
Y 5401636.3807 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine silty sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-01-XRF-02	Decision Unit	Sediment Decision Unit 1
Sample Date Time	2015-04-20 14:29	Collection Method	XRF
Initials on CoC	EL	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-01-XRF-02

2015-04-20-14-32-44_SDU-01-XRF-02_TECK2.JPG



sample

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-20-14-30-01_SDU-01-XRF-02_TECK2.JPG



groundsurface

2015-04-20-14-30-07_SDU-01-XRF-02_TECK2.JPG



overview facing west

Appendix I
XRF Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-01-XRF-03	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-20 14:15	Sample Team Initials	EL
Sample Collected?	Y		
X	423528.0647 m		
Y	5401636.3807 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine silty sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-01-XRF-03	Decision Unit	Sediment Decision Unit 1
Sample Date Time	2015-04-20 14:15	Collection Method	XRF
Initials on CoC	EL	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-01-XRF-03

2015-04-20-14-19-20_SDU-01-XRF-03_TECK2.JPG



sample

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-20-14-17-54_SDU-01-XRF-03_TECK2.JPG



groundsurface

2015-04-20-14-17-59_SDU-01-XRF-03_TECK2.JPG



overview facing west

Appendix I
XRF Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-01-XRF-04	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-20 13:55	Sample Team Initials	EL

Sample Collected? Y
X 423583.0647 m
Y 5401636.3807 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N
Texture Silt and very fine sand
Vegetation Type if Present N

Anthropogenic Changes Present? N
Color 10YR 4/2.5
Debris Presence N
Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? N

Station Comments

Sample Collected from Station

Sample Id	SDU-01-XRF-04	Decision Unit	Sediment Decision Unit 1
Sample Date Time	2015-04-20 13:55	Collection Method	XRF
Initials on CoC	EL	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-01-XRF-04

2015-04-20-13-57-35_SDU-01-XRF-04_TECK2.JPG



sample

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-20-13-57-48_SDU-01-XRF-04_TECK2.JPG



groundsurface

2015-04-20-13-57-51_SDU-01-XRF-04_TECK2.JPG



overview facing west

Appendix I
XRF Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-01-XRF-05	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-20 14:41	Sample Team Initials	EL

Sample Collected? Y
X 423445.5647 m
Y 5401581.3807 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sandy silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-01-XRF-05	Decision Unit	Sediment Decision Unit 1
Sample Date Time	2015-04-20 14:41	Collection Method	XRF
Initials on CoC	EL	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-01-XRF-05

2015-04-20-14-42-37_SDU-01-XRF-05_TECK2.JPG



groundsurface

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-20-14-42-41_SDU-01-XRF-05_TECK2.JPG



overview facing west

2015-04-20-14-43-58_SDU-01-XRF-05_TECK2.JPG



sample

Appendix I
XRF Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-01-XRF-06	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-20 14:50	Sample Team Initials	EL

Sample Collected? Y
X 423555.5647 m
Y 5401581.3807 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sandy silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-01-XRF-06	Decision Unit	Sediment Decision Unit 1
Sample Date Time	2015-04-20 14:50	Collection Method	XRF
Initials on CoC	EL	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-01-XRF-06

2015-04-20-14-55-29_SDU-01-XRF-06_TECK2.JPG



sample

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-20-14-55-36_SDU-01-XRF-06_TECK2.JPG



groundsurface

2015-04-20-14-55-41_SDU-01-XRF-06_TECK2.JPG



overview facing west

Appendix I
XRF Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-01-XRF-07	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-20 13:45	Sample Team Initials	EL
Sample Collected?	Y		
X	423610.5647 m		
Y	5401581.3807 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sandy silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-01-XRF-07	Decision Unit	Sediment Decision Unit 1
Sample Date Time	2015-04-20 13:45	Collection Method	XRF
Initials on CoC	EL	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-01-XRF-07

2015-04-20-13-47-48_SDU-01-XRF-07_1619LP-WA70047.JPG



general area

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-20-13-47-44_SDU-01-XRF-07_1619LP-WA70047.JPG



sample location

2015-04-20-13-47-36_SDU-01-XRF-07_1619LP-WA70047.JPG



sample

Appendix I
XRF Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-01-XRF-08	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-20 15:02	Sample Team Initials	EL

Sample Collected? Y
X 423528.0647 m
Y 5401526.3807 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N

Texture Very fine sandy silt
Vegetation Type if Present N

Anthropogenic Changes Present? N
Color 2.5Y 4/2
Debris Presence N

Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? N

Station Comments

Sample Collected from Station

Sample Id	SDU-01-XRF-08	Decision Unit	Sediment Decision Unit 1
Sample Date Time	2015-04-20 15:02	Collection Method	XRF
Initials on CoC	EL	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-01-XRF-08

2015-04-20-15-05-51_SDU-01-XRF-08_TECK2.JPG



sample

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-20-15-04-29_SDU-01-XRF-08_TECK2.JPG



groundsurface

2015-04-20-15-04-34_SDU-01-XRF-08_TECK2.JPG



overview facing west

Appendix I
XRF Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-01-XRF-09	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-20 13:35	Sample Team Initials	EL

Sample Collected? Y
X 423555.5647 m
Y 5401471.3807 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N

Texture Silty very fine sand
Vegetation Type if Present N

Anthropogenic Changes Present? N
Color 2.5Y 4/2
Debris Presence N

Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? N

Station Comments

Sample Collected from Station

Sample Id	SDU-01-XRF-09	Decision Unit	Sediment Decision Unit 1
Sample Date Time	2015-04-20 13:35	Collection Method	XRF
Initials on CoC	EL	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-01-XRF-09

2015-04-20-13-36-08_SDU-01-XRF-09_1619LP-WA70047.JPG



sample location

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-20-13-35-50_SDU-01-XRF-09_1619LP-WA70047.JPG



sample

2015-04-20-13-36-10_SDU-01-XRF-09_TECK2.JPG



overview facing west

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-01-XRF-R01	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-01-XRF-R01	Decision Unit	Sediment Decision Unit 1
Sample Date Time		Collection Method	XRF
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Photos Collected from Station SDU-01-XRF-R01

No photos taken at this station. See station comments for more details.

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-01-XRF-R02	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-01-XRF-R02	Decision Unit	Sediment Decision Unit 1
Sample Date Time		Collection Method	XRF
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Photos Collected from Station SDU-01-XRF-R02

No photos taken at this station. See station comments for more details.

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-01-XRF-R03	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-01-XRF-R03	Decision Unit	Sediment Decision Unit 1
Sample Date Time		Collection Method	XRF
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Photos Collected from Station SDU-01-XRF-R03

No photos taken at this station. See station comments for more details.

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XRF Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-01-XRF-R04	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-01-XRF-R04	Decision Unit	Sediment Decision Unit 1
Sample Date Time		Collection Method	XRF
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Photos Collected from Station SDU-01-XRF-R04

No photos taken at this station. See station comments for more details.

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-01-XRF-R05	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-01-XRF-R05	Decision Unit	Sediment Decision Unit 1
Sample Date Time		Collection Method	XRF
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Photos Collected from Station SDU-01-XRF-R05

No photos taken at this station. See station comments for more details.

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XRF Sample Collection Report
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Station Id	SDU-02-XRF-01	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-21 9:33	Sample Team Initials	AP
Sample Collected?	Y		
X	423325.3027 m		
Y	5401483.8645 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Carp spawning depressions	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments on flat south of low water bouy

Sample Collected from Station

Sample Id	SDU-02-XRF-01	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-21 9:33	Collection Method	XRF
Initials on CoC	AP	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-02-XRF-01

2015-04-21-09-27-21_SDU-02-XRF-01_TECK1.JPG



ground surface

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-21-09-29-10_SDU-02-XRF-01_TECK1.JPG



2015-04-21-09-29-23_SDU-02-XRF-01_TECK1.JPG



View north

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-02-XRF-02	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-21 9:44	Sample Team Initials	AP
Sample Collected?	Y		
X	423380.3027 m		
Y	5401483.8645 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Carp spawning depressions	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on flat southeast of low water bouy

Sample Collected from Station

Sample Id	SDU-02-XRF-02	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-21 9:44	Collection Method	XRF
Initials on CoC	AP	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-02-XRF-02

2015-04-21-09-39-52_SDU-02-XRF-02_TECK1.JPG



ground surface

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-21-09-41-26_SDU-02-XRF-02_TECK1.JPG



2015-04-21-09-41-36_SDU-02-XRF-02_TECK1.JPG



view north

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XRF Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-02-XRF-03	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-21 9:57	Sample Team Initials	AP

Sample Collected? Y
X 423435.3027 m
Y 5401483.8645 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence Carp spawning depression
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N
Texture Silty very fine sand
Vegetation Type if Present N

Anthropogenic Changes Present? N
Color 10YR 4/2
Debris Presence N
Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? N

Station Comments located on flat east of low water bouy.

Sample Collected from Station

Sample Id	SDU-02-XRF-03	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-21 9:57	Collection Method	XRF
Initials on CoC	AP	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-02-XRF-03

2015-04-21-09-51-27_SDU-02-XRF-03_TECK1.JPG



ground surface

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XRF Sample Collection Report
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2015-04-21-09-53-36_SDU-02-XRF-03_TECK1.JPG



2015-04-21-09-53-49_SDU-02-XRF-03_TECK1.JPG



view north

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XRF Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-02-XRF-04	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-21 9:21	Sample Team Initials	AP

Sample Collected? Y
X 423352.8027 m
Y 5401428.8645 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence Carp spawning depressions
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N
Texture Silty very fine sand with trace clay
Vegetation Type if Present N

Anthropogenic Changes Present? N
Color 10YR 4/2
Debris Presence N
Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? N

Station Comments located on flat west of hillside.

Sample Collected from Station

Sample Id	SDU-02-XRF-04	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-21 9:21	Collection Method	XRF
Initials on CoC	AP	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-02-XRF-04

2015-04-21-09-16-10_SDU-02-XRF-04_TECK1.JPG



ground surface

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-21-09-18-34_SDU-02-XRF-04_TECK1.JPG



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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-02-XRF-05	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-21 10:09	Sample Team Initials	AP

Sample Collected? Y
X 423462.8027 m
Y 5401428.8645 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence Carp spawning depressions
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N
Texture Silty very fine sand
Vegetation Type if Present N

Station Comments located on flat west of hillside

Sample Collected from Station

Sample Id	SDU-02-XRF-05	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-21 10:09	Collection Method	XRF
Initials on CoC	AP	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Anthropogenic Changes Present? N
Color 10YR 4/2
Debris Presence N
Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? N

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Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-02-XRF-05

2015-04-21-10-04-46_SDU-02-XRF-05_TECK1.JPG



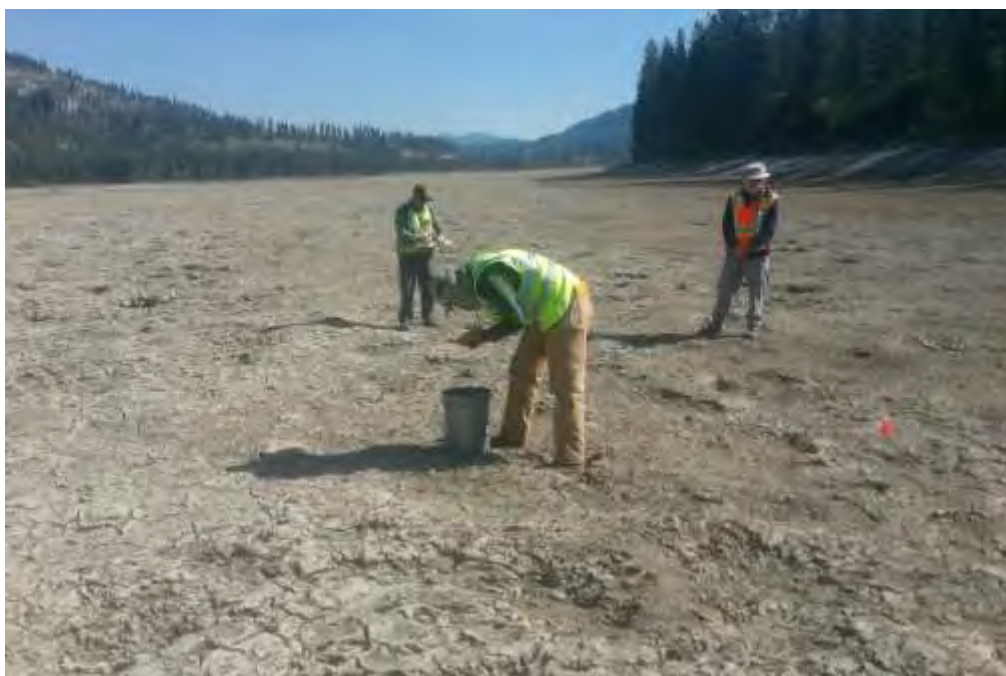
ground surface

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-21-10-06-37_SDU-02-XRF-05_TECK1.JPG



2015-04-21-10-06-49_SDU-02-XRF-05_TECK1.JPG



view north

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-02-XRF-06	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-21 9:10	Sample Team Initials	AP
Sample Collected?	Y		
X	423380.3027 m		
Y	5401373.8645 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Carp spawning depressions	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand with clay	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on flat west of hillside.

Sample Collected from Station

Sample Id	SDU-02-XRF-06	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-21 9:10	Collection Method	XRF
Initials on CoC	AP	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-02-XRF-06

2015-04-21-09-03-22_SDU-02-XRF-06_TECK1.JPG



ground surface

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-21-09-05-33_SDU-02-XRF-06_TECK1.JPG



2015-04-21-09-05-42_SDU-02-XRF-06_TECK1.JPG



view north

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XRF Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-02-XRF-07	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-21 8:56	Sample Team Initials	AP
Sample Collected?	Y		
X	423435.3027 m		
Y	5401373.8645 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Bioturbation	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand with clay	Vegetation Present?	Y
Vegetation Type if Present	Some grass		

Station Comments located on flat west of river bank

Sample Collected from Station

Sample Id	SDU-02-XRF-07	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-21 8:56	Collection Method	XRF
Initials on CoC	AP	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-02-XRF-07

2015-04-21-08-49-06_SDU-02-XRF-07_TECK1.JPG



ground surface

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-21-08-51-33_SDU-02-XRF-07_TECK1.JPG



2015-04-21-08-51-44_SDU-02-XRF-07_TECK1.JPG



view north

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XRF Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-02-XRF-08	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-21 8:41	Sample Team Initials	AP

Sample Collected? Y
X 423490.3027 m
Y 5401373.8645 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description Motorcycle tracks

Biological Visual Presence N

Cultural Oversight Inspection Conducted? Y

Odor N

Percent Ground Coverage 0

Shells Presence N

Surface Debris Present? N

Texture Silty fine sand with clay

Vegetation Type if Present Some grass

Station Comments located on open flat, west of hillside.

Anthropogenic Changes Present? N

Color 10YR 4/2

Debris Presence N

Percent Canopy Coverage 0

Sheen Presence N

Substrate Type Sediment

Surface Debris Removed Prior to Sampling? N

Vegetation Present? Y

Sample Collected from Station

Sample Id	SDU-02-XRF-08	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-21 8:41	Collection Method	XRF
Initials on CoC	AP	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-02-XRF-08

2015-04-21-08-33-17_SDU-02-XRF-08_TECK1.JPG



ground surface

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-21-08-36-24_SDU-02-XRF-08_TECK1.JPG



2015-04-21-08-36-36_SDU-02-XRF-08_TECK1.JPG



view north

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-02-XRF-R01	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-02-XRF-R01	Decision Unit	Sediment Decision Unit 2
Sample Date Time		Collection Method	XRF
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Photos Collected from Station SDU-02-XRF-R01

No photos taken at this station. See station comments for more details.

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-02-XRF-R02	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-02-XRF-R02	Decision Unit	Sediment Decision Unit 2
Sample Date Time		Collection Method	XRF
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Photos Collected from Station SDU-02-XRF-R02

No photos taken at this station. See station comments for more details.

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-02-XRF-R03	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-02-XRF-R03	Decision Unit	Sediment Decision Unit 2
Sample Date Time		Collection Method	XRF
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Photos Collected from Station SDU-02-XRF-R03

No photos taken at this station. See station comments for more details.

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-02-XRF-R04	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-02-XRF-R04	Decision Unit	Sediment Decision Unit 2
Sample Date Time		Collection Method	XRF
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-02-XRF-R04

2015-04-21-09-18-45_SDU-02-XRF-R04_TECK1.JPG



view north

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-02-XRF-R05	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-02-XRF-R05	Decision Unit	Sediment Decision Unit 2
Sample Date Time		Collection Method	XRF
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Photos Collected from Station SDU-02-XRF-R05

No photos taken at this station. See station comments for more details.

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-03-XRF-01	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-20 16:12	Sample Team Initials	EL
Sample Collected?	Y		
X	423086.7872 m		
Y	5401100.4635 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	2.5Y 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine to coarse gravel fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-03-XRF-01	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-20 16:12	Collection Method	XRF
Initials on CoC	EL	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-03-XRF-01

2015-04-20-16-16-00_SDU-03-XRF-01_TECK2.JPG



groundsurface

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-20-16-16-09_SDU-03-XRF-01_TECK2.JPG



sample

2015-04-20-16-16-14_SDU-03-XRF-01_TECK2.JPG



overview facing west

Appendix I
XRF Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study

Station Id	SDU-03-XRF-02	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-20 16:32	Sample Team Initials	EL

Sample Collected? Y
X 423029.2872 m
Y 5401055.4635 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine to coarse sandy fine to coarse gravel	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments gravel cobble boulder beach with limited fines

Sample Collected from Station

Sample Id	SDU-03-XRF-02	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-20 16:32	Collection Method	XRF
Initials on CoC	EL	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-03-XRF-02

2015-04-20-16-33-32_SDU-03-XRF-02_TECK2.JPG



sample

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-20-16-34-06_SDU-03-XRF-02_TECK2.JPG



groundsurface

2015-04-20-16-34-10_SDU-03-XRF-02_TECK2.JPG



overview facing west

Appendix I
XRF Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-03-XRF-03	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-20 16:39	Sample Team Initials	AP

Sample Collected? Y
X 422971.7872 m
Y 5401010.4635 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly, silty fine sand with clay	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located in cobble bar at foot of slope

Sample Collected from Station

Sample Id	SDU-03-XRF-03	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-20 16:39	Collection Method	XRF
Initials on CoC	AP	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-03-XRF-03

2015-04-20-16-15-02_SDU-03-XRF-03_1619LP-WA70047.JPG



sample location

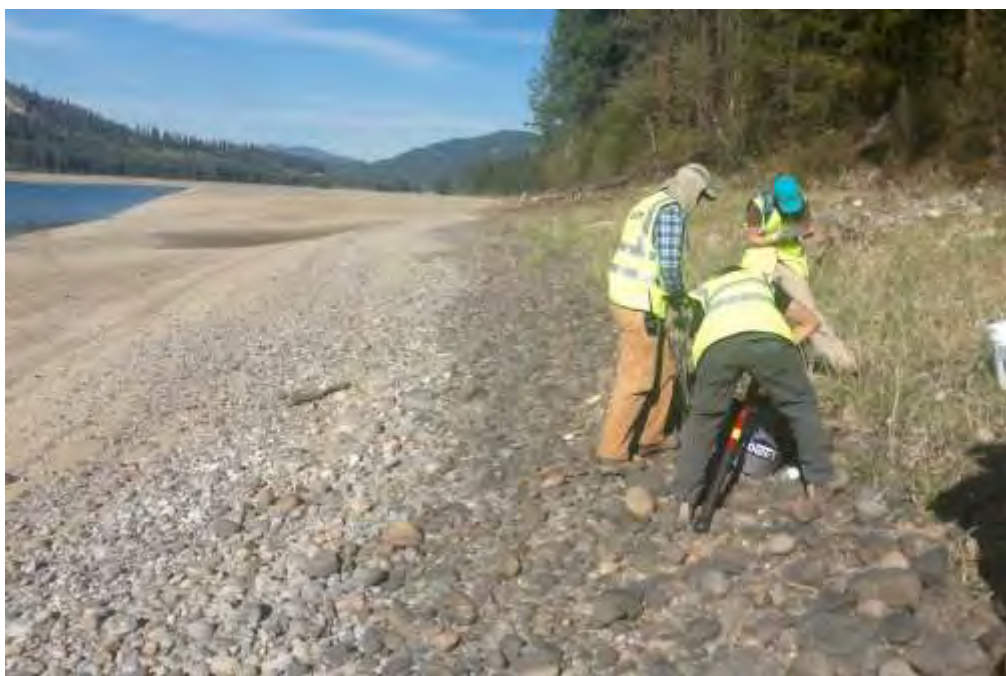
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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-20-16-35-40_SDU-03-XRF-03_1619LP-WA70047.JPG



sample

2015-04-20-16-35-54_SDU-03-XRF-03_1619LP-WA70047.JPG



overview of area facing north

Appendix I
XRF Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-03-XRF-04	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-20 16:53	Sample Team Initials	AP

Sample Collected? Y
X 422914.2872 m
Y 5400965.4635 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly, silty fine sand with clay	Vegetation Present?	Y
Vegetation Type if Present	Some grass		

Station Comments located on cobble bar immediately west of beach access road.

Sample Collected from Station

Sample Id	SDU-03-XRF-04	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-20 16:53	Collection Method	XRF
Initials on CoC	AP	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-03-XRF-04

2015-04-20-16-46-14_SDU-03-XRF-04_TECK1.JPG



ground surface

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-20-16-48-48_SDU-03-XRF-04_TECK1.JPG



2015-04-20-16-48-52_SDU-03-XRF-04_TECK1.JPG



view south

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-03-XRF-R01	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-03-XRF-R01	Decision Unit	Sediment Decision Unit 3
Sample Date Time		Collection Method	XRF
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Photos Collected from Station SDU-03-XRF-R01

No photos taken at this station. See station comments for more details.

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-03-XRF-R02	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-03-XRF-R02	Decision Unit	Sediment Decision Unit 3
Sample Date Time		Collection Method	XRF
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Photos Collected from Station SDU-03-XRF-R02

No photos taken at this station. See station comments for more details.

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-03-XRF-R03	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-03-XRF-R03	Decision Unit	Sediment Decision Unit 3
Sample Date Time		Collection Method	XRF
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Photos Collected from Station SDU-03-XRF-R03

No photos taken at this station. See station comments for more details.

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-03-XRF-R04	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-03-XRF-R04	Decision Unit	Sediment Decision Unit 3
Sample Date Time		Collection Method	XRF
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-03-XRF-R04

2015-04-20-16-48-52_SDU-03-XRF-R04_TECK1.JPG



view south

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XRF Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-04-XRF-01	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-02 10:12	Sample Team Initials	MS

Sample Collected? Y
X 422691.1355 m
Y 5400781.8543 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand fine to coarse gravel	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-04-XRF-01	Decision Unit	Sediment Decision Unit 4
Sample Date Time	2015-05-02 10:12	Collection Method	XRF
Initials on CoC	MS	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-04-XRF-01

2015-05-02-10-15-49_SDU-04-XRF-01_TECK2.JPG



sample

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-02-10-16-47_SDU-04-XRF-01_TECK2.JPG



groundsurface

2015-05-02-10-16-53_SDU-04-XRF-01_TECK2.JPG



overview facing south

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-04-XRF-02	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-02 9:56	Sample Team Initials	MS

Sample Collected? Y
X 422649.1355 m
Y 5400721.8543 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand some fine to medium gravel	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments No recovery first attempt due to loose gravel. Second attempt 80% full and used scoop to obtain remaining 20%.

Sample Collected from Station

Sample Id	SDU-04-XRF-02	Decision Unit	Sediment Decision Unit 4
Sample Date Time	2015-05-02 9:56	Collection Method	XRF
Initials on CoC	MS	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-04-XRF-02

2015-05-02-10-02-09_SDU-04-XRF-02_TECK2.JPG



sample

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-02-10-02-31_SDU-04-XRF-02_TECK2.JPG



overview facing north

2015-05-02-10-03-06_SDU-04-XRF-02_TECK2.JPG



groundsurface

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-04-XRF-03	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-02 9:45	Sample Team Initials	MS

Sample Collected? Y
X 422631.1355 m
Y 5400685.8543 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand trace fine gravel	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments Loose sediment; scoop used to complete sample collection.

Sample Collected from Station

Sample Id	SDU-04-XRF-03	Decision Unit	Sediment Decision Unit 4
Sample Date Time	2015-05-02 9:45	Collection Method	XRF
Initials on CoC	MS	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-04-XRF-03

2015-05-02-09-50-43_SDU-04-XRF-03_TECK2.JPG



sample

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-02-09-51-11_SDU-04-XRF-03_TECK2.JPG



2015-05-02-09-51-16_SDU-04-XRF-03_TECK2.JPG



overview facing north

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-04-XRF-04	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-02 9:18	Sample Team Initials	MS

Sample Collected? Y
X 422595.1355 m
Y 5400613.8543 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N

Texture Silty fine sand
Vegetation Type if Present N

Anthropogenic Changes Present? N
Color 10YR 4/2
Debris Presence N

Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? N

Station Comments

Sample Collected from Station

Sample Id	SDU-04-XRF-04	Decision Unit	Sediment Decision Unit 4
Sample Date Time	2015-05-02 9:18	Collection Method	XRF
Initials on CoC	MS	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-04-XRF-04

2015-05-02-09-20-58_SDU-04-XRF-04_TECK2.JPG



sample

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-02-09-21-11_SDU-04-XRF-04_TECK2.JPG



groundsurface

2015-05-02-09-21-15_SDU-04-XRF-04_TECK2.JPG



overview facing south

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-04-XRF-R01	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-04-XRF-R01	Decision Unit	Sediment Decision Unit 4
Sample Date Time		Collection Method	XRF
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Photos Collected from Station SDU-04-XRF-R01

No photos taken at this station. See station comments for more details.

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Station Id	SDU-04-XRF-R02	Start Depth	0 cm
Station Type	Reserve	End Depth	15 cm
Collection DateTime	2015-05-02 9:31	Sample Team Initials	MS
Sample Collected?	N		
X	Not collected		
Y	Not Collected		
Coordinate System: UTM 11 North, Units: meters; Datum: WGS1984			
Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand trace fine gravel	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments collected this sample but do not need as a reserve, HOLD sample on ice.

Sample Collected from Station

Sample Id	SDU-04-XRF-R02	Decision Unit	Sediment Decision Unit 4
Sample Date Time	2015-05-02 9:31	Collection Method	XRF
Initials on CoC	MS	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-04-XRF-R02

2015-05-02-09-21-15_SDU-04-XRF-R02_TECK2.JPG



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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-02-09-34-13_SDU-04-XRF-R02_TECK2.JPG



groundsurface

2015-05-02-09-34-25_SDU-04-XRF-R02_TECK2.JPG



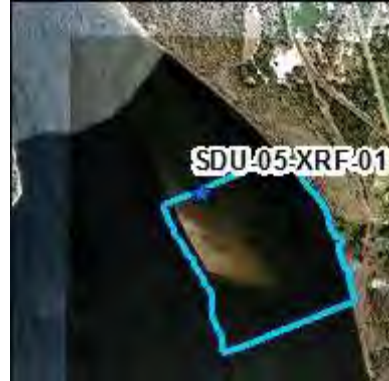
sample

Appendix I
XRF Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study

Station Id	SDU-05-XRF-01	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-24 10:42	Sample Team Initials	AP

Sample Collected? Y
X 424294.0087 m
Y 5395316.5972 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes N
Description

Biological Visual Presence Carp spawning depressions

Cultural Oversight Y
Inspection Conducted?

Odor N

Percent Ground Coverage 0

Shells Presence N

Surface Debris Present? N

Texture Silt with trace fine sand

Vegetation Type if Present Some grass like plants

Station Comments on elevated flat area

Anthropogenic Changes N
Present?

Color 10YR 3/2

Debris Presence N

Percent Canopy Coverage 0

Sheen Presence N

Substrate Type Sediment

Surface Debris Removed N
Prior to Sampling?

Vegetation Present? Y

Sample Collected from Station

Sample Id	SDU-05-XRF-01	Decision Unit	Sediment Decision Unit 5
Sample Date Time	2015-04-24 10:42	Collection Method	XRF
Initials on CoC	AP	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-05-XRF-01

2015-04-24-10-33-33_SDU-05-XRF-01_TECK1.JPG



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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-24-10-37-57_SDU-05-XRF-01_TECK1.JPG



view n

2015-04-24-10-37-47_SDU-05-XRF-01_TECK1.JPG



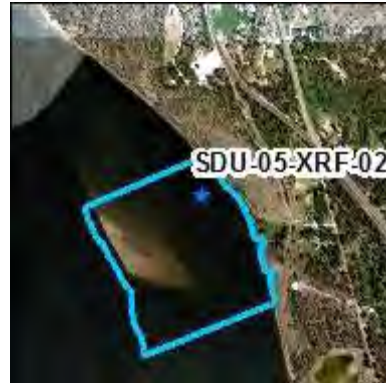
Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-05-XRF-02	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-25 11:35	Sample Team Initials	AP

Sample Collected? Y
X 424544 m
Y 5395316.59 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Goose tracks	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Clayey silt, slighty plastic	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located in depression between elevated flat and east river bank

Sample Collected from Station

Sample Id	SDU-05-XRF-02	Decision Unit	Sediment Decision Unit 5
Sample Date Time	2015-04-25 11:35	Collection Method	XRF
Initials on CoC	AP	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-05-XRF-02

2015-04-25-11-26-10_SDU-05-XRF-02_TECK1.JPG



View n

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-25-11-31-34_SDU-05-XRF-02_TECK1.JPG



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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-05-XRF-03	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-24 13:11	Sample Team Initials	AP

Sample Collected? Y
X 424356.5087 m
Y 5395191.5972 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence Carp spawning depressions
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N
Texture Very fine sand with silt
Vegetation Type if Present N

Anthropogenic Changes Present? N
Color 10YR 3/2
Debris Presence N
Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? N

Station Comments located on elevated flat

Sample Collected from Station

Sample Id	SDU-05-XRF-03	Decision Unit	Sediment Decision Unit 5
Sample Date Time	2015-04-24 13:11	Collection Method	XRF
Initials on CoC	AP	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-05-XRF-03

2015-04-24-13-03-25_SDU-05-XRF-03_TECK1.JPG



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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-24-13-06-05_SDU-05-XRF-03_TECK1.JPG



view n

2015-04-24-13-07-22_SDU-05-XRF-03_TECK1.JPG



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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Station Id	SDU-05-XRF-04	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-25 10:30	Sample Team Initials	AP

Sample Collected? Y
X 424606.5087 m
Y 5395191.5972 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Carp spawning depressions	Color	10YR 4/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on east facing slope of elevated flat

Sample Collected from Station

Sample Id	SDU-05-XRF-04	Decision Unit	Sediment Decision Unit 5
Sample Date Time	2015-04-25 10:30	Collection Method	XRF
Initials on CoC	AP	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-05-XRF-04

2015-04-25-10-37-28_SDU-05-XRF-04_1619LP-WA70043.JPG



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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-25-10-37-22_SDU-05-XRF-04_1619LP-WA70043.JPG



2015-04-25-10-37-18_SDU-05-XRF-04_1619LP-WA70043.JPG



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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-26-20-27-50_SDU-05-XRF-04_TECK1.JPG



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XRF Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-05-XRF-05	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-25 10:00	Sample Team Initials	AP

Sample Collected? Y
X 424419.0087 m
Y 5395066.5972 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes N
Description
Biological Visual Presence Goose tracks
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N
Texture Clayey silt, slightly plastic
Vegetation Type if Present N

Anthropogenic Changes Present? N
Color 7.5YR 3/2
Debris Presence N
Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? N

Station Comments located on elevated flat

Sample Collected from Station

Sample Id	SDU-05-XRF-05	Decision Unit	Sediment Decision Unit 5
Sample Date Time	2015-04-25 10:00	Collection Method	XRF
Initials on CoC	AP	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-05-XRF-05

2015-04-25-10-11-46_SDU-05-XRF-05_1619LP-WA70043.JPG



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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-25-10-11-32_SDU-05-XRF-05_1619LP-WA70043.JPG



2015-04-26-20-27-50_SDU-05-XRF-05_TECK1.JPG



looking north

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Station Id	SDU-05-XRF-06	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-25 10:12	Sample Team Initials	AP
Sample Collected?	Y		
X	424544.0087 m		
Y	5395066.5972 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Carp spawning depressions	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Sandy silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-05-XRF-06	Decision Unit	Sediment Decision Unit 5
Sample Date Time		Collection Method	XRF
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-05-XRF-06

2015-04-25-10-25-50_SDU-05-XRF-06_1619LP-WA70043.JPG



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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-25-10-25-42_SDU-05-XRF-06_1619LP-WA70043.JPG



2015-04-25-10-25-32_SDU-05-XRF-06_1619LP-WA70043.JPG



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XRF Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-05-XRF-07	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime	2015-04-24 12:00	Sample Team Initials	AP
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984

Station Comments Location was abandoned because it was under water. Replaced by reserve station SDU-05-XRF-R03

Sample Collected from Station

Sample Id	SDU-05-XRF-07	Decision Unit	Sediment Decision Unit 5
Sample Date Time	2015-04-24 12:00	Collection Method	XRF
Initials on CoC	AP	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	Replaced by SDU-05-XRF-R03		

Photos Collected from Station SDU-05-XRF-07

No photos taken at this station. See station comments for more details.

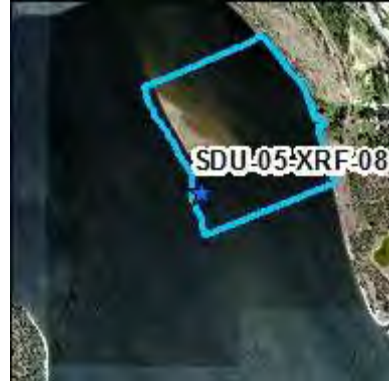
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XRF Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-05-XRF-08	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-24 9:38	Sample Team Initials	AP

Sample Collected? Y
X 424356.5087 m
Y 5394941.5972 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Carp spawning depressions	Color	10YR 4/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty with clay and trace very fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on flat north of low water bouy

Sample Collected from Station

Sample Id	SDU-05-XRF-08	Decision Unit	Sediment Decision Unit 5
Sample Date Time	2015-04-24 9:38	Collection Method	XRF
Initials on CoC	AP	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-05-XRF-08

2015-04-24-09-30-32_SDU-05-XRF-08_TECK1.JPG



g.5

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-24-09-33-16_SDU-05-XRF-08_TECK1.JPG



2015-04-24-09-33-30_SDU-05-XRF-08_TECK1.JPG



view n

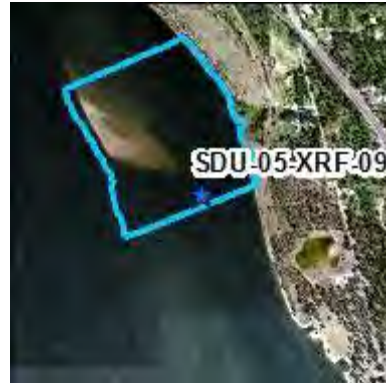
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XRF Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-05-XRF-09	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-25 8:23	Sample Team Initials	AP

Sample Collected? Y
X 424606.5087 m
Y 5394941.5972 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence Carp spawning depressions
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N
Texture Silt with very fine sand
Vegetation Type if Present N

Anthropogenic Changes Present? N
Color 10YR 3/2
Debris Presence N
Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? N

Station Comments located on flat east of low water bouy

Sample Collected from Station

Sample Id	SDU-05-XRF-09	Decision Unit	Sediment Decision Unit 5
Sample Date Time	2015-04-25 8:23	Collection Method	XRF
Initials on CoC	AP	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-05-XRF-09

2015-04-25-08-15-39_SDU-05-XRF-09_TECK1.JPG



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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-25-08-16-31_SDU-05-XRF-09_TECK1.JPG



view n

2015-04-25-08-19-13_SDU-05-XRF-09_TECK1.JPG



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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-05-XRF-R01	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-05-XRF-R01	Decision Unit	Sediment Decision Unit 5
Sample Date Time		Collection Method	XRF
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
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Photos Collected from Station SDU-05-XRF-R01

2015-04-24-10-37-57_SDU-05-XRF-R01_TECK1.JPG



view n

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XRF Sample Collection Report
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Station Id	SDU-05-XRF-R02	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-05-XRF-R02	Decision Unit	Sediment Decision Unit 5
Sample Date Time		Collection Method	XRF
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Photos Collected from Station SDU-05-XRF-R02

No photos taken at this station. See station comments for more details.

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XRF Sample Collection Report
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Station Id	SDU-05-XRF-R03	Start Depth	0 cm
Station Type	Reserve	End Depth	15 cm
Collection DateTime	2015-04-24 12:01	Sample Team Initials	AP

Sample Collected? Y
X 424481.5087 m
Y 5395191.5972 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence Carp spawning depressions
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N
Texture Silty fine sand
Vegetation Type if Present N

Anthropogenic Changes Present? N
Color 10YR 4/2
Debris Presence N
Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? N

Station Comments located on elevated flat

Sample Collected from Station

Sample Id	SDU-05-XRF-R03	Decision Unit	Sediment Decision Unit 5
Sample Date Time	2015-04-24 12:01	Collection Method	XRF
Initials on CoC	AP	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments	Replacement location for SDU-05-XRF-07		

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-05-XRF-R03

2015-04-24-11-50-42_SDU-05-XRF-R03_TECK1.JPG



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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-24-11-57-00_SDU-05-XRF-R03_TECK1.JPG



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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-05-XRF-R04	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-05-XRF-R04	Decision Unit	Sediment Decision Unit 5
Sample Date Time		Collection Method	XRF
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Photos Collected from Station SDU-05-XRF-R04

No photos taken at this station. See station comments for more details.

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-05-XRF-R05	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-05-XRF-R05	Decision Unit	Sediment Decision Unit 5
Sample Date Time		Collection Method	XRF
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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Photos Collected from Station SDU-05-XRF-R05

No photos taken at this station. See station comments for more details.

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XRF Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-06-XRF-01	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-28 9:27	Sample Team Initials	AP
Sample Collected?	Y		
X	425126.2415 m		
Y	5394173.8951 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	Located on beach	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Sandy gravel with cobbles	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on beach just below bulkhead

Sample Collected from Station

Sample Id	SDU-06-XRF-01	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-28 9:27	Collection Method	XRF
Initials on CoC	AP	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-06-XRF-01

2015-04-28-09-16-17_SDU-06-XRF-01_TECK1.JPG



view n

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-28-09-24-51_SDU-06-XRF-01_TECK1.JPG



Appendix I
XRF Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-06-XRF-02	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-28 9:10	Sample Team Initials	AP

Sample Collected? Y
X 425223.7415 m
Y 5394068.8951 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Some grass		
Station Comments	located on upper beach		

Sample Collected from Station

Sample Id	SDU-06-XRF-02	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-28 9:10	Collection Method	XRF
Initials on CoC	AP	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-06-XRF-02

2015-04-28-09-03-56_SDU-06-XRF-02_TECK1.JPG



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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-28-09-04-19_SDU-06-XRF-02_TECK1.JPG



view n

2015-04-28-09-07-39_SDU-06-XRF-02_TECK1.JPG



Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-06-XRF-03	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime	2015-04-28 8:57	Sample Team Initials	AP
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments refusal on boulders, replaced by reserve station SDU-06-XRF-R02

Sample Collected from Station

Sample Id	SDU-06-XRF-03	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-28 8:57	Collection Method	XRF
Initials on CoC	AP	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Photos Collected from Station SDU-06-XRF-03

No photos taken at this station. See station comments for more details.

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XRF Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-06-XRF-04	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-28 8:36	Sample Team Initials	AP

Sample Collected? Y
X 425306.2415 m
Y 5393813.8951 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand with trace silt	Vegetation Present?	Y
Vegetation Type if Present	Some grass		

Station Comments located on upper beach

Sample Collected from Station

Sample Id	SDU-06-XRF-04	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-28 8:36	Collection Method	XRF
Initials on CoC	AP	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-06-XRF-04

2015-04-28-08-30-13_SDU-06-XRF-04_TECK1.JPG



gs

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-28-08-30-33_SDU-06-XRF-04_TECK1.JPG



view n

2015-04-28-08-33-37_SDU-06-XRF-04_TECK1.JPG

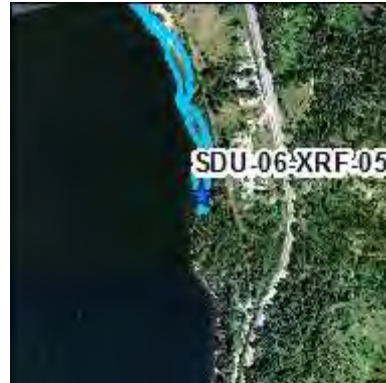


Appendix I
XRF Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-06-XRF-05	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-28 8:25	Sample Team Initials	AP
Sample Collected?	Y		
X	425298.7415 m		
Y	5393678.8951 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine sand with trace silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on upper beach

Sample Collected from Station

Sample Id	SDU-06-XRF-05	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-28 8:25	Collection Method	XRF
Initials on CoC	AP	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-06-XRF-05

2015-04-28-08-22-56_SDU-06-XRF-05_TECK1.JPG



Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-06-XRF-R01	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-06-XRF-R01	Decision Unit	Sediment Decision Unit 6
Sample Date Time		Collection Method	XRF
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-06-XRF-R01

2015-04-28-09-15-48_SDU-06-XRF-R01_TECK1.JPG



gs

Appendix I
XRF Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-06-XRF-R02	Start Depth	0 cm
Station Type	Reserve	End Depth	15 cm
Collection DateTime	2015-04-28 8:58	Sample Team Initials	AP

Sample Collected? Y
X 425238.7415 m
Y 5394008.8951 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Some grass		

Station Comments located on upper beach. replaces SDU-06-XRF-03, which was refused on rocks

Sample Collected from Station

Sample Id	SDU-06-XRF-R02	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-28 8:58	Collection Method	XRF
Initials on CoC	AP	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-06-XRF-R02

2015-04-28-08-47-01_SDU-06-XRF-R02_TECK1.JPG



gs

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-28-08-48-22_SDU-06-XRF-R02_TECK1.JPG



view n

2015-04-28-08-54-31_SDU-06-XRF-R02_TECK1.JPG



Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-06-XRF-R03	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-06-XRF-R03	Decision Unit	Sediment Decision Unit 6
Sample Date Time		Collection Method	XRF
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-06-XRF-R03

2015-04-28-13-03-59_SDU-06-XRF-R03_TECK1.JPG



gs

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-06-XRF-R04	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-06-XRF-R04	Decision Unit	Sediment Decision Unit 6
Sample Date Time		Collection Method	XRF
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Photos Collected from Station SDU-06-XRF-R04

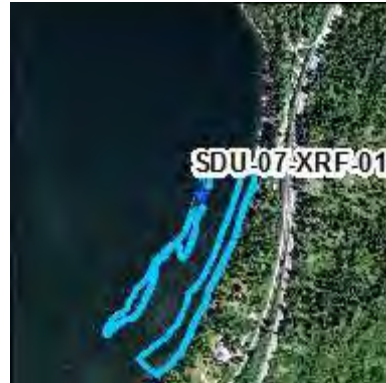
No photos taken at this station. See station comments for more details.

Appendix I
XRF Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07-XRF-01	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-02 11:57	Sample Team Initials	MS
Sample Collected?	Y		
X	425189.3164 m		
Y	5393030.7354 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-07-XRF-01	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-02 11:57	Collection Method	XRF
Initials on CoC	MS	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-07-XRF-01

2015-05-02-12-00-23_SDU-07-XRF-01_TECK2.JPG



sample

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-02-12-00-36_SDU-07-XRF-01_TECK2.JPG



groundsurface

2015-05-02-11-58-54_SDU-07-XRF-01_TECK2.JPG



overview facing north

Appendix I
XRF Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07-XRF-02	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-02 12:15	Sample Team Initials	MS
Sample Collected?	Y		
X	425228.7331 m		
Y	5392911.3126 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine to coarse sand trace fine gravel	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-07-XRF-02	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-02 12:15	Collection Method	XRF
Initials on CoC	MS	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-07-XRF-02

2015-05-02-12-16-52_SDU-07-XRF-02_TECK2.JPG



sample

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-02-12-17-05_SDU-07-XRF-02_TECK2.JPG



groundsurface

2015-05-02-12-17-09_SDU-07-XRF-02_TECK2.JPG



overview facing south

Appendix I
XRF Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07-XRF-03	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-02 11:42	Sample Team Initials	MS
Sample Collected?	Y		
X	425037.5772 m		
Y	5392795.058 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-07-XRF-03	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-02 11:42	Collection Method	XRF
Initials on CoC	MS	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-07-XRF-03

2015-05-02-11-44-27_SDU-07-XRF-03_TECK2.JPG



overview facing south

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-02-11-46-39_SDU-07-XRF-03_TECK2.JPG



sample

2015-05-02-11-46-45_SDU-07-XRF-03_TECK2.JPG



sample

Appendix I
XRF Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07-XRF-04	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-02 12:28	Sample Team Initials	MS
Sample Collected?	Y		
X	425108.7331 m		
Y	5392671.3126 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-07-XRF-04	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-02 12:28	Collection Method	XRF
Initials on CoC	MS	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-07-XRF-04

2015-05-02-12-30-07_SDU-07-XRF-04_TECK2.JPG



sample

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-02-12-29-57_SDU-07-XRF-04_TECK2.JPG



overview facing south

2015-05-02-12-30-14_SDU-07-XRF-04_TECK2.JPG



Appendix I
XRF Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07-XRF-R01	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-07-XRF-R01	Decision Unit	Sediment Decision Unit 7
Sample Date Time		Collection Method	XRF
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Photos Collected from Station SDU-07-XRF-R01

No photos taken at this station. See station comments for more details.

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07-XRF-R02	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-07-XRF-R02	Decision Unit	Sediment Decision Unit 7
Sample Date Time		Collection Method	XRF
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Photos Collected from Station SDU-07-XRF-R02

No photos taken at this station. See station comments for more details.

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07-XRF-R03	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-07-XRF-R03	Decision Unit	Sediment Decision Unit 7
Sample Date Time		Collection Method	XRF
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Photos Collected from Station SDU-07-XRF-R03

No photos taken at this station. See station comments for more details.

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07-F-XRF-01	Start Depth	cm
Station Type		End Depth	cm
Collection DateTime	2015-05-05 12:41	Sample Team Initials	ALD
Sample Collected?	Y		
X	424961.2141 m		
Y	5392697.5875 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Station Comments

Sample Collected from Station

Sample Id	SDU-07-F-XRF	Decision Unit	Sediment Decision Unit 7
Sample Date Time	1899-12-30 0:00	Collection Method	In Situ XRF
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-07-F-XRF-01

2015-05-14-05-09-08_SDU-07-F-XRF-01_1619LP-WA70047.jpg



in situ XRF location analyzed on 5/5/15 facing east

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-14-05-09-00_SDU-07-F-XRF-01_1619LP-WA70047.jpg



eastern shore of west half of SDU-07 facing north

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07-F-XRF-02	Start Depth	cm
Station Type		End Depth	cm
Collection DateTime	2015-05-05 12:47	Sample Team Initials	ALD
Sample Collected?	Y		
X	424983.9573 m		
Y	5392719.7703 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Station Comments

Sample Collected from Station

Sample Id	SDU-07-F-XRF	Decision Unit	Sediment Decision Unit 7
Sample Date Time	1899-12-30 0:00	Collection Method	In Situ XRF
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-07-F-XRF-02

2015-05-14-05-09-18_SDU-07-F-XRF-02_1619LP-WA70047.jpg



in situ XRF location analyzed on 5/5/15 facing east

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07-F-XRF-03	Start Depth	cm
Station Type		End Depth	cm
Collection DateTime	2015-05-05 12:53	Sample Team Initials	ALD
Sample Collected?	Y		
X	425014.4552 m		
Y	5392734.062 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Station Comments

Sample Collected from Station

Sample Id	SDU-07-F-XRF	Decision Unit	Sediment Decision Unit 7
Sample Date Time	1899-12-30 0:00	Collection Method	In Situ XRF
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-07-F-XRF-03

2015-05-14-05-09-32_SDU-07-F-XRF-03_1619LP-WA70047.jpg



in situ XRF location analyzed on 5/5/15 facing east

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07-F-XRF-04	Start Depth	cm
Station Type		End Depth	cm
Collection DateTime	2015-05-05 12:58	Sample Team Initials	ALD
Sample Collected?	Y		
X	425030.362 m		
Y	5392747.9844 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Station Comments

Sample Collected from Station

Sample Id	SDU-07-F-XRF	Decision Unit	Sediment Decision Unit 7
Sample Date Time	1899-12-30 0:00	Collection Method	In Situ XRF
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-07-F-XRF-04

2015-05-14-05-09-42_SDU-07-F-XRF-04_1619LP-WA70047.jpg



in situ XRF location analyzed on 5/5/15 facing east

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07-F-XRF-05	Start Depth	cm
Station Type		End Depth	cm
Collection DateTime	2015-05-05 13:02	Sample Team Initials	ALD
Sample Collected?	Y		
X	425047.1557 m		
Y	5392774.2568 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Station Comments

Sample Collected from Station

Sample Id	SDU-07-F-XRF	Decision Unit	Sediment Decision Unit 7
Sample Date Time	1899-12-30 0:00	Collection Method	In Situ XRF
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-07-F-XRF-05

2015-05-14-05-09-50_SDU-07-F-XRF-05_1619LP-WA70047.jpg



in situ XRF location analyzed on 5/5/15 facing east

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07-F-XRF-06	Start Depth	cm
Station Type		End Depth	cm
Collection DateTime	2015-05-05 13:07	Sample Team Initials	ALD
Sample Collected?	Y		
X	425060.9651 m		
Y	5392805.0505 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Station Comments

Sample Collected from Station

Sample Id	SDU-07-F-XRF	Decision Unit	Sediment Decision Unit 7
Sample Date Time	1899-12-30 0:00	Collection Method	In Situ XRF
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-07-F-XRF-06

2015-05-14-05-10-02_SDU-07-F-XRF-06_1619LP-WA70047.jpg



in situ XRF location analyzed on 5/5/15 facing east

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07-F-XRF-07	Start Depth	cm
Station Type		End Depth	cm
Collection DateTime	2015-05-05 13:11	Sample Team Initials	ALD
Sample Collected?	Y		
X	425071.5526 m		
Y	5392834.1906 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Station Comments

Sample Collected from Station

Sample Id	SDU-07-F-XRF	Decision Unit	Sediment Decision Unit 7
Sample Date Time	1899-12-30 0:00	Collection Method	In Situ XRF
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-07-F-XRF-07

2015-05-14-05-10-14_SDU-07-F-XRF-07_1619LP-WA70047.jpg



in situ XRF location analyzed on 5/5/15 facing east

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07-F-XRF-08	Start Depth	cm
Station Type		End Depth	cm
Collection DateTime	2015-05-05 13:15	Sample Team Initials	ALD
Sample Collected?	Y		
X	425076.3542 m		
Y	5392860.2568 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Station Comments

Sample Collected from Station

Sample Id	SDU-07-F-XRF	Decision Unit	Sediment Decision Unit 7
Sample Date Time	1899-12-30 0:00	Collection Method	In Situ XRF
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-07-F-XRF-08

2015-05-14-05-10-26_SDU-07-F-XRF-08_1619LP-WA70047.jpg



eastern shore of west half of SDU-07 facing north

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-14-05-10-20_SDU-07-F-XRF-08_1619LP-WA70047.jpg



eastern shore of west half of SDU-07 facing south

2015-05-14-05-10-32_SDU-07-F-XRF-08_1619LP-WA70047.jpg



in situ XRF location analyzed on 5/5/15 facing east

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07-F-XRF-09	Start Depth	cm
Station Type		End Depth	cm
Collection DateTime	2015-05-05 13:18	Sample Team Initials	ALD
Sample Collected?	Y		
X	425095.4203 m		
Y	5392885.3813 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Station Comments

Sample Collected from Station

Sample Id	SDU-07-F-XRF	Decision Unit	Sediment Decision Unit 7
Sample Date Time	1899-12-30 0:00	Collection Method	In Situ XRF
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-07-F-XRF-09

2015-05-14-05-10-40_SDU-07-F-XRF-09_1619LP-WA70047.jpg



in situ XRF location analyzed 5/5/15 facing east

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07-F-XRF-10	Start Depth	cm
Station Type		End Depth	cm
Collection DateTime	2015-05-05 13:22	Sample Team Initials	ALD
Sample Collected?	Y		
X	425111.8172 m		
Y	5392906.1245 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Station Comments

Sample Collected from Station

Sample Id	SDU-07-F-XRF	Decision Unit	Sediment Decision Unit 7
Sample Date Time	1899-12-30 0:00	Collection Method	In Situ XRF
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-07-F-XRF-10

2015-05-14-05-10-50_SDU-07-F-XRF-10_1619LP-WA70047.jpg



in situ XRF location analyzed 5/5/15 facing east

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07-F-XRF-11	Start Depth	cm
Station Type		End Depth	cm
Collection DateTime	2015-05-05 13:31	Sample Team Initials	ALD
Sample Collected?	Y		
X	425132.5797 m		
Y	5392896.8677 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Station Comments

Sample Collected from Station

Sample Id	SDU-07-F-XRF	Decision Unit	Sediment Decision Unit 7
Sample Date Time	1899-12-30 0:00	Collection Method	In Situ XRF
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-07-F-XRF-11

2015-05-14-05-11-04_SDU-07-F-XRF-11_1619LP-WA70047.jpg



in situ XRF location analyzed 5/5/15 facing west

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07-F-XRF-12	Start Depth	cm
Station Type		End Depth	cm
Collection DateTime	2015-05-05 13:35	Sample Team Initials	ALD
Sample Collected?	Y		
X	425142.4943 m		
Y	5392882.638 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Station Comments

Sample Collected from Station

Sample Id	SDU-07-F-XRF	Decision Unit	Sediment Decision Unit 7
Sample Date Time	1899-12-30 0:00	Collection Method	In Situ XRF
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-07-F-XRF-12

2015-05-14-05-11-32_SDU-07-F-XRF-12_1619LP-WA70047.jpg



in situ XRF location analyzed 5/5/15 facing east

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07-F-XRF-13	Start Depth	cm
Station Type		End Depth	cm
Collection DateTime	2015-05-05 13:38	Sample Team Initials	ALD
Sample Collected?	Y		
X	425155.8911 m		
Y	5392907.4552 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Station Comments

Sample Collected from Station

Sample Id	SDU-07-F-XRF	Decision Unit	Sediment Decision Unit 7
Sample Date Time	1899-12-30 0:00	Collection Method	In Situ XRF
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-07-F-XRF-13

2015-05-14-05-11-58_SDU-07-F-XRF-13_1619LP-WA70047.jpg



in situ XRF location analyzed 5/5/15 facing east

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-14-05-11-46_SDU-07-F-XRF-13_1619LP-WA70047.jpg



eastern shore of west half of SDU-07 facing north

2015-05-14-05-11-40_SDU-07-F-XRF-13_1619LP-WA70047.jpg



eastern shore of west half of SDU-07 facing south

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07-F-XRF-14	Start Depth	cm
Station Type		End Depth	cm
Collection DateTime	2015-05-05 13:43	Sample Team Initials	ALD
Sample Collected?	Y		
X	425165.8911 m		
Y	5392936.0583 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Station Comments

Sample Collected from Station

Sample Id	SDU-07-F-XRF	Decision Unit	Sediment Decision Unit 7
Sample Date Time	1899-12-30 0:00	Collection Method	In Situ XRF
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-07-F-XRF-14

2015-05-14-05-12-06_SDU-07-F-XRF-14_1619LP-WA70047.jpg



in situ XRF location analyzed 5/5/15 facing east

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07-F-XRF-15	Start Depth	cm
Station Type		End Depth	cm
Collection DateTime	2015-05-05 13:46	Sample Team Initials	ALD
Sample Collected?	Y		
X	425171.0469 m		
Y	5392964.1906 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Station Comments

Sample Collected from Station

Sample Id	SDU-07-F-XRF	Decision Unit	Sediment Decision Unit 7
Sample Date Time	1899-12-30 0:00	Collection Method	In Situ XRF
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-07-F-XRF-15

2015-05-14-05-12-16_SDU-07-F-XRF-15_1619LP-WA70047.jpg



in situ XRF location analyzed 5/5/15 facing east

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07-F-XRF-16	Start Depth	cm
Station Type		End Depth	cm
Collection DateTime	2015-05-05 13:50	Sample Team Initials	ALD
Sample Collected?	Y		
X	425185.1635 m		
Y	5392994.1167 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Station Comments

Sample Collected from Station

Sample Id	SDU-07-F-XRF	Decision Unit	Sediment Decision Unit 7
Sample Date Time	1899-12-30 0:00	Collection Method	In Situ XRF
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-07-F-XRF-16

2015-05-14-05-12-22_SDU-07-F-XRF-16_1619LP-WA70047.jpg



in situ XRF location analyzed 5/5/15 facing east

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07-F-XRF-17	Start Depth	cm
Station Type		End Depth	cm
Collection DateTime	2015-05-05 13:54	Sample Team Initials	ALD
Sample Collected?	Y		
X	425193.6422 m		
Y	5393021.7276 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Station Comments

Sample Collected from Station

Sample Id	SDU-07-F-XRF	Decision Unit	Sediment Decision Unit 7
Sample Date Time	1899-12-30 0:00	Collection Method	In Situ XRF
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-07-F-XRF-17

2015-05-14-05-12-32_SDU-07-F-XRF-17_1619LP-WA70047.jpg



in situ XRF location analyzed 5/5/15 facing east

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07-F-XRF-18	Start Depth	cm
Station Type		End Depth	cm
Collection DateTime	2015-05-05 14:00	Sample Team Initials	ALD
Sample Collected?	Y		
X	425201.1635 m		
Y	5393051.463 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Station Comments

Sample Collected from Station

Sample Id	SDU-07-F-XRF	Decision Unit	Sediment Decision Unit 7
Sample Date Time	1899-12-30 0:00	Collection Method	In Situ XRF
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-07-F-XRF-18

2015-05-14-05-12-50_SDU-07-F-XRF-18_1619LP-WA70047.jpg



in situ XRF location analyzed 5/5/15 facing east

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07-F-XRF-19	Start Depth	cm
Station Type		End Depth	cm
Collection DateTime	2015-05-05 14:07	Sample Team Initials	ALD
Sample Collected?	Y		
X	425205.8833 m		
Y	5393082.6615 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Station Comments

Sample Collected from Station

Sample Id	SDU-07-F-XRF	Decision Unit	Sediment Decision Unit 7
Sample Date Time	1899-12-30 0:00	Collection Method	In Situ XRF
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-07-F-XRF-19

2015-05-14-05-13-12_SDU-07-F-XRF-19_1619LP-WA70047.jpg



in situ XRF location analyzed 5/5/15 facing east

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07-F-XRF-20	Start Depth	cm
Station Type		End Depth	cm
Collection DateTime	2015-05-05 14:10	Sample Team Initials	ALD
Sample Collected?	Y		
X	425207.6031 m		
Y	5393089.7432 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Station Comments

Sample Collected from Station

Sample Id	SDU-07-F-XRF	Decision Unit	Sediment Decision Unit 7
Sample Date Time	1899-12-30 0:00	Collection Method	In Situ XRF
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-07-F-XRF-20

2015-05-14-05-13-38_SDU-07-F-XRF-20_1619LP-WA70047.jpg



in situ XRF location analyzed 5/5/15 facing east

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-14-05-13-32_SDU-07-F-XRF-20_1619LP-WA70047.jpg



eastern shore of west half of SDU-07 facing south

2015-05-14-05-13-22_SDU-07-F-XRF-20_1619LP-WA70047.jpg



northeast corner of west half of SDU-07 facing north

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07-F-XRF-21	Start Depth	cm
Station Type		End Depth	cm
Collection DateTime	2015-05-05 14:38	Sample Team Initials	ALD
Sample Collected?	Y		
X	425280.6013 m		
Y	5393083.49 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Station Comments

Sample Collected from Station

Sample Id	SDU-07-F-XRF	Decision Unit	Sediment Decision Unit 7
Sample Date Time	1899-12-30 0:00	Collection Method	In Situ XRF
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-07-F-XRF-21

2015-05-14-05-14-00_SDU-07-F-XRF-21_1619LP-WA70047.jpg



in situ XRF location analyzed 5/5/15 facing west

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-14-05-13-50_SDU-07-F-XRF-21_1619LP-WA70047.jpg



northwest corner of east half of SDU-07 facing south

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07-F-XRF-22	Start Depth	cm
Station Type		End Depth	cm
Collection DateTime	2015-05-05 14:44	Sample Team Initials	ALD
Sample Collected?	Y		
X	425275.9504 m		
Y	5393061.1696 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Station Comments

Sample Collected from Station

Sample Id	SDU-07-F-XRF	Decision Unit	Sediment Decision Unit 7
Sample Date Time	1899-12-30 0:00	Collection Method	In Situ XRF
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-07-F-XRF-22

2015-05-14-05-14-08_SDU-07-F-XRF-22_1619LP-WA70047.jpg



in situ XRF location analyzed 5/5/15 facing west

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07-F-XRF-23	Start Depth	cm
Station Type		End Depth	cm
Collection DateTime	2015-05-05 14:48	Sample Team Initials	ALD
Sample Collected?	Y		
X	425266 m		
Y	5393030 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Station Comments

Sample Collected from Station

Sample Id	SDU-07-F-XRF	Decision Unit	Sediment Decision Unit 7
Sample Date Time	1899-12-30 0:00	Collection Method	In Situ XRF
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-07-F-XRF-23

2015-05-14-05-14-16_SDU-07-F-XRF-23_1619LP-WA70047.jpg



in situ XRF location analyzed 5/5/15 facing west

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07-F-XRF-24	Start Depth	cm
Station Type		End Depth	cm
Collection DateTime	2015-05-05 15:03	Sample Team Initials	ALD
Sample Collected?	Y		
X	425256 m		
Y	5393002 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Station Comments

Sample Collected from Station

Sample Id	SDU-07-F-XRF	Decision Unit	Sediment Decision Unit 7
Sample Date Time	1899-12-30 0:00	Collection Method	In Situ XRF
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-07-F-XRF-24

2015-05-14-05-14-24_SDU-07-F-XRF-24_1619LP-WA70047.jpg



in situ XRF location analyzed 5/5/15 facing west

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07-F-XRF-25	Start Depth	cm
Station Type		End Depth	cm
Collection DateTime	2015-05-05 15:07	Sample Team Initials	ALD
Sample Collected?	Y		
X	425248 m		
Y	5392977 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Station Comments

Sample Collected from Station

Sample Id	SDU-07-F-XRF	Decision Unit	Sediment Decision Unit 7
Sample Date Time	1899-12-30 0:00	Collection Method	In Situ XRF
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-07-F-XRF-25

2015-05-14-05-14-30_SDU-07-F-XRF-25_1619LP-WA70047.jpg



in situ XRF location analyzed 5/5/15 facing west

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07-F-XRF-26	Start Depth	cm
Station Type		End Depth	cm
Collection DateTime	2015-05-05 15:10	Sample Team Initials	ALD
Sample Collected?	Y		
X	425235 m		
Y	5392947 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Station Comments

Sample Collected from Station

Sample Id	SDU-07-F-XRF	Decision Unit	Sediment Decision Unit 7
Sample Date Time	1899-12-30 0:00	Collection Method	In Situ XRF
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-07-F-XRF-26

2015-05-14-05-14-40_SDU-07-F-XRF-26_1619LP-WA70047.jpg



in situ XRF location analyzed 5/5/15 facing west

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07-F-XRF-27	Start Depth	cm
Station Type		End Depth	cm
Collection DateTime	2015-05-05 15:14	Sample Team Initials	ALD
Sample Collected?	Y		
X	425224.5135 m		
Y	5392916.4708 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Station Comments

Sample Collected from Station

Sample Id	SDU-07-F-XRF	Decision Unit	Sediment Decision Unit 7
Sample Date Time	1899-12-30 0:00	Collection Method	In Situ XRF
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-07-F-XRF-27

2015-05-14-05-14-54_SDU-07-F-XRF-27_1619LP-WA70047.jpg



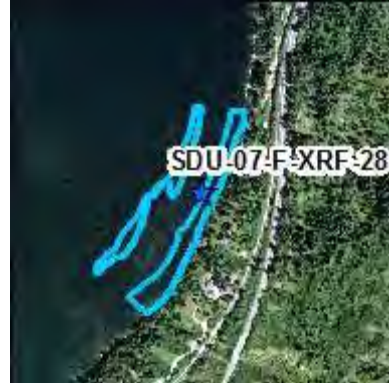
in situ XRF location analyzed 5/5/15 facing west

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07-F-XRF-28	Start Depth	cm
Station Type		End Depth	cm
Collection DateTime	2015-05-05 15:17	Sample Team Initials	ALD
Sample Collected?	Y		
X	425212.6138 m		
Y	5392887.746 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Station Comments

Sample Collected from Station

Sample Id	SDU-07-F-XRF	Decision Unit	Sediment Decision Unit 7
Sample Date Time	1899-12-30 0:00	Collection Method	In Situ XRF
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-07-F-XRF-28

2015-05-14-05-15-06_SDU-07-F-XRF-28_1619LP-WA70047.jpg



in situ XRF location analyzed 5/5/15 facing west

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07-F-XRF-29	Start Depth	cm
Station Type		End Depth	cm
Collection DateTime	2015-05-05 15:22	Sample Team Initials	ALD
Sample Collected?	Y		
X	425201 m		
Y	5392862 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Station Comments

Sample Collected from Station

Sample Id	SDU-07-F-XRF	Decision Unit	Sediment Decision Unit 7
Sample Date Time	1899-12-30 0:00	Collection Method	In Situ XRF
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-07-F-XRF-29

2015-05-14-05-15-16_SDU-07-F-XRF-29_1619LP-WA70047.jpg



in situ XRF location analyzed 5/5/15 facing west

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07-F-XRF-30	Start Depth	cm
Station Type		End Depth	cm
Collection DateTime	2015-05-05 15:26	Sample Team Initials	ALD
Sample Collected?	Y		
X	425185.8599 m		
Y	5392833.4708 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Station Comments

Sample Collected from Station

Sample Id	SDU-07-F-XRF	Decision Unit	Sediment Decision Unit 7
Sample Date Time	1899-12-30 0:00	Collection Method	In Situ XRF
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-07-F-XRF-30

2015-05-14-05-15-28_SDU-07-F-XRF-30_1619LP-WA70047.jpg



in situ XRF location analyzed 5/5/15 facing west

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07-F-XRF-31	Start Depth	cm
Station Type		End Depth	cm
Collection DateTime	2015-05-05 15:33	Sample Team Initials	ALD
Sample Collected?	Y		
X	425166.6284 m		
Y	5392806.2724 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Station Comments

Sample Collected from Station

Sample Id	SDU-07-F-XRF	Decision Unit	Sediment Decision Unit 7
Sample Date Time	1899-12-30 0:00	Collection Method	In Situ XRF
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-07-F-XRF-31

2015-05-14-05-15-58_SDU-07-F-XRF-31_1619LP-WA70047.jpg



in situ XRF location analyzed 5/5/15 facing west

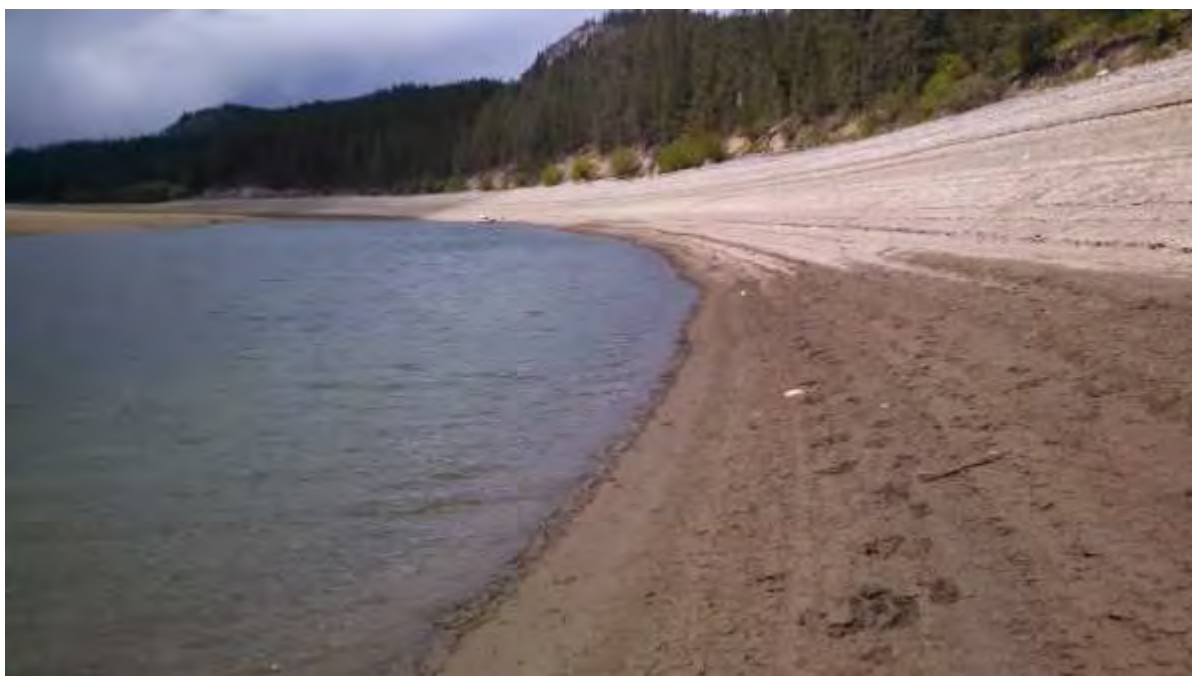
Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-14-05-15-50_SDU-07-F-XRF-31_1619LP-WA70047.jpg



western shore of east half of SDU-07 facing south

2015-05-14-05-15-40_SDU-07-F-XRF-31_1619LP-WA70047.jpg



western shore of east half of SDU-07 facing north

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07-F-XRF-32	Start Depth	cm
Station Type		End Depth	cm
Collection DateTime	2015-05-05 15:38	Sample Team Initials	ALD
Sample Collected?	Y		
X	425149.8773 m		
Y	5392790.7354 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Station Comments

Sample Collected from Station

Sample Id	SDU-07-F-XRF	Decision Unit	Sediment Decision Unit 7
Sample Date Time	1899-12-30 0:00	Collection Method	In Situ XRF
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-07-F-XRF-32

2015-05-14-05-16-06_SDU-07-F-XRF-32_1619LP-WA70047.jpg



in situ XRF location analyzed 5/5/15 facing west

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07-F-XRF-33	Start Depth	cm
Station Type		End Depth	cm
Collection DateTime	2015-05-05 15:42	Sample Team Initials	ALD
Sample Collected?	Y		
X	425145 m		
Y	5392763 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Station Comments

Sample Collected from Station

Sample Id	SDU-07-F-XRF	Decision Unit	Sediment Decision Unit 7
Sample Date Time	1899-12-30 0:00	Collection Method	In Situ XRF
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-07-F-XRF-33

2015-05-14-05-16-10_SDU-07-F-XRF-33_1619LP-WA70047.jpg



in situ XRF location analyzed 5/5/15 facing west

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07-F-XRF-34	Start Depth	cm
Station Type		End Depth	cm
Collection DateTime	2015-05-05 15:46	Sample Team Initials	ALD
Sample Collected?	Y		
X	425132.8521 m		
Y	5392733.9946 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Station Comments

Sample Collected from Station

Sample Id	SDU-07-F-XRF	Decision Unit	Sediment Decision Unit 7
Sample Date Time	1899-12-30 0:00	Collection Method	In Situ XRF
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-07-F-XRF-34

2015-05-14-05-16-18_SDU-07-F-XRF-34_1619LP-WA70047.jpg



in situ XRF location analyzed 5/5/15 facing west

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07-F-XRF-35	Start Depth	cm
Station Type		End Depth	cm
Collection DateTime	2015-05-05 15:51	Sample Team Initials	ALD
Sample Collected?	Y		
X	425116.8046 m		
Y	5392711.5712 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Station Comments

Sample Collected from Station

Sample Id	SDU-07-F-XRF	Decision Unit	Sediment Decision Unit 7
Sample Date Time	1899-12-30 0:00	Collection Method	In Situ XRF
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-07-F-XRF-35

2015-05-14-05-16-24_SDU-07-F-XRF-35_1619LP-WA70047.jpg



in situ XRF location analyzed 5/5/15 facing west

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07-F-XRF-36	Start Depth	cm
Station Type		End Depth	cm
Collection DateTime	2015-05-05 15:56	Sample Team Initials	ALD
Sample Collected?	Y		
X	425096.2754 m		
Y	5392687.8833 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Station Comments

Sample Collected from Station

Sample Id	SDU-07-F-XRF	Decision Unit	Sediment Decision Unit 7
Sample Date Time	1899-12-30 0:00	Collection Method	In Situ XRF
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-07-F-XRF-36

2015-05-14-05-16-32_SDU-07-F-XRF-36_1619LP-WA70047.jpg



in situ XRF location analyzed 5/5/15 facing west

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07-F-XRF-37	Start Depth	cm
Station Type		End Depth	cm
Collection DateTime	2015-05-05 16:00	Sample Team Initials	ALD
Sample Collected?	Y		
X	425070 m		
Y	5392670 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Station Comments

Sample Collected from Station

Sample Id	SDU-07-F-XRF	Decision Unit	Sediment Decision Unit 7
Sample Date Time	1899-12-30 0:00	Collection Method	In Situ XRF
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-07-F-XRF-37

2015-05-14-05-16-40_SDU-07-F-XRF-37_1619LP-WA70047.jpg



in situ XRF location analyzed 5/5/15 facing west

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07-F-XRF-38	Start Depth	cm
Station Type		End Depth	cm
Collection DateTime	2015-05-05 16:06	Sample Team Initials	ALD
Sample Collected?	Y		
X	425047.6615 m		
Y	5392651.3385 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Station Comments

Sample Collected from Station

Sample Id	SDU-07-F-XRF	Decision Unit	Sediment Decision Unit 7
Sample Date Time	1899-12-30 0:00	Collection Method	In Situ XRF
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-07-F-XRF-38

2015-05-14-05-16-48_SDU-07-F-XRF-38_1619LP-WA70047.jpg



in situ XRF location analyzed 5/5/15 facing west

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07-F-XRF-39	Start Depth	cm
Station Type		End Depth	cm
Collection DateTime	2015-05-05 16:09	Sample Team Initials	ALD
Sample Collected?	Y		
X	425033.926 m		
Y	5392639.2724 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Station Comments

Sample Collected from Station

Sample Id	SDU-07-F-XRF	Decision Unit	Sediment Decision Unit 7
Sample Date Time	1899-12-30 0:00	Collection Method	In Situ XRF
Initials on CoC	ALD	Matrix	Sediment
Sample Split	None	Replicate	
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-07-F-XRF-39

2015-05-14-05-16-58_SDU-07-F-XRF-39_1619LP-WA70047.jpg



in situ XRF location analyzed 5/5/15 facing west

Appendix I
XRF Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-08-XRF-01	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-02 9:23	Sample Team Initials	AP

Sample Collected? Y
X 423209.273 m
Y 5401902 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Some cobbles
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	50	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand with trace fine rounded gravel	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located approx. 6 feet from water line, sample is wet

Sample Collected from Station

Sample Id	SDU-08-XRF-01	Decision Unit	Sediment Decision Unit 8
Sample Date Time	2015-05-02 9:23	Collection Method	XRF
Initials on CoC	AP	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-08-XRF-01

2015-05-02-09-15-03_SDU-08-XRF-01_TECK1.JPG



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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-02-09-19-34_SDU-08-XRF-01_TECK1.JPG



Appendix I
XRF Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-08-XRF-02	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-02 9:45	Sample Team Initials	AP

Sample Collected? Y
X 423131.273 m
Y 5401824 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes N
Description

Biological Visual Presence N

Cultural Oversight Y
Inspection Conducted?

Odor N

Percent Ground Coverage 40

Shells Presence N

Surface Debris Present? N

Texture Silty very fine sand with angular gravel

Vegetation Type if Present N

Anthropogenic Changes Present? N

Color 10YR 3/2

Debris Presence Some angular gravel

Percent Canopy Coverage 0

Sheen Presence N

Substrate Type Sediment

Surface Debris Removed Prior to Sampling? N

Vegetation Present? N

Station Comments located on lower beach

Sample Collected from Station

Sample Id	SDU-08-XRF-02	Decision Unit	Sediment Decision Unit 8
Sample Date Time	2015-05-02 9:45	Collection Method	XRF
Initials on CoC	AP	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-08-XRF-02

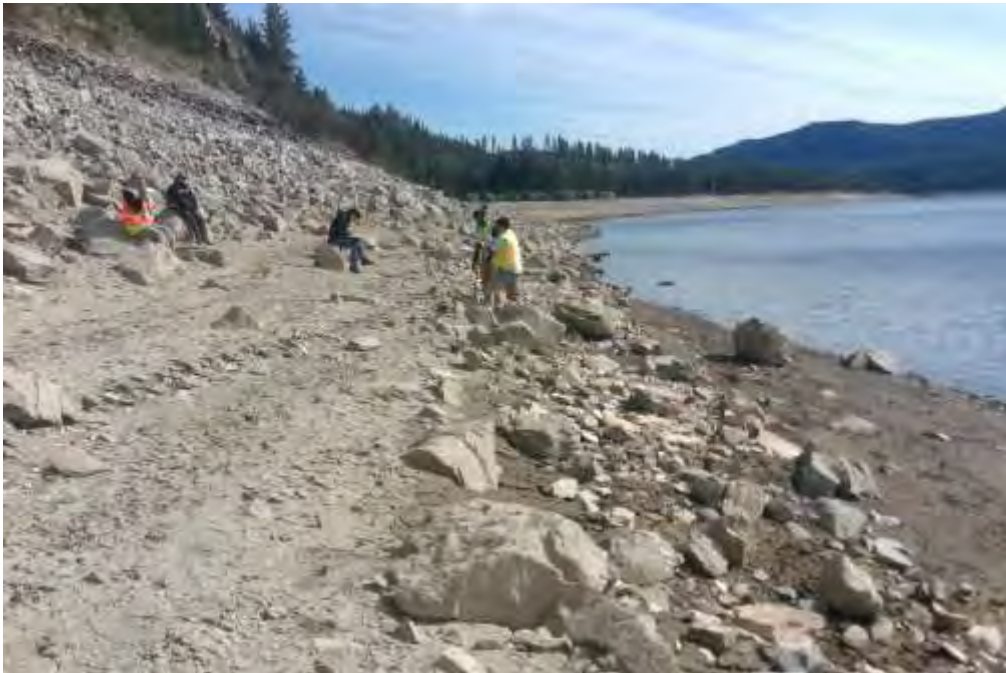
2015-05-02-09-33-14_SDU-08-XRF-02_TECK1.JPG



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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-02-09-33-41_SDU-08-XRF-02_TECK1.JPG



vne

2015-05-02-09-41-54_SDU-08-XRF-02_TECK1.JPG



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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-08-XRF-03	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime	2015-05-02 10:12	Sample Team Initials	AP
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments located approx. 3 meters into water, will replace with reserve station R03

Sample Collected from Station

Sample Id	SDU-08-XRF-03	Decision Unit	Sediment Decision Unit 8
Sample Date Time	2015-05-02 10:12	Collection Method	XRF
Initials on CoC	AP	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Photos Collected from Station SDU-08-XRF-03

No photos taken at this station. See station comments for more details.

Appendix I
XRF Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-08-XRF-04	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-02 10:42	Sample Team Initials	AP

Sample Collected? Y
X 422994.773 m
Y 5401668 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand with trace fine rounded gravel	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located mid beach

Sample Collected from Station

Sample Id	SDU-08-XRF-04	Decision Unit	Sediment Decision Unit 8
Sample Date Time	2015-05-02 10:42	Collection Method	XRF
Initials on CoC	AP	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-08-XRF-04

2015-05-02-10-22-22_SDU-08-XRF-04_TECK1.JPG



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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-02-10-22-36_SDU-08-XRF-04_TECK1.JPG



vne

2015-05-02-10-29-01_SDU-08-XRF-04_TECK1.JPG



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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-08-XRF-R01	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-08-XRF-R01	Decision Unit	Sediment Decision Unit 8
Sample Date Time		Collection Method	XRF
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Photos Collected from Station SDU-08-XRF-R01

No photos taken at this station. See station comments for more details.

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-08-XRF-R02	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-08-XRF-R02	Decision Unit	Sediment Decision Unit 8
Sample Date Time		Collection Method	XRF
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Photos Collected from Station SDU-08-XRF-R02

No photos taken at this station. See station comments for more details.

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Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-08-XRF-R03	Start Depth	0 cm
Station Type	Reserve	End Depth	15 cm
Collection DateTime	2015-05-02 10:13	Sample Team Initials	AP
Sample Collected?	Y		
X	423032.4236 m		
Y	5401708.0319 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Clams and mussels	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Some gravel
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	30	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments this reserve station replaces SDU-08-XRF-03, which was under water. This reserve station was located underwater, but was offset 2 meters west, which put it on shore.

Sample Collected from Station

Sample Id	SDU-08-XRF-R03	Decision Unit	Sediment Decision Unit 8
Sample Date Time	2015-05-02 10:13	Collection Method	XRF
Initials on CoC	AP	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-08-XRF-R03

2015-05-02-09-59-50_SDU-08-XRF-R03_TECK1.JPG



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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-02-10-00-29_SDU-08-XRF-R03_TECK1.JPG



vne

2015-05-02-10-10-07_SDU-08-XRF-R03_TECK1.JPG



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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-09-XRF-01	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-27 10:28	Sample Team Initials	AP

Sample Collected? Y
X 422480.1543 m
Y 5401083.337 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles and boulders
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine to coarse sand with trace silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments located on bank approx. 5 feet from water at time of sampling

Sample Collected from Station

Sample Id	SDU-09-XRF-01	Decision Unit	Sediment Decision Unit 9
Sample Date Time	2015-04-27 10:28	Collection Method	XRF
Initials on CoC	AP	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-09-XRF-01

2015-04-27-10-19-52_SDU-09-XRF-01_TECK1.JPG



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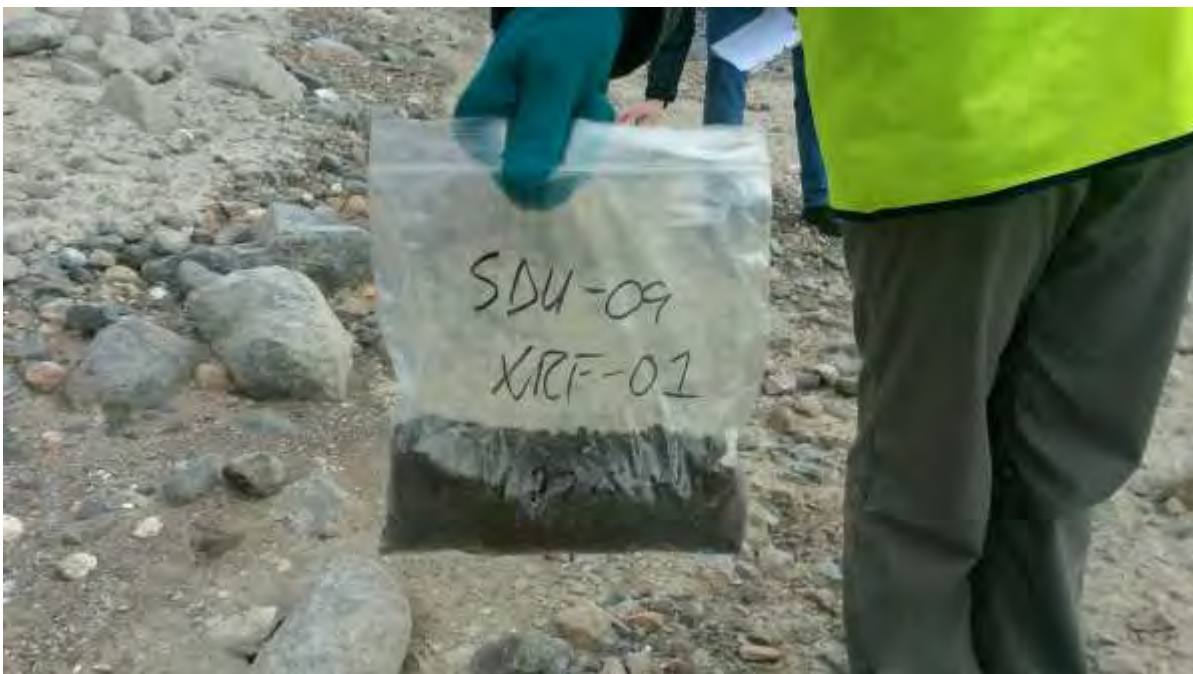
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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-27-10-20-50_SDU-09-XRF-01_TECK1.JPG



View n

2015-04-27-10-25-39_SDU-09-XRF-01_TECK1.JPG



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XRF Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-09-XRF-02	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-27 10:14	Sample Team Initials	AP

Sample Collected? Y
X 422419.134 m
Y 5401027.1808 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine to coarse sand with trace silt	Vegetation Present?	Y
Vegetation Type if Present	Some grass like plants		
Station Comments	located on slope towards water		

Sample Collected from Station

Sample Id	SDU-09-XRF-02	Decision Unit	Sediment Decision Unit 9
Sample Date Time	2015-04-27 10:14	Collection Method	XRF
Initials on CoC	AP	Matrix	Sediment
Sample Split	Field	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-09-XRF-02

2015-04-27-10-05-44_SDU-09-XRF-02_TECK1.JPG



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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-27-10-07-44_SDU-09-XRF-02_TECK1.JPG



view north

2015-04-27-10-11-55_SDU-09-XRF-02_TECK1.JPG



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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-09-XRF-03	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-27 10:00	Sample Team Initials	AP

Sample Collected? Y
X 422373.0456 m
Y 5400950.0893 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence Some carp spawning depressions and deer tracks
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N
Texture Fine sand with trace silt and trace fine rounded gravel
Vegetation Type if Present Some grass like plants
Station Comments located on slope towards water

Anthropogenic Changes Present? N
Color 10YR 4/1
Debris Presence N
Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? Y

Sample Collected from Station

Sample Id	SDU-09-XRF-03	Decision Unit	Sediment Decision Unit 9
Sample Date Time	2015-04-27 10:00	Collection Method	XRF
Initials on CoC	AP	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-09-XRF-03

2015-04-27-09-53-12_SDU-09-XRF-03_TECK1.JPG



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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-27-09-57-13_SDU-09-XRF-03_TECK1.JPG



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XRF Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-09-XRF-04	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-27 9:46	Sample Team Initials	AP

Sample Collected? Y
X 422326.9572 m
Y 5400872.9977 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	Some mussel shells near sample location	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine to coarse sand with silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments sample is within 3 feet of lake water at time of sampling. water is encountered in borehole at 3 inches below ground surface

Sample Collected from Station

Sample Id	SDU-09-XRF-04	Decision Unit	Sediment Decision Unit 9
Sample Date Time	2015-04-27 9:46	Collection Method	XRF
Initials on CoC	AP	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-09-XRF-04

2015-04-27-09-37-13_SDU-09-XRF-04_TECK1.JPG



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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-27-09-38-34_SDU-09-XRF-04_TECK1.JPG



view n

2015-04-27-09-43-02_SDU-09-XRF-04_TECK1.JPG



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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-09-XRF-R01	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-09-XRF-R01	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	XRF
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Photos Collected from Station SDU-09-XRF-R01

No photos taken at this station. See station comments for more details.

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-09-XRF-R02	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-09-XRF-R02	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	XRF
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Photos Collected from Station SDU-09-XRF-R02

No photos taken at this station. See station comments for more details.

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-09-XRF-R03	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-09-XRF-R03	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	XRF
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-09-XRF-R03

2015-04-27-09-53-46_SDU-09-XRF-R03_TECK1.JPG



view n

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-10-XRF-01	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-27 9:33	Sample Team Initials	MS
Sample Collected?	Y		
X	422246.1323 m		
Y	5400805.5368 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand some silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-10-XRF-01	Decision Unit	Sediment Decision Unit 10
Sample Date Time	2015-04-27 9:33	Collection Method	XRF
Initials on CoC	MS	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-10-XRF-01

2015-04-27-09-36-08_SDU-10-XRF-01_TECK2.JPG



sample

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-27-09-36-21_SDU-10-XRF-01_TECK2.JPG



groundsurface

2015-04-27-09-36-30_SDU-10-XRF-01_TECK2.JPG



overview facing north

Appendix I
XRF Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-10-XRF-02	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-27 9:45	Sample Team Initials	MS

Sample Collected? Y
X 422198.1114 m
Y 5400743.7389 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 5/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand trace silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

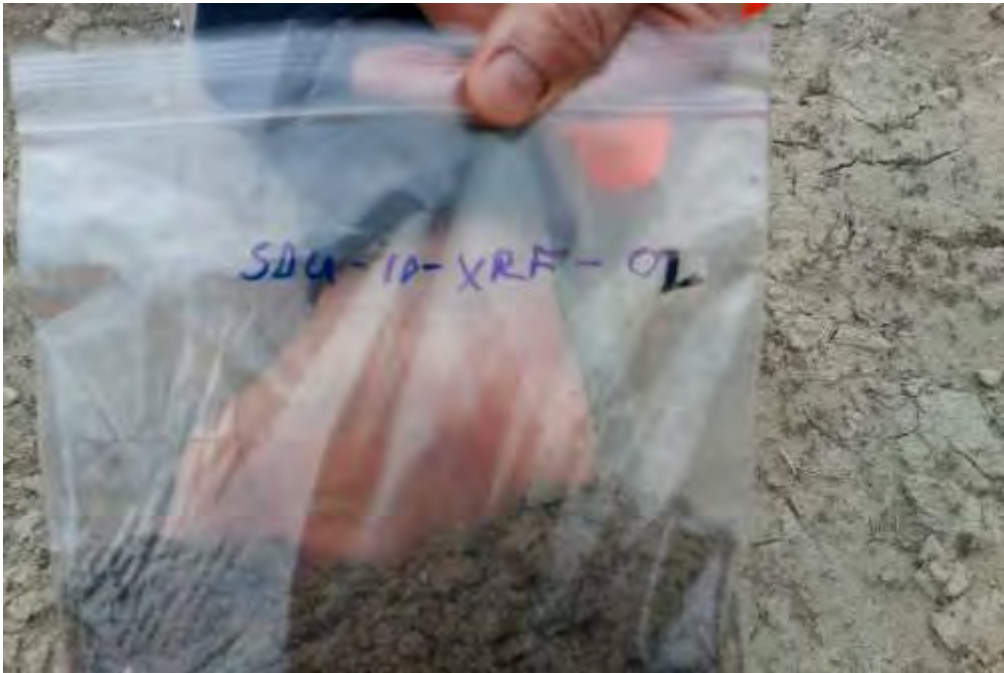
Sample Collected from Station

Sample Id	SDU-10-XRF-02	Decision Unit	Sediment Decision Unit 10
Sample Date Time	2015-04-27 9:45	Collection Method	XRF
Initials on CoC	MS	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-10-XRF-02

2015-04-27-09-47-01_SDU-10-XRF-02_TECK2.JPG



sample

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-27-09-47-11_SDU-10-XRF-02_TECK2.JPG



groundsurface

2015-04-27-09-47-15_SDU-10-XRF-02_TECK2.JPG



overview facing north

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-10-XRF-03	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-27 9:55	Sample Team Initials	MS

Sample Collected? Y
X 422150.0905 m
Y 5400681.9409 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine to coarse sand some fine to coarse gravel	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-10-XRF-03	Decision Unit	Sediment Decision Unit 10
Sample Date Time	2015-04-27 9:55	Collection Method	XRF
Initials on CoC	MS	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-10-XRF-03

2015-04-27-09-56-53_SDU-10-XRF-03_TECK2.JPG



sample

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-27-09-57-03_SDU-10-XRF-03_TECK2.JPG



groundsurface

2015-04-27-09-57-06_SDU-10-XRF-03_TECK2.JPG



overview facing north

Appendix I
XRF Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-10-XRF-04	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-27 10:03	Sample Team Initials	MS

Sample Collected? Y
X 422102.0695 m
Y 5400620.1429 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-10-XRF-04	Decision Unit	Sediment Decision Unit 10
Sample Date Time	2015-04-27 10:03	Collection Method	XRF
Initials on CoC	MS	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-10-XRF-04

2015-04-27-10-03-51_SDU-10-XRF-04_TECK2.JPG



sample

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-27-10-04-05_SDU-10-XRF-04_TECK2.JPG



groundsurface

2015-04-27-10-04-11_SDU-10-XRF-04_TECK2.JPG



overview facing north

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-10-XRF-R01	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-10-XRF-R01	Decision Unit	Sediment Decision Unit 10
Sample Date Time		Collection Method	XRF
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Photos Collected from Station SDU-10-XRF-R01

No photos taken at this station. See station comments for more details.

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-10-XRF-R02	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-10-XRF-R02	Decision Unit	Sediment Decision Unit 10
Sample Date Time		Collection Method	XRF
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Photos Collected from Station SDU-10-XRF-R02

No photos taken at this station. See station comments for more details.

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-10-XRF-R03	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	SDU-10-XRF-R03	Decision Unit	Sediment Decision Unit 10
Sample Date Time		Collection Method	XRF
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Photos Collected from Station SDU-10-XRF-R03

No photos taken at this station. See station comments for more details.

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-01-XRF-01	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-15 16:46	Sample Team Initials	EL

Sample Collected? Y
X 422896.7268 m
Y 5400940.792 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 100
Shells Presence N
Surface Debris Present? N

Texture Very fine to fine sand
some some finebto coarse
gravel trace coarse sand

Vegetation Type if Present Moss

Anthropogenic Changes Present? N
Color 10YR 5/3
Debris Presence N

Percent Canopy Coverage 50
Sheen Presence N
Substrate Type Soil
Surface Debris Removed Prior to Sampling? N
Vegetation Present? Y

Station Comments on bank below beach access road

Sample Collected from Station

Sample Id	UDU-01-XRF-01	Decision Unit	Soil Decision Unit 1
Sample Date Time	2015-04-15 16:46	Collection Method	XRF
Initials on CoC	EL	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-01-XRF-01

2015-04-15-16-45-22_UDU-01-XRF-01_TECK2.JPG



overview facing west

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-15-16-44-23_UDU-01-XRF-01_TECK2.JPG



groundsurface

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XRF Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-01-XRF-02	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-15 14:16	Sample Team Initials	EL

Sample Collected? Y
X 422931.7268 m
Y 5400940.792 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	10
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	Y
Texture	Silty clayey very fine sand; trace fine to coarse gravel	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	UDU-01-XRF-02	Decision Unit	Soil Decision Unit 1
Sample Date Time	2015-04-15 14:16	Collection Method	XRF
Initials on CoC	EL	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-01-XRF-02

2015-04-15-14-11-26_UDU-01-XRF-02_TECK2.JPG



sample

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-15-14-10-55_UDU-01-XRF-02_TECK2.JPG



ground surface

2015-04-15-14-11-09_UDU-01-XRF-02_TECK2.JPG



overview west

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-01-XRF-03	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-15 14:35	Sample Team Initials	EL
Sample Collected?	Y		
X	422966.7268 m		
Y	5400940.792 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Present?	N	Biological Visual Presence	N
Color	10YR 3/2	Cultural Oversight Inspection Conducted?	Y
Debris Presence	N	Odor	N
Percent Canopy Coverage	0	Percent Ground Coverage	98
Sheen Presence	N	Shells Presence	N
Substrate Type	Soil	Surface Debris Present?	N
Surface Debris Removed Prior to Sampling?	N	Texture	Silty clay very fine sand trace fine gravel
Vegetation Present?	Y	Vegetation Type if Present	Grasses

Station Comments

Sample Collected from Station

Sample Id	UDU-01-XRF-03	Decision Unit	Soil Decision Unit 1
Sample Date Time	2015-04-15 14:35	Collection Method	XRF
Initials on CoC	EL	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-01-XRF-03

2015-04-15-14-31-28_UDU-01-XRF-03_1619LP-WA70047.JPG



sample

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-15-14-30-26_UDU-01-XRF-03_TECK2.JPG



ground surface

2015-04-15-14-30-42_UDU-01-XRF-03_TECK2.JPG



overview west

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-01-XRF-04	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-15 15:12	Sample Team Initials	EL

Sample Collected? Y
X 422981.0435 m
Y 5400905.2351 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	10
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	Y	Surface Debris Removed Prior to Sampling?	N
Texture	Silt clay fine sand	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments Moved from coordinates specified in QAPP and documented in field change form

Sample Collected from Station

Sample Id	UDU-01-XRF-04	Decision Unit	Soil Decision Unit 1
Sample Date Time	2015-04-15 15:12	Collection Method	XRF
Initials on CoC	EL	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-01-XRF-04

2015-04-15-15-07-27_UDU-01-XRF-04_TECK2.JPG



groundsurface

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-15-15-07-31_UDU-01-XRF-04_TECK2.JPG



overview facing north

2015-04-15-15-08-05_UDU-01-XRF-04_TECK2.JPG



sample

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-01-XRF-05	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-15 15:54	Sample Team Initials	EL

Sample Collected? Y
X 423001.1434 m
Y 5400868.5384 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty clayey very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pine and grasses		

Station Comments moved coordinates from those specified in qapp and prepared field change form

Sample Collected from Station

Sample Id	UDU-01-XRF-05	Decision Unit	Soil Decision Unit 1
Sample Date Time	2015-04-15 15:54	Collection Method	XRF
Initials on CoC	EL	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-01-XRF-05

2015-04-15-15-52-12_UDU-01-XRF-05_TECK2.JPG



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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-15-16-00-23_UDU-01-XRF-05_TECK2.JPG



2015-04-15-15-52-18_UDU-01-XRF-05_TECK2.JPG



overview facing west

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-01-XRF-06	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-15 16:20	Sample Team Initials	EL
Sample Collected?	Y		
X	423036.8067 m		
Y	5400872.3826 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Color	10YR 3/2	Cultural Oversight Inspection Conducted?	Y
Debris Presence	N	Odor	N
Percent Canopy Coverage	0	Percent Ground Coverage	100
Sheen Presence	N	Shells Presence	N
Substrate Type	Soil	Surface Debris Present?	N
Surface Debris Removed Prior to Sampling?	N	Texture	Silty clayey very fine sand coarse gravel
Vegetation Present?	Y	Vegetation Type if Present	Grasses

Station Comments moved coordinate from those specified in quapp and documented in field change form

Sample Collected from Station

Sample Id	UDU-01-XRF-06	Decision Unit	Soil Decision Unit 1
Sample Date Time	2015-04-15 16:20	Collection Method	XRF
Initials on CoC	EL	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-01-XRF-06

2015-04-15-16-16-58_UDU-01-XRF-06_TECK2.JPG



sample

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-15-16-11-56_UDU-01-XRF-06_TECK2.JPG



overview facing west

2015-04-15-16-11-46_UDU-01-XRF-06_TECK2.JPG



ground surface

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-01-XRF-07	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-15 13:46	Sample Team Initials	EL

Sample Collected? Y
X 422949.2268 m
Y 5400905.792 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2.5
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	98	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty clay very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Grasses		

Station Comments

Sample Collected from Station

Sample Id	UDU-01-XRF-07	Decision Unit	Soil Decision Unit 1
Sample Date Time	2015-04-15 13:46	Collection Method	XRF
Initials on CoC	EL	Matrix	Soil
Sample Split	EPA	Replicate	No Replicate
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-01-XRF-07

2015-04-15-13-53-43_UDU-01-XRF-07_TECK2.JPG



sample

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-15-13-38-41_UDU-01-XRF-07_TECK2.JPG



overview facing west

2015-04-15-13-38-30_UDU-01-XRF-07_TECK2.JPG



ground surface

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-01-XRF-R01	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-01-XRF-R01	Decision Unit	Soil Decision Unit 1
Sample Date Time		Collection Method	XRF
Initials on CoC		Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Photos Collected from Station UDU-01-XRF-R01

No photos taken at this station. See station comments for more details.

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XRF Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-02-XRF-01	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-16 10:47	Sample Team Initials	DC

Sample Collected? Y
X 422931.7268 m
Y 5400870.792 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Present?	N	Biological Visual Presence	N
Color	7.5YR 3/2	Cultural Oversight Inspection Conducted?	Y
Debris Presence	N	Odor	N
Percent Canopy Coverage	0	Percent Ground Coverage	100
Sheen Presence	N	Shells Presence	N
Substrate Type	Soil	Surface Debris Present?	N
Surface Debris Removed Prior to Sampling?	Y	Texture	Fine sand with clay
Vegetation Present?	Y	Vegetation Type if Present	Grass
Station Comments	none		

Sample Collected from Station

Sample Id	UDU-02-XRF-01	Decision Unit	Soil Decision Unit 2
Sample Date Time	2015-04-16 10:47	Collection Method	XRF
Initials on CoC	DC	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-02-XRF-01

2015-04-16-10-41-48_UDU-02-XRF-01_1619LP-WA70047.JPG



general area of sample

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-16-10-41-36_UDU-02-XRF-01_1619LP-WA70047.JPG



sample

2015-04-16-10-37-50_UDU-02-XRF-01_1619LP-WA70047.JPG



sample location

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-02-XRF-02	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-16 10:31	Sample Team Initials	DC
Sample Collected?	Y		
X	422966.7268 m		
Y	5400870.792 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Present?	N	Biological Visual Presence	N
Color	7.5YR 3/2	Cultural Oversight Inspection Conducted?	Y
Debris Presence	N	Odor	N
Percent Canopy Coverage	0	Percent Ground Coverage	100
Sheen Presence	N	Shells Presence	N
Substrate Type	Soil	Surface Debris Present?	N
Surface Debris Removed Prior to Sampling?	Y	Texture	Fine sand with clay
Vegetation Present?	Y	Vegetation Type if Present	Grass
Station Comments	none		

Sample Collected from Station

Sample Id	UDU-02-XRF-02	Decision Unit	Soil Decision Unit 2
Sample Date Time	2015-04-16 10:31	Collection Method	XRF
Initials on CoC	DC	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Photos Collected from Station UDU-02-XRF-02

2015-04-16-10-25-02_UDU-02-XRF-02_1619LP-WA70047.JPG

overview facing north

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-16-10-24-44_UDU-02-XRF-02_TECK1.JPG



2015-04-16-10-19-11_UDU-02-XRF-02_TECK1.JPG



ground surface

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XRF Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-02-XRF-03	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-16 10:59	Sample Team Initials	DC

Sample Collected? Y
X 422949.2268 m
Y 5400835.792 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Present?	N	Biological Visual Presence	N
Color	7.5YR 3/2	Cultural Oversight Inspection Conducted?	Y
Debris Presence	N	Odor	N
Percent Canopy Coverage	0	Percent Ground Coverage	100
Sheen Presence	N	Shells Presence	N
Substrate Type	Soil	Surface Debris Present?	N
Surface Debris Removed Prior to Sampling?	Y	Texture	Fine sand with silt and cal
Vegetation Present?	Y	Vegetation Type if Present	Grass
Station Comments	none		

Sample Collected from Station

Sample Id	UDU-02-XRF-03	Decision Unit	Soil Decision Unit 2
Sample Date Time	2015-04-16 10:59	Collection Method	XRF
Initials on CoC	DC	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-02-XRF-03

2015-04-16-10-56-56_UDU-02-XRF-03_TECK1.JPG



view north

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-16-10-56-42_UDU-02-XRF-03_TECK1.JPG



2015-04-16-10-53-05_UDU-02-XRF-03_TECK1.JPG



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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-02-XRF-04	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-17 16:35	Sample Team Initials	AP
Sample Collected?	Y		
X	422984.2268 m		
Y	5400835.792 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with clay	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments in middle of field, no landmarks nearby. Sample originally collected on Thursday, April 16, 2015 @ 11:14:54 AM. needed to be recollected because it was dropped while removing from lab oven

Sample Collected from Station

Sample Id	UDU-02-XRF-04	Decision Unit	Soil Decision Unit 2
Sample Date Time	2015-04-17 16:35	Collection Method	XRF
Initials on CoC	AP	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-02-XRF-04

2015-04-16-11-10-01_UDU-02-XRF-04_TECK1.JPG



view north

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-16-11-09-52_UDU-02-XRF-04_TECK1.JPG



2015-04-16-11-06-11_UDU-02-XRF-04_TECK1.JPG



view north

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-02-XRF-05	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-16 11:40	Sample Team Initials	AP
Sample Collected?	Y		
X	422931.7268 m		
Y	5400800.792 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with clay	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments In open field adjacent to historic house foundation.

Sample Collected from Station

Sample Id	UDU-02-XRF-05	Decision Unit	Soil Decision Unit 2
Sample Date Time	2015-04-16 11:40	Collection Method	XRF
Initials on CoC	AP	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-02-XRF-05

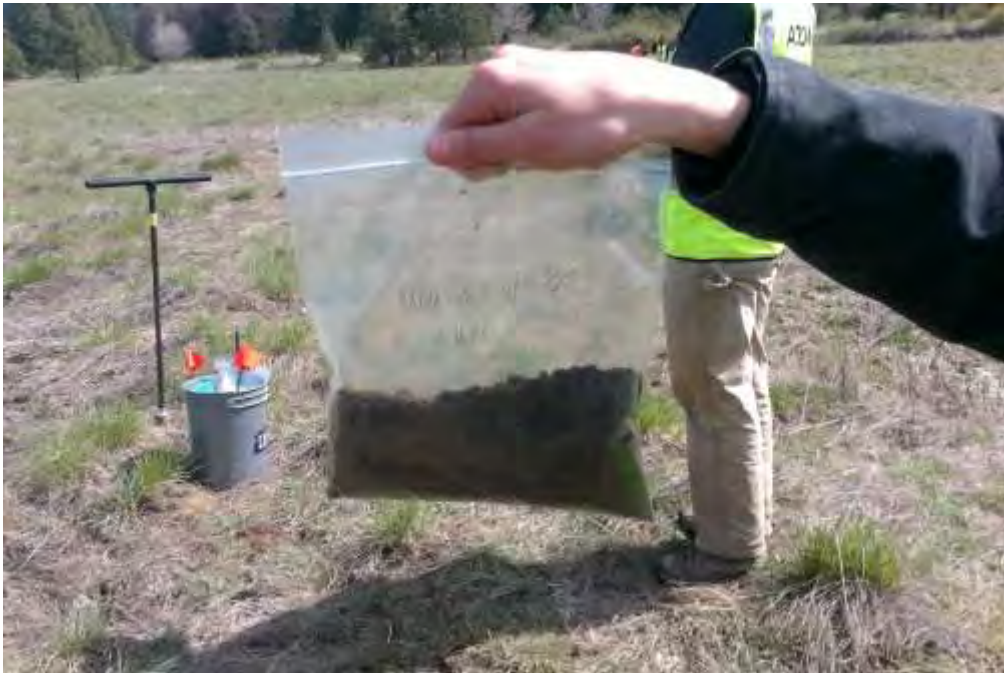
2015-04-16-11-36-43_UDU-02-XRF-05_TECK1.JPG



view north

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-16-11-36-33_UDU-02-XRF-05_TECK1.JPG



2015-04-16-11-33-50_UDU-02-XRF-05_TECK1.JPG



view north

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XRF Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-02-XRF-06	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-16 11:28	Sample Team Initials	AP
Sample Collected?	Y		
X	422966.7268 m		
Y	5400800.792 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with clay	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments in open field, not landmarks present.

Sample Collected from Station

Sample Id	UDU-02-XRF-06	Decision Unit	Soil Decision Unit 2
Sample Date Time	2015-04-16 11:28	Collection Method	XRF
Initials on CoC	AP	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-02-XRF-06

2015-04-16-11-24-13_UDU-02-XRF-06_TECK1.JPG



view north

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-16-11-23-56_UDU-02-XRF-06_TECK1.JPG



2015-04-16-11-20-48_UDU-02-XRF-06_TECK1.JPG



view north

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-02-XRF-R01	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-02-XRF-R01	Decision Unit	Soil Decision Unit 2
Sample Date Time		Collection Method	XRF
Initials on CoC		Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Photos Collected from Station UDU-02-XRF-R01

No photos taken at this station. See station comments for more details.

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Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-02-XRF-R02	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-02-XRF-R02	Decision Unit	Soil Decision Unit 2
Sample Date Time		Collection Method	XRF
Initials on CoC		Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
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Photos Collected from Station UDU-02-XRF-R02

No photos taken at this station. See station comments for more details.

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Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-03-XRF-01	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-16 14:24	Sample Team Initials	AP

Sample Collected? Y
X 422879.2268 m
Y 5400765.792 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with trace clay and gravel	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments location in open field south of beach access road.

Sample Collected from Station

Sample Id	UDU-03-XRF-01	Decision Unit	Soil Decision Unit 3
Sample Date Time	2015-04-16 14:24	Collection Method	XRF
Initials on CoC	AP	Matrix	Soil
Sample Split	EPA	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-03-XRF-01

2015-04-16-14-12-56_UDU-03-XRF-01_TECK1.JPG



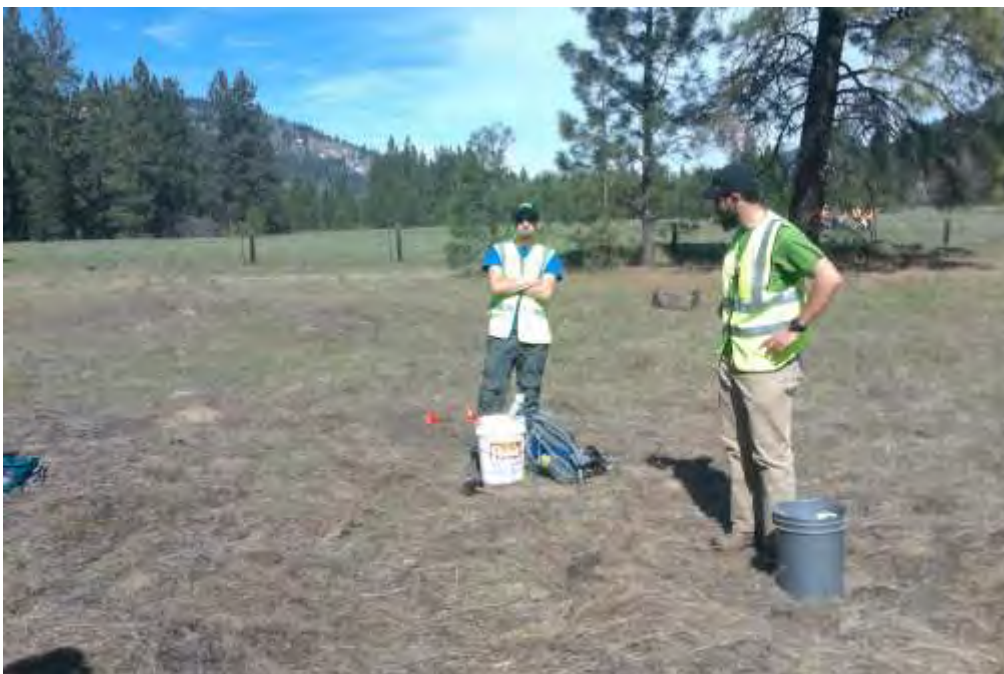
view north

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-16-14-19-38_UDU-03-XRF-01_TECK1.JPG



2015-04-16-14-19-49_UDU-03-XRF-01_TECK1.JPG



view north

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-03-XRF-02	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-16 13:01	Sample Team Initials	AP

Sample Collected? Y
X 422774.2268 m
Y 5400835.792 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine to coarse sand with trace silt and clay	Vegetation Present?	Y
Vegetation Type if Present	Large pine trees		

Station Comments location is on SW side of gully in UDU-03, adjacent to large pine tree.

Sample Collected from Station

Sample Id	UDU-03-XRF-02	Decision Unit	Soil Decision Unit 3
Sample Date Time	2015-04-16 13:01	Collection Method	XRF
Initials on CoC	AP	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-03-XRF-02

2015-04-16-12-52-25_UDU-03-XRF-02_TECK1.JPG



view south

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-16-12-54-41_UDU-03-XRF-02_TECK1.JPG



2015-04-16-12-54-47_UDU-03-XRF-02_TECK1.JPG



view south

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-03-XRF-03	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-16 13:16	Sample Team Initials	AP

Sample Collected? Y
X 422809.2268 m
Y 5400835.792 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Grass duff
Odor	N	Percent Canopy Coverage	10
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with clay	Vegetation Present?	Y
Vegetation Type if Present	Grass and small pine trees		

Station Comments location is in open field between gully and barbed wire fence.

Sample Collected from Station

Sample Id	UDU-03-XRF-03	Decision Unit	Soil Decision Unit 3
Sample Date Time	2015-04-16 13:16	Collection Method	XRF
Initials on CoC	AP	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-03-XRF-03

2015-04-16-13-09-46_UDU-03-XRF-03_TECK1.JPG



view north

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2015-04-16-13-13-27_UDU-03-XRF-03_TECK1.JPG



2015-04-16-13-13-37_UDU-03-XRF-03_TECK1.JPG



view north

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-03-XRF-04	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-16 13:31	Sample Team Initials	AP

Sample Collected? Y
X 422844.2268 m
Y 5400835.792 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	50
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	Y	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with clay	Vegetation Present?	Y
Vegetation Type if Present	Grass and large pine trees		

Station Comments location is adjacent to large pine tree west of beach access road

Sample Collected from Station

Sample Id	UDU-03-XRF-04	Decision Unit	Soil Decision Unit 3
Sample Date Time	2015-04-16 13:31	Collection Method	XRF
Initials on CoC	AP	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-03-XRF-04

2015-04-16-13-25-01_UDU-03-XRF-04_TECK1.JPG



view north

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2015-04-16-13-27-37_UDU-03-XRF-04_TECK1.JPG



2015-04-16-13-27-48_UDU-03-XRF-04_TECK1.JPG



view north

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Station Id	UDU-03-XRF-05	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-16 13:47	Sample Team Initials	AP

Sample Collected? Y
X 422826.7268 m
Y 5400800.792 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	15
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with trace clay and rounded gravel	Vegetation Present?	Y
Vegetation Type if Present	Grass and pine trees		

Station Comments location in open field west of beach access road

Sample Collected from Station

Sample Id	UDU-03-XRF-05	Decision Unit	Soil Decision Unit 3
Sample Date Time	2015-04-16 13:47	Collection Method	XRF
Initials on CoC	AP	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-03-XRF-05

2015-04-16-13-38-52_UDU-03-XRF-05_TECK1.JPG



view north

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-16-13-43-42_UDU-03-XRF-05_TECK1.JPG



2015-04-16-13-43-52_UDU-03-XRF-05_TECK1.JPG



view north

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-03-XRF-06	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-16 14:03	Sample Team Initials	AP

Sample Collected? Y
X 422861.7268 m
Y 5400800.792 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description Sample is in middle of beach access road
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 10
Shells Presence N
Surface Debris Present? N
Texture Fine sand with trace clay
Vegetation Type if Present Grass and pine trees
Station Comments in middle of beach road T

Anthropogenic Changes Present? N
Color 10YR 3/2
Debris Presence Pine duff
Percent Canopy Coverage 30
Sheen Presence N
Substrate Type Soil
Surface Debris Removed Prior to Sampling? N
Vegetation Present? Y

Sample Collected from Station

Sample Id	UDU-03-XRF-06	Decision Unit	Soil Decision Unit 3
Sample Date Time	2015-04-16 14:03	Collection Method	XRF
Initials on CoC	AP	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-03-XRF-06

2015-04-16-13-53-59_UDU-03-XRF-06_TECK1.JPG



view north

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-16-13-58-55_UDU-03-XRF-06_TECK1.JPG



2015-04-16-13-59-08_UDU-03-XRF-06_TECK1.JPG



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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-03-XRF-07	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-16 16:45	Sample Team Initials	AP

Sample Collected? Y
X 422896.7268 m
Y 5400800.792 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Grubs in soil	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with clay	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments located in open field immediately adjacent to beach access road.

Sample Collected from Station

Sample Id	UDU-03-XRF-07	Decision Unit	Soil Decision Unit 3
Sample Date Time	2015-04-16 16:45	Collection Method	XRF
Initials on CoC	AP	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-03-XRF-07

2015-04-16-16-33-37_UDU-03-XRF-07_TECK1.JPG



view north

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-16-16-37-16_UDU-03-XRF-07_TECK1.JPG



2015-04-16-16-37-24_UDU-03-XRF-07_TECK1.JPG



view north

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-03-XRF-08	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-17 8:21	Sample Team Initials	AP

Sample Collected? Y
X 422914.2268 m
Y 5400765.792 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with clay	Vegetation Present?	Y
Vegetation Type if Present	Grass and pine trees		

Station Comments sample is located immediately adjacent to bossburg road, on the south side

Sample Collected from Station

Sample Id	UDU-03-XRF-08	Decision Unit	Soil Decision Unit 3
Sample Date Time	2015-04-17 8:21	Collection Method	XRF
Initials on CoC	AP	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-03-XRF-08

2015-04-17-08-13-52_UDU-03-XRF-08_TECK1.JPG



view north

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-17-08-16-31_UDU-03-XRF-08_TECK1.JPG



2015-04-17-08-16-40_UDU-03-XRF-08_TECK1.JPG



view north

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-03-XRF-R01	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-03-XRF-R01	Decision Unit	Soil Decision Unit 3
Sample Date Time		Collection Method	XRF
Initials on CoC		Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

Photos Collected from Station UDU-03-XRF-R01

No photos taken at this station. See station comments for more details.

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-04-XRF-01	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime	2015-04-18 12:07	Sample Team Initials	AP
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Location abandoned due to refusal on cobbles. 7 attempts to drive sampler were made within the allowable 2 meters.

Sample Collected from Station

Sample Id	UDU-04-XRF-01	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-18 12:07	Collection Method	XRF
Initials on CoC		Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-04-XRF-01

2015-04-18-11-23-01_UDU-04-XRF-01_TECK1.JPG



could not get sample

Appendix I
XRF Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-04-XRF-02	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-18 12:33	Sample Team Initials	AP

Sample Collected? Y
X 422879.2268 m
Y 5400905.792 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	80
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with trace clay, high % organic material	Vegetation Present?	Y
Vegetation Type if Present	Grass and pine trees		

Station Comments

Sample Collected from Station

Sample Id	UDU-04-XRF-02	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-18 12:33	Collection Method	XRF
Initials on CoC	AP	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-04-XRF-02

2015-04-18-12-24-06_UDU-04-XRF-02_TECK1.JPG



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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-18-12-30-14_UDU-04-XRF-02_TECK1.JPG



2015-04-18-12-30-27_UDU-04-XRF-02_TECK1.JPG



view west

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XRF Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-04-XRF-03	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-18 11:46	Sample Team Initials	AP

Sample Collected? Y
X 422826.7268 m
Y 5400870.792 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with trace silt, high % organic material	Vegetation Present?	Y
Vegetation Type if Present	Pine trees		

Station Comments sample directly under pine tree, on edge of hill slope that sits above trail leading down to beach

Sample Collected from Station

Sample Id	UDU-04-XRF-03	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-18 11:46	Collection Method	XRF
Initials on CoC	AP	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-04-XRF-03

2015-04-18-11-40-40_UDU-04-XRF-03_TECK1.JPG



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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-18-11-41-20_UDU-04-XRF-03_TECK1.JPG



ground shot

2015-04-18-11-41-44_UDU-04-XRF-03_TECK1.JPG



view north

Appendix I
XRF Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-04-XRF-04	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-18 13:31	Sample Team Initials	AP

Sample Collected? Y
X 422896.7268 m
Y 5400870.792 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with trace silt	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments sample collected in open field adjacent to apple tree.

Sample Collected from Station

Sample Id	UDU-04-XRF-04	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-18 13:31	Collection Method	XRF
Initials on CoC	AP	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-04-XRF-04

2015-04-18-13-27-26_UDU-04-XRF-04_1619LP-WA70047.JPG



sample

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-18-13-25-13_UDU-04-XRF-04_TECK1.JPG



ground surface

2015-04-18-13-27-37_UDU-04-XRF-04_TECK1.JPG



view north

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-04-XRF-05	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-18 13:44	Sample Team Initials	AP

Sample Collected? Y
X 422879.2268 m
Y 5400835.792 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with trace silt	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments located in open field just east of beach access road

Sample Collected from Station

Sample Id	UDU-04-XRF-05	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-18 13:44	Collection Method	XRF
Initials on CoC	AP	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-04-XRF-05

2015-04-18-13-37-57_UDU-04-XRF-05_TECK1.JPG



ground surface

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-18-13-40-26_UDU-04-XRF-05_TECK1.JPG



2015-04-18-13-40-37_UDU-04-XRF-05_TECK1.JPG



view north

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-04-XRF-R01	Start Depth	0 cm
Station Type	Reserve	End Depth	15 cm
Collection DateTime	2015-04-18 12:03	Sample Team Initials	AP

Sample Collected? Y
X 422861.7268 m
Y 5400870.792 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	80
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with clay and rounded gravel, high % organic material	Vegetation Present?	Y
Vegetation Type if Present	Grass and pine trees		

Station Comments This replicate location was used in place of UDU-04-XRF-01, which was abandoned due to refusal on cobbles.

Sample Collected from Station

Sample Id	UDU-04-XRF-R01	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-18 12:03	Collection Method	XRF
Initials on CoC	AP	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-04-XRF-R01

2015-04-18-11-55-51_UDU-04-XRF-R01_TECK1.JPG



ground surface

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-18-11-59-46_UDU-04-XRF-R01_TECK1.JPG



2015-04-18-11-59-57_UDU-04-XRF-R01_TECK1.JPG



view north

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-04-XRF-R02	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-04-XRF-R02	Decision Unit	Soil Decision Unit 4
Sample Date Time		Collection Method	XRF
Initials on CoC		Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Photos Collected from Station UDU-04-XRF-R02

No photos taken at this station. See station comments for more details.

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-05-XRF-01	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-30 9:52	Sample Team Initials	AP

Sample Collected? Y
X 423466.1196 m
Y 5401293.3972 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 100
Shells Presence N
Surface Debris Present? N

Texture Silty fine sand with trace gravel
Vegetation Type if Present Pine trees and scrub brush
Station Comments located just above beach

Anthropogenic Changes Present? N
Color 10YR 4/2
Debris Presence Pine duff

Percent Canopy Coverage 100
Sheen Presence N
Substrate Type Soil
Surface Debris Removed Prior to Sampling? N
Vegetation Present? Y

Sample Collected from Station

Sample Id	UDU-05-XRF-01	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-04-30 9:52	Collection Method	XRF
Initials on CoC	AP	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-05-XRF-01

2015-04-30-09-45-54_UDU-05-XRF-01_TECK1.JPG



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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-30-09-47-25_UDU-05-XRF-01_TECK1.JPG



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2015-04-30-09-50-19_UDU-05-XRF-01_TECK1.JPG



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XRF Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-05-XRF-02	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-30 9:30	Sample Team Initials	AP

Sample Collected? Y
X 423483.9396 m
Y 5401293.3972 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	50
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Sandy silt with gravel	Vegetation Present?	Y
Vegetation Type if Present	Pine trees		
Station Comments	located below rail road		

Sample Collected from Station

Sample Id	UDU-05-XRF-02	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-04-30 9:30	Collection Method	XRF
Initials on CoC	AP	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-05-XRF-02

2015-04-30-09-21-59_UDU-05-XRF-02_TECK1.JPG



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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-30-09-22-15_UDU-05-XRF-02_TECK1.JPG



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2015-04-30-09-26-58_UDU-05-XRF-02_TECK1.JPG



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XRF Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-05-XRF-03	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-30 9:16	Sample Team Initials	AP

Sample Collected? Y
X 423492.8496 m
Y 5401311.2172 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine sand with silt	Vegetation Present?	Y
Vegetation Type if Present	Pine trees		
Station Comments	located below rail road		

Sample Collected from Station

Sample Id	UDU-05-XRF-03	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-04-30 9:16	Collection Method	XRF
Initials on CoC	AP	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-05-XRF-03

2015-04-30-09-08-18_UDU-05-XRF-03_TECK1.JPG



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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-30-09-11-56_UDU-05-XRF-03_TECK1.JPG



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2015-04-30-09-14-19_UDU-05-XRF-03_TECK1.JPG



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XRF Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-05-XRF-04	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-30 10:16	Sample Team Initials	AP

Sample Collected? Y
X 423501.7596 m
Y 5401329.0372 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand, high % organic material	Vegetation Present?	Y
Vegetation Type if Present	Pine trees		

Station Comments located on hillside above beach

Sample Collected from Station

Sample Id	UDU-05-XRF-04	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-04-30 10:16	Collection Method	XRF
Initials on CoC	AP	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-05-XRF-04

2015-04-30-10-01-16_UDU-05-XRF-04_TECK1.JPG



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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-30-10-01-31_UDU-05-XRF-04_TECK1.JPG



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2015-04-30-10-11-49_UDU-05-XRF-04_TECK1.JPG



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XRF Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-05-XRF-05	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-30 10:28	Sample Team Initials	AP

Sample Collected? Y
X 423510.6696 m
Y 5401346.8572 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand with trace gravel, high % organic material	Vegetation Present?	Y
Vegetation Type if Present	Pine trees		

Station Comments located on hillside just above beach

Sample Collected from Station

Sample Id	UDU-05-XRF-05	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-04-30 10:28	Collection Method	XRF
Initials on CoC	AP	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-05-XRF-05

2015-04-30-10-22-28_UDU-05-XRF-05_TECK1.JPG



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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-30-10-23-23_UDU-05-XRF-05_TECK1.JPG



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2015-04-30-10-25-37_UDU-05-XRF-05_TECK1.JPG



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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-05-XRF-06	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-30 8:59	Sample Team Initials	AP

Sample Collected? Y
X 423528.4896 m
Y 5401346.8572 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence Carp spawning depressions
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N
Texture Very fine with trace silt
Vegetation Type if Present Small grass like plant
Station Comments located below rail road

Anthropogenic Changes Present? N
Color 10YR 4/2
Debris Presence N
Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? Y

Sample Collected from Station

Sample Id	UDU-05-XRF-06	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-04-30 8:59	Collection Method	XRF
Initials on CoC	AP	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-05-XRF-06

2015-04-30-08-53-17_UDU-05-XRF-06_TECK1.JPG



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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-30-08-53-32_UDU-05-XRF-06_TECK1.JPG



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2015-04-30-08-56-32_UDU-05-XRF-06_TECK1.JPG



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XRF Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-05-XRF-07	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-30 8:45	Sample Team Initials	AP

Sample Collected? Y
X 423537.3996 m
Y 5401364.6772 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine sand with silt, high % organic material	Vegetation Present?	Y
Vegetation Type if Present	Pine trees		

Station Comments located below rail road

Sample Collected from Station

Sample Id	UDU-05-XRF-07	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-04-30 8:45	Collection Method	XRF
Initials on CoC	AP	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-05-XRF-07

2015-04-30-08-39-51_UDU-05-XRF-07_TECK1.JPG



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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-30-08-40-35_UDU-05-XRF-07_TECK1.JPG



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2015-04-30-08-42-44_UDU-05-XRF-07_TECK1.JPG



Appendix I
XRF Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-05-XRF-08	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-29 10:08	Sample Team Initials	AP

Sample Collected? Y
X 423546.3096 m
Y 5401382.4972 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description Adjacent to railroad

Biological Visual Presence N

Cultural Oversight Inspection Conducted? Y

Odor N

Percent Ground Coverage 100

Shells Presence N

Surface Debris Present? N

Texture Gravelly fine to coarse sand with trace silt, high % organic material

Vegetation Type if Present Trees

Station Comments located on hillside adjacent to railroad

Sample Collected from Station

Sample Id	UDU-05-XRF-08	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-04-29 10:08	Collection Method	XRF
Initials on CoC	AP	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

Anthropogenic Changes Present? N

Color 7.5YR 3/2

Debris Presence Pine duff and cobbles

Percent Canopy Coverage 100

Sheen Presence N

Substrate Type Soil

Surface Debris Removed Prior to Sampling? N

Vegetation Present? Y

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Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-05-XRF-08

2015-04-29-09-58-34_UDU-05-XRF-08_TECK1.JPG



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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-29-09-59-20_UDU-05-XRF-08_TECK1.JPG



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2015-04-29-10-05-51_UDU-05-XRF-08_TECK1.JPG



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XRF Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-05-XRF-09	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-29 10:42	Sample Team Initials	AP

Sample Collected? Y
X 423555.2196 m
Y 5401400.3172 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff and cobbles
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine sand with trace silt, high % organic material	Vegetation Present?	Y
Vegetation Type if Present	Trees		
Station Comments	located on hillside		

Sample Collected from Station

Sample Id	UDU-05-XRF-09	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-04-29 10:42	Collection Method	XRF
Initials on CoC	AP	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-05-XRF-09

2015-04-29-10-33-03_UDU-05-XRF-09_TECK1.JPG



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Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-29-10-33-32_UDU-05-XRF-09_TECK1.JPG



vs

2015-04-29-10-39-21_UDU-05-XRF-09_TECK1.JPG



Appendix I
XRF Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-05-XRF-10	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-29 9:50	Sample Team Initials	AP

Sample Collected? Y
X 423564.1296 m
Y 5401418.1372 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff and cobbles
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine to coarse sand with trace silt, some organic material	Vegetation Present?	Y
Vegetation Type if Present	Trees		
Station Comments	located on hill side		

Sample Collected from Station

Sample Id	UDU-05-XRF-10	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-04-29 9:50	Collection Method	XRF
Initials on CoC	AP	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-05-XRF-10

2015-04-29-09-40-16_UDU-05-XRF-10_TECK1.JPG



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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-29-09-41-03_UDU-05-XRF-10_TECK1.JPG



vs

2015-04-29-09-47-56_UDU-05-XRF-10_TECK1.JPG



Appendix I
XRF Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-05-XRF-11	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-29 9:31	Sample Team Initials	AP

Sample Collected? Y
X 423581.9496 m
Y 5401418.1372 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description Immediately adjacent to railroad
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 100
Shells Presence N
Surface Debris Present? N
Texture Gravelly fine to coarse sand with silt
Vegetation Type if Present N

Anthropogenic Changes Present? N
Color 10YR 4/2
Debris Presence Pine duff and cobbles
Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Soil
Surface Debris Removed Prior to Sampling? N
Vegetation Present? N

Station Comments located just below railroad on 46 degree slope

Sample Collected from Station

Sample Id	UDU-05-XRF-11	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-04-29 9:31	Collection Method	XRF
Initials on CoC	AP	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-05-XRF-11

2015-04-29-09-21-54_UDU-05-XRF-11_TECK1.JPG



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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-29-09-22-22_UDU-05-XRF-11_TECK1.JPG



view ne

2015-04-29-09-26-42_UDU-05-XRF-11_TECK1.JPG



Appendix I
XRF Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-05-XRF-12	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-29 9:08	Sample Team Initials	AP

Sample Collected? Y
X 423581.9496 m
Y 5401453.7772 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff and cobbles
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silt with trace fine sand, dominate percentage of soil matrix is organic material	Vegetation Present?	Y
Vegetation Type if Present	Coniferous and deciduous trees		

Station Comments located on steep back below railroad and above beach

Sample Collected from Station

Sample Id	UDU-05-XRF-12	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-04-29 9:08	Collection Method	XRF
Initials on CoC	AP	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-05-XRF-12

2015-04-29-08-58-14_UDU-05-XRF-12_TECK1.JPG



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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-29-08-58-37_UDU-05-XRF-12_TECK1.JPG



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2015-04-29-09-05-22_UDU-05-XRF-12_TECK1.JPG



Appendix I
XRF Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-05-XRF-13	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-29 8:46	Sample Team Initials	AP
Sample Collected?	Y		
X	423599.7696 m		
Y	5401489.4172 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Boulders, cobbles, pine duff
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine sand with trace silt	Vegetation Present?	Y
Vegetation Type if Present	Deciduous tree		
Station Comments	located on bank under tree		

Sample Collected from Station

Sample Id	UDU-05-XRF-13	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-04-29 8:46	Collection Method	XRF
Initials on CoC	AP	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-05-XRF-13

2015-04-29-08-39-01_UDU-05-XRF-13_TECK1.JPG



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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-29-08-39-36_UDU-05-XRF-13_TECK1.JPG



view n

2015-04-29-08-43-16_UDU-05-XRF-13_TECK1.JPG



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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-05-XRF-R01	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-05-XRF-R01	Decision Unit	Soil Decision Unit 5
Sample Date Time		Collection Method	XRF
Initials on CoC		Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Photos Collected from Station UDU-05-XRF-R01

No photos taken at this station. See station comments for more details.

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-05-XRF-R02	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-05-XRF-R02	Decision Unit	Soil Decision Unit 5
Sample Date Time		Collection Method	XRF
Initials on CoC		Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Photos Collected from Station UDU-05-XRF-R02

No photos taken at this station. See station comments for more details.

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-05-XRF-R03	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-05-XRF-R03	Decision Unit	Soil Decision Unit 5
Sample Date Time		Collection Method	XRF
Initials on CoC		Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Photos Collected from Station UDU-05-XRF-R03

No photos taken at this station. See station comments for more details.

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-05-XRF-R04	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-05-XRF-R04	Decision Unit	Soil Decision Unit 5
Sample Date Time		Collection Method	XRF
Initials on CoC		Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Photos Collected from Station UDU-05-XRF-R04

No photos taken at this station. See station comments for more details.

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-06-XRF-01	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-06 13:51	Sample Team Initials	MS

Sample Collected? Y
X 422279.68 m
Y 5400932.04 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	80
Percent Ground Coverage	80	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand with organic material	Vegetation Present?	Y
Vegetation Type if Present	Alder apple maple grasses		

Station Comments

Sample Collected from Station

Sample Id	UDU-06-XRF-01	Decision Unit	Soil Decision Unit 6
Sample Date Time	2015-05-06 13:51	Collection Method	XRF
Initials on CoC	MS	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-06-XRF-01

2015-05-06-13-48-53_UDU-06-XRF-01_TECK2.JPG



overview facing south

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-06-13-48-50_UDU-06-XRF-01_TECK2.JPG



groundsurface

2015-05-06-13-51-59_UDU-06-XRF-01_TECK2.JPG



sample

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XRF Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-06-XRF-02	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-06 14:09	Sample Team Initials	MS

Sample Collected? Y
X 422256.18 m
Y 5400888.83 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	80
Percent Ground Coverage	50	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand organic	Vegetation Present?	N
Vegetation Type if Present	Birch maple alder		

Station Comments

Sample Collected from Station

Sample Id	UDU-06-XRF-02	Decision Unit	Soil Decision Unit 6
Sample Date Time	2015-05-06 14:09	Collection Method	XRF
Initials on CoC	MS	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-06-XRF-02

2015-05-06-14-07-31_UDU-06-XRF-02_TECK2.JPG



groundsurface

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-06-14-07-39_UDU-06-XRF-02_TECK2.JPG



overview facing east

2015-05-06-14-13-42_UDU-06-XRF-02_TECK2.JPG



sample

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-06-XRF-03	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-06 14:34	Sample Team Initials	MS

Sample Collected? Y
X 422226.9 m
Y 5400850.08 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	80
Percent Ground Coverage	50	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand organics	Vegetation Present?	Y
Vegetation Type if Present	Birch alder maple aple		

Station Comments

Sample Collected from Station

Sample Id	UDU-06-XRF-03	Decision Unit	Soil Decision Unit 6
Sample Date Time	2015-05-06 14:34	Collection Method	XRF
Initials on CoC	MS	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-06-XRF-03

2015-05-06-14-38-17_UDU-06-XRF-03_TECK2.JPG



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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-06-14-32-56_UDU-06-XRF-03_TECK2.JPG



groundsurface

2015-05-06-14-37-49_UDU-06-XRF-03_TECK2.JPG



sample

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XRF Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-06-XRF-04	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-06 14:45	Sample Team Initials	MS

Sample Collected? Y
X 422203.39 m
Y 5400806.87 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand organics	Vegetation Present?	Y
Vegetation Type if Present	Mistletoe grasses		

Station Comments

Sample Collected from Station

Sample Id	UDU-06-XRF-04	Decision Unit	Soil Decision Unit 6
Sample Date Time	2015-05-06 14:45	Collection Method	XRF
Initials on CoC	MS	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-06-XRF-04

2015-05-06-14-42-51_UDU-06-XRF-04_TECK2.JPG



groundsurface

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-06-14-42-55_UDU-06-XRF-04_TECK2.JPG



overview facing east

2015-05-06-14-46-56_UDU-06-XRF-04_TECK2.JPG



sample

Appendix I
XRF Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study

Station Id	UDU-06-XRF-05	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-06 14:57	Sample Team Initials	MS

Sample Collected? Y
X 422176.34 m
Y 5400765.82 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand organic	Vegetation Present?	Y
Vegetation Type if Present	Grasses poison ivy		
Station Comments	scoop		

Sample Collected from Station

Sample Id	UDU-06-XRF-05	Decision Unit	Soil Decision Unit 6
Sample Date Time	2015-05-06 14:57	Collection Method	XRF
Initials on CoC	MS	Matrix	Soil
Sample Split	Field	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-06-XRF-05

2015-05-06-15-07-56_UDU-06-XRF-05_TECK2.JPG



sample

Appendix I
XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-06-15-04-43_UDU-06-XRF-05_TECK2.JPG



groundsurface

2015-05-06-15-04-48_UDU-06-XRF-05_TECK2.JPG



overview facing north

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-06-XRF-R01	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-06-XRF-R01	Decision Unit	Soil Decision Unit 6
Sample Date Time		Collection Method	XRF
Initials on CoC		Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Photos Collected from Station UDU-06-XRF-R01

No photos taken at this station. See station comments for more details.

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-06-XRF-R02	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-06-XRF-R02	Decision Unit	Soil Decision Unit 6
Sample Date Time		Collection Method	XRF
Initials on CoC		Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Photos Collected from Station UDU-06-XRF-R02

No photos taken at this station. See station comments for more details.

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-06-XRF-R03	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-06-XRF-R03	Decision Unit	Soil Decision Unit 6
Sample Date Time		Collection Method	XRF
Initials on CoC		Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Photos Collected from Station UDU-06-XRF-R03

No photos taken at this station. See station comments for more details.

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XRF Sample Collection Report
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Station Id	UDU-06-XRF-R04	Start Depth	cm
Station Type	Reserve	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Reserve sample not needed.

Sample Collected from Station

Sample Id	UDU-06-XRF-R04	Decision Unit	Soil Decision Unit 6
Sample Date Time		Collection Method	XRF
Initials on CoC		Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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XRF Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Photos Collected from Station UDU-06-XRF-R04

No photos taken at this station. See station comments for more details.

Appendix I
Sampling Collection Reports
Part 3 of 3 Core Samples

Appendix I
COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-01-COR-01-001	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-29 8:49	Sample Team Initials	DL

Sample Collected? Y
X 423610.5647 m
Y 5401581.3807 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments Photo not collected at this station. For general site photo see the associated XRF station, SDU-01-XRF-07.

Sample Collected from Station

Sample Id	SDU-01-COR-01-001	Decision Unit	Sediment Decision Unit 1
Sample Date Time	2015-04-29 8:49	Collection Method	COR
Initials on CoC	DL	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Photos Collected from Station SDU-01-COR-01-001

No photos taken at this station. See station comments for more details.

Appendix I
COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-01-COR-01-002	Start Depth	15 cm
Station Type	Primary	End Depth	30 cm
Collection DateTime	2015-04-29 8:54	Sample Team Initials	DL
Sample Collected?	Y		
X	423610.5647 m		
Y	5401581.3807 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments Photo not collected at this station. For general site photo see the associated XRF station, SDU-01-XRF-07.

Sample Collected from Station

Sample Id	SDU-01-COR-01-002	Decision Unit	Sediment Decision Unit 1
Sample Date Time	2015-04-29 8:54	Collection Method	COR
Initials on CoC	DL	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Photos Collected from Station SDU-01-COR-01-002

No photos taken at this station. See station comments for more details.

Appendix I
COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study

Station Id	SDU-01-COR-01-003	Start Depth	30 cm
Station Type	Primary	End Depth	45 cm
Collection DateTime	2015-04-29 8:58	Sample Team Initials	DL

Sample Collected? Y
X 423610.5647 m
Y 5401581.3807 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments Photo not collected at this station. For general site photo see the associated XRF station, SDU-01-XRF-07.

Sample Collected from Station

Sample Id	SDU-01-COR-01-003	Decision Unit	Sediment Decision Unit 1
Sample Date Time	2015-04-29 8:58	Collection Method	COR
Initials on CoC	DL	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Photos Collected from Station SDU-01-COR-01-003

No photos taken at this station. See station comments for more details.

Appendix I
COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-01-COR-02-001	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-29 9:09	Sample Team Initials	DL

Sample Collected? Y
X 423555.5647 m
Y 5401471.3807 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments Photo not collected at this station. For general site photo see the associated XRF station, SDU-01-XRF-09.

Sample Collected from Station

Sample Id	SDU-01-COR-02-001	Decision Unit	Sediment Decision Unit 1
Sample Date Time	2015-04-29 9:09	Collection Method	COR
Initials on CoC	DL	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Photos Collected from Station SDU-01-COR-02-001

No photos taken at this station. See station comments for more details.

Appendix I
COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study

Station Id	SDU-01-COR-02-002	Start Depth	15 cm
Station Type	Primary	End Depth	30 cm
Collection DateTime	2015-04-29 9:12	Sample Team Initials	DL
Sample Collected?	Y		
X	423555.5647 m		
Y	5401471.3807 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments Photo not collected at this station. For general site photo see the associated XRF station, SDU-01-XRF-09.

Sample Collected from Station

Sample Id	SDU-01-COR-02-002	Decision Unit	Sediment Decision Unit 1
Sample Date Time	2015-04-29 9:12	Collection Method	COR
Initials on CoC	DL	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Photos Collected from Station SDU-01-COR-02-002

No photos taken at this station. See station comments for more details.

Appendix I
COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-01-COR-02-003	Start Depth	30 cm
Station Type	Primary	End Depth	45 cm
Collection DateTime	2015-04-29 9:20	Sample Team Initials	DL
Sample Collected?	Y		
X	423555.5647 m		
Y	5401471.3807 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments Photo not collected at this station. For general site photo see the associated XRF station, SDU-01-XRF-09.

Sample Collected from Station

Sample Id	SDU-01-COR-02-003	Decision Unit	Sediment Decision Unit 1
Sample Date Time	2015-04-29 9:20	Collection Method	COR
Initials on CoC	DL	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Photos Collected from Station SDU-01-COR-02-003

No photos taken at this station. See station comments for more details.

Appendix I
COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-01-COR-03-001	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-29 9:32	Sample Team Initials	DL

Sample Collected? Y
X 423528.0647 m
Y 5401526.3807 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments Photo not collected at this station. For general site photo see the associated XRF station, SDU-01-XRF-08.

Sample Collected from Station

Sample Id	SDU-01-COR-03-001	Decision Unit	Sediment Decision Unit 1
Sample Date Time	2015-04-29 9:32	Collection Method	COR
Initials on CoC	DL	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Photos Collected from Station SDU-01-COR-03-001

No photos taken at this station. See station comments for more details.

Appendix I
COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-01-COR-03-002	Start Depth	15 cm
Station Type	Primary	End Depth	30 cm
Collection DateTime	2015-04-29 9:35	Sample Team Initials	DL
Sample Collected?	Y		
X	423528.0647 m		
Y	5401526.3807 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments Photo not collected at this station. For general site photo see the associated XRF station, SDU-01-XRF-08.

Sample Collected from Station

Sample Id	SDU-01-COR-03-002	Decision Unit	Sediment Decision Unit 1
Sample Date Time	2015-04-29 9:35	Collection Method	COR
Initials on CoC	DL	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Photos Collected from Station SDU-01-COR-03-002

No photos taken at this station. See station comments for more details.

Appendix I
COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-01-COR-03-003	Start Depth	30 cm
Station Type	Primary	End Depth	45 cm
Collection DateTime	2015-04-29 9:41	Sample Team Initials	DL
Sample Collected?	Y		
X	423528.0647 m		
Y	5401526.3807 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments Photo not collected at this station. For general site photo see the associated XRF station, SDU-01-XRF-08.

Sample Collected from Station

Sample Id	SDU-01-COR-03-003	Decision Unit	Sediment Decision Unit 1
Sample Date Time	2015-04-29 9:41	Collection Method	COR
Initials on CoC	DL	Matrix	Sediment
Sample Split	Field/EPA	Replicate	No Replicate
Sample Comments			

Photos Collected from Station SDU-01-COR-03-003

No photos taken at this station. See station comments for more details.

Appendix I
COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-02-COR-01-001	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-29 10:18	Sample Team Initials	DL

Sample Collected? Y
X 423490.3027 m
Y 5401373.8645 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments Photo not collected at this station. For general site photo see the associated XRF station, SDU-02-XRF-08.

Sample Collected from Station

Sample Id	SDU-02-COR-01-001	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-29 10:18	Collection Method	COR
Initials on CoC	DL	Matrix	Sediment
Sample Split	Field/EPA	Replicate	No Replicate
Sample Comments			

Photos Collected from Station SDU-02-COR-01-001

No photos taken at this station. See station comments for more details.

Appendix I
COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-02-COR-01-002	Start Depth	15 cm
Station Type	Primary	End Depth	30 cm
Collection DateTime	2015-04-29 10:27	Sample Team Initials	DL
Sample Collected?	Y		
X	423490.3027 m		
Y	5401373.8645 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments Photo not collected at this station. For general site photo see the associated XRF station, SDU-02-XRF-08.

Sample Collected from Station

Sample Id	SDU-02-COR-01-002	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-29 10:27	Collection Method	COR
Initials on CoC	DL	Matrix	Sediment
Sample Split	Field	Replicate	No Replicate
Sample Comments			

Photos Collected from Station SDU-02-COR-01-002

No photos taken at this station. See station comments for more details.

Appendix I
COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-02-COR-01-003	Start Depth	30 cm
Station Type	Primary	End Depth	45 cm
Collection DateTime	2015-04-29 10:36	Sample Team Initials	DL
Sample Collected?	Y		
X	423490.3027 m		
Y	5401373.8645 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments Photo not collected at this station. For general site photo see the associated XRF station, SDU-02-XRF-08.

Sample Collected from Station

Sample Id	SDU-02-COR-01-003	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-29 10:36	Collection Method	COR
Initials on CoC	DL	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Photos Collected from Station SDU-02-COR-01-003

No photos taken at this station. See station comments for more details.

Appendix I
COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-02-COR-02-001	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-29 11:10	Sample Team Initials	DL

Sample Collected? Y
X 423380.3027 m
Y 5401373.8645 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments Photo not collected at this station. For general site photo see the associated XRF station, SDU-02-XRF-06.

Sample Collected from Station

Sample Id	SDU-02-COR-02-001	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-29 11:10	Collection Method	COR
Initials on CoC	DL	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Photos Collected from Station SDU-02-COR-02-001

No photos taken at this station. See station comments for more details.

Appendix I
COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-02-COR-02-002	Start Depth	15 cm
Station Type	Primary	End Depth	30 cm
Collection DateTime	2015-04-29 11:14	Sample Team Initials	DL
Sample Collected?	Y		
X	423380.3027 m		
Y	5401373.8645 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments Photo not collected at this station. For general site photo see the associated XRF station, SDU-02-XRF-06.

Sample Collected from Station

Sample Id	SDU-02-COR-02-002	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-29 11:14	Collection Method	COR
Initials on CoC	DL	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Appendix I
COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Photos Collected from Station SDU-02-COR-02-002

No photos taken at this station. See station comments for more details.

Appendix I
COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-02-COR-02-003	Start Depth	30 cm
Station Type	Primary	End Depth	45 cm
Collection DateTime	2015-04-29 11:18	Sample Team Initials	DL
Sample Collected?	Y		
X	423380.3027 m		
Y	5401373.8645 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments Photo not collected at this station. For general site photo see the associated XRF station, SDU-02-XRF-06.

Sample Collected from Station

Sample Id	SDU-02-COR-02-003	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-29 11:18	Collection Method	COR
Initials on CoC	DL	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Photos Collected from Station SDU-02-COR-02-003

No photos taken at this station. See station comments for more details.

Appendix I
COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-02-COR-03-001	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-29 11:36	Sample Team Initials	DL

Sample Collected? Y
X 423352.8027 m
Y 5401428.8645 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments Photo not collected at this station. For general site photo see the associated XRF station, SDU-02-XRF-04.

Sample Collected from Station

Sample Id	SDU-02-COR-03-001	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-29 11:36	Collection Method	COR
Initials on CoC	DL	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Photos Collected from Station SDU-02-COR-03-001

No photos taken at this station. See station comments for more details.

Appendix I
COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-02-COR-03-002	Start Depth	15 cm
Station Type	Primary	End Depth	30 cm
Collection DateTime	2015-04-29 11:40	Sample Team Initials	DL

Sample Collected? Y
X 423352.8027 m
Y 5401428.8645 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments Photo not collected at this station. For general site photo see the associated XRF station, SDU-02-XRF-04.

Sample Collected from Station

Sample Id	SDU-02-COR-03-002	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-29 11:40	Collection Method	COR
Initials on CoC	DL	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments			

Photos Collected from Station SDU-02-COR-03-002

No photos taken at this station. See station comments for more details.

Appendix I
COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-02-COR-03-003	Start Depth	30 cm
Station Type	Primary	End Depth	45 cm
Collection DateTime	2015-04-29 11:48	Sample Team Initials	DL
Sample Collected?	Y		
X	423352.8027 m		
Y	5401428.8645 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments Photo not collected at this station. For general site photo see the associated XRF station, SDU-02-XRF-04.

Sample Collected from Station

Sample Id	SDU-02-COR-03-003	Decision Unit	Sediment Decision Unit 2
Sample Date Time	2015-04-29 11:48	Collection Method	COR
Initials on CoC	DL	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Photos Collected from Station SDU-02-COR-03-003

No photos taken at this station. See station comments for more details.

Appendix I
COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-03-COR-01-001	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-25 14:15	Sample Team Initials	AP
Sample Collected?	Y		
X	423086.7872 m		
Y	5401100.4635 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine to coarse sand with cobbles	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments collect 1 liter of soil from this depth interval

Sample Collected from Station

Sample Id	SDU-03-COR-01-001	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-25 14:15	Collection Method	COR
Initials on CoC	AP	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Photos Collected from Station SDU-03-COR-01-001

2015-04-25-15-43-50_SDU-03-COR-01-001_TECK1.JPG



This baggie is mislabelled due to field error. The error was discovered in the field and the sample was submitted to the laboratory as SDU-03-COR-01-001.

Appendix I
COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-03-COR-01-002	Start Depth	15 cm
Station Type	Primary	End Depth	30 cm
Collection DateTime	2015-04-25 14:19	Sample Team Initials	AP
Sample Collected?	Y		
X	423086.7872 m		
Y	5401100.4635 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with silt and trace rounded gravel	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments collect 1 liter of soil from this depth interval

Sample Collected from Station

Sample Id	SDU-03-COR-01-002	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-25 14:19	Collection Method	COR
Initials on CoC	AP	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Appendix I
COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-03-COR-01-002

2015-04-25-14-19-45_SDU-03-COR-01-002_TECK2.JPG



SAMPLE SITE

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-25-14-19-57_SDU-03-COR-01-002_TECK2.JPG



LOCATION OVERVIEW

2015-04-25-15-43-56_SDU-03-COR-01-002_TECK1.JPG



Appendix I
COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-03-COR-01-003	Start Depth	30 cm
Station Type	Primary	End Depth	45 cm
Collection DateTime	2015-04-25 14:25	Sample Team Initials	AP
Sample Collected?	Y		
X	423086.7872 m		
Y	5401100.4635 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand with trace silt and rounded gravel	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments collect 1 liter of soil from this depth interval

Sample Collected from Station

Sample Id	SDU-03-COR-01-003	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-25 14:25	Collection Method	COR
Initials on CoC	AP	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Appendix I
COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-03-COR-01-003

2015-04-25-15-44-00_SDU-03-COR-01-003_TECK1.JPG



Appendix I
COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-03-COR-02-001	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-25 14:19	Sample Team Initials	MV
Sample Collected?	Y		
X	423029.2872 m		
Y	5401055.4635 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Present?	N	Color	10YR 4/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Texture	Fine silty sand with minor fine to medium gravel
Vegetation Present?	N		

Station Comments SDU-03-XRF-02. TIME OF SDU-03-COR-02-001 IS 1419

Sample Collected from Station

Sample Id	SDU-03-COR-02-001	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-25 14:19	Collection Method	COR
Initials on CoC	MV	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Appendix I
COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-03-COR-02-001

2015-04-25-16-47-48_SDU-03-COR-02-001_1619LP-WA70047.JPG



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COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-03-COR-02-002	Start Depth	15 cm
Station Type	Primary	End Depth	30 cm
Collection DateTime	2015-04-25 14:22	Sample Team Initials	MV
Sample Collected?	Y		
X	423029.2872 m		
Y	5401055.4635 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Present?	Y	Biological Visual Presence	N
Color	10YR 4/1	Cultural Oversight Inspection Conducted?	Y
Debris Presence	N	Odor	N
Percent Canopy Coverage	0	Percent Ground Coverage	0
Sheen Presence	N	Shells Presence	N
Substrate Type	Sediment	Surface Debris Present?	N
Texture	Fine silty sand, minor fine gravel	Vegetation Present?	N

Station Comments SDU-03-XRF-02

Sample Collected from Station

Sample Id	SDU-03-COR-02-002	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-25 14:22	Collection Method	COR
Initials on CoC	MV	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-03-COR-02-002

2015-04-25-16-47-54_SDU-03-COR-02-002_TECK2.JPG



Appendix I
COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-03-COR-02-003	Start Depth	30 cm
Station Type	Primary	End Depth	45 cm
Collection DateTime	2015-04-25 14:25	Sample Team Initials	MV
Sample Collected?	Y		
X	423029.2872 m		
Y	5401055.4635 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Present?	N	Biological Visual Presence	N
Color	10YR 4/1	Cultural Oversight Inspection Conducted?	Y
Debris Presence	N	Odor	N
Percent Canopy Coverage	0	Percent Ground Coverage	0
Sheen Presence	N	Shells Presence	N
Substrate Type	Sediment	Surface Debris Present?	N
Texture	Fine silty sand, minor fine gravel	Vegetation Present?	N

Station Comments SDU-03-XRF-02

Sample Collected from Station

Sample Id	SDU-03-COR-02-003	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-25 14:25	Collection Method	COR
Initials on CoC	MV	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Appendix I
COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-03-COR-02-003

2015-04-25-16-48-02_SDU-03-COR-02-003_1619LP-WA70047.JPG



Appendix I
COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-03-COR-03-001	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-25 14:42	Sample Team Initials	AP

Sample Collected? Y
X 422914.2872 m
Y 5400965.4635 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description Adjacent to beach access road
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 50
Shells Presence N
Surface Debris Present? N
Texture Gravelly silty fine sand, high % organic material
Vegetation Type if Present Grass

Anthropogenic Changes Present? N
Color 10YR 3/2
Debris Presence Cobbles
Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? Y

Station Comments Located just west of bosburg beach access road. Collect 1 liter of soil from this interval. Photo not collected at this station. For general site photo see the associated XRF station, SDU-03-XRF-04.

Sample Collected from Station

Sample Id	SDU-03-COR-03-001	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-25 14:42	Collection Method	COR
Initials on CoC	AP	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Photos Collected from Station SDU-03-COR-03-001

No photos taken at this station. See station comments for more details.

Appendix I
COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-03-COR-03-002	Start Depth	15 cm
Station Type	Primary	End Depth	30 cm
Collection DateTime	2015-04-25 14:45	Sample Team Initials	AP
Sample Collected?	Y		
X	422914.2872 m		
Y	5400965.4635 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	Adjacent to beach access road	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles
Odor	N	Percent Canopy Coverage	50
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand with some fine rounded gravel, high % organic material	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments Located just west of bossburg beach access road. Collect 1 liter of soil from this depth interval. Photo not collected at this station. For general site photo see the associated XRF station, SDU-03-XRF-04.

Sample Collected from Station

Sample Id	SDU-03-COR-03-002	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-25 14:45	Collection Method	COR
Initials on CoC	AP	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Photos Collected from Station SDU-03-COR-03-002

No photos taken at this station. See station comments for more details.

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-03-COR-03-003	Start Depth	30 cm
Station Type	Primary	End Depth	45 cm
Collection DateTime	2015-04-25 14:46	Sample Team Initials	AP
Sample Collected?	Y		
X	422914.2872 m		
Y	5400965.4635 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	Located adjacent to beach access road	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles
Odor	N	Percent Canopy Coverage	50
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand with occasional fine rounded gravel	Vegetation Present?	N
Vegetation Type if Present	Grass		

Station Comments Located just west of bossburg beach access road. Collected 2 liters of soil from this depth interval. Photo not collected at this station. For general site photo see the associated XRF station, SDU-03-XRF-04.

Sample Collected from Station

Sample Id	SDU-03-COR-03-003	Decision Unit	Sediment Decision Unit 3
Sample Date Time	2015-04-25 14:46	Collection Method	COR
Initials on CoC	AP	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments			

Photos Collected from Station SDU-03-COR-03-003

No photos taken at this station. See station comments for more details.

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COR Sample Collection Report
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Station Id	SDU-04-COR-01-001	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-04 15:35	Sample Team Initials	AP

Sample Collected? Y
X 422691.1355 m
Y 5400781.8543 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	50
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand some organic material	Vegetation Present?	Y
Vegetation Type if Present	Pine needles		

Station Comments Colocated with SDU-04-XRF-01. Collect 1 liter of sediment from this depth. Photo not collected at this station. For general site photo see the associated XRF station, SDU-04-XRF-01.

Sample Collected from Station

Sample Id	SDU-04-COR-01-001	Decision Unit	Sediment Decision Unit 4
Sample Date Time	2015-05-04 15:35	Collection Method	COR
Initials on CoC	AP	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Photos Collected from Station SDU-04-COR-01-001

No photos taken at this station. See station comments for more details.

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COR Sample Collection Report
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Station Id	SDU-04-COR-01-002	Start Depth	15 cm
Station Type	Primary	End Depth	30 cm
Collection DateTime	2015-05-04 15:37	Sample Team Initials	AP
Sample Collected?	Y		
X	422691.1355 m		
Y	5400781.8543 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/4
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	50
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pine needles		

Station Comments collocated with SDU-04-XRF-01. Collected 1 liter of sediment from this depth. Photo not collected at this station. For general site photo see the associated XRF station, SDU-04-XRF-01.

Sample Collected from Station

Sample Id	SDU-04-COR-01-002	Decision Unit	Sediment Decision Unit 4
Sample Date Time	2015-05-04 15:37	Collection Method	COR
Initials on CoC	AP	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Photos Collected from Station SDU-04-COR-01-002

No photos taken at this station. See station comments for more details.

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Station Id	SDU-04-COR-01-003	Start Depth	30 cm
Station Type	Primary	End Depth	45 cm
Collection DateTime	2015-05-04 15:39	Sample Team Initials	AP
Sample Collected?	Y		
X	422691.1355 m		
Y	5400781.8543 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	50
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pine needles		

Station Comments collocated with SDU-04-XRF-01. Collect 2 liters of sediment from this depth. Photo not collected at this station. For general site photo see the associated XRF station, SDU-04-XRF-01.

Sample Collected from Station

Sample Id	SDU-04-COR-01-003	Decision Unit	Sediment Decision Unit 4
Sample Date Time	2015-05-04 15:39	Collection Method	COR
Initials on CoC	AP	Matrix	Sediment
Sample Split	Field	Replicate	No Replicate
Sample Comments			

Photos Collected from Station SDU-04-COR-01-003

No photos taken at this station. See station comments for more details.

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-04-COR-02-001	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-04 15:52	Sample Team Initials	AP

Sample Collected? Y
X 422631.1355 m
Y 5400685.8543 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles and boulders
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments collocated with SDU-04-XRF-03. Collect 1 liter of sediment from this depth.

Sample Collected from Station

Sample Id	SDU-04-COR-02-001	Decision Unit	Sediment Decision Unit 4
Sample Date Time	2015-05-04 15:52	Collection Method	COR
Initials on CoC	AP	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-04-COR-02-001

2015-05-04-16-59-13_SDU-04-COR-02-001_TECK3.JPG



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COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-04-COR-02-002	Start Depth	15 cm
Station Type	Primary	End Depth	30 cm
Collection DateTime	2015-05-04 15:56	Sample Team Initials	AP
Sample Collected?	Y		
X	422631.1355 m		
Y	5400685.8543 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles and boulders
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments collocated with SDU-04-XRF-03. Collect 2 liters from this depth.

Sample Collected from Station

Sample Id	SDU-04-COR-02-002	Decision Unit	Sediment Decision Unit 4
Sample Date Time	2015-05-04 15:56	Collection Method	COR
Initials on CoC	AP	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-04-COR-02-002

2015-05-04-16-59-13_SDU-04-COR-02-001_TECK3.JPG



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Station Id	SDU-04-COR-02-003	Start Depth	30 cm
Station Type	Primary	End Depth	45 cm
Collection DateTime	2015-05-04 15:58	Sample Team Initials	AP
Sample Collected?	Y		
X	422631.1355 m		
Y	5400685.8543 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Present?	N	Color	10YR 4/1
Percent Canopy Coverage	0	Percent Ground Coverage	0
Sheen Presence	N	Shells Presence	N
Substrate Type	Sediment	Surface Debris Present?	N
Texture	Fine silty sand minor fine gravel	Vegetation Present?	N

Station Comments colocated with SDU-04-XRF-03. collect 1 liter of sediment from this depth.

Sample Collected from Station

Sample Id	SDU-04-COR-02-003	Decision Unit	Sediment Decision Unit 4
Sample Date Time	2015-05-04 15:58	Collection Method	COR
Initials on CoC	AP	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-04-COR-02-003

2015-05-04-16-59-13_SDU-04-COR-02-001_TECK3.JPG



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Station Id	SDU-04-COR-03-001	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-04 16:09	Sample Team Initials	AP

Sample Collected? Y
X 422595.1355 m
Y 5400613.8543 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles and boulders
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments collocated with SDU-04-XRF-04. collect 1 liter of sediment from this depth.

Sample Collected from Station

Sample Id	SDU-04-COR-03-001	Decision Unit	Sediment Decision Unit 4
Sample Date Time	2015-05-04 16:09	Collection Method	COR
Initials on CoC	AP	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-04-COR-03-001

2015-05-04-17-00-36_SDU-04-COR-03-001_TECK3.JPG



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Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-04-COR-03-002	Start Depth	15 cm
Station Type	Primary	End Depth	30 cm
Collection DateTime	2015-05-04 16:11	Sample Team Initials	AP
Sample Collected?	Y		
X	422595.1355 m		
Y	5400613.8543 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles and boulders
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments collocated with SDU-04-XRF-04. collect 1 liter of sediment from this depth.

Sample Collected from Station

Sample Id	SDU-04-COR-03-002	Decision Unit	Sediment Decision Unit 4
Sample Date Time	2015-05-04 16:11	Collection Method	COR
Initials on CoC	AP	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
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Photos Collected from Station SDU-04-COR-03-002

2015-05-04-17-00-36_SDU-04-COR-03-001_TECK3.JPG



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Station Id	SDU-04-COR-03-003	Start Depth	30 cm
Station Type	Primary	End Depth	45 cm
Collection DateTime	2015-05-04 16:13	Sample Team Initials	AP
Sample Collected?	Y		
X	422595.1355 m		
Y	5400613.8543 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles and boulders
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly very fine sand with trace silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments colocated with SDU-04-XRF-04. collect 1 liter of sediment from this interval

Sample Collected from Station

Sample Id	SDU-04-COR-03-003	Decision Unit	Sediment Decision Unit 4
Sample Date Time	2015-05-04 16:13	Collection Method	COR
Initials on CoC	AP	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-04-COR-03-003

2015-04-30-16-06-55_SDU-04-COR-03-003_TECK1.JPG



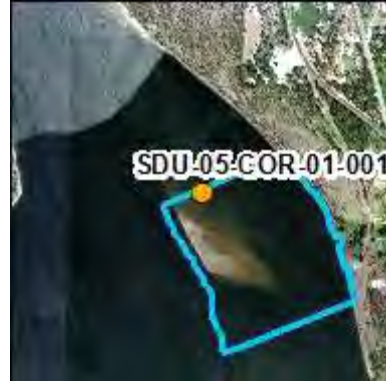
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COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-05-COR-01-001	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-01 8:55	Sample Team Initials	AP

Sample Collected? Y
X 424294.0087 m
Y 5395316.5972 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Carp spawning depressions	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	Y
Vegetation Type if Present	Some small grass like plants		

Station Comments collocated with SDU-05-XRF-01. collect 3 liters of sediment from this depth

Sample Collected from Station

Sample Id	SDU-05-COR-01-001	Decision Unit	Sediment Decision Unit 5
Sample Date Time	2015-05-01 8:55	Collection Method	COR
Initials on CoC	AP	Matrix	Sediment
Sample Split	Field/EPA	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-05-COR-01-001

2015-05-01-08-56-30_SDU-05-COR-01-001_TECK1.JPG



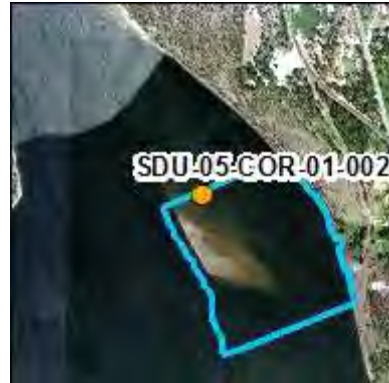
Appendix I
COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-05-COR-01-002	Start Depth	15 cm
Station Type	Primary	End Depth	30 cm
Collection DateTime	2015-05-01 9:00	Sample Team Initials	AP

Sample Collected? Y
X 424294.0087 m
Y 5395316.5972 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Carp spawning depressions	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand with trace silt	Vegetation Present?	Y
Vegetation Type if Present	Some small grass like plant		

Station Comments collocated with SDU-05-XRF-01. collect 1 liter of sediment from this depth

Sample Collected from Station

Sample Id	SDU-05-COR-01-002	Decision Unit	Sediment Decision Unit 5
Sample Date Time	2015-05-01 9:00	Collection Method	COR
Initials on CoC	AP	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Appendix I
COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-05-COR-01-002

2015-05-01-09-02-12_SDU-05-COR-01-002_TECK1.JPG



Appendix I
COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-05-COR-01-003	Start Depth	30 cm
Station Type	Primary	End Depth	45 cm
Collection DateTime	2015-05-01 9:05	Sample Team Initials	AP

Sample Collected? Y
X 424294.0087 m
Y 5395316.5972 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence Carp spawning depressions
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N
Texture Very fine sand with trace silt
Vegetation Type if Present Some small grass like plant

Anthropogenic Changes Present? N
Color 10YR 4/2
Debris Presence N
Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? Y

Station Comments colocated with SDU-05-XRF-01. collect 1 liter of sediment from this depth.

Sample Collected from Station

Sample Id	SDU-05-COR-01-003	Decision Unit	Sediment Decision Unit 5
Sample Date Time	2015-05-01 9:05	Collection Method	COR
Initials on CoC	AP	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Appendix I
COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-05-COR-01-003

2015-05-01-09-03-09_SDU-05-COR-01-003_TECK1.JPG



Appendix I
COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-05-COR-02-001	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-01 9:30	Sample Team Initials	AP

Sample Collected? Y
X 424606.5087 m
Y 5394941.5972 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Carp spawning depressions	Color	7.5YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand with silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments collocated with SDU-05-XRF-09. 1 liter of sediment collected from this depth

Sample Collected from Station

Sample Id	SDU-05-COR-02-001	Decision Unit	Sediment Decision Unit 5
Sample Date Time	2015-05-01 9:30	Collection Method	COR
Initials on CoC	AP	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Appendix I
COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-05-COR-02-001

2015-05-01-09-38-34_SDU-05-COR-02-001_TECK1.JPG



Appendix I
COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-05-COR-02-002	Start Depth	15 cm
Station Type	Primary	End Depth	30 cm
Collection DateTime	2015-05-01 9:40	Sample Team Initials	AP

Sample Collected? Y
X 424606.5087 m
Y 5394941.5972 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Carp spawning depressions	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand with silt	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments collocated with SDU-05-XRF-09. 2 liters of sediment collected from this depth.

Sample Collected from Station

Sample Id	SDU-05-COR-02-002	Decision Unit	Sediment Decision Unit 5
Sample Date Time	2015-05-01 9:40	Collection Method	COR
Initials on CoC	AP	Matrix	Sediment
Sample Split	Field	Replicate	No Replicate
Sample Comments			

Appendix I
COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-05-COR-02-002

2015-05-01-09-47-32_SDU-05-COR-02-002_TECK1.JPG



Appendix I
COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-05-COR-02-003	Start Depth	30 cm
Station Type	Primary	End Depth	45 cm
Collection DateTime	2015-05-01 9:45	Sample Team Initials	AP

Sample Collected? Y
X 424606.5087 m
Y 5394941.5972 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence Carp spawning depressions
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N
Texture Very fine sand
Vegetation Type if Present N

Anthropogenic Changes Present? N
Color 10YR 4/2
Debris Presence N
Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? N

Station Comments collocated with SDU-05-XRF-09. Collect 1 liter of sediment from this depth

Sample Collected from Station

Sample Id	SDU-05-COR-02-003	Decision Unit	Sediment Decision Unit 5
Sample Date Time	2015-05-01 9:45	Collection Method	COR
Initials on CoC	AP	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Appendix I
COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-05-COR-02-003

2015-05-01-09-47-49_SDU-05-COR-02-003_TECK1.JPG



Appendix I
COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-05-COR-03-001	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-30 16:03	Sample Team Initials	AP

Sample Collected? Y
X 424606.5087 m
Y 5395191.5972 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence Carp spawning depressions
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N
Texture Silt with trace fine sand
Vegetation Type if Present N

Anthropogenic Changes Present? N
Color 7.5YR 3/2
Debris Presence N
Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? N

Station Comments collect 1 liter of sediment from this depth. colocated with SDU-05-XRF-04

Sample Collected from Station

Sample Id	SDU-05-COR-03-001	Decision Unit	Sediment Decision Unit 5
Sample Date Time	2015-04-30 16:03	Collection Method	COR
Initials on CoC	AP	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Appendix I
COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-05-COR-03-001

2015-04-30-16-01-53_SDU-05-COR-03-001_TECK1.JPG



Appendix I
COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-05-COR-03-002	Start Depth	15 cm
Station Type	Primary	End Depth	30 cm
Collection DateTime	2015-04-30 16:06	Sample Team Initials	AP
Sample Collected?	Y		
X	424606.5087 m		
Y	5395191.5972 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Carp spawning depressions	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments collect 1 liter of sediment from this depth. colocated with SDU-05-XRF-04.

Sample Collected from Station

Sample Id	SDU-05-COR-03-002	Decision Unit	Sediment Decision Unit 5
Sample Date Time	2015-04-30 16:06	Collection Method	COR
Initials on CoC	AP	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-05-COR-03-002

2015-04-30-16-04-37_SDU-05-COR-03-002_TECK1.JPG



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COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-05-COR-03-003	Start Depth	30 cm
Station Type	Primary	End Depth	45 cm
Collection DateTime	2015-04-30 16:09	Sample Team Initials	AP
Sample Collected?	Y		
X	424606.5087 m		
Y	5395191.5972 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Carp spawning depressions	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments collect 1 liter of sediment from this depth. Colocated with SDU-05-XRF-04

Sample Collected from Station

Sample Id	SDU-05-COR-03-003	Decision Unit	Sediment Decision Unit 5
Sample Date Time	2015-04-30 16:09	Collection Method	COR
Initials on CoC	AP	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-05-COR-03-003

2015-04-30-16-06-56_SDU-05-COR-03-003_1619LP-WA70047.JPG



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COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-06-COR-01-001	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-29 14:53	Sample Team Initials	MS

Sample Collected? Y
X 425306.2415 m
Y 5393813.8951 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	N
Vegetation Type if Present	Some grass		
Station Comments	XRF-04		

Sample Collected from Station

Sample Id	SDU-06-COR-01-001	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 14:53	Collection Method	COR
Initials on CoC	MS	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-06-COR-01-001

2015-04-29-14-54-16_SDU-06-COR-01-001_TECK2.JPG



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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-29-14-54-36_SDU-06-COR-01-001_TECK2.JPG



groundsurface

2015-04-29-14-58-25_SDU-06-COR-01-001_TECK2.JPG



overview facing west

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-06-COR-01-002	Start Depth	15 cm
Station Type	Primary	End Depth	30 cm
Collection DateTime	2015-04-29 15:00	Sample Team Initials	MS
Sample Collected?	Y		
X	425306.2415 m		
Y	5393813.8951 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments co-located with XRF-02

Sample Collected from Station

Sample Id	SDU-06-COR-01-002	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 15:00	Collection Method	COR
Initials on CoC	MS	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-06-COR-01-002

2015-04-29-14-59-56_SDU-06-COR-01-002_TECK2.JPG



sample

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COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-06-COR-01-003	Start Depth	30 cm
Station Type	Primary	End Depth	45 cm
Collection DateTime	2015-04-29 15:03	Sample Team Initials	MS

Sample Collected? Y
X 425306.2415 m
Y 5393813.8951 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-06-COR-01-003	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 15:03	Collection Method	COR
Initials on CoC	MS	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-06-COR-01-003

2015-04-29-15-05-04_SDU-06-COR-01-003_TECK2.JPG



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Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-06-COR-02-001	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-29 15:24	Sample Team Initials	MS

Sample Collected? Y
X 425223.7415 m
Y 5394068.8951 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 5/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	Grasses		

Station Comments

Sample Collected from Station

Sample Id	SDU-06-COR-02-001	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 15:24	Collection Method	COR
Initials on CoC	MS	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-06-COR-02-001

2015-04-29-15-27-51_SDU-06-COR-02-001_TECK2.JPG



sample

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-29-15-26-10_SDU-06-COR-02-001_TECK2.JPG



overview facing west

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COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-06-COR-02-002	Start Depth	15 cm
Station Type	Primary	End Depth	30 cm
Collection DateTime	2015-04-29 15:32	Sample Team Initials	MS
Sample Collected?	Y		
X	425223.7415 m		
Y	5394068.8951 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-06-COR-02-002	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 15:32	Collection Method	COR
Initials on CoC	MS	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-06-COR-02-002

2015-04-29-15-31-46_SDU-06-COR-02-002_TECK2.JPG



sample

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COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-06-COR-02-003	Start Depth	30 cm
Station Type	Primary	End Depth	45 cm
Collection DateTime	2015-04-29 15:34	Sample Team Initials	MS
Sample Collected?	Y		
X	425223.7415 m		
Y	5394068.8951 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	Grasses		

Station Comments

Sample Collected from Station

Sample Id	SDU-06-COR-02-003	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 15:34	Collection Method	COR
Initials on CoC	MS	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-06-COR-02-003

2015-04-29-15-37-13_SDU-06-COR-02-003_TECK2.JPG



sample

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-29-15-37-31_SDU-06-COR-02-003_TECK2.JPG



groundsurface

Appendix I
COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-06-COR-03-001	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-29 15:48	Sample Team Initials	MS

Sample Collected? Y
X 425126.2415 m
Y 5394173.8951 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments stainless steel shovel used to clear top layer cobbles

Sample Collected from Station

Sample Id	SDU-06-COR-03-001	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 15:48	Collection Method	COR
Initials on CoC	MS	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-06-COR-03-001

2015-04-29-15-58-58_SDU-06-COR-03-001_TECK2.JPG



sample

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COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-06-COR-03-002	Start Depth	15 cm
Station Type	Primary	End Depth	30 cm
Collection DateTime	2015-04-29 16:02	Sample Team Initials	MS
Sample Collected?	Y		
X	425126.2415 m		
Y	5394173.8951 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-06-COR-03-002	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 16:02	Collection Method	COR
Initials on CoC	MS	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Appendix I
COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-06-COR-03-002

2015-04-29-16-06-28_SDU-06-COR-03-002_1619LP-WA70047.JPG



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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-06-COR-03-003	Start Depth	30 cm
Station Type	Primary	End Depth	45 cm
Collection DateTime	2015-04-29 16:09	Sample Team Initials	MS
Sample Collected?	Y		
X	425126.2415 m		
Y	5394173.8951 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine to coarse sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-06-COR-03-003	Decision Unit	Sediment Decision Unit 6
Sample Date Time	2015-04-29 16:09	Collection Method	COR
Initials on CoC	MS	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-06-COR-03-003

2015-04-29-16-13-19_SDU-06-COR-03-003_TECK2.JPG



sample

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-29-16-11-03_SDU-06-COR-03-003_TECK2.JPG



sample

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07-COR-01-001	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-06 10:06	Sample Team Initials	MS

Sample Collected? Y
X 425108.7331 m
Y 5392671.3126 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence N
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 0
Shells Presence N
Surface Debris Present? N

Texture Silty fine sand
Vegetation Type if Present N

Anthropogenic Changes Present? N
Color 10YR 4/2
Debris Presence N

Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Sediment
Surface Debris Removed Prior to Sampling? N
Vegetation Present? N

Station Comments

Sample Collected from Station

Sample Id	SDU-07-COR-01-001	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:06	Collection Method	COR
Initials on CoC	MS	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-07-COR-01-001

2015-05-06-10-20-19_SDU-07-COR-01-001_TECK2.JPG



groundsurface

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-06-10-20-21_SDU-07-COR-01-001_TECK2.JPG



overview facing south

2015-05-06-10-09-16_SDU-07-COR-01-001_TECK2.JPG



sample

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07-COR-01-002	Start Depth	15 cm
Station Type	Primary	End Depth	30 cm
Collection DateTime	2015-05-06 10:11	Sample Team Initials	MS
Sample Collected?	Y		
X	425108.7331 m		
Y	5392671.3126 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-07-COR-01-002	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:11	Collection Method	COR
Initials on CoC	MS	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-07-COR-01-002

2015-05-06-10-17-52_SDU-07-COR-01-002_TECK2.JPG



sample

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-06-10-11-52_SDU-07-COR-01-002_TECK2.JPG



sample

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07-COR-01-003	Start Depth	30 cm
Station Type	Primary	End Depth	45 cm
Collection DateTime	2015-05-06 10:17	Sample Team Initials	MS
Sample Collected?	Y		
X	425108.7331 m		
Y	5392671.3126 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-07-COR-01-003	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:17	Collection Method	COR
Initials on CoC	MS	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-07-COR-01-003

2015-05-06-10-19-50_SDU-07-COR-01-003_TECK2.JPG



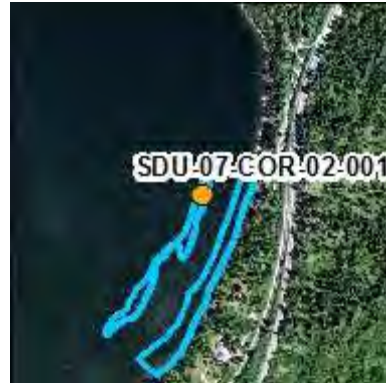
sample

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07-COR-02-001	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-06 11:36	Sample Team Initials	MS
Sample Collected?	Y		
X	425189.3164 m		
Y	5393030.7354 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-07-COR-02-001	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 11:36	Collection Method	COR
Initials on CoC	MS	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-07-COR-02-001

2015-05-06-11-45-13_SDU-07-COR-02-001_TECK2.JPG



groundsurface

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-06-11-45-16_SDU-07-COR-02-001_TECK2.JPG



overview facing south

2015-05-06-11-36-44_SDU-07-COR-02-001_TECK2.JPG



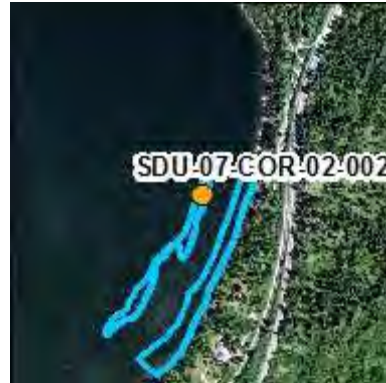
sample

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COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07-COR-02-002	Start Depth	15 cm
Station Type	Primary	End Depth	30 cm
Collection DateTime	2015-05-06 11:40	Sample Team Initials	MS
Sample Collected?	Y		
X	425189.3164 m		
Y	5393030.7354 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-07-COR-02-002	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 11:40	Collection Method	COR
Initials on CoC	MS	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-07-COR-02-002

2015-05-06-11-41-35_SDU-07-COR-02-002_TECK2.JPG



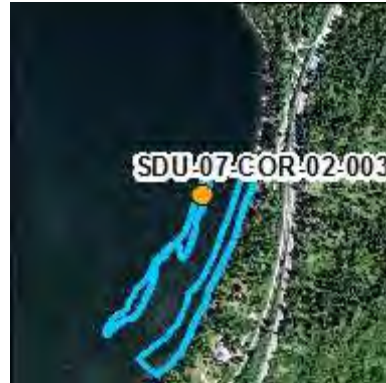
sample

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07-COR-02-003	Start Depth	30 cm
Station Type	Primary	End Depth	45 cm
Collection DateTime	2015-05-06 11:44	Sample Team Initials	MS
Sample Collected?	Y		
X	425189.3164 m		
Y	5393030.7354 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-07-COR-02-003	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 11:44	Collection Method	COR
Initials on CoC	MS	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-07-COR-02-003

2015-05-06-11-44-45_SDU-07-COR-02-003_TECK2.JPG



sample

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COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07-COR-03-001	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-06 10:59	Sample Team Initials	MS
Sample Collected?	Y		
X	425037.5772 m		
Y	5392795.058 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Sity fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments

Sample Collected from Station

Sample Id	SDU-07-COR-03-001	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 10:59	Collection Method	COR
Initials on CoC	MS	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-07-COR-03-001

2015-05-06-11-22-45_SDU-07-COR-03-001_TECK2.JPG



groundsurface

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-06-11-22-52_SDU-07-COR-03-001_TECK2.JPG



overview facing north

2015-05-06-11-01-51_SDU-07-COR-03-001_TECK2.JPG



sample

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COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07-COR-03-002	Start Depth	15 cm
Station Type	Primary	End Depth	30 cm
Collection DateTime	2015-05-06 11:02	Sample Team Initials	MS
Sample Collected?	Y		
X	425037.5772 m		
Y	5392795.058 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments field split at 1107

Sample Collected from Station

Sample Id	SDU-07-COR-03-002	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 11:02	Collection Method	COR
Initials on CoC	MS	Matrix	Sediment
Sample Split	Field	Replicate	No Replicate
Sample Comments			

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-06-11-04-28_SDU-07-COR-03-002_TECK2.JPG



sample

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COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-07-COR-03-003	Start Depth	30 cm
Station Type	Primary	End Depth	45 cm
Collection DateTime	2015-05-06 11:10	Sample Team Initials	MS
Sample Collected?	Y		
X	425037.5772 m		
Y	5392795.058 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		
Station Comments	split 1113		

Sample Collected from Station

Sample Id	SDU-07-COR-03-003	Decision Unit	Sediment Decision Unit 7
Sample Date Time	2015-05-06 11:10	Collection Method	COR
Initials on CoC	MS	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments			

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Photos Collected from Station SDU-07-COR-03-003

2015-05-06-11-14-43_SDU-07-COR-03-003_TECK2.JPG



sample

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-06-11-12-55_SDU-07-COR-03-003_TECK2.JPG



sample

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COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-08-COR-01-001	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-06 12:00	Sample Team Initials	AP

Sample Collected? Y
X 422994.773 m
Y 5401668 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	Angular rock from road cut above	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles and boulders
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly, silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments collocated with SDU-08-XRF-04. collect 1 liter of sediment from this depth

Sample Collected from Station

Sample Id	SDU-08-COR-01-001	Decision Unit	Sediment Decision Unit 8
Sample Date Time	2015-05-06 12:00	Collection Method	COR
Initials on CoC	AP	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-08-COR-01-001

2015-05-06-12-12-25_SDU-08-COR-01-001_TECK3.JPG



1-3

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COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-08-COR-01-002	Start Depth	15 cm
Station Type	Primary	End Depth	30 cm
Collection DateTime	2015-05-06 12:05	Sample Team Initials	AP
Sample Collected?	Y		
X	422994.773 m		
Y	5401668 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	Angular rock from road cut above	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles and boulders
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly, silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments collocated with SDU-08-XRF-04. Collect 1 liter of sediment from this depth

Sample Collected from Station

Sample Id	SDU-08-COR-01-002	Decision Unit	Sediment Decision Unit 8
Sample Date Time	2015-05-06 12:05	Collection Method	COR
Initials on CoC	AP	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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Bossburg Flat Beach Refined Sediment and Soil Study



Photos Collected from Station SDU-08-COR-01-002

2015-05-06-12-12-25_SDU-08-COR-01-001_TECK3.JPG



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Station Id	SDU-08-COR-01-003	Start Depth	30 cm
Station Type	Primary	End Depth	45 cm
Collection DateTime	2015-05-06 12:10	Sample Team Initials	AP
Sample Collected?	Y		
X	422994.773 m		
Y	5401668 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	Angular rock from road cut above	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles and boulders
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly, silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments collocated with SDU-XRF-04. collect 1 liter of sediment from this depth

Sample Collected from Station

Sample Id	SDU-08-COR-01-003	Decision Unit	Sediment Decision Unit 8
Sample Date Time	2015-05-06 12:10	Collection Method	COR
Initials on CoC	AP	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-08-COR-01-003

2015-05-06-12-12-25_SDU-08-COR-01-001_TECK3.JPG



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Station Id	SDU-08-COR-02-001	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-06 13:40	Sample Team Initials	AP

Sample Collected? Y
X 423032.4236 m
Y 5401708.0319 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	Angular rock from road cut above	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles and boulders
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand with cobbles and boulders	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments collocated with SDU-08-XRF-R03. collect 1 liter of sediment from this depth

Sample Collected from Station

Sample Id	SDU-08-COR-02-001	Decision Unit	Sediment Decision Unit 8
Sample Date Time	2015-05-06 13:40	Collection Method	COR
Initials on CoC	AP	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-08-COR-02-001

2015-05-12-08-49-38_SDU-08-COR-02-001_1619LP-WA70043.JPG



Site overview

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COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-08-COR-02-002	Start Depth	15 cm
Station Type	Primary	End Depth	30 cm
Collection DateTime	2015-05-06 13:45	Sample Team Initials	AP
Sample Collected?	Y		
X	423032.4236 m		
Y	5401708.0319 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	Angular rock from road cut above	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles and boulders
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand with cobbles and boulders	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments collocated with SDU-08-XRF-R03. Collect 2 liters of soil from this depth.

Sample Collected from Station

Sample Id	SDU-08-COR-02-002	Decision Unit	Sediment Decision Unit 8
Sample Date Time	2015-05-06 13:45	Collection Method	COR
Initials on CoC	AP	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
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Photos Collected from Station SDU-08-COR-02-002

2015-05-12-08-49-38_SDU-08-COR-02-002_1619LP-WA70043.JPG



Site overview

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COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-08-COR-02-003	Start Depth	30 cm
Station Type	Primary	End Depth	45 cm
Collection DateTime	2015-05-06 13:50	Sample Team Initials	AP
Sample Collected?	Y		
X	423032.4236 m		
Y	5401708.0319 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	Angular rocks from road cut above	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles and boulders
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand with cobbles and boulders	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments colocated with SDU-08-XRF-R03. collect 1 liter of sediment from this depth

Sample Collected from Station

Sample Id	SDU-08-COR-02-003	Decision Unit	Sediment Decision Unit 8
Sample Date Time	2015-05-06 13:50	Collection Method	COR
Initials on CoC	AP	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-08-COR-02-003

2015-05-12-08-49-38_SDU-08-COR-02-003_1619LP-WA70043.JPG



Site overview

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COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-08-COR-03-001	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-06 13:05	Sample Team Initials	AP
Sample Collected?	Y		
X	423209.273 m		
Y	5401902 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	Angular rock from road cut above	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles and boulders
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	60	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly, silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments collocated with SDU-08-XRF-01. collect 2 liters of sediment from this depth

Sample Collected from Station

Sample Id	SDU-08-COR-03-001	Decision Unit	Sediment Decision Unit 8
Sample Date Time	2015-05-06 13:05	Collection Method	COR
Initials on CoC	AP	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station SDU-08-COR-03-001

2015-05-12-08-22-42_SDU-08-COR-03-001_1619LP-WA70043.JPG



Site overview

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2015-05-06-13-16-03_SDU-08-COR-03-001_TECK3.JPG



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COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-08-COR-03-002	Start Depth	15 cm
Station Type	Primary	End Depth	30 cm
Collection DateTime	2015-05-06 13:10	Sample Team Initials	AP
Sample Collected?	Y		
X	423209.273 m		
Y	5401902 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	Angular rocks from road cut above	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles and boulders
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	60	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments collocated with SDU-08-XRF-01. collect 1 liter of sediment from this depth.

Sample Collected from Station

Sample Id	SDU-08-COR-03-002	Decision Unit	Sediment Decision Unit 8
Sample Date Time	2015-05-06 13:10	Collection Method	COR
Initials on CoC	AP	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Photos Collected from Station SDU-08-COR-03-002

2015-05-06-13-16-04_SDU-08-COR-03-002_1619LP-WA70047.JPG

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2015-05-12-08-22-42_SDU-08-COR-03-002_1619LP-WA70043.JPG



Site overview

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COR Sample Collection Report
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Station Id	SDU-08-COR-03-003	Start Depth	30 cm
Station Type	Primary	End Depth	45 cm
Collection DateTime	2015-05-06 13:15	Sample Team Initials	AP
Sample Collected?	Y		
X	423209.273 m		
Y	5401902 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	Angular rocks from road cut above	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Cobbles and boulders
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	60	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments collocated with SDU-08-XRF-01. collect 1 liter of sediment from this depth

Sample Collected from Station

Sample Id	SDU-08-COR-03-003	Decision Unit	Sediment Decision Unit 8
Sample Date Time	2015-05-06 13:15	Collection Method	COR
Initials on CoC	AP	Matrix	Sediment
Sample Split	Field	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Photos Collected from Station SDU-08-COR-03-003

2015-05-06-13-16-04_SDU-08-COR-03-003_1619LP-WA70047.JPG

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2015-05-12-08-22-42_SDU-08-COR-03-003_1619LP-WA70043.JPG



Site overview

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-09-COR-01-001	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Sample not collected due to cultural concerns with sampling at depth.

Sample Collected from Station

Sample Id	SDU-09-COR-01-001	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	COR
Initials on CoC		Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments			

Photos Collected from Station SDU-09-COR-01-001

No photos taken at this station. See station comments for more details.

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-09-COR-01-002	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Sample not collected due to cultural concerns with sampling at depth.

Sample Collected from Station

Sample Id	SDU-09-COR-01-002	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	COR
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Photos Collected from Station SDU-09-COR-01-002

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09-COR-01-003	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Sample not collected due to cultural concerns with sampling at depth.

Sample Collected from Station

Sample Id	SDU-09-COR-01-003	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	COR
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Photos Collected from Station SDU-09-COR-01-003

No photos taken at this station. See station comments for more details.

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-09-COR-02-001	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Sample not collected due to cultural concerns with sampling at depth.

Sample Collected from Station

Sample Id	SDU-09-COR-02-001	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	COR
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Photos Collected from Station SDU-09-COR-02-001

No photos taken at this station. See station comments for more details.

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-09-COR-02-002	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984

Station Comments Sample not collected due to cultural concerns with sampling at depth.

Sample Collected from Station

Sample Id	SDU-09-COR-02-002	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	COR
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Photos Collected from Station SDU-09-COR-02-002

No photos taken at this station. See station comments for more details.

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-09-COR-02-003	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Sample not collected due to cultural concerns with sampling at depth.

Sample Collected from Station

Sample Id	SDU-09-COR-02-003	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	COR
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Photos Collected from Station SDU-09-COR-02-003

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09-COR-03-001	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Sample not collected due to cultural concerns with sampling at depth.

Sample Collected from Station

Sample Id	SDU-09-COR-03-001	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	COR
Initials on CoC		Matrix	Sediment
Sample Split	Field	Replicate	No Replicate
Sample Comments			

Photos Collected from Station SDU-09-COR-03-001

No photos taken at this station. See station comments for more details.

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	SDU-09-COR-03-002	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Sample not collected due to cultural concerns with sampling at depth.

Sample Collected from Station

Sample Id	SDU-09-COR-03-002	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	COR
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Photos Collected from Station SDU-09-COR-03-002

No photos taken at this station. See station comments for more details.

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Station Id	SDU-09-COR-03-003	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Sample not collected due to cultural concerns with sampling at depth.

Sample Collected from Station

Sample Id	SDU-09-COR-03-003	Decision Unit	Sediment Decision Unit 9
Sample Date Time		Collection Method	COR
Initials on CoC		Matrix	Sediment
Sample Split	Field	Replicate	No Replicate
Sample Comments			

Photos Collected from Station SDU-09-COR-03-003

No photos taken at this station. See station comments for more details.

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COR Sample Collection Report
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Station Id	UDU-01-COR-01-001	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-18 8:35	Sample Team Initials	AP

Sample Collected? Y
X 422981.0435 m
Y 5400905.2351 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with clay	Vegetation Present?	Y
Vegetation Type if Present	Grass and pine tree		

Station Comments 1 liter collected from this interval, associated with UDU-01-XRF-04.

Sample Collected from Station

Sample Id	UDU-01-COR-01-001	Decision Unit	Soil Decision Unit 1
Sample Date Time	2015-04-18 8:35	Collection Method	COR
Initials on CoC	AP	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-01-COR-01-001

2015-04-18-08-40-10_UDU-01-COR-01-001_1619LP-WA70047.JPG



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COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-01-COR-01-002	Start Depth	15 cm
Station Type	Primary	End Depth	30 cm
Collection DateTime	2015-04-18 8:55	Sample Team Initials	AP
Sample Collected?	Y		
X	422981.0435 m		
Y	5400905.2351 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with trace clay and fine rounded gravel	Vegetation Present?	Y
Vegetation Type if Present	Grass and pine tree		

Station Comments 1 liter of soil collected from this depth. A discrete GPS coordinate was not recorded for this sample, as it was collected from the same borehole as sample UDU-01-COR-001.

Sample Collected from Station

Sample Id	UDU-01-COR-01-002	Decision Unit	Soil Decision Unit 1
Sample Date Time	2015-04-18 8:55	Collection Method	COR
Initials on CoC	AP	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-01-COR-01-002

2015-04-18-08-47-37_UDU-01-COR-01-002_TECK1.JPG



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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-01-COR-01-003	Start Depth	30 cm
Station Type	Primary	End Depth	45 cm
Collection DateTime	2015-04-18 9:11	Sample Team Initials	AP
Sample Collected?	Y		
X	422981.0435 m		
Y	5400905.2351 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly fine sand with trace medium to coarse sand, and trace silt.	Vegetation Present?	Y
Vegetation Type if Present	Grass and pine trees		

Station Comments Collect 1 liter of sample for this depth. GPS coordinates for this sample are associated with sample UDU-01-COR-001, as this sample was collected from the same borehole.

Sample Collected from Station

Sample Id	UDU-01-COR-01-003	Decision Unit	Soil Decision Unit 1
Sample Date Time	2015-04-18 9:11	Collection Method	COR
Initials on CoC	AP	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-01-COR-01-003

2015-04-18-09-06-37_UDU-01-COR-01-003_TECK1.JPG



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Station Id	UDU-01-COR-02-001	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-18 9:57	Sample Team Initials	AP

Sample Collected? Y
X 423001.1434 m
Y 5400868.5384 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with clay and trace fine rounded gravel	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments 1 liter of soil was collected for this sample. The GPS coordinates for this sample are also representative for the deeper samples, as they were collected from the same borehole.

Sample Collected from Station

Sample Id	UDU-01-COR-02-001	Decision Unit	Soil Decision Unit 1
Sample Date Time	2015-04-18 9:57	Collection Method	COR
Initials on CoC	AP	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-01-COR-02-001

2015-04-18-09-33-03_UDU-01-COR-02-001_TECK1.JPG



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2015-04-18-09-20-05_UDU-01-COR-02-001_TECK1.JPG



ground surface

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-01-COR-02-002	Start Depth	15 cm
Station Type	Primary	End Depth	30 cm
Collection DateTime	2015-04-18 9:49	Sample Team Initials	AP

Sample Collected? Y
X 423001.1434 m
Y 5400868.5384 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with clay	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments 2 liters were collected from this depth interval per the QAPP. GPS coordinates for this sample are associated with the coordinates for UDU-01-COR-02-001, as they were collected from the same borehole.

Sample Collected from Station

Sample Id	UDU-01-COR-02-002	Decision Unit	Soil Decision Unit 1
Sample Date Time	2015-04-18 9:49	Collection Method	COR
Initials on CoC	AP	Matrix	Soil
Sample Split	EPA	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
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Photos Collected from Station UDU-01-COR-02-002

2015-04-18-09-46-00_UDU-01-COR-02-002_TECK1.JPG



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COR Sample Collection Report
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Station Id	UDU-01-COR-02-003	Start Depth	30 cm
Station Type	Primary	End Depth	45 cm
Collection DateTime	2015-04-18 10:02	Sample Team Initials	AP
Sample Collected?	Y		
X	423001.1434 m		
Y	5400868.5384 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with trace clay and trace fine rounded gravel	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments 1 liter was collected for this sample. The GPS coordinates for UDU-01-COR-02-001 are representative of this sample, as they were collected from the same borehole.

Sample Collected from Station

Sample Id	UDU-01-COR-02-003	Decision Unit	Soil Decision Unit 1
Sample Date Time	2015-04-18 10:02	Collection Method	COR
Initials on CoC	AP	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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Photos Collected from Station UDU-01-COR-02-003

2015-04-18-09-46-26_UDU-01-COR-02-003_TECK1.JPG



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COR Sample Collection Report
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Station Id	UDU-01-COR-03-001	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-18 10:30	Sample Team Initials	AP

Sample Collected? Y
X 422931.66 m
Y 5400916.77 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	50
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with trace silt and trace fine rounded gravel	Vegetation Present?	Y
Vegetation Type if Present	Grass and pine trees		

Station Comments 2 liters were collected for this sample per the QAPP. GPS coordinates for this sample are representative of the deeper samples, as they were collected from the same borehole.

Sample Collected from Station

Sample Id	UDU-01-COR-03-001	Decision Unit	Soil Decision Unit 1
Sample Date Time	2015-04-18 10:30	Collection Method	COR
Initials on CoC	AP	Matrix	Soil
Sample Split	EPA	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-01-COR-03-001

2015-04-18-10-26-54_UDU-01-COR-03-001_1619LP-WA70047.JPG



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2015-04-18-10-13-06_UDU-01-COR-03-001_TECK1.JPG



2015-04-18-10-27-20_UDU-01-COR-03-001_TECK1.JPG



view north

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COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-01-COR-03-002	Start Depth	15 cm
Station Type	Primary	End Depth	30 cm
Collection DateTime	2015-04-18 10:33	Sample Team Initials	AP
Sample Collected?	Y		
X	422931.66 m		
Y	5400916.77 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	50
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with trace silt and trace fine rounded gravel	Vegetation Present?	Y
Vegetation Type if Present	Grass and pine trees		

Station Comments 1 liter of soil was collected for this sample. GPS coordinates for UDU-01-COR-03-001 are representative of this sample, as they were collected from the same borehole.

Sample Collected from Station

Sample Id	UDU-01-COR-03-002	Decision Unit	Soil Decision Unit 1
Sample Date Time	2015-04-18 10:33	Collection Method	COR
Initials on CoC	AP	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-01-COR-03-002

2015-04-18-10-27-02_UDU-01-COR-03-002_1619LP-WA70047.JPG



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COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-01-COR-03-003	Start Depth	30 cm
Station Type	Primary	End Depth	45 cm
Collection DateTime	2015-04-18 10:37	Sample Team Initials	AP

Sample Collected? Y
X 422931.66 m
Y 5400916.77 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	50
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	Y	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with trace clay	Vegetation Present?	Y
Vegetation Type if Present	Grass and pine trees		

Station Comments 1 liter of soil was collected for this sample. GPS coordinates for UDU-01-COR-03-001 are representative of this sample, as they were collected from the same borehole.

Sample Collected from Station

Sample Id	UDU-01-COR-03-003	Decision Unit	Soil Decision Unit 1
Sample Date Time	2015-04-18 10:37	Collection Method	COR
Initials on CoC	AP	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-01-COR-03-003

2015-04-18-10-27-07_UDU-01-COR-03-003_TECK1.JPG



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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-02-COR-01-001	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-20 8:39	Sample Team Initials	AP

Sample Collected? Y
X 422931.7268 m
Y 5400870.792 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with clay, high % organic material	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments GPS coordinates recorded in Arc Pad need to be moved 1 meter west. GPS coordinates for this sample (001) are representative for all COR-01 samples, as they were collected from the same borehole. 2 liters of soil were collected for this depth per the QAPP.

Sample Collected from Station

Sample Id	UDU-02-COR-01-001	Decision Unit	Soil Decision Unit 2
Sample Date Time	2015-04-20 8:39	Collection Method	COR
Initials on CoC	AP	Matrix	Soil
Sample Split	EPA	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-02-COR-01-001

2015-04-20-08-31-58_UDU-02-COR-01-001_TECK1.JPG



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2015-04-20-08-15-09_UDU-02-COR-01-001_TECK1.JPG



delete

2015-04-20-08-10-15_UDU-02-COR-01-001_TECK1.JPG



ground surface

Appendix I
COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study

Station Id	UDU-02-COR-01-002	Start Depth	15 cm
Station Type	Primary	End Depth	30 cm
Collection DateTime	2015-04-20 8:46	Sample Team Initials	AP
Sample Collected?	Y		
X	422931.7268 m		
Y	5400870.792 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with trace silt and clay	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments GPS coordinates for interval 001 (15cm) are representative for this interval, as they were collected from the same borehole. 1 liter collected for this sample.

Sample Collected from Station

Sample Id	UDU-02-COR-01-002	Decision Unit	Soil Decision Unit 2
Sample Date Time	2015-04-20 8:46	Collection Method	COR
Initials on CoC	AP	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-02-COR-01-002

2015-04-20-08-32-26_UDU-02-COR-01-002_TECK1.JPG



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COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-02-COR-01-003	Start Depth	30 cm
Station Type	Primary	End Depth	45 cm
Collection DateTime	2015-04-20 8:49	Sample Team Initials	AP
Sample Collected?	Y		
X	422931.7268 m		
Y	5400870.792 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with trace silt and clay	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments GPS coordinates for interval 001 (15cm) are representative of this sample, as they were collected from the same borehole. 1 liter of soil collected for this sample.

Sample Collected from Station

Sample Id	UDU-02-COR-01-003	Decision Unit	Soil Decision Unit 2
Sample Date Time	2015-04-20 8:49	Collection Method	COR
Initials on CoC	AP	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-02-COR-01-003

2015-04-20-08-32-42_UDU-02-COR-01-003_TECK1.JPG



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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-02-COR-02-001	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-20 9:25	Sample Team Initials	AP

Sample Collected? Y
X 422966.7268 m
Y 5400870.792 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 4/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with trace silt and clay, high % organic material	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments GPS coordinates for this interval (15cm) are representative for all deeper intervals, as they were collected from the same borehole. Slightly less than 1 liter collected for this sample due to high % of organic material

Sample Collected from Station

Sample Id	UDU-02-COR-02-001	Decision Unit	Soil Decision Unit 2
Sample Date Time	2015-04-20 9:25	Collection Method	COR
Initials on CoC	AP	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-02-COR-02-001

2015-04-20-09-19-27_UDU-02-COR-02-001_TECK1.JPG



ground surface

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-20-09-19-54_UDU-02-COR-02-001_TECK1.JPG



2015-04-20-09-21-13_UDU-02-COR-02-001_TECK1.JPG



view north

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COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-02-COR-02-002	Start Depth	15 cm
Station Type	Primary	End Depth	30 cm
Collection DateTime	2015-04-20 9:27	Sample Team Initials	AP
Sample Collected?	Y		
X	422966.7268 m		
Y	5400870.792 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with trace silt and clay, trace rounded fine gravel	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments GPS coordinates for interval 001 (15 cm) are also representative for this sample, as they were collected from the same borehole. Collec 1 liter of soil for this sample

Sample Collected from Station

Sample Id	UDU-02-COR-02-002	Decision Unit	Soil Decision Unit 2
Sample Date Time	2015-04-20 9:27	Collection Method	COR
Initials on CoC	AP	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
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Photos Collected from Station UDU-02-COR-02-002

2015-04-20-09-20-18_UDU-02-COR-02-002_TECK1.JPG



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COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study

Station Id	UDU-02-COR-02-003	Start Depth	30 cm
Station Type	Primary	End Depth	45 cm
Collection DateTime	2015-04-20 9:32	Sample Team Initials	AP
Sample Collected?	Y		
X	422966.7268 m		
Y	5400870.792 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with trace silt and clay, trace fine rounded gravel	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments GPS coordinates for interval 001 (15cm) is representative of this sample, as it was collected from the same borehole. Collect 1 liter of soil for this sample.

Sample Collected from Station

Sample Id	UDU-02-COR-02-003	Decision Unit	Soil Decision Unit 2
Sample Date Time	2015-04-20 9:32	Collection Method	COR
Initials on CoC	AP	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-02-COR-02-003

2015-04-20-09-20-58_UDU-02-COR-02-003_TECK1.JPG



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COR Sample Collection Report
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Station Id	UDU-02-COR-03-001	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-20 10:20	Sample Team Initials	AP
Sample Collected?	Y		
X	422973.6454 m		
Y	5400848.5776 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	Possible, slight depression in field	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with trace silt and clay, high % organic material	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments GPS coordinates for this sample interval (15cm) is representative for deeper samples, as they were collected from the same borehole. collect 1 liter of soil for this sample

Sample Collected from Station

Sample Id	UDU-02-COR-03-001	Decision Unit	Soil Decision Unit 2
Sample Date Time	2015-04-20 10:20	Collection Method	COR
Initials on CoC	AP	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-02-COR-03-001

2015-04-20-09-59-39_UDU-02-COR-03-001_TECK1.JPG



ground surface

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-20-09-59-55_UDU-02-COR-03-001_TECK1.JPG



2015-04-20-10-00-29_UDU-02-COR-03-001_TECK1.JPG



view north

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COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-02-COR-03-002	Start Depth	15 cm
Station Type	Primary	End Depth	30 cm
Collection DateTime	2015-04-20 10:25	Sample Team Initials	AP
Sample Collected?	Y		
X	422973.6454 m		
Y	5400848.5776 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	Possibly, location is in a depression in open field
Biological Visual Presence	N
Cultural Oversight Inspection Conducted?	Y
Odor	N
Percent Ground Coverage	100
Shells Presence	N
Surface Debris Present?	N
Texture	Fine sand with trace silt and clay, trace rounded gravel
Vegetation Type if Present	Grass

Anthropogenic Changes Present?	N
Color	10YR 4/2
Debris Presence	N
Percent Canopy Coverage	0
Sheen Presence	N
Substrate Type	Soil
Surface Debris Removed Prior to Sampling?	N
Vegetation Present?	Y

Station Comments GPS coordinates for sample interval 001 (15cm) is representative for this sample. as they were collected from the same borehole.

Sample Collected from Station

Sample Id	UDU-02-COR-03-002	Decision Unit	Soil Decision Unit 2
Sample Date Time	2015-04-20 10:25	Collection Method	COR
Initials on CoC	AP	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-02-COR-03-002

2015-04-20-10-00-05_UDU-02-COR-03-002_TECK1.JPG



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Station Id	UDU-02-COR-03-003	Start Depth	30 cm
Station Type	Primary	End Depth	45 cm
Collection DateTime	2015-04-20 10:27	Sample Team Initials	AP
Sample Collected?	Y		
X	422973.6454 m		
Y	5400848.5776 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	Possibly, sample is located in a depression in open field	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/3
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with trace silt and rounded gravel	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments GPS coordinates for interval 001 (15cm) is representative of this sample, as they were collected from the same borehole.

Sample Collected from Station

Sample Id	UDU-02-COR-03-003	Decision Unit	Soil Decision Unit 2
Sample Date Time	2015-04-20 10:27	Collection Method	COR
Initials on CoC	AP	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-02-COR-03-003

2015-04-20-10-00-16_UDU-02-COR-03-003_TECK1.JPG



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Station Id	UDU-03-COR-01-001	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-25 11:24	Sample Team Initials	MV
Sample Collected?	Y		
X	422896.7268 m		
Y	5400800.792 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Present?	N	Biological Visual Presence	N
Color	10YR 3/1	Cultural Oversight Inspection Conducted?	Y
Debris Presence	N	Odor	N
Percent Canopy Coverage	0	Percent Ground Coverage	100
Sheen Presence	N	Shells Presence	N
Substrate Type	Soil	Surface Debris Present?	N
Surface Debris Removed Prior to Sampling?	N	Texture	Fine sand and trace coars gravel
Vegetation Present?	Y	Vegetation Type if Present	Grass
Station Comments	UDU-03-XRF-07		

Sample Collected from Station

Sample Id	UDU-03-COR-01-001	Decision Unit	Soil Decision Unit 3
Sample Date Time	2015-04-25 11:24	Collection Method	COR
Initials on CoC	MV	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-03-COR-01-001

2015-04-25-11-48-18_UDU-03-COR-01-001_TECK2.JPG



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Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-03-COR-01-002	Start Depth	15 cm
Station Type	Primary	End Depth	30 cm
Collection DateTime	2015-04-25 11:32	Sample Team Initials	MV
Sample Collected?	Y		
X	422896.7268 m		
Y	5400800.792 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand, trace coarse gravel	Vegetation Present?	Y
Vegetation Type if Present	Grass		
Station Comments	UDU-03-XRF-07		

Sample Collected from Station

Sample Id	UDU-03-COR-01-002	Decision Unit	Soil Decision Unit 3
Sample Date Time	2015-04-25 11:32	Collection Method	COR
Initials on CoC	MV	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-03-COR-01-002

2015-04-25-11-49-18_UDU-03-COR-01-002_TECK2.JPG



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Station Id	UDU-03-COR-01-003	Start Depth	30 cm
Station Type	Primary	End Depth	45 cm
Collection DateTime	2015-04-25 11:38	Sample Team Initials	MV
Sample Collected?	Y		
X	422896.7268 m		
Y	5400800.792 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/4
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine silty sand	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments UDU-03-XRF-07

Sample Collected from Station

Sample Id	UDU-03-COR-01-003	Decision Unit	Soil Decision Unit 3
Sample Date Time	2015-04-25 11:38	Collection Method	COR
Initials on CoC	MV	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-03-COR-01-003

2015-04-25-11-50-49_UDU-03-COR-01-003_TECK2.JPG



CORE SITE

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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-25-11-51-00_UDU-03-COR-01-003_TECK2.JPG



2015-04-25-11-50-09_UDU-03-COR-01-003_TECK2.JPG



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COR Sample Collection Report
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Station Id	UDU-03-COR-02-001	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-24 16:26	Sample Team Initials	AP

Sample Collected? Y
X 422879.2268 m
Y 5400765.792 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with silt and trace clay, high % organic material	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments this core sample is collocated with UDU-03-XRF-01.

Sample Collected from Station

Sample Id	UDU-03-COR-02-001	Decision Unit	Soil Decision Unit 3
Sample Date Time	2015-04-24 16:26	Collection Method	COR
Initials on CoC	AP	Matrix	Soil
Sample Split	Field	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Photos Collected from Station UDU-03-COR-02-001

2015-04-24-16-22-13_UDU-03-COR-02-001_TECK1.JPG



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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-03-COR-02-002	Start Depth	15 cm
Station Type	Primary	End Depth	30 cm
Collection DateTime	2015-04-24 16:30	Sample Team Initials	AP

Sample Collected? Y
X 422879.2268 m
Y 5400765.792 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence Some bioturbation
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 100
Shells Presence N
Surface Debris Present? N
Texture Fine sand with silt and trace fine rounded gravel
Vegetation Type if Present Grass

Anthropogenic Changes Present? N
Color 7.5YR 4/2
Debris Presence Pine duff
Percent Canopy Coverage 0
Sheen Presence N
Substrate Type Soil
Surface Debris Removed Prior to Sampling? N
Vegetation Present? Y

Station Comments this core sample is colocated with UDU-03-XRF-01. 1 liter of soil was collected from this depth

Sample Collected from Station

Sample Id	UDU-03-COR-02-002	Decision Unit	Soil Decision Unit 3
Sample Date Time	2015-04-24 16:30	Collection Method	COR
Initials on CoC	AP	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-03-COR-02-002

2015-04-24-16-22-20_UDU-03-COR-02-002_TECK1.JPG



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COR Sample Collection Report
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Station Id	UDU-03-COR-02-003	Start Depth	30 cm
Station Type	Primary	End Depth	45 cm
Collection DateTime	2015-04-24 16:35	Sample Team Initials	AP
Sample Collected?	Y		
X	422879.2268 m		
Y	5400765.792 m		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Some bioturbation	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with silt	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments this core sample is colocated with UDU-03-XRF-01. 1 liter of soil was collected from this depth

Sample Collected from Station

Sample Id	UDU-03-COR-02-003	Decision Unit	Soil Decision Unit 3
Sample Date Time	2015-04-24 16:35	Collection Method	COR
Initials on CoC	AP	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-03-COR-02-003

2015-04-24-16-22-24_UDU-03-COR-02-003_TECK1.JPG



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COR Sample Collection Report
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Station Id	UDU-03-COR-03-001	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-24 15:38	Sample Team Initials	AP

Sample Collected? Y
X 422844.2268 m
Y 5400835.792 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description N
Biological Visual Presence Some bioturbation nearby
Cultural Oversight Inspection Conducted? Y
Odor N
Percent Ground Coverage 100
Shells Presence N
Surface Debris Present? N
Texture Fine sand with silt
Vegetation Type if Present Grass and pine trees

Anthropogenic Changes Present? N
Color 10YR 3/2
Debris Presence Pine duff
Percent Canopy Coverage 60
Sheen Presence N
Substrate Type Soil
Surface Debris Removed Prior to Sampling? N
Vegetation Present? Y

Station Comments This core sample is colocated with UDU-03-XRF-04.

Sample Collected from Station

Sample Id	UDU-03-COR-03-001	Decision Unit	Soil Decision Unit 3
Sample Date Time	2015-04-24 15:38	Collection Method	COR
Initials on CoC	AP	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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Photos Collected from Station UDU-03-COR-03-001

2015-04-24-15-34-02_UDU-03-COR-03-001_1619LP-WA70047.JPG



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Bossburg Flat Beach Refined Sediment and Soil Study

Station Id	UDU-03-COR-03-002	Start Depth	15 cm
Station Type	Primary	End Depth	30 cm
Collection DateTime	2015-04-24 15:38	Sample Team Initials	AP
Sample Collected?	Y		
X	422844.2268 m		
Y	5400835.792 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Some bioturbation nearby	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	60
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with clay, trace organic material	Vegetation Present?	Y
Vegetation Type if Present	Grass and pine trees		

Station Comments This core sample is colocated with UDU-03-XRF-04.

Sample Collected from Station

Sample Id	UDU-03-COR-03-002	Decision Unit	Soil Decision Unit 3
Sample Date Time	2015-04-24 15:38	Collection Method	COR
Initials on CoC	AP	Matrix	Soil
Sample Split	Field	Replicate	No Replicate
Sample Comments			

Appendix I
COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-03-COR-03-002

2015-04-24-15-34-14_UDU-03-COR-03-002_TECK1.JPG



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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-03-COR-03-003	Start Depth	30 cm
Station Type	Primary	End Depth	45 cm
Collection DateTime	2015-04-24 15:38	Sample Team Initials	AP
Sample Collected?	Y		
X	422844.2268 m		
Y	5400835.792 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	Some bioturbation nearby	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	60
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Fine sand with clay	Vegetation Present?	Y
Vegetation Type if Present	Grass and pine trees		

Station Comments This core sample is colocated with UDU-03-XRF-04.

Sample Collected from Station

Sample Id	UDU-03-COR-03-003	Decision Unit	Soil Decision Unit 3
Sample Date Time	2015-04-24 15:38	Collection Method	COR
Initials on CoC	AP	Matrix	Soil
Sample Split	EPA	Replicate	No Replicate
Sample Comments			

Appendix I
COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-03-COR-03-003

2015-04-24-15-34-29_UDU-03-COR-03-003_TECK1.JPG



Appendix I
COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-04-COR-01-001	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-24 16:34	Sample Team Initials	MS

Sample Collected? Y
X 422861.7268 m
Y 5400870.792 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand some organic material	Vegetation Present?	Y
Vegetation Type if Present	Grasses		

Station Comments

Sample Collected from Station

Sample Id	UDU-04-COR-01-001	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-24 16:34	Collection Method	COR
Initials on CoC	MS	Matrix	Soil
Sample Split	EPA	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-04-COR-01-001

2015-04-24-16-43-56_UDU-04-COR-01-001_1619LP-WA70047.JPG



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COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-04-COR-01-002	Start Depth	15 cm
Station Type	Primary	End Depth	30 cm
Collection DateTime	2015-04-24 16:48	Sample Team Initials	MS
Sample Collected?	Y		
X	422861.7268 m		
Y	5400870.792 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	30
Percent Ground Coverage	5	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	Y	Surface Debris Removed Prior to Sampling?	Y
Texture	Fine sand	Vegetation Present?	Y
Vegetation Type if Present	Mock orange, snow berry		

Station Comments

Sample Collected from Station

Sample Id	UDU-04-COR-01-002	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-24 16:48	Collection Method	COR
Initials on CoC	MS	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-04-COR-01-002

2015-04-24-16-44-12_UDU-04-COR-01-002_1619LP-WA70047.JPG



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COR Sample Collection Report
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Station Id	UDU-04-COR-01-003	Start Depth	30 cm
Station Type	Primary	End Depth	37 cm
Collection DateTime	2015-04-24 16:45	Sample Team Initials	MS
Sample Collected?	Y		
X	422861.7268 m		
Y	5400870.792 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	50
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	Y	Surface Debris Removed Prior to Sampling?	Y
Texture	Silty fine sand	Vegetation Present?	Y
Vegetation Type if Present	Pine needles		
Station Comments	refusal at 14.5 inches (37 cm)		

Sample Collected from Station

Sample Id	UDU-04-COR-01-003	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-24 16:45	Collection Method	COR
Initials on CoC	MS	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-04-COR-01-003

2015-04-24-16-39-18_UDU-04-COR-01-003_1619LP-WA70047.JPG



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COR Sample Collection Report
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2015-04-24-16-44-28_UDU-04-COR-01-003_1619LP-WA70047.JPG



2015-04-25-09-36-32_UDU-04-COR-01-003_TECK2.JPG



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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-04-COR-02-001	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-25 8:26	Sample Team Initials	MV

Sample Collected? Y
X 422879.2268 m
Y 5400905.792 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description Mounded area to west of ferry landing road

Biological Visual Presence N

Cultural Oversight Inspection Conducted? Y

Odor N

Percent Ground Coverage 10

Shells Presence N

Surface Debris Present? Y

Texture Fine silt and organic material

Vegetation Type if Present Mock orange, snow berry

Station Comments 3"DUFF, UDU-04-XRF-02

Anthropogenic Changes Present? Y

Color 10YR 4/2

Debris Presence N

Percent Canopy Coverage 50

Sheen Presence N

Substrate Type Soil

Surface Debris Removed Prior to Sampling? Y

Vegetation Present? Y

Sample Collected from Station

Sample Id	UDU-04-COR-02-001	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-25 8:26	Collection Method	COR
Initials on CoC		Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-04-COR-02-001

2015-04-25-08-27-49_UDU-04-COR-02-001_TECK2.JPG



OVERVIEW

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-25-08-29-46_UDU-04-COR-02-001_TECK2.JPG



SAMPLE

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COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-04-COR-02-002	Start Depth	15 cm
Station Type	Primary	End Depth	30 cm
Collection DateTime	2015-04-25 8:50	Sample Team Initials	MV
Sample Collected?	Y		
X	422879.2268 m		
Y	5400905.792 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Present?	N	Biological Visual Presence	N
Color	10YR 4/2	Cultural Oversight Inspection Conducted?	Y
Debris Presence	Duff	Odor	N
Percent Canopy Coverage	30	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	Y	Surface Debris Removed Prior to Sampling?	Y
Texture	Fine silt fine minor coarse sand little fine to coarse gravel, minor organic material	Vegetation Present?	Y
Vegetation Type if Present	Mock orange snow berry.		

Station Comments UDU-04-XRF-02. THIS LOG IS CORRECT FOR UDU-04-COR-02-002. MV 4/26/15

Sample Collected from Station

Sample Id	UDU-04-COR-02-002	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-25 8:50	Collection Method	COR
Initials on CoC	MV	Matrix	Soil
Sample Split	EPA	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-04-COR-02-002

2015-04-25-08-47-58_UDU-04-COR-02-002_TECK2.JPG



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COR Sample Collection Report
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Station Id	UDU-04-COR-02-003	Start Depth	30 cm
Station Type	Primary	End Depth	45 cm
Collection DateTime	2015-04-25 9:30	Sample Team Initials	MV
Sample Collected?	Y		
X	422879.2268 m		
Y	5400905.792 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Present?	N	Biological Visual Presence	N
Color	10YR 3/2	Cultural Oversight Inspection Conducted?	Y
Debris Presence	N	Odor	N
Percent Canopy Coverage	30	Percent Ground Coverage	5
Sheen Presence	N	Shells Presence	N
Substrate Type	Soil	Surface Debris Present?	Y
Surface Debris Removed Prior to Sampling?	Y	Texture	Fine to coarse sand little fine to coarse gravel trace silt
Vegetation Present?	Y	Vegetation Type if Present	Mock orange, snow berry
Station Comments	TROUBLE COLLECTING 12-18" SAMPLE DUE TO ROCKS		

Sample Collected from Station

Sample Id	UDU-04-COR-02-003	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-25 9:30	Collection Method	COR
Initials on CoC	MV	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Photos Collected from Station UDU-04-COR-02-003

2015-04-25-09-36-34_UDU-04-COR-02-003_1619LP-WA70047.JPG

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2015-04-25-09-45-24_UDU-04-COR-02-003_TECK2.JPG



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Station Id	UDU-04-COR-03-001	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-25 10:13	Sample Team Initials	MV

Sample Collected? Y
X 422879.2268 m
Y 5400835.792 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Present?	N	Biological Visual Presence	N
Color	10YR 4/1	Cultural Oversight Inspection Conducted?	Y
Debris Presence	N	Odor	N
Percent Canopy Coverage	0	Percent Ground Coverage	100
Sheen Presence	N	Shells Presence	N
Substrate Type	Soil	Surface Debris Present?	N
Surface Debris Removed Prior to Sampling?	N	Texture	Fine sand, trace gravel
Vegetation Present?	Y	Vegetation Type if Present	Grass
Station Comments	UDU-04-XRF-05		

Sample Collected from Station

Sample Id	UDU-04-COR-03-001	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-25 10:13	Collection Method	COR
Initials on CoC	MV	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

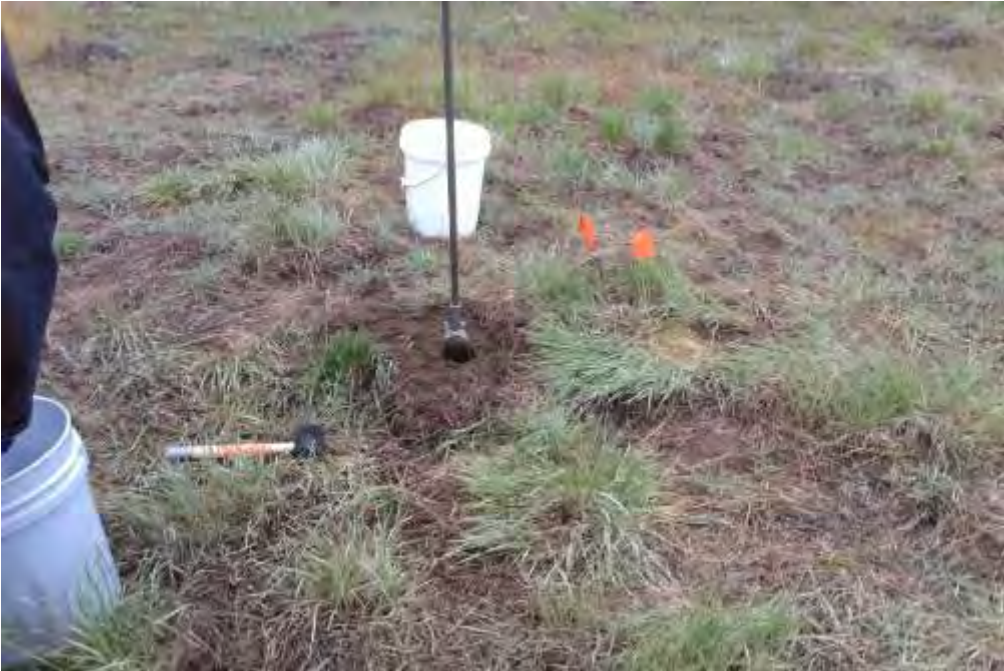
Photos Collected from Station UDU-04-COR-03-001

2015-04-25-10-29-30_UDU-04-COR-03-001_TECK2.JPG



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2015-04-25-10-11-02_UDU-04-COR-03-001_TECK2.JPG



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COR Sample Collection Report
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Station Id	UDU-04-COR-03-002	Start Depth	15 cm
Station Type	Primary	End Depth	30 cm
Collection DateTime	2015-04-25 10:18	Sample Team Initials	MV
Sample Collected?	Y		
X	422879.2268 m		
Y	5400835.792 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silt and fine coarse sand	Vegetation Present?	Y
Vegetation Type if Present	Grass		

Station Comments UDU-04-XRF-05

Sample Collected from Station

Sample Id	UDU-04-COR-03-002	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-25 10:18	Collection Method	COR
Initials on CoC	MV	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-04-COR-03-002

2015-04-25-10-29-35_UDU-04-COR-03-002_TECK2.JPG



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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-04-COR-03-003	Start Depth	30 cm
Station Type	Primary	End Depth	45 cm
Collection DateTime	2015-04-25 10:36	Sample Team Initials	MV
Sample Collected?	Y		
X	422879.2268 m		
Y	5400835.792 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Present?	N	Biological Visual Presence	N
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Vegetation Present?	Y	Vegetation Type if Present	Grass

Station Comments UDU-04-XRF-05. SAMPLE COLLECTED FROM 12-17 INCHES DUE TO REFUSAL At 5th attempt.

Sample Collected from Station

Sample Id	UDU-04-COR-03-003	Decision Unit	Soil Decision Unit 4
Sample Date Time	2015-04-25 10:36	Collection Method	COR
Initials on CoC	MV	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-04-COR-03-003

2015-04-25-10-38-08_UDU-04-COR-03-003_TECK2.JPG



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Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-25-10-38-04_UDU-04-COR-03-003_TECK2.JPG



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COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-05-COR-01-001	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-01 13:00	Sample Team Initials	AP

Sample Collected? Y
X 423537.3996 m
Y 5401364.6772 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff and cobbles
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty clay with sand and gravel	Vegetation Present?	Y
Vegetation Type if Present	Pine and alder trees		

Station Comments collocated with UDU-05-XRF-07. collect 1 liter of soil from this depth

Sample Collected from Station

Sample Id	UDU-05-COR-01-001	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-05-01 13:00	Collection Method	COR
Initials on CoC	AP	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-05-COR-01-001

2015-05-12-08-22-04_UDU-05-COR-01-001_1619LP-WA70043.JPG



Site overview

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COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-05-COR-01-002	Start Depth	15 cm
Station Type	Primary	End Depth	30 cm
Collection DateTime	2015-05-01 13:10	Sample Team Initials	AP
Sample Collected?	Y		
X	423537.3996 m		
Y	5401364.6772 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 5/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff and cobbles
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty clay with trace fine gravel	Vegetation Present?	Y
Vegetation Type if Present	Pine and alder trees		

Station Comments colocated with UDU-05-XRF-07. Collect 2 liters of soil from this sample.

Sample Collected from Station

Sample Id	UDU-05-COR-01-002	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-05-01 13:10	Collection Method	COR
Initials on CoC	AP	Matrix	Soil
Sample Split	Field	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-05-COR-01-002

2015-05-12-08-22-04_UDU-05-COR-01-002_1619LP-WA70043.JPG



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Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-01-13-08-55_UDU-05-COR-01-002_TECK1.JPG



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COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-05-COR-01-003	Start Depth	30 cm
Station Type	Primary	End Depth	45 cm
Collection DateTime	2015-05-01 13:15	Sample Team Initials	AP
Sample Collected?	Y		
X	423537.3996 m		
Y	5401364.6772 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 5/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff and cobbles
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty clay with trace fine gravel	Vegetation Present?	Y
Vegetation Type if Present	Pine and alder trees		

Station Comments colocated with UDU-05-XRF-07. Collect 1 liter of soil from this depth

Sample Collected from Station

Sample Id	UDU-05-COR-01-003	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-05-01 13:15	Collection Method	COR
Initials on CoC	AP	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-05-COR-01-003

2015-05-12-08-22-04_UDU-05-COR-01-003_1619LP-WA70043.JPG



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Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-01-13-17-22_UDU-05-COR-01-003_TECK1.JPG



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COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-05-COR-02-001	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-01 13:55	Sample Team Initials	AP

Sample Collected? Y
X 423483.9396 m
Y 5401293.3972 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff and cobbles
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Gravelly silty clay with cobbles	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments collocated with UDU-05-XRF-02. collect 1 liter of soil from this depth.

Sample Collected from Station

Sample Id	UDU-05-COR-02-001	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-05-01 13:55	Collection Method	COR
Initials on CoC	AP	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-05-COR-02-001

2015-05-12-08-22-10_UDU-05-COR-02-001_1619LP-WA70043.JPG



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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-05-COR-02-002	Start Depth	15 cm
Station Type	Primary	End Depth	30 cm
Collection DateTime	2015-05-01 14:00	Sample Team Initials	AP
Sample Collected?	Y		
X	423483.9396 m		
Y	5401293.3972 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff and cobbles
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty clay with gravel	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments collocated with UDU-05-XRF-02. collect 1 liter of soil from this depth

Sample Collected from Station

Sample Id	UDU-05-COR-02-002	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-05-01 14:00	Collection Method	COR
Initials on CoC	AP	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-05-COR-02-002

2015-05-12-08-22-10_UDU-05-COR-02-002_1619LP-WA70043.JPG



Site overview

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COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-05-COR-02-003	Start Depth	30 cm
Station Type	Primary	End Depth	45 cm
Collection DateTime	2015-05-01 14:05	Sample Team Initials	AP
Sample Collected?	Y		
X	423483.9396 m		
Y	5401293.3972 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff and cobbles
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty clay with gravel and cobbles	Vegetation Present?	Y
Vegetation Type if Present	N		

Station Comments collocated with UDU-05-XRF-02. collect 1 liter from this depth.

Sample Collected from Station

Sample Id	UDU-05-COR-02-003	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-05-01 14:05	Collection Method	COR
Initials on CoC	AP	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

Appendix I
COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-05-COR-02-003

2015-05-12-08-22-10_UDU-05-COR-02-003_1619LP-WA70043.JPG



Site overview

Appendix I
COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-05-COR-03-001	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-01 11:40	Sample Team Initials	AP

Sample Collected? Y
X 423581.9496 m
Y 5401453.7772 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/1
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand with silt, matrix mostly organic material	Vegetation Present?	Y

Vegetation Type if Present Pine and alder trees

Station Comments colocated with UDU-05-XRF-12. collect 2 liters of soil from this depth

Sample Collected from Station

Sample Id	UDU-05-COR-03-001	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-05-01 11:40	Collection Method	COR
Initials on CoC	AP	Matrix	Soil
Sample Split	EPA	Replicate	No Replicate
Sample Comments			

Appendix I
COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-05-COR-03-001

2015-05-12-08-21-58_UDU-05-COR-03-001_1619LP-WA70043.JPG



Site overview

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-01-11-55-15_UDU-05-COR-03-001_TECK1.JPG



excavation method

2015-05-01-12-27-36_UDU-05-COR-03-001_TECK1.JPG



Appendix I
COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-05-COR-03-002	Start Depth	15 cm
Station Type	Primary	End Depth	30 cm
Collection DateTime	2015-05-01 11:50	Sample Team Initials	AP
Sample Collected?	Y		
X	423581.9496 m		
Y	5401453.7772 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 4/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Pine duff
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Very fine sand with some organic material	Vegetation Present?	Y
Vegetation Type if Present	Pine and alder trees		

Station Comments collocated with UDU-05-XRF-12. 1 liter collected from this depth.

Sample Collected from Station

Sample Id	UDU-05-COR-03-002	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-05-01 11:50	Collection Method	COR
Initials on CoC	AP	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-05-COR-03-002

2015-05-12-08-21-58_UDU-05-COR-03-002_1619LP-WA70043.JPG



Site overview

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-01-12-27-52_UDU-05-COR-03-002_TECK1.JPG



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COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-05-COR-03-003	Start Depth	30 cm
Station Type	Primary	End Depth	45 cm
Collection DateTime	2015-05-01 11:55	Sample Team Initials	AP
Sample Collected?	Y		
X	423581.9496 m		
Y	5401453.7772 m		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	10YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	0
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Sediment
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty very fine sand	Vegetation Present?	N
Vegetation Type if Present	N		

Station Comments collocated with UDU-05-XRF-12. collect 1 liter of soil from this depth

Sample Collected from Station

Sample Id	UDU-05-COR-03-003	Decision Unit	Soil Decision Unit 5
Sample Date Time	2015-05-01 11:55	Collection Method	COR
Initials on CoC	AP	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-05-COR-03-003

2015-05-12-08-21-58_UDU-05-COR-03-003_1619LP-WA70043.JPG



Site overview

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-05-01-12-28-04_UDU-05-COR-03-003_TECK1.JPG



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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-06-COR-01-001	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-07 14:45	Sample Team Initials	AP

Sample Collected? Y
X 422279.68 m
Y 5400932.04 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Downed branches
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Sandy silt with clay, high % organic material	Vegetation Present?	Y
Vegetation Type if Present	Deciduous trees		

Station Comments colcoated with UDU-06-XRF-01. collect 2 liters of soil from this depth.

Sample Collected from Station

Sample Id	UDU-06-COR-01-001	Decision Unit	Soil Decision Unit 6
Sample Date Time	2015-05-07 14:45	Collection Method	COR
Initials on CoC	AP	Matrix	Soil
Sample Split	EPA	Replicate	No Replicate
Sample Comments			

Appendix I
COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-06-COR-01-001

2015-05-07-17-22-52_UDU-06-COR-01-001_1619LP-WA70047.JPG



Appendix I
COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-06-COR-01-002	Start Depth	15 cm
Station Type	Primary	End Depth	30 cm
Collection DateTime	2015-05-07 14:50	Sample Team Initials	AP

Sample Collected? Y
X 422279.68 m
Y 5400932.04 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Downed branches
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Sandy silt with clay, high % organic material	Vegetation Present?	Y
Vegetation Type if Present	Deciduous trees		

Station Comments collocated with UDU-06-XRF-01. collect 1 liter of soil from this depth.

Sample Collected from Station

Sample Id	UDU-06-COR-01-002	Decision Unit	Soil Decision Unit 6
Sample Date Time	2015-05-07 14:50	Collection Method	COR
Initials on CoC	AP	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

Appendix I
COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-06-COR-01-002

2015-05-07-17-22-52_UDU-06-COR-01-001_1619LP-WA70047.JPG



Appendix I
COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id UDU-06-COR-01-003 **Start Depth** 30 cm
Station Type Primary **End Depth** 45 cm
Collection DateTime 2015-05-07 14:55 **Sample Team Initials** AP

Sample Collected? Y
X 422279.68 m
Y 5400932.04 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Downed branches
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand with trace clay, high % organic material	Vegetation Present?	N
Vegetation Type if Present	Deciduous trees		

Station Comments collocated with UDU-06-XRF-01. Collect 1 liter of soil from this depth

Sample Collected from Station

Sample Id	UDU-06-COR-01-003	Decision Unit	Soil Decision Unit 6
Sample Date Time	2015-05-07 14:55	Collection Method	COR
Initials on CoC	AP	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-06-COR-01-003

2015-05-07-17-22-52_UDU-06-COR-01-001_1619LP-WA70047.JPG



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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-06-COR-02-001	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-07 15:05	Sample Team Initials	AP

Sample Collected? Y
X 422256.18 m
Y 5400888.83 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Downed branches
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand with trace clay, high % organic material	Vegetation Present?	Y
Vegetation Type if Present	Deciduous trees		

Station Comments collocated with UDU-06-XRF-02. 1 liter of soil collected from this depth.

Sample Collected from Station

Sample Id	UDU-06-COR-02-001	Decision Unit	Soil Decision Unit 6
Sample Date Time	2015-05-07 15:05	Collection Method	COR
Initials on CoC	AP	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-06-COR-02-001

2015-05-07-17-23-48_UDU-06-COR-02-001_TECK3.JPG



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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-06-COR-02-002	Start Depth	15 cm
Station Type	Primary	End Depth	30 cm
Collection DateTime	2003-05-07 15:10	Sample Team Initials	AP

Sample Collected? Y
X 422256.18 m
Y 5400888.83 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Downed branches
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand with trace clay, high % organic material	Vegetation Present?	Y
Vegetation Type if Present	Deciduous trees		

Station Comments collocated with UDU-06-XRF-02. collect 1 liter of soil from this depth.

Sample Collected from Station

Sample Id	UDU-06-COR-02-002	Decision Unit	Soil Decision Unit 6
Sample Date Time	2003-05-07 15:10	Collection Method	COR
Initials on CoC	AP	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-06-COR-02-002

2015-05-07-17-23-48_UDU-06-COR-02-001_TECK3.JPG



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COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-06-COR-02-003	Start Depth	30 cm
Station Type	Primary	End Depth	45 cm
Collection DateTime	2015-05-07 15:15	Sample Team Initials	AP

Sample Collected? Y
X 422256.18 m
Y 5400888.83 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	Downed branches
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	100	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand with trace clay, high % organic material	Vegetation Present?	Y
Vegetation Type if Present	Deciduous trees		

Station Comments collocated with UDU-06-XRF-02. collect 1 liter of soil from this depth.

Sample Collected from Station

Sample Id	UDU-06-COR-02-003	Decision Unit	Soil Decision Unit 6
Sample Date Time	2015-05-07 15:15	Collection Method	COR
Initials on CoC	AP	Matrix	Soil
Sample Split	Field	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-06-COR-02-003

2015-05-07-17-23-48_UDU-06-COR-02-001_TECK3.JPG



Appendix I
COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-06-COR-03-001	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-05-07 15:30	Sample Team Initials	AP

Sample Collected? Y
X 422226.9 m
Y 5400850.08 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand with trace clay, high % organic material	Vegetation Present?	Y
Vegetation Type if Present	Deciduous trees		

Station Comments collocated with UDU-06-XRF-03. collect 2 liters of soil from this depth.

Sample Collected from Station

Sample Id	UDU-06-COR-03-001	Decision Unit	Soil Decision Unit 6
Sample Date Time	2015-05-07 15:30	Collection Method	COR
Initials on CoC	AP	Matrix	Soil
Sample Split	Field	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-06-COR-03-001

2015-05-07-17-24-58_UDU-06-COR-03-001_TECK3.JPG



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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-06-COR-03-002	Start Depth	15 cm
Station Type	Primary	End Depth	30 cm
Collection DateTime	2015-05-07 15:35	Sample Team Initials	AP

Sample Collected? Y
X 422226.9 m
Y 5400850.08 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand with trace clay, high % organic material	Vegetation Present?	Y
Vegetation Type if Present	Deciduous trees		

Station Comments collocated with UDU-06-XRF-03. collect 1 liter of soil from this depth.

Sample Collected from Station

Sample Id	UDU-06-COR-03-002	Decision Unit	Soil Decision Unit 6
Sample Date Time	2015-05-07 15:35	Collection Method	COR
Initials on CoC	AP	Matrix	Soil
Sample Split	None	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-06-COR-03-002

2015-05-07-17-24-58_UDU-06-COR-03-001_TECK3.JPG



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COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	UDU-06-COR-03-003	Start Depth	30 cm
Station Type	Primary	End Depth	45 cm
Collection DateTime	2015-05-07 15:40	Sample Team Initials	AP

Sample Collected? Y
X 422226.9 m
Y 5400850.08 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Description	N	Anthropogenic Changes Present?	N
Biological Visual Presence	N	Color	7.5YR 3/2
Cultural Oversight Inspection Conducted?	Y	Debris Presence	N
Odor	N	Percent Canopy Coverage	100
Percent Ground Coverage	0	Sheen Presence	N
Shells Presence	N	Substrate Type	Soil
Surface Debris Present?	N	Surface Debris Removed Prior to Sampling?	N
Texture	Silty fine sand with trace clay, high % organic material	Vegetation Present?	Y
Vegetation Type if Present	Deciduous trees		

Station Comments collocated with UDU-06-XRF-03. collect 2 liters of soil from this depth.

Sample Collected from Station

Sample Id	UDU-06-COR-03-003	Decision Unit	Soil Decision Unit 6
Sample Date Time	2015-05-07 15:40	Collection Method	COR
Initials on CoC	AP	Matrix	Soil
Sample Split	Field	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station UDU-06-COR-03-003

2015-05-07-17-24-58_UDU-06-COR-03-001_TECK3.JPG



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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	F-1-COR-01-001	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-25 12:16	Sample Team Initials	MV

Sample Collected? Y
X 422826.102 m
Y 5400904.0479 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Present?	N	Biological Visual Presence	N
Color	10YR 4/4	Cultural Oversight Inspection Conducted?	Y
Debris Presence	N	Odor	N
Percent Canopy Coverage	0	Percent Ground Coverage	0
Sheen Presence	N	Shells Presence	N
Substrate Type	Sediment	Surface Debris Present?	N
Texture	Fine silty sand	Vegetation Present?	N

Station Comments BELOW TIMBER AT BASE OF SLOPE.

Sample Collected from Station

Sample Id	F-1-COR-01-001	Decision Unit	East Bank Cable Ferry Landing
Sample Date Time	2015-04-25 12:16	Collection Method	COR
Initials on CoC	MV	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station F-1-COR-01-001

2015-04-25-12-18-12_F-1-COR-01-001_TECK2.JPG



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COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	F-1-COR-01-002	Start Depth	15 cm
Station Type	Primary	End Depth	30 cm
Collection DateTime	2015-04-25 12:21	Sample Team Initials	MV

Sample Collected? Y
X 422826.102 m
Y 5400904.0479 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Present?	N	Biological Visual Presence	N
Color	2.5Y 5/4	Cultural Oversight Inspection Conducted?	Y
Debris Presence	N	Odor	N
Percent Canopy Coverage	0	Percent Ground Coverage	0
Sheen Presence	N	Shells Presence	N
Substrate Type	Sediment	Surface Debris Present?	N
Texture	Fine silty sand	Vegetation Present?	N

Station Comments NEAR TIMBER IN BANK BELOW TOE OF SLOPE

Sample Collected from Station

Sample Id	F-1-COR-01-002	Decision Unit	East Bank Cable Ferry Landing
Sample Date Time	2015-04-25 12:21	Collection Method	COR
Initials on CoC	MV	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station F-1-COR-01-002

2015-04-25-12-25-17_F-1-COR-01-002_TECK2.JPG



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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	F-1-COR-01-003	Start Depth	30 cm
Station Type	Primary	End Depth	45 cm
Collection DateTime	2015-04-25 12:27	Sample Team Initials	MV

Sample Collected? Y
X 422826.102 m
Y 5400904.0479 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Present?	N	Biological Visual Presence	N
Color	2.5Y 5/3	Cultural Oversight Inspection Conducted?	Y
Debris Presence	N	Odor	N
Percent Canopy Coverage	0	Percent Ground Coverage	0
Sheen Presence	N	Shells Presence	N
Substrate Type	Sediment	Surface Debris Present?	N
Texture	Fine sandy silt	Vegetation Present?	N

Station Comments BELOW TIMBER AT TOE OF SLOPE

Sample Collected from Station

Sample Id	F-1-COR-01-003	Decision Unit	East Bank Cable Ferry Landing
Sample Date Time	2015-04-25 12:27	Collection Method	COR
Initials on CoC	MV	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station F-1-COR-01-003

2015-04-25-12-29-47_F-1-COR-01-003_TECK2.JPG



SAMPLE.

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-25-12-29-57_F-1-COR-01-003_TECK2.JPG



CORE LOCATION

2015-04-25-12-30-08_F-1-COR-01-003_TECK2.JPG



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COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	F-1-COR-02-001	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-25 12:41	Sample Team Initials	MV

Sample Collected? Y
X 422844.83 m
Y 5400934.17 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Present?	N	Biological Visual Presence	N
Color	10YR 4/2	Cultural Oversight Inspection Conducted?	Y
Debris Presence	N	Odor	N
Percent Canopy Coverage	0	Percent Ground Coverage	0
Sheen Presence	N	Shells Presence	N
Substrate Type	Sediment	Surface Debris Present?	N
Texture	Fint to coarse silty sands	Vegetation Present?	N

Station Comments LOCATION BETWEEN TWO CONCRETE/ ROCK LINEAR FEATURES

Sample Collected from Station

Sample Id	F-1-COR-02-001	Decision Unit	East Bank Cable Ferry Landing
Sample Date Time	2015-04-25 12:41	Collection Method	COR
Initials on CoC	MV	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station F-1-COR-02-001

2015-04-25-12-42-31_F-1-COR-02-001_TECK2.JPG



SAMPLE

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COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	F-1-COR-02-002	Start Depth	15 cm
Station Type	Primary	End Depth	30 cm
Collection DateTime	2015-04-25 12:46	Sample Team Initials	MV

Sample Collected? Y
X 422844.83 m
Y 5400934.17 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Present?	N	Biological Visual Presence	N
Color	10YR 5/2	Cultural Oversight Inspection Conducted?	Y
Debris Presence	N	Odor	N
Percent Canopy Coverage	0	Percent Ground Coverage	0
Sheen Presence	N	Shells Presence	N
Substrate Type	Sediment	Surface Debris Present?	N
Texture	Fine silty sand	Vegetation Present?	N

Station Comments AT LINEAR ROCK CONCRETE FEATURE ON BEACH.

Sample Collected from Station

Sample Id	F-1-COR-02-002	Decision Unit	East Bank Cable Ferry Landing
Sample Date Time	2015-04-25 12:46	Collection Method	COR
Initials on CoC	MV	Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments			

Appendix I
COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station F-1-COR-02-002

2015-04-25-12-50-04_F-1-COR-02-002_TECK2.JPG



Appendix I
COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	F-1-COR-02-003	Start Depth	30 cm
Station Type	Primary	End Depth	45 cm
Collection DateTime	2015-04-25 12:58	Sample Team Initials	MV

Sample Collected? Y
X 422844.83 m
Y 5400934.17 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Present?	N	Biological Visual Presence	N
Color	10YR 4/2	Cultural Oversight Inspection Conducted?	Y
Debris Presence	N	Odor	N
Percent Canopy Coverage	0	Percent Ground Coverage	0
Sheen Presence	N	Shells Presence	N
Substrate Type	Sediment	Surface Debris Present?	N
Texture	Fine to coarse silty sand	Vegetation Present?	N

Station Comments AT LINEAR ROCK CONCRETE FEATURE ON BEACH

Sample Collected from Station

Sample Id	F-1-COR-02-003	Decision Unit	East Bank Cable Ferry Landing
Sample Date Time	2015-04-25 12:58	Collection Method	COR
Initials on CoC	MV	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Appendix I
COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station F-1-COR-02-003

2015-04-25-12-56-44_F-1-COR-02-003_TECK2.JPG



SAMPLE SITE

Appendix I
COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-25-12-57-03_F-1-COR-02-003_TECK2.JPG



SAMPLE LOCATION OVERVIEW

2015-04-25-12-55-38_F-1-COR-02-003_TECK2.JPG



Appendix I
COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	F-1-COR-03-001	Start Depth	0 cm
Station Type	Primary	End Depth	15 cm
Collection DateTime	2015-04-25 13:18	Sample Team Initials	MV

Sample Collected? Y
X 422846.07 m
Y 5400915.01 m

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984



Anthropogenic Changes Present?	N	Biological Visual Presence	N
Color	10YR 5/3	Cultural Oversight Inspection Conducted?	Y
Debris Presence	N	Odor	N
Percent Canopy Coverage	0	Percent Ground Coverage	0
Sheen Presence	N	Shells Presence	N
Substrate Type	Sediment	Surface Debris Present?	N
Texture	Fine to coarse silty sand minor gravel	Vegetation Present?	N

Station Comments 30 FEET WEST OF BANK, SE OF F-1-COR-02

Sample Collected from Station

Sample Id	F-1-COR-03-001	Decision Unit	East Bank Cable Ferry Landing
Sample Date Time	2015-04-25 13:18	Collection Method	COR
Initials on CoC	MV	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Appendix I
COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station F-1-COR-03-001

2015-04-25-13-22-26_F-1-COR-03-001_TECK2.JPG



SAMPLE

Appendix I
COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	F-1-COR-03-002	Start Depth	15 cm
Station Type	Primary	End Depth	30 cm
Collection DateTime	2015-04-25 13:23	Sample Team Initials	MV

Sample Collected? Y
X 422846.07 m
Y 5400915.01 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Present?	N	Biological Visual Presence	N
Color	10YR 4/2	Cultural Oversight Inspection Conducted?	Y
Debris Presence	N	Odor	N
Percent Canopy Coverage	0	Percent Ground Coverage	0
Sheen Presence	N	Shells Presence	N
Substrate Type	Sediment	Surface Debris Present?	N
Texture	Fine silty sand	Vegetation Present?	N

Station Comments 30 FEET WEST OF BANK SE OF F-1-COR-02

Sample Collected from Station

Sample Id	F-1-COR-03-002	Decision Unit	East Bank Cable Ferry Landing
Sample Date Time	2015-04-25 13:23	Collection Method	COR
Initials on CoC	MV	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Appendix I
COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station F-1-COR-03-002

2015-04-25-13-25-51_F-1-COR-03-002_TECK2.JPG



SAMPLE

Appendix I
COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	F-1-COR-03-003	Start Depth	30 cm
Station Type	Primary	End Depth	45 cm
Collection DateTime	2015-04-25 13:27	Sample Team Initials	MV

Sample Collected? Y
X 422846.07 m
Y 5400915.01 m

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984



Anthropogenic Changes Present?	N	Biological Visual Presence	N
Color	10YR 4/2	Cultural Oversight Inspection Conducted?	Y
Debris Presence	N	Odor	N
Percent Canopy Coverage	0	Percent Ground Coverage	0
Sheen Presence	N	Shells Presence	N
Substrate Type	Sediment	Surface Debris Present?	N
Texture	Fine silty sand	Vegetation Present?	N

Station Comments 30 FEET WEST OF BANK, SE OF F-1-COR-02

Sample Collected from Station

Sample Id	F-1-COR-03-003	Decision Unit	East Bank Cable Ferry Landing
Sample Date Time	2015-04-25 13:27	Collection Method	COR
Initials on CoC	MV	Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Appendix I
COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station F-1-COR-03-003

2015-04-25-13-30-41_F-1-COR-03-003_TECK2.JPG



Appendix I
COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

2015-04-25-13-30-47_F-1-COR-03-003_TECK2.JPG



SAMPLE SITE

2015-04-25-13-30-57_F-1-COR-03-003_TECK2.JPG



LOCATION OVERVIEW

Appendix I
COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	F-2-COR-01-001	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Sample not collected due to cultural concerns with sampling at depth.

Sample Collected from Station

Sample Id	F-2-COR-01-001	Decision Unit	West Bank Cable Ferry Landing
Sample Date Time		Collection Method	COR
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Photos Collected from Station F-2-COR-01-001

No photos taken at this station. See station comments for more details.

Appendix I
COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	F-2-COR-01-002	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
Units: meters;
Datum: WGS1984

Station Comments Sample not collected due to cultural concerns with sampling at depth.

Sample Collected from Station

Sample Id	F-2-COR-01-002	Decision Unit	West Bank Cable Ferry Landing
Sample Date Time		Collection Method	COR
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Appendix I
COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study

Photos Collected from Station F-2-COR-01-002

2015-05-05-09-36-31_F-2-COR-01-002_TECK3.JPG



delete

Appendix I
COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	F-2-COR-01-003	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Sample not collected due to cultural concerns with sampling at depth.

Sample Collected from Station

Sample Id	F-2-COR-01-003	Decision Unit	West Bank Cable Ferry Landing
Sample Date Time		Collection Method	COR
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Photos Collected from Station F-2-COR-01-003

No photos taken at this station. See station comments for more details.

Appendix I
COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	F-2-COR-02-001	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Sample not collected due to cultural concerns with sampling at depth.

Sample Collected from Station

Sample Id	F-2-COR-02-001	Decision Unit	West Bank Cable Ferry Landing
Sample Date Time		Collection Method	COR
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Photos Collected from Station F-2-COR-02-001

No photos taken at this station. See station comments for more details.

Appendix I
COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	F-2-COR-02-002	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Sample not collected due to cultural concerns with sampling at depth.

Sample Collected from Station

Sample Id	F-2-COR-02-002	Decision Unit	West Bank Cable Ferry Landing
Sample Date Time		Collection Method	COR
Initials on CoC		Matrix	Sediment
Sample Split	EPA	Replicate	No Replicate
Sample Comments			

Photos Collected from Station F-2-COR-02-002

No photos taken at this station. See station comments for more details.

Appendix I
COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	F-2-COR-02-003	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Sample not collected due to cultural concerns with sampling at depth.

Sample Collected from Station

Sample Id	F-2-COR-02-003	Decision Unit	West Bank Cable Ferry Landing
Sample Date Time		Collection Method	COR
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Photos Collected from Station F-2-COR-02-003

No photos taken at this station. See station comments for more details.

Appendix I
COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	F-2-COR-03-001	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Sample not collected due to cultural concerns with sampling at depth.

Sample Collected from Station

Sample Id	F-2-COR-03-001	Decision Unit	West Bank Cable Ferry Landing
Sample Date Time		Collection Method	COR
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Photos Collected from Station F-2-COR-03-001

No photos taken at this station. See station comments for more details.

Appendix I
COR Sample Collection Report
Bosburg Flat Beach Refined Sediment and Soil Study



Station Id	F-2-COR-03-002	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Sample not collected due to cultural concerns with sampling at depth.

Sample Collected from Station

Sample Id	F-2-COR-03-002	Decision Unit	West Bank Cable Ferry Landing
Sample Date Time		Collection Method	COR
Initials on CoC		Matrix	Sediment
Sample Split	None	Replicate	No Replicate
Sample Comments			

Photos Collected from Station F-2-COR-03-002

No photos taken at this station. See station comments for more details.

Appendix I
COR Sample Collection Report
Bossburg Flat Beach Refined Sediment and Soil Study



Station Id	F-2-COR-03-003	Start Depth	cm
Station Type	Primary	End Depth	cm
Collection DateTime		Sample Team Initials	
Sample Collected?	N		
X	Not collected		
Y	Not Collected		

Coordinate System: UTM 11 North,
 Units: meters;
 Datum: WGS1984

Station Comments Sample not collected due to cultural concerns with sampling at depth.

Sample Collected from Station

Sample Id	F-2-COR-03-003	Decision Unit	West Bank Cable Ferry Landing
Sample Date Time		Collection Method	COR
Initials on CoC		Matrix	Sediment
Sample Split	Field/EPA	Replicate	No Replicate
Sample Comments			

Photos Collected from Station F-2-COR-03-003

No photos taken at this station. See station comments for more details.

Table 5-10b. Comparison of Metals Data from < 250-µm Sediment and < 150-µm Soil Fractions in Core Samples with Available Human Health Screening Levels

Decision Unit/ Location ID	Sample ID	Sampling Depth (cm)	Concentration by Analyte (mg/kg dw) ^a																		
			Aluminum	Antimony ^c	Arsenic ^{d,e}	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead ^f	Manganese	Mercury ^c	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
<i>Human Health Screening Level (mg/kg)^b</i>			77,400	31.3	9.68	15,300	156	70.3	117,000	23.4	3,130	54,800	400	1,830	24	1,550	391	391	0.782	394	23,500
Soil (<150-µm) (continued)																					
UDU-04																					
UDU-04-XRF-02	UDU-04-COR-02-001	0 - 15	8570	17.4	J 6.45	129	0.275	15.8	14.8	4.79	29.5	12,200	J 915	J 391	0.278	11.7	0.79	0.645	0.983	J 23.8	776
UDU-04-XRF-02	UDU-04-COR-02-002	15 - 30	16,000	5.39	J 18.6	165	0.533	21.8	24.9	9.88	34.5	18,300	J 554	J 845	0.112	20.5	0.48	0.351	0.722	J 39	669
UDU-04-XRF-02	UDU-04-COR-02-003	30 - 45	20,900	1.31	J 3.67	190	0.467	2.92	50.1	13.6	31.8	32,000	J 97	J 617	0.034	24.7	0.23	0.226	0.717	J 77.5	254
UDU-04-XRF-05	UDU-04-COR-03-001	0 - 15	16,600	2.4	J 1.94	289	0.493	3.52	20.3	6.67	35.7	16,500	J 1030	J 523	0.204	14.5	0.28	1.96	0.194	J 32.2	420
UDU-04-XRF-05	UDU-04-COR-03-002	15 - 30	19,200	1.38	J 1.09	229	0.545	1.32	17.7	6.11	20.7	15,600	J 362	J 414	0.089	13.6	0.23	0.807	0.174	J 30.7	177
UDU-04-XRF-05	UDU-04-COR-03-003	30 - 45	17,600	0.669	J 0.530	J 202	0.511	0.367	18.1	5.82	17.2	15,500	J 124	J 248	0.037	13.8	0.14	J 0.26	0.167	J 30.9	85.8
UDU-04-XRF-R01	UDU-04-COR-01-001	0 - 15	19,300	2.19	J 3.58	253	0.583	4.09	20.1	7.15	25.9	17,800	J 1210	J 611	0.237	16.6	0.29	0.943	0.327	J 32.1	244
UDU-04-XRF-R01	UDU-04-COR-01-002	15 - 30	20,700	0.473	J 1.21	222	0.556	0.378	18	6.76	19.4	17,200	J 251	J 403	0.046	15.2	0.22	0.423	0.155	J 33.6	79.8
UDU-04-XRF-R01	UDU-04-COR-01-003	30 - 45	5240	0.09	J 0.920	J 57.1	0.148	0.112	5.01	1.75	4.65	4890	J 37.9	J 127	0.019	J 4.08	0.2	J 0.051	J 0.042	U* 8.78	19.3
UDU-05																					
UDU-05-XRF-02	UDU-05-COR-02-001	0 - 15	24,100	0.308	J 1.59	288	1.15	0.604	52.2	15.7	J 51.4	35,200	15	895	0.024	46.3	0.18	J 0.223	0.341	73.9	147
UDU-05-XRF-02	UDU-05-COR-02-002	15 - 30	22,300	0.304	J 1.56	270	1.05	0.579	48.1	14.4	J 45.1	32,400	17.3	826	0.022	43.3	0.18	J 0.202	0.312	67.2	135
UDU-05-XRF-02	UDU-05-COR-02-003	30 - 45	19,600	0.364	J 1.41	237	0.933	0.622	41.7	12.8	J 40.1	28,200	22.4	759	0.025	37.4	0.18	J 0.351	0.289	58.2	122
UDU-05-XRF-07	UDU-05-COR-01-001	0 - 15	22,100	0.288	J 1.58	255	1.1	0.492	52.7	14.1	J 40.9	34,300	15.1	792	0.017	J 44.4	0.15	J 0.153	0.278	69.4	125
UDU-05-XRF-07	UDU-05-COR-01-002	15 - 30	17,200	0.212	1.45	210	0.848	0.423	41.5	11.7	32.3	28,100	11.1	669	0.013	35.9	0.12	0.119	0.228	56.8	97.1
UDU-05-XRF-07	UDU-05-COR-01-003	30 - 45	16,500	0.196	J 1.30	204	0.801	0.427	41.4	11	J 30.7	26,700	9.38	641	0.014	J 35.3	0.13	J 0.147	0.221	54.5	95.4
UDU-05-XRF-12	UDU-05-COR-03-001	0 - 15	12,100	3.46	J 3.80	268	0.492	7.82	18.5	6.35	J 31.1	18,100	527	931	0.202	18.2	0.4	0.302	0.415	29.9	551
UDU-05-XRF-12	UDU-05-COR-03-002	15 - 30	13,300	0.946	J 1.78	155	0.52	0.317	21.3	6.54	J 16.7	18,100	7.81	444	0.016	J 19.1	0.17	J 0.054	0.153	31.7	62.1
UDU-05-XRF-12	UDU-05-COR-03-003	30 - 45	12,300	0.603	J 0.990	131	0.459	0.134	19.4	5.76	J 15.4	17,000	3.98	287	0.011	J 17.7	0.13	J 0.05	0.132	28.2	46.5
UDU-06																					
UDU-06-XRF-01	UDU-06-COR-01-001	0 - 15	10,900	1.14	J 2.33	197	0.442	2	26.1	8.2	23.8	17,400	54.2	J 493	0.056	21.8	0.5	0.191	0.217	30	162
UDU-06-XRF-01	UDU-06-COR-01-002	15 - 30	12,600	0.911	J 2.06	202	0.451	1.19	28.3	8.66	24.1	18,000	24.4	J 494	0.034	23.3	0.55	0.177	0.191	32.2	110
UDU-06-XRF-01	UDU-06-COR-01-003	30 - 45	12,700	0.553	J 1.13	214	0.471	0.635	29.1	8.85	24.4	18,000	6.17	J 476	0.016	J 24.3	0.61	0.174	0.164	32.4	78.4
UDU-06-XRF-02	UDU-06-COR-02-001	0 - 15	13,400	1.32	J 2.51	226	0.513	2.06	29.7	10	28.1	20,400	53.5	J 604	0.058	26.3	0.52	0.199	0.243	35.1	147
UDU-06-XRF-02	UDU-06-COR-02-002	15 - 30	13,300	1.3	J 2.17	226	0.501	2.19	29.5	9.94	27.4	20,000	55.9	J 595	0.069	25.8	0.53	0.199	0.25	35.1	161
UDU-06-XRF-02	UDU-06-COR-02-003	30 - 45	13,500	0.755	1.89	224	0.52	0.805	30	10	27.3	20,800	11.2	612	0.021	26.9	0.605	0.159	0.192	35.4	85.3
UDU-06-XRF-03	UDU-06-COR-03-001	0 - 15	7530	1.73	2.84	231	0.287	2.11	16.7	6.13	21	11,700	46.8	431	0.062	16.2	0.7	0.16	0.168	18.7	117
UDU-06-XRF-03	UDU-06-COR-03-002	15 - 30	7450	1.64	J 2.72	233	0.294	1.8	17.1	6.32	19.6	11,800	38.1	J 425	0.052	16.8	0.72	0.13	0.154	19.2	96.7
UDU-06-XRF-03	UDU-06-COR-03-003	30 - 45	6120	1.27	2.42	231	0.244	0.853	13.9	5.33	16.2	9700	10.6	327	0.0205	14.6	0.695	0.0985	0.099	15	53

Notes:
 Bold and shaded cells indicate concentrations greater than the human health screening level.
 Averaged results have three significant figures applied.
^a For decision units (DUs) with field split and triplicate samples, summary statistics are based on the average of results for the DU. Non-detected values (NDs) are included as half the reporting limits (RLs).
^b Screening level values are residential sediment screening levels from SRC (2013) and presented in the quality assurance project plan (QAPP) (HDR 2015a).
^c The screening levels for antimony and mercury were adjusted to reflect changes to the default values for those metals as discussed by SRC when developing screening levels for use in EPA's subsurface sediment screen (SRC 2013).
^d The human health screening level for arsenic is based on the default residential soil screening level for a 1 in 1 million risk level adjusted for the default RBA of 60 percent (USEPA 2015b) plus an estimate of the concentration of arsenic in natural background (9 mg/kg).
^e Arsenic concentrations adjusted for site-specific RBA using the equations from Bradham (2015): RBA (%) = 0.65 *IVBA(%) + 7.8.
^f Lead concentrations adjusted for the ratio of site-specific RBA to EPA's default RBA. RBA equation from EPA (2007-lead estimation guidance): RBA= 0.878*IVBA-0.028.
 J - estimated value
 SDU - sediment decision unit
 UDU - upland decision unit
 XRF - X-ray fluorescence

