

## APPENDIX G

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### LABORATORY REPORTS

## **APPENDIX G-1**

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### PHASE IA PART 1 LABORATORY ANALYTICAL REPORTS



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ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

September 06, 2017

**Analytical Report for Service Request No: K1708839**

Dave Enos  
Teck American Incorporated  
501 North Riverpoint Blvd., Suite 300  
Spokane, WA 99202

**RE: August 2017 Sampling SAT Study / B0095010.0005.00001**

Dear Dave,

Enclosed are the results of the sample(s) submitted to our laboratory August 22, 2017  
For your reference, these analyses have been assigned our service request number **K1708839**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at [www.alsglobal.com](http://www.alsglobal.com). All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at [Jeff.Coronado@alsglobal.com](mailto:Jeff.Coronado@alsglobal.com).

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**

Jeff Coronado  
Metals Department  
Manager



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ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

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## Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

### **Inorganic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

### **Metals Data Qualifiers**

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.  
  - i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Organic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Additional Petroleum Hydrocarbon Specific Qualifiers**

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

**ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso  
State Certifications, Accreditations, and Licenses**

<b>Agency</b>	<b>Web Site</b>	<b>Number</b>
Alaska DEH	<a href="http://dec.alaska.gov/eh/lab/cs/csapproval.htm">http://dec.alaska.gov/eh/lab/cs/csapproval.htm</a>	UST-040
Arizona DHS	<a href="http://www.azdhs.gov/lab/license/env.htm">http://www.azdhs.gov/lab/license/env.htm</a>	AZ0339
Arkansas - DEQ	<a href="http://www.adeq.state.ar.us/techsvs/labcert.htm">http://www.adeq.state.ar.us/techsvs/labcert.htm</a>	88-0637
California DHS (ELAP)	<a href="http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx">http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx</a>	2795
DOD ELAP	<a href="http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm">http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm</a>	L14-51
Florida DOH	<a href="http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm">http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm</a>	E87412
Hawaii DOH	<a href="http://health.hawaii.gov/">http://health.hawaii.gov/</a>	-
ISO 17025	<a href="http://www.pjllabs.com/">http://www.pjllabs.com/</a>	L16-57
Louisiana DEQ	<a href="http://www.deq.louisiana.gov/page/la-lab-accreditation">http://www.deq.louisiana.gov/page/la-lab-accreditation</a>	03016
Maine DHS	<a href="http://www.maine.gov/dhhs/">http://www.maine.gov/dhhs/</a>	WA01276
Minnesota DOH	<a href="http://www.health.state.mn.us/accreditation">http://www.health.state.mn.us/accreditation</a>	053-999-457
Nevada DEP	<a href="http://ndep.nv.gov/bsdw/labservice.htm">http://ndep.nv.gov/bsdw/labservice.htm</a>	WA01276
New Jersey DEP	<a href="http://www.nj.gov/dep/enforcement/oqa.html">http://www.nj.gov/dep/enforcement/oqa.html</a>	WA005
New York - DOH	<a href="https://www.wadsworth.org/regulatory/elap">https://www.wadsworth.org/regulatory/elap</a>	12060
North Carolina DEQ	<a href="https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification">https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification</a>	605
Oklahoma DEQ	<a href="http://www.deq.state.ok.us/CSDnew/labcert.htm">http://www.deq.state.ok.us/CSDnew/labcert.htm</a>	9801
Oregon – DEQ (NELAP)	<a href="http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx">http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx</a>	WA100010
South Carolina DHEC	<a href="http://www.scdhec.gov/environment/EnvironmentalLabCertification/">http://www.scdhec.gov/environment/EnvironmentalLabCertification/</a>	61002
Texas CEQ	<a href="http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html">http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html</a>	T104704427
Washington DOE	<a href="http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html">http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html</a>	C544
Wyoming (EPA Region 8)	<a href="https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water">https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water</a>	-
Kelso Laboratory Website	<a href="http://www.alsglobal.com">www.alsglobal.com</a>	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at [www.ALSGlobal.com](http://www.ALSGlobal.com) or at the accreditation bodies web site.  
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.



## Case Narrative

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)



**ALS ENVIRONMENTAL**

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/  
B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request No.:** K1708839  
**Date Received:** 08/22/17

**Case Narrative**


All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

**Sample Receipt**

Twenty soil samples were received for analysis at ALS Environmental on 08/22/17. The samples were received in good condition and consistent with the accompanying chain of custody form, except where noted on the cooler receipt and preservation form included in this report.. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

**Total Metals**

No anomalies associated with the analysis of these samples were observed.

Approved by  \_\_\_\_\_



# Chain of Custody

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

K1708839

Date 8/20/17  
 PAGE 8 OF 15  
 SR#

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001  
 Project Contact: Kady Young Company: Arcadis  
 Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488  
 City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961  
 Sampler's Signature: \_\_\_\_\_

Number of Containers	Analysis Requested					REMARKS
	lead/arsenic 3050B/6010					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					

Sample I.D.	Date	Time	LAB ID	Matrix
258-2-F01-081917	8/19/17	1424		S
F02		1426		S
F03		1427		S
F04		1429		S
F05		1431		S
F06		1433		S
F07		1435		S
F08		1437		S
F09		1438		S
F10		1441		S

**TURNAROUND REQUIREMENTS**  
 24 hr  48 hr  5 day  
 Standard (10 days)  
 Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes raw data)  
 IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99208

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Watson Matsutani  
 Firm: Arcadis  
 Date/Time: 8/21/17 1300

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: SWOLF  
 Firm: ALS  
 Date/Time: 8/22/17 0950

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

K1708839

Date 8/20/17  
 PAGE 9 OF 15  
 SR# \_\_\_\_\_

Project Name: <u>Teck American - UCR SATES</u> Project Number: <u>B0095010.0005.00001</u> Project Contact: <u>Kady Young</u> Company: <u>Arcadis</u> Company/Address: <u>189 North Cedar Street</u> Phone: <u>307-203-3510</u> or <u>810-588-1488</u> City, State, Zip: <u>Buffalo, WY 82834</u> FAX: <u>307-684-5961</u> Sampler's Signature: _____	Number of Containers	Analysis Requested				
--	----------------------	--------------------	--	--	--	--

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	lead/arsenic 3050B/6010					REMARKS
<u>258-2-F10-081917-D</u>	<u>8/19/17</u>	<u>1441</u>		S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					

**TURNAROUND REQUIREMENTS**  
 24 hr  48 hr  5 day  
 Standard (10 days)  
 Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes raw data)  
 IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99201

**RELINQUISHED BY:**  
 Signature: Watson  
 Printed Name: Watson Metzner  
 Firm: Arcadis  
 Date/Time: 8/21/17 1300

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: SWOLF  
 Firm: ALS  
 Date/Time: 8/22/17 0950

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

K1708839

Date 8/20/17  
 PAGE 10 OF 15  
 SR#

**ALS Environmental-Kelso**

1317 South 13th, Kelso, WA 98626 (360) 577-7222 FAX (360) 636-1068

**Project Name:** Teck American - UCR SATES **Project Number:** B0095010.0005.00001  
**Project Contact:** Kady Young **Company:** Arcadis  
**Company/Address:** 189 North Cedar Street **Phone:** 307-203-3510 or 810-588-1488  
**City, State, Zip:** Buffalo, WY 82834 **FAX:** 307-684-5961  
**Sampler's Signature:** \_\_\_\_\_

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	Analysis Requested					REMARKS
						lead/arsenic 3050B/6010					
258-2-G01-081917	8/19/17	1505		S	1	X					
G02		1506		S	1	X					
G03		1508		S	1	X					
G04		1510		S	1	X					
G05		1512		S	1	X					
G06		1513		S	1	X					
G07		1516		S	1	X					
G08		1517		S	1	X					
G09		1519		S	1	X					
G10		1521		S	1	X					

**URNAROUND REQUIREMENTS**  
 \_\_\_ 24 hr \_\_\_ 48 hr \_\_\_ 5 day  
 Standard (10 days)  
 \_\_\_ Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_  
**Invoice Information**  
 I.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
501 N Riverpoint Blvd, Suite 300 Spokane, WA 99208

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes raw data)  
 IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Watson Metzger  
 Firm: Arcadis  
 Date/Time: 8/21/17 1300

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: Snow  
 Firm: ALS  
 Date/Time: 8/22/17 0950

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_



PC 16

### Cooler Receipt and Preservation Form

Client Teck America Service Request K17 08839  
Received: 8/22/17 Opened: 8/22/17 By: Km Unloaded: 8/22/17 By: Km

Samples were received via? USPS 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 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
5.2	5.4	13.1	13.3	+0.2	325		8745 6738 5575		
7.8	7.9	11.5	11.6	+0.1	373		8745 6738 5586		
7.3	7.6	14.1	14.4	+0.3	340		8745 6738 5564		
7.7	7.2	7.2	7.4	-0.2	379		8105 9112 1296		
9.3	9.2	14.2	14.1	-0.1	328		8745 6738 5597		

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

Were samples received in good condition (temperature, unbroken)? Indicate in the table below. NA Y N

If applicable, tissue samples were received: Frozen Partially Thawed Thawed

Were all sample labels complete (i.e. analysis, preservation, etc.)? NA Y N Km

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:
401-2-G02-081717	401-2-602-0817-D	"G02-D" on Sample jar Lid
401-1-C1-081817	401-1-C01-081817	Dates + times match COC. <u>NA</u> <u>Y</u> <u>N</u> that way.

Sample ID	Bottle Count	Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

es, Discrepancies, & Resolutions: In all of the Coolers, there wasn't enough ice and what was there was melted.



# Total Solids

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1708839  
**Date Collected:** 08/19/17  
**Date Received:** 08/22/17  
**Units:** Percent  
**Basis:** As Received

**Solids, Total**

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
258-2-F01-081917	K1708839-001	97.0	-	-	1	08/23/17 16:40	
258-2-F02-081917	K1708839-002	97.2	-	-	1	08/23/17 16:40	
258-2-F03-081917	K1708839-003	98.3	-	-	1	08/23/17 16:40	
258-2-F04-081917	K1708839-004	98.2	-	-	1	08/23/17 16:40	
258-2-F05-081917	K1708839-005	97.7	-	-	1	08/23/17 16:40	
258-2-F06-081917	K1708839-006	97.4	-	-	1	08/23/17 16:40	
258-2-F07-081917	K1708839-007	98.0	-	-	1	08/23/17 16:40	
258-2-F08-081917	K1708839-008	97.5	-	-	1	08/23/17 16:40	
258-2-F09-081917	K1708839-009	98.4	-	-	1	08/23/17 16:40	
258-2-F10-081917	K1708839-010	98.4	-	-	1	08/23/17 16:40	
258-2-F10-081917-D	K1708839-011	98.7	-	-	1	08/23/17 16:40	
258-2-G01-081917	K1708839-012	96.0	-	-	1	08/23/17 16:40	
258-2-G02-081917	K1708839-013	98.1	-	-	1	08/23/17 16:40	
258-2-G03-081917	K1708839-014	97.2	-	-	1	08/23/17 16:40	
258-2-G04-081917	K1708839-015	96.5	-	-	1	08/23/17 16:40	
258-2-G05-081917	K1708839-016	97.4	-	-	1	08/23/17 16:40	
258-2-G06-081917	K1708839-017	95.2	-	-	1	08/23/17 16:40	
258-2-G07-081917	K1708839-018	96.0	-	-	1	08/23/17 16:40	
258-2-G08-081917	K1708839-019	97.2	-	-	1	08/23/17 16:40	
258-2-G09-081917	K1708839-020	98.5	-	-	1	08/23/17 16:40	



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QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:**K1708839  
**Date Collected:**08/19/17  
**Date Received:**08/22/17

**Units:**Percent  
**Basis:**As Received

Replicate Sample Summary

Inorganic Parameters

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
258-2-F01-081917	K1708839-001DUP	-	97.0	97.0	97.0	<1	20	08/23/17
258-2-F10-081917-D	K1708839-011DUP	-	98.7	99.0	98.9	<1	20	08/23/17
Batch QC	K1708840-001DUP	-	99.0	98.9	99.0	<1	20	08/23/17
Batch QC	K1708840-011DUP	-	99.2	99.3	99.3	<1	20	08/23/17

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



# Metals

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-F01-081917  
**Lab Code:** K1708839-001

**Service Request:** K1708839  
**Date Collected:** 08/19/17 14:24  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>11.0</b>	mg/Kg	4.1	2.1	2	08/25/17 14:59	08/23/17	
Lead	6010C	<b>218</b>	mg/Kg	2.1	0.7	2	08/25/17 14:59	08/23/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-F02-081917  
**Lab Code:** K1708839-002

**Service Request:** K1708839  
**Date Collected:** 08/19/17 14:26  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>12.2</b>	mg/Kg	3.9	1.9	2	08/25/17 15:01	08/23/17	
Lead	6010C	<b>254</b>	mg/Kg	1.9	0.7	2	08/25/17 15:01	08/23/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-F03-081917  
**Lab Code:** K1708839-003

**Service Request:** K1708839  
**Date Collected:** 08/19/17 14:27  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>10.0</b>	mg/Kg	4.0	2.0	2	08/25/17 15:04	08/23/17	
Lead	6010C	<b>166</b>	mg/Kg	2.0	0.7	2	08/25/17 15:04	08/23/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-F04-081917  
**Lab Code:** K1708839-004

**Service Request:** K1708839  
**Date Collected:** 08/19/17 14:29  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>10.3</b>	mg/Kg	4.1	2.0	2	08/25/17 14:49	08/23/17	
Lead	6010C	<b>192</b>	mg/Kg	2.0	0.7	2	08/25/17 14:49	08/23/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-F05-081917  
**Lab Code:** K1708839-005

**Service Request:** K1708839  
**Date Collected:** 08/19/17 14:31  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>15.3</b>	mg/Kg	4.1	2.0	2	08/25/17 15:12	08/23/17	
Lead	6010C	<b>197</b>	mg/Kg	2.0	0.7	2	08/25/17 15:12	08/23/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-F06-081917  
**Lab Code:** K1708839-006

**Service Request:** K1708839  
**Date Collected:** 08/19/17 14:33  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>14.0</b>	mg/Kg	4.1	2.1	2	08/25/17 15:14	08/23/17	
Lead	6010C	<b>216</b>	mg/Kg	2.1	0.7	2	08/25/17 15:14	08/23/17	



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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-F07-081917  
**Lab Code:** K1708839-007

**Service Request:** K1708839  
**Date Collected:** 08/19/17 14:35  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>14.3</b>	mg/Kg	3.9	2.0	2	08/25/17 15:16	08/23/17	
Lead	6010C	<b>248</b>	mg/Kg	2.0	0.7	2	08/25/17 15:16	08/23/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-F08-081917  
**Lab Code:** K1708839-008

**Service Request:** K1708839  
**Date Collected:** 08/19/17 14:37  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>12.5</b>	mg/Kg	4.1	2.0	2	08/25/17 15:19	08/23/17	
Lead	6010C	<b>207</b>	mg/Kg	2.0	0.7	2	08/25/17 15:19	08/23/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-F09-081917  
**Lab Code:** K1708839-009

**Service Request:** K1708839  
**Date Collected:** 08/19/17 14:38  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>8.3</b>	mg/Kg	3.9	2.0	2	08/25/17 15:21	08/23/17	
Lead	6010C	<b>139</b>	mg/Kg	2.0	0.7	2	08/25/17 15:21	08/23/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-F10-081917  
**Lab Code:** K1708839-010

**Service Request:** K1708839  
**Date Collected:** 08/19/17 14:41  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>8.0</b>	mg/Kg	3.9	1.9	2	08/25/17 15:23	08/23/17	
Lead	6010C	<b>46.6</b>	mg/Kg	1.9	0.7	2	08/25/17 15:23	08/23/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-F10-081917-D  
**Lab Code:** K1708839-011

**Service Request:** K1708839  
**Date Collected:** 08/19/17 14:41  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>10.5</b>	mg/Kg	4.1	2.0	2	08/25/17 15:25	08/23/17	
Lead	6010C	<b>44.7</b>	mg/Kg	2.0	0.7	2	08/25/17 15:25	08/23/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-G01-081917  
**Lab Code:** K1708839-012

**Service Request:** K1708839  
**Date Collected:** 08/19/17 15:05  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>13.4</b>	mg/Kg	4.1	2.1	2	08/25/17 15:27	08/23/17	
Lead	6010C	<b>343</b>	mg/Kg	2.1	0.7	2	08/25/17 15:27	08/23/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-G02-081917  
**Lab Code:** K1708839-013

**Service Request:** K1708839  
**Date Collected:** 08/19/17 15:06  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>11.6</b>	mg/Kg	4.0	2.0	2	08/25/17 15:29	08/23/17	
Lead	6010C	<b>173</b>	mg/Kg	2.0	0.7	2	08/25/17 15:29	08/23/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-G03-081917  
**Lab Code:** K1708839-014

**Service Request:** K1708839  
**Date Collected:** 08/19/17 15:08  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>12.4</b>	mg/Kg	4.1	2.0	2	08/25/17 15:31	08/23/17	
Lead	6010C	<b>195</b>	mg/Kg	2.0	0.7	2	08/25/17 15:31	08/23/17	



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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-G04-081917  
**Lab Code:** K1708839-015

**Service Request:** K1708839  
**Date Collected:** 08/19/17 15:10  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>11.8</b>	mg/Kg	4.1	2.1	2	08/25/17 15:40	08/23/17	
Lead	6010C	<b>178</b>	mg/Kg	2.1	0.7	2	08/25/17 15:40	08/23/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-G05-081917  
**Lab Code:** K1708839-016

**Service Request:** K1708839  
**Date Collected:** 08/19/17 15:12  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	17.9	mg/Kg	4.0	2.0	2	08/25/17 15:42	08/23/17	
Lead	6010C	245	mg/Kg	2.0	0.7	2	08/25/17 15:42	08/23/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-G06-081917  
**Lab Code:** K1708839-017

**Service Request:** K1708839  
**Date Collected:** 08/19/17 15:13  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>10.9</b>	mg/Kg	4.1	2.1	2	08/25/17 15:44	08/23/17	
Lead	6010C	<b>276</b>	mg/Kg	2.1	0.7	2	08/25/17 15:44	08/23/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-G07-081917  
**Lab Code:** K1708839-018

**Service Request:** K1708839  
**Date Collected:** 08/19/17 15:16  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>13.1</b>	mg/Kg	4.1	2.1	2	08/25/17 15:46	08/23/17	
Lead	6010C	<b>220</b>	mg/Kg	2.1	0.7	2	08/25/17 15:46	08/23/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-G08-081917  
**Lab Code:** K1708839-019

**Service Request:** K1708839  
**Date Collected:** 08/19/17 15:17  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>11.5</b>	mg/Kg	4.0	2.0	2	08/25/17 15:48	08/23/17	
Lead	6010C	<b>191</b>	mg/Kg	2.0	0.7	2	08/25/17 15:48	08/23/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-G09-081917  
**Lab Code:** K1708839-020

**Service Request:** K1708839  
**Date Collected:** 08/19/17 15:19  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>18.9</b>	mg/Kg	3.8	1.9	2	08/25/17 15:50	08/23/17	
Lead	6010C	<b>177</b>	mg/Kg	1.9	0.7	2	08/25/17 15:50	08/23/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** Method Blank  
**Lab Code:** KQ1712021-04

**Service Request:** K1708839  
**Date Collected:** NA  
**Date Received:** NA  
**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	ND U	mg/Kg	4	2.0	2	08/25/17 14:45	08/23/17	
Lead	6010C	ND U	mg/Kg	2	0.7	2	08/25/17 14:45	08/23/17	

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QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708839  
**Date Collected:** 08/19/17  
**Date Received:** 08/22/17  
**Date Analyzed:** 08/25/17  
**Date Extracted:** 08/23/17

**Duplicate Matrix Spike Summary  
Total Metals**

**Sample Name:** 258-2-F04-081917  
**Lab Code:** K1708839-004  
**Analysis Method:** 6010C  
**Prep Method:** EPA 3050B

**Units:** mg/Kg  
**Basis:** Dry

Analyte Name	Sample Result	Result	Matrix Spike KQ1712021-02		Duplicate Matrix Spike KQ1712021-03		% Rec Limits	RPD	RPD Limit	
			Spike Amount	% Rec	Result	Spike Amount				% Rec
Arsenic	10.3	105	99.8	95	108	101	97	75-125	2	30
Lead	192	291	99.8	99	294	101	101	75-125	1	30

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



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QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708839

**Date Analyzed:** 08/25/17

**Lab Control Sample Summary**  
**Total Metals**

**Units:**mg/Kg

**Basis:**Dry

**Lab Control Sample**  
KQ1712021-01

<b>Analyte Name</b>	<b>Analytical Method</b>	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>% Rec Limits</b>
Arsenic	6010C	495	500	99	80-120
Lead	6010C	513	500	103	80-120



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ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

September 05, 2017

**Analytical Report for Service Request No: K1708840**

Dave Enos  
Teck American Incorporated  
501 North Riverpoint Blvd., Suite 300  
Spokane, WA 99202

**RE: August 2017 Sampling SAT Study / B0095010.0005.00001**

Dear Dave,

Enclosed are the results of the sample(s) submitted to our laboratory August 22, 2017  
For your reference, these analyses have been assigned our service request number **K1708840**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at [www.alsglobal.com](http://www.alsglobal.com). All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at [Jeff.Coronado@alsglobal.com](mailto:Jeff.Coronado@alsglobal.com).

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**

Jeff Coronado  
Metals Department  
Manager



---

ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

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## Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

### **Inorganic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

### **Metals Data Qualifiers**

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.  
  - i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Organic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.  
  - i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Additional Petroleum Hydrocarbon Specific Qualifiers**

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

**ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso  
State Certifications, Accreditations, and Licenses**

<b>Agency</b>	<b>Web Site</b>	<b>Number</b>
Alaska DEH	<a href="http://dec.alaska.gov/eh/lab/cs/csapproval.htm">http://dec.alaska.gov/eh/lab/cs/csapproval.htm</a>	UST-040
Arizona DHS	<a href="http://www.azdhs.gov/lab/license/env.htm">http://www.azdhs.gov/lab/license/env.htm</a>	AZ0339
Arkansas - DEQ	<a href="http://www.adeq.state.ar.us/techsvs/labcert.htm">http://www.adeq.state.ar.us/techsvs/labcert.htm</a>	88-0637
California DHS (ELAP)	<a href="http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx">http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx</a>	2795
DOD ELAP	<a href="http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm">http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm</a>	L14-51
Florida DOH	<a href="http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm">http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm</a>	E87412
Hawaii DOH	<a href="http://health.hawaii.gov/">http://health.hawaii.gov/</a>	-
ISO 17025	<a href="http://www.pjllabs.com/">http://www.pjllabs.com/</a>	L16-57
Louisiana DEQ	<a href="http://www.deq.louisiana.gov/page/la-lab-accreditation">http://www.deq.louisiana.gov/page/la-lab-accreditation</a>	03016
Maine DHS	<a href="http://www.maine.gov/dhhs/">http://www.maine.gov/dhhs/</a>	WA01276
Minnesota DOH	<a href="http://www.health.state.mn.us/accreditation">http://www.health.state.mn.us/accreditation</a>	053-999-457
Nevada DEP	<a href="http://ndep.nv.gov/bsdw/labservice.htm">http://ndep.nv.gov/bsdw/labservice.htm</a>	WA01276
New Jersey DEP	<a href="http://www.nj.gov/dep/enforcement/oqa.html">http://www.nj.gov/dep/enforcement/oqa.html</a>	WA005
New York - DOH	<a href="https://www.wadsworth.org/regulatory/elap">https://www.wadsworth.org/regulatory/elap</a>	12060
North Carolina DEQ	<a href="https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification">https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification</a>	605
Oklahoma DEQ	<a href="http://www.deq.state.ok.us/CSDnew/labcert.htm">http://www.deq.state.ok.us/CSDnew/labcert.htm</a>	9801
Oregon – DEQ (NELAP)	<a href="http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx">http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx</a>	WA100010
South Carolina DHEC	<a href="http://www.scdhec.gov/environment/EnvironmentalLabCertification/">http://www.scdhec.gov/environment/EnvironmentalLabCertification/</a>	61002
Texas CEQ	<a href="http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html">http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html</a>	T104704427
Washington DOE	<a href="http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html">http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html</a>	C544
Wyoming (EPA Region 8)	<a href="https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water">https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water</a>	-
Kelso Laboratory Website	<a href="http://www.alsglobal.com">www.alsglobal.com</a>	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at [www.ALSGlobal.com](http://www.ALSGlobal.com) or at the accreditation bodies web site.  
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.



## Case Narrative

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

**ALS ENVIRONMENTAL**

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/  
B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request No.:** K1708840  
**Date Received:** 08/22/17

**Case Narrative**

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

**Sample Receipt**

Twenty soil samples were received for analysis at ALS Environmental on 08/22/17. The samples were received in good condition and consistent with the accompanying chain of custody form, except where noted on the cooler receipt and preservation form included in this report.. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

**Total Metals**

No anomalies associated with the analysis of these samples were observed.

Approved by \_\_\_\_\_  






# Chain of Custody

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

K1705540

Date 8/20/17  
 PAGE 10 OF 15  
 SR#

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001  
 Project Contact: Kady Young Company: Arcadis  
 Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488  
 City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961  
 Sampler's Signature: \_\_\_\_\_

Number of Containers	Analysis Requested					REMARKS
	lead/arsenic 3050B/6010					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					

Sample I.D.	Date	Time	LAB ID	Matrix
258-2-G01-081917	8/19/17	1505		S
G02		1506		S
G03		1508		S
G04		1510		S
G05		1512		S
G06		1513		S
G07		1516		S
G08		1517		S
G09		1519		S
G10		1521		S

**TURNAROUND REQUIREMENTS**  
 \_\_\_ 24 hr \_\_\_ 48 hr \_\_\_ 5 day  
 Standard (10 days)  
 \_\_\_ Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes raw data)  
 IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99208

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Watson Metzner  
 Firm: Arcadis  
 Date/Time: 8/21/17 1300

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: Quorf  
 Firm: ACS  
 Date/Time: 8/22/17 0950

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

K1708840

Date 8/20/17  
 PAGE 11 OF 15  
 SR#

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001

Project Contact: Kady Young Company: Arcadis

Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488

City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961

Sampler's Signature: \_\_\_\_\_

Number of Containers	Analysis Requested					REMARKS
	lead/arsenic 3050B/6010					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					

Sample I.D.	Date	Time	LAB ID	Matrix
258-2-H01-081917	8/19/17	1524		S
H02		1526		S
H03		1528		S
H04		1530		S
H05		1530		S
H06		1534		S
H07		1535		S
H08		1536		S
H09		1538		S
H10		1540		S

**TURNAROUND REQUIREMENTS**  
 24 hr \_\_\_\_\_ 48 hr \_\_\_\_\_ 5 day \_\_\_\_\_  
 Standard (10 days)  
 Provide FAX Preliminary Results \_\_\_\_\_  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required \_\_\_\_\_  
 II. Report Dup., MS, MSD as required \_\_\_\_\_  
 III. Data Validation Report (includes raw data) \_\_\_\_\_  
 IV. CLP Deliverable Report \_\_\_\_\_  
 V. EDD \_\_\_\_\_

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99205

**RELINQUISHED BY:**  
 Signature: Watson  
 Printed Name: Watson Metsutnam  
 Firm: Arcadis  
 Date/Time: 8/21/17 1300

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: SWOLF  
 Firm: ALS  
 Date/Time: 8/22/17 0950

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

K1709840

Date 8/20/17  
 PAGE 12 OF 15  
 SR#

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001  
 Project Contact: Kady Young Company: Arcadis  
 Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488  
 City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961  
 Sampler's Signature: \_\_\_\_\_

Number of Containers	Analysis Requested					REMARKS
	lead/arsenic 3050B/6010					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					

Sample I.D.	Date	Time	LAB ID	Matrix
258-2-H01-081917-18/19/17	8/19/17	1524		S
				S
				S
				S
				S
				S
				S
				S
				S
				S

**TURNAROUND REQUIREMENTS**  
 \_\_\_ 24 hr \_\_\_ 48 hr \_\_\_ 5 day  
 Standard (10 days)  
 \_\_\_ Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes raw data)  
 IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 992

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Watson Netsutnam  
 Firm: Arcadis  
 Date/Time: 8/21/17 1300

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: SWOFF  
 Firm: ALS  
 Date/Time: 8/22/17 0950

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

K1708840

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001  
 Project Contact: Kady Young Company: Arcadis  
 Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488  
 City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961  
 Sampler's Signature: \_\_\_\_\_

Number of Containers	Analysis Requested					REMARKS
	lead/arsenic 3050B/6010					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					

Sample I.D.	Date	Time	LAB ID	Matrix
258-2-I01-081917	8/19/17	1557		S
I02		1558		S
I03		1600		S
I04		1602		S
I05		1604		S
I06		1605		S
I07		1607		S
I08		1608		S
I09		1610		S
I10		1612		S

**TURNAROUND REQUIREMENTS**  
 \_\_\_ 24 hr \_\_\_ 48 hr \_\_\_ 5 day  
 Standard (10 days)  
 \_\_\_ Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_  
**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99201

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes raw data)  
 IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**RELINQUISHED BY:**  
 Signature: Watson  
 Printed Name: Watson Metzman  
 Firm: Arcadis  
 Date/Time: 8/21/17 1300

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: SWOLF  
 Firm: A25  
 Date/Time: 8/22/17 0950

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_



PC J Co

### Cooler Receipt and Preservation Form

Client: Teck America Service Request KI7 08840  
Received: 8/22/17 Opened: 8/22/17 By: KM Unloaded: 8/22/17 By: KM

Samples were received via? USPS 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 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
5.2	5.4	13.1	13.3	+0.2	325		8745 6738 5575		
7.8	7.9	11.5	11.6	+0.1	373		8745 6738 5586		
7.3	7.6	14.1	14.4	+0.3	349		8745 6738 5564		
7.7	7.2	7.2	7.4	+0.2	379		8105 9112 1296		
7.3	7.9	14.2	14.1	-0.1	328		8745 6738 5597		

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

Were samples received in good condition (temperature, unbroken)? *Indicate in the table below.* NA Y N

If applicable, tissue samples were received: Frozen Partially Thawed Thawed

Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N KM

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:
<u>401-2-G02-081717</u>	<u>401-2-G02-0817-D</u>	<u>"G02-D" on Sample jar Lid</u>
<u>401-1-C1-081817</u>	<u>401-1-C01-081817</u>	<u>(Dates + times match COC. <del>CO1-C01</del> that way.)</u>

Sample ID	Bottle Count	Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

s, Discrepancies, & Resolutions: In all of the Coolers, there wasn't enough ice and what was there was melted.



# Total Solids

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1708840  
**Date Collected:** 08/19/17  
**Date Received:** 08/22/17  
**Units:** Percent  
**Basis:** As Received

Solids, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
258-2-G10-081917	K1708840-001	99.0	-	-	1	08/23/17 16:40	
258-2-H01-081917	K1708840-002	96.9	-	-	1	08/23/17 16:40	
258-2-H02-081917	K1708840-003	95.6	-	-	1	08/23/17 16:40	
258-2-H03-081917	K1708840-004	96.5	-	-	1	08/23/17 16:40	
258-2-H04-081917	K1708840-005	97.4	-	-	1	08/23/17 16:40	
258-2-H05-081917	K1708840-006	95.8	-	-	1	08/23/17 16:40	
258-2-H06-081917	K1708840-007	98.0	-	-	1	08/23/17 16:40	
258-2-H07-081917	K1708840-008	97.3	-	-	1	08/23/17 16:40	
258-2-H08-081917	K1708840-009	98.4	-	-	1	08/23/17 16:40	
258-2-H09-081917	K1708840-010	98.9	-	-	1	08/23/17 16:40	
258-2-H10-081917	K1708840-011	99.2	-	-	1	08/23/17 16:40	
258-2-H01-081917-D	K1708840-012	97.0	-	-	1	08/23/17 16:40	
258-2-I01-081917	K1708840-013	94.8	-	-	1	08/23/17 16:40	
258-2-I02-081917	K1708840-014	94.0	-	-	1	08/23/17 16:40	
258-2-I03-081917	K1708840-015	96.2	-	-	1	08/23/17 16:40	
258-2-I04-081917	K1708840-016	96.7	-	-	1	08/23/17 16:40	
258-2-I05-081917	K1708840-017	97.2	-	-	1	08/23/17 16:40	
258-2-I06-081917	K1708840-018	97.9	-	-	1	08/23/17 16:40	
258-2-I07-081917	K1708840-019	98.7	-	-	1	08/23/17 16:40	
258-2-I08-081917	K1708840-020	98.3	-	-	1	08/23/17 16:40	



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QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:**K1708840  
**Date Collected:**08/19/17  
**Date Received:**08/22/17

**Units:**Percent  
**Basis:**As Received

Replicate Sample Summary

Inorganic Parameters

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	K1708839-001DUP	-	97.0	97.0	97.0	<1	20	08/23/17
Batch QC	K1708839-011DUP	-	98.7	99.0	98.9	<1	20	08/23/17
258-2-G10-081917	K1708840-001DUP	-	99.0	98.9	99.0	<1	20	08/23/17
258-2-H10-081917	K1708840-011DUP	-	99.2	99.3	99.3	<1	20	08/23/17

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



# Metals

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-G10-081917  
**Lab Code:** K1708840-001

**Service Request:** K1708840  
**Date Collected:** 08/19/17 15:21  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	7.0	mg/Kg	3.9	2.0	2	08/25/17 15:57	08/23/17	
Lead	6010C	27.4	mg/Kg	2.0	0.7	2	08/25/17 15:57	08/23/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-H01-081917  
**Lab Code:** K1708840-002

**Service Request:** K1708840  
**Date Collected:** 08/19/17 15:24  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>6.7</b>	mg/Kg	3.9	2.0	2	08/25/17 16:20	08/23/17	
Lead	6010C	<b>95.0</b>	mg/Kg	2.0	0.7	2	08/25/17 16:20	08/23/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-H02-081917  
**Lab Code:** K1708840-003

**Service Request:** K1708840  
**Date Collected:** 08/19/17 15:26  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>8.7</b>	mg/Kg	4.1	2.1	2	08/25/17 16:22	08/23/17	
Lead	6010C	<b>266</b>	mg/Kg	2.1	0.7	2	08/25/17 16:22	08/23/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-H03-081917  
**Lab Code:** K1708840-004

**Service Request:** K1708840  
**Date Collected:** 08/19/17 15:28  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>14.0</b>	mg/Kg	4.0	2.0	2	08/25/17 16:24	08/23/17	
Lead	6010C	<b>308</b>	mg/Kg	2.0	0.7	2	08/25/17 16:24	08/23/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-H04-081917  
**Lab Code:** K1708840-005

**Service Request:** K1708840  
**Date Collected:** 08/19/17 15:30  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>10.7</b>	mg/Kg	4.0	2.0	2	08/25/17 16:26	08/23/17	
Lead	6010C	<b>156</b>	mg/Kg	2.0	0.7	2	08/25/17 16:26	08/23/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-H05-081917  
**Lab Code:** K1708840-006

**Service Request:** K1708840  
**Date Collected:** 08/19/17 15:30  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>26.4</b>	mg/Kg	4.0	2.0	2	08/25/17 16:35	08/23/17	
Lead	6010C	<b>468</b>	mg/Kg	2.0	0.7	2	08/25/17 16:35	08/23/17	



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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-H06-081917  
**Lab Code:** K1708840-007

**Service Request:** K1708840  
**Date Collected:** 08/19/17 15:34  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>10.7</b>	mg/Kg	4.0	2.0	2	08/25/17 16:37	08/23/17	
Lead	6010C	<b>160</b>	mg/Kg	2.0	0.7	2	08/25/17 16:37	08/23/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-H07-081917  
**Lab Code:** K1708840-008

**Service Request:** K1708840  
**Date Collected:** 08/19/17 15:35  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>15.6</b>	mg/Kg	4.0	2.0	2	08/25/17 16:39	08/23/17	
Lead	6010C	<b>223</b>	mg/Kg	2.0	0.7	2	08/25/17 16:39	08/23/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-H08-081917  
**Lab Code:** K1708840-009

**Service Request:** K1708840  
**Date Collected:** 08/19/17 15:36  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>22.3</b>	mg/Kg	4.0	2.0	2	08/25/17 16:41	08/23/17	
Lead	6010C	<b>305</b>	mg/Kg	2.0	0.7	2	08/25/17 16:41	08/23/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-H09-081917  
**Lab Code:** K1708840-010

**Service Request:** K1708840  
**Date Collected:** 08/19/17 15:38  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>22.8</b>	mg/Kg	3.8	1.9	2	08/25/17 16:43	08/23/17	
Lead	6010C	<b>144</b>	mg/Kg	1.9	0.7	2	08/25/17 16:43	08/23/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-H10-081917  
**Lab Code:** K1708840-011

**Service Request:** K1708840  
**Date Collected:** 08/19/17 15:40  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>17.4</b>	mg/Kg	4.0	2.0	2	08/25/17 16:45	08/23/17	
Lead	6010C	<b>60.0</b>	mg/Kg	2.0	0.7	2	08/25/17 16:45	08/23/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-H01-081917-D  
**Lab Code:** K1708840-012

**Service Request:** K1708840  
**Date Collected:** 08/19/17 15:24  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	7.0	mg/Kg	4.0	2.0	2	08/25/17 16:47	08/23/17	
Lead	6010C	85.6	mg/Kg	2.0	0.7	2	08/25/17 16:47	08/23/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-I01-081917  
**Lab Code:** K1708840-013

**Service Request:** K1708840  
**Date Collected:** 08/19/17 15:57  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>13.8</b>	mg/Kg	4.0	2.0	2	08/25/17 16:49	08/23/17	
Lead	6010C	<b>239</b>	mg/Kg	2.0	0.7	2	08/25/17 16:49	08/23/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-I02-081917  
**Lab Code:** K1708840-014

**Service Request:** K1708840  
**Date Collected:** 08/19/17 15:58  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>13.4</b>	mg/Kg	4.3	2.1	2	08/25/17 16:51	08/23/17	
Lead	6010C	<b>232</b>	mg/Kg	2.1	0.7	2	08/25/17 16:51	08/23/17	



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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-I03-081917  
**Lab Code:** K1708840-015

**Service Request:** K1708840  
**Date Collected:** 08/19/17 16:00  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>17.0</b>	mg/Kg	4.1	2.1	2	08/25/17 16:53	08/23/17	
Lead	6010C	<b>226</b>	mg/Kg	2.1	0.7	2	08/25/17 16:53	08/23/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-I04-081917  
**Lab Code:** K1708840-016

**Service Request:** K1708840  
**Date Collected:** 08/19/17 16:02  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>11.8</b>	mg/Kg	4.0	2.0	2	08/25/17 17:02	08/23/17	
Lead	6010C	<b>186</b>	mg/Kg	2.0	0.7	2	08/25/17 17:02	08/23/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-I05-081917  
**Lab Code:** K1708840-017

**Service Request:** K1708840  
**Date Collected:** 08/19/17 16:04  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	15.5	mg/Kg	4.0	2.0	2	08/25/17 17:04	08/23/17	
Lead	6010C	191	mg/Kg	2.0	0.7	2	08/25/17 17:04	08/23/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-I06-081917  
**Lab Code:** K1708840-018

**Service Request:** K1708840  
**Date Collected:** 08/19/17 16:05  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>14.8</b>	mg/Kg	4.0	2.0	2	08/25/17 17:06	08/23/17	
Lead	6010C	<b>262</b>	mg/Kg	2.0	0.7	2	08/25/17 17:06	08/23/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-I07-081917  
**Lab Code:** K1708840-019

**Service Request:** K1708840  
**Date Collected:** 08/19/17 16:07  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>10.4</b>	mg/Kg	4.0	2.0	2	08/25/17 17:08	08/23/17	
Lead	6010C	<b>119</b>	mg/Kg	2.0	0.7	2	08/25/17 17:08	08/23/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-I08-081917  
**Lab Code:** K1708840-020

**Service Request:** K1708840  
**Date Collected:** 08/19/17 16:08  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>15.8</b>	mg/Kg	3.8	1.9	2	08/25/17 17:11	08/23/17	
Lead	6010C	<b>220</b>	mg/Kg	1.9	0.7	2	08/25/17 17:11	08/23/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** Method Blank  
**Lab Code:** KQ1712032-02

**Service Request:** K1708840  
**Date Collected:** NA  
**Date Received:** NA  
**Basis:** Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6010C	ND U	mg/Kg	4	2.0	2	08/25/17 15:52	08/23/17	
Lead	6010C	ND U	mg/Kg	2	0.7	2	08/25/17 15:52	08/23/17	

ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708840  
**Date Collected:** 08/19/17  
**Date Received:** 08/22/17  
**Date Analyzed:** 08/25/17  
**Date Extracted:** 08/23/17

**Duplicate Matrix Spike Summary  
Total Metals**

**Sample Name:** 258-2-G10-081917  
**Lab Code:** K1708840-001  
**Analysis Method:** 6010C  
**Prep Method:** EPA 3050B

**Units:** mg/Kg  
**Basis:** Dry

Analyte Name	Sample Result	Result	Matrix Spike KQ1712032-03		Duplicate Matrix Spike KQ1712032-04		% Rec Limits	RPD	RPD Limit	
			Spike Amount	% Rec	Result	Spike Amount				% Rec
Arsenic	7.0	105	98.5	100	98.2	94.3	97	75-125	7	30
Lead	27.4	132	98.5	107	123	94.3	101	75-125	7	30

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708840

**Date Analyzed:** 08/25/17

**Lab Control Sample Summary**  
**Total Metals**

**Units:**mg/Kg

**Basis:**Dry

**Lab Control Sample**  
KQ1712032-01

<b>Analyte Name</b>	<b>Analytical Method</b>	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>% Rec Limits</b>
Arsenic	6010C	492	500	98	80-120
Lead	6010C	506	500	101	80-120



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ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

September 05, 2017

**Analytical Report for Service Request No: K1708841**

Dave Enos  
Teck American Incorporated  
501 North Riverpoint Blvd., Suite 300  
Spokane, WA 99202

**RE: August 2017 Sampling SAT Study / B0095010.0005.00001**

Dear Dave,

Enclosed are the results of the sample(s) submitted to our laboratory August 22, 2017  
For your reference, these analyses have been assigned our service request number **K1708841**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at [www.alsglobal.com](http://www.alsglobal.com). All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at [Jeff.Coronado@alsglobal.com](mailto:Jeff.Coronado@alsglobal.com).

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**

Jeff Coronado  
Metals Department  
Manager



---

ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

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## Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

### **Inorganic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

### **Metals Data Qualifiers**

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.  
  - i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Organic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Additional Petroleum Hydrocarbon Specific Qualifiers**

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

**ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso  
State Certifications, Accreditations, and Licenses**

<b>Agency</b>	<b>Web Site</b>	<b>Number</b>
Alaska DEH	<a href="http://dec.alaska.gov/eh/lab/cs/csapproval.htm">http://dec.alaska.gov/eh/lab/cs/csapproval.htm</a>	UST-040
Arizona DHS	<a href="http://www.azdhs.gov/lab/license/env.htm">http://www.azdhs.gov/lab/license/env.htm</a>	AZ0339
Arkansas - DEQ	<a href="http://www.adeq.state.ar.us/techsvs/labcert.htm">http://www.adeq.state.ar.us/techsvs/labcert.htm</a>	88-0637
California DHS (ELAP)	<a href="http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx">http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx</a>	2795
DOD ELAP	<a href="http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm">http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm</a>	L14-51
Florida DOH	<a href="http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm">http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm</a>	E87412
Hawaii DOH	<a href="http://health.hawaii.gov/">http://health.hawaii.gov/</a>	-
ISO 17025	<a href="http://www.pjlabs.com/">http://www.pjlabs.com/</a>	L16-57
Louisiana DEQ	<a href="http://www.deq.louisiana.gov/page/la-lab-accreditation">http://www.deq.louisiana.gov/page/la-lab-accreditation</a>	03016
Maine DHS	<a href="http://www.maine.gov/dhhs/">http://www.maine.gov/dhhs/</a>	WA01276
Minnesota DOH	<a href="http://www.health.state.mn.us/accreditation">http://www.health.state.mn.us/accreditation</a>	053-999-457
Nevada DEP	<a href="http://ndep.nv.gov/bsdw/labservice.htm">http://ndep.nv.gov/bsdw/labservice.htm</a>	WA01276
New Jersey DEP	<a href="http://www.nj.gov/dep/enforcement/oqa.html">http://www.nj.gov/dep/enforcement/oqa.html</a>	WA005
New York - DOH	<a href="https://www.wadsworth.org/regulatory/elap">https://www.wadsworth.org/regulatory/elap</a>	12060
North Carolina DEQ	<a href="https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification">https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification</a>	605
Oklahoma DEQ	<a href="http://www.deq.state.ok.us/CSDnew/labcert.htm">http://www.deq.state.ok.us/CSDnew/labcert.htm</a>	9801
Oregon – DEQ (NELAP)	<a href="http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx">http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx</a>	WA100010
South Carolina DHEC	<a href="http://www.scdhec.gov/environment/EnvironmentalLabCertification/">http://www.scdhec.gov/environment/EnvironmentalLabCertification/</a>	61002
Texas CEQ	<a href="http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html">http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html</a>	T104704427
Washington DOE	<a href="http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html">http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html</a>	C544
Wyoming (EPA Region 8)	<a href="https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water">https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water</a>	-
Kelso Laboratory Website	<a href="http://www.alsglobal.com">www.alsglobal.com</a>	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at [www.ALSGlobal.com](http://www.ALSGlobal.com) or at the accreditation bodies web site.  
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.



## Case Narrative

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

**ALS ENVIRONMENTAL**

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/  
B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request No.:** K1708841  
**Date Received:** 08/22/17

**Case Narrative**

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

**Sample Receipt**

Twenty soil samples were received for analysis at ALS Environmental on 08/22/17. The samples were received in good condition and consistent with the accompanying chain of custody form, except where noted on the cooler receipt and preservation form included in this report.. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

**Total Metals**

No anomalies associated with the analysis of these samples were observed.

Approved by  \_\_\_\_\_





## Chain of Custody

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

K1408841

Date 8/20/17  
 PAGE 13 OF 15  
 SR#

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001

Project Contact: Kady Young Company: Arcadis

Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488

City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961

Sampler's Signature: \_\_\_\_\_

Number of Containers	Analysis Requested					REMARKS
	lead/arsenic 3050B/6010					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					

Sample I.D.	Date	Time	LAB ID	Matrix
258-2-I01-081917	8/19/17	1557		S
I02		1558		S
I03		1600		S
I04		1602		S
I05		1604		S
I06		1605		S
I07		1607		S
I08		1608		S
I09		1610		S
I10		1612		S

**TURNAROUND REQUIREMENTS**  
 24 hr  48 hr  5 day  
 Standard (10 days)  
 Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes raw data)  
 IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99201

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Watson Metzman  
 Firm: Arcadis  
 Date/Time: 8/21/17 1300

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: Smole  
 Firm: A25  
 Date/Time: 8/22/17 0950

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

K1708841

Date 8/20/17  
 PAGE 14 OF 15  
 SR#

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001  
 Project Contact: Kady Young Company: Arcadis  
 Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488  
 City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961  
 Sampler's Signature: \_\_\_\_\_

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	Analysis Requested					REMARKS
						lead/arsenic 3050B/6010					
258-2-J01-081917	8/19/17	1618		S	1	X					
J02		1620		S	1	X					
J03		1621		S	1	X					
J04		1623		S	1	X					
J05		1625		S	1	X					
J06		1627		S	1	X					
J07		1629		S	1	X					
J08		1630		S	1	X					
J09		1632		S	1	X					
J10		1633		S	1	X					

**TURNAROUND REQUIREMENTS**  
 24 hr \_\_\_\_\_ 48 hr \_\_\_\_\_ 5 day \_\_\_\_\_  
 Standard (10 days)  
 Provide FAX Preliminary Results \_\_\_\_\_  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes raw data)  
 IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99208

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Watson Metzman  
 Firm: Arcadis  
 Date/Time: 8/21/17 1300

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: SWOLF  
 Firm: ALS  
 Date/Time: 8/22/17 0956

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001

Project Contact: Kady Young Company: Arcadis

Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488

City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961

Sampler's Signature: \_\_\_\_\_

Number of Containers	Analysis Requested					REMARKS
	lead/arsenic 3050B/6010					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					

Sample I.D.	Date	Time	LAB ID	Matrix
258-2-305-081917-D	8/19/17	1625		S
				S
				S
				S
				S
				S
				S
				S
				S
				S

**TURNAROUND REQUIREMENTS**  
 24 hr  48 hr  5 day  
 Standard (10 days)  
 Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes raw data)  
 IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
501 N Riverpoint Blvd, Suite 300 Spokane, WA 99208

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Watson Metschnan  
 Firm: Arcadis  
 Date/Time: 8/21/17 1300

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: SWOLF  
 Firm: ALS  
 Date/Time: 8/22/17 0950

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

ALS Environmental-Kelso

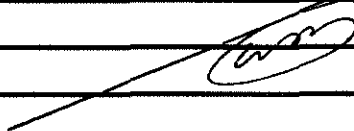
1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

K1708841

Date 8/2 OF 10  
 PAGE 1-2 OF 10  
 SR# WM 8/19/17 WM 8/19/17

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001  
 Project Contact: Kady Young Company: Arcadis  
 Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488  
 City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961  
 Sampler's Signature: \_\_\_\_\_

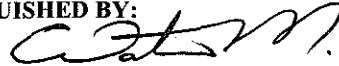
Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	Analysis Requested					REMARKS	
						lead/arsenic 3050B/6010						
401-2-A06-081617	8/16/17	11:03		S	1	X						
↓ A07 ↓	↓ ↓	13:03		S	1	X						
↓ A08 ↓	↓ ↓	14:00		S	1	X						
↓ A09 ↓	↓ ↓	15:04		S	1	X						
↓ A10 ↓	↓ ↓	16:08		S	1	X						
				S	1	X						
				S	1	X						
				S	1	X						
				S	1	X						
				S	1	X						


**TURNAROUND REQUIREMENTS**  
 \_\_\_ 24 hr \_\_\_ 48 hr \_\_\_ 5 day  
 Standard (10 days)  
 \_\_\_ Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes raw data)  
 IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # \_\_\_\_\_  
 Bill to: Dave Enos - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99208

**RELINQUISHED BY:**  
 Signature:   
 Printed Name: Watson Matsutani  
 Firm: Arcadis  
 Date/Time: 8/21/17 1360

**RECEIVED BY:**  
 Signature:   
 Printed Name: SWOLF  
 Firm: ALS  
 Date/Time: 8/22/17 0950

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

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1708841

Date 8/21/17  
 PAGE 24 OF 2010  
 SR# Wm 8/19/17 Wm 8/19/17

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001  
 Project Contact: Kady Young Company: Arcadis  
 Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488  
 City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961  
 Sampler's Signature: \_\_\_\_\_

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	Analysis Requested					REMARKS
						lead/arsenic 3050B/6010					
401-2-B06-081617	08/16/17	11:12		S	1	X					
B07		13:11		S	1	X					
B08		14:03		S	1	X					
B09		15:07		S	1	X					
B10		16:12		S	1	X					
401-2-B07-081617-D		13:11		S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					

**TURNAROUND REQUIREMENTS**  
 \_\_\_ 24 hr \_\_\_ 48 hr \_\_\_ 5 day  
 Standard (10 days)  
 \_\_\_ Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes raw data)  
 IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # \_\_\_\_\_  
 Bill to: Dave Enos - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99201

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Watson Metsutnan  
 Firm: Arcadis  
 Date/Time: 8/21/17 1300

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: SWOLF  
 Firm: A25  
 Date/Time: 8/22/17 0950

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_



PC 16

### Cooler Receipt and Preservation Form

Client: Teck America Service Request K17  
 Received: 8/22/17 Opened: 8/22/17 By: KM Unloaded: 8/22/17 By: KM

08841

Samples were received via? USPS FedEx 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 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
5.2	5.4	13.1	13.3	+0.2	325		8745 6738 5575		
7.8	7.9	11.5	11.6	+0.1	373		8745 6738 5586		
7.3	7.6	14.1	14.4	+0.3	340		8745 6738 5564		
7.7	7.2	7.2	7.4	+0.2	379		8105 9112 1296		
7.3	7.9	14.2	14.1	-0.1	328		8745 6738 5597		

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  
 Were samples received in good condition (temperature, unbroken)? Indicate in the table below. NA Y N  
 If applicable, tissue samples were received: Frozen Partially Thawed Thawed  
 Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N KM  
 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:
401-2-G02-081717	401-2-602-0817-D	"G02-D" on Sample jar Lid
401-1-C1-081817	401-1-C01-081817	(Dates + times match COC. <del>COI-COQ that way.</del> )

Sample ID	Bottle Count	Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

s, Discrepancies, & Resolutions: In all of the Coolers, there wasn't enough ice and what was there was melted.



# Total Solids

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)



**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1708841  
**Date Collected:** 08/16/17 - 08/19/17  
**Date Received:** 08/22/17  
**Units:** Percent  
**Basis:** As Received

**Solids, Total**

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
258-2-I09-081917	K1708841-001	99.2	-	-	1	08/23/17 16:44	
258-2-I10-081917	K1708841-002	99.3	-	-	1	08/23/17 16:44	
258-2-J01-081917	K1708841-003	96.2	-	-	1	08/23/17 16:44	
258-2-J02-081917	K1708841-004	94.9	-	-	1	08/23/17 16:44	
258-2-J03-081917	K1708841-005	97.2	-	-	1	08/23/17 16:44	
258-2-J04-081917	K1708841-006	97.0	-	-	1	08/23/17 16:44	
258-2-J05-081917	K1708841-007	96.1	-	-	1	08/23/17 16:44	
258-2-J06-081917	K1708841-008	97.1	-	-	1	08/23/17 16:44	
258-2-J07-081917	K1708841-009	97.9	-	-	1	08/23/17 16:44	
258-2-J08-081917	K1708841-010	98.5	-	-	1	08/23/17 16:44	
258-2-J09-081917	K1708841-011	98.6	-	-	1	08/23/17 16:44	
258-2-J10-081917	K1708841-012	99.5	-	-	1	08/23/17 16:44	
258-2-J05-081917-D	K1708841-013	95.2	-	-	1	08/23/17 16:44	
401-2-A06-081617	K1708841-014	95.4	-	-	1	08/23/17 16:44	
401-2-A07-081617	K1708841-015	93.8	-	-	1	08/23/17 16:44	
401-2-A08-081617	K1708841-016	95.0	-	-	1	08/23/17 16:44	
401-2-A09-081617	K1708841-017	96.5	-	-	1	08/23/17 16:44	
401-2-A10-081617	K1708841-018	95.6	-	-	1	08/23/17 16:44	
401-2-B06-081617	K1708841-019	93.6	-	-	1	08/23/17 16:44	
401-2-B07-081617	K1708841-020	95.7	-	-	1	08/23/17 16:44	

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:**K1708841  
**Date Collected:**08/19/17  
**Date Received:**08/22/17

**Units:**Percent  
**Basis:**As Received

Replicate Sample Summary

Inorganic Parameters

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
258-2-I09-081917	K1708841-001DUP	-	99.2	99.2	99.2	<1	20	08/23/17
258-2-J09-081917	K1708841-011DUP	-	98.6	98.8	98.7	<1	20	08/23/17
Batch QC	K1708844-001DUP	-	94.7	94.7	94.7	<1	20	08/23/17
Batch QC	K1708844-011DUP	-	95.2	95.1	95.2	<1	20	08/23/17

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



# Metals

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-I09-081917  
**Lab Code:** K1708841-001

**Service Request:** K1708841  
**Date Collected:** 08/19/17 16:10  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>18.3</b>	mg/Kg	3.9	0.8	2	08/29/17 16:24	08/23/17	
Lead	6010C	<b>136</b>	mg/Kg	1.9	0.4	2	08/29/17 16:24	08/23/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-I10-081917  
**Lab Code:** K1708841-002

**Service Request:** K1708841  
**Date Collected:** 08/19/17 16:12  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>14.6</b>	mg/Kg	4.0	0.8	2	08/29/17 16:36	08/23/17	
Lead	6010C	<b>120</b>	mg/Kg	2.0	0.4	2	08/29/17 16:36	08/23/17	

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-J01-081917  
**Lab Code:** K1708841-003

**Service Request:** K1708841  
**Date Collected:** 08/19/17 16:18  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>15.6</b>	mg/Kg	4.1	0.8	2	08/29/17 16:38	08/23/17	
Lead	6010C	<b>301</b>	mg/Kg	2.1	0.4	2	08/29/17 16:38	08/23/17	

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-J02-081917  
**Lab Code:** K1708841-004

**Service Request:** K1708841  
**Date Collected:** 08/19/17 16:20  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>33.3</b>	mg/Kg	4.1	0.8	2	08/29/17 16:40	08/23/17	
Lead	6010C	<b>268</b>	mg/Kg	2.1	0.4	2	08/29/17 16:40	08/23/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-J03-081917  
**Lab Code:** K1708841-005

**Service Request:** K1708841  
**Date Collected:** 08/19/17 16:21  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>11.2</b>	mg/Kg	4.1	0.8	2	08/29/17 16:49	08/23/17	
Lead	6010C	<b>265</b>	mg/Kg	2.1	0.4	2	08/29/17 16:49	08/23/17	



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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-J04-081917  
**Lab Code:** K1708841-006

**Service Request:** K1708841  
**Date Collected:** 08/19/17 16:23  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>14.0</b>	mg/Kg	4.1	0.8	2	08/29/17 16:52	08/23/17	
Lead	6010C	<b>243</b>	mg/Kg	2.0	0.4	2	08/29/17 16:52	08/23/17	

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-J05-081917  
**Lab Code:** K1708841-007

**Service Request:** K1708841  
**Date Collected:** 08/19/17 16:25  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>10.8</b>	mg/Kg	4.1	0.8	2	08/29/17 16:54	08/23/17	
Lead	6010C	<b>156</b>	mg/Kg	2.1	0.4	2	08/29/17 16:54	08/23/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-J06-081917  
**Lab Code:** K1708841-008

**Service Request:** K1708841  
**Date Collected:** 08/19/17 16:27  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>10.5</b>	mg/Kg	4.1	0.8	2	08/29/17 16:56	08/23/17	
Lead	6010C	<b>143</b>	mg/Kg	2.1	0.4	2	08/29/17 16:56	08/23/17	

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-J07-081917  
**Lab Code:** K1708841-009

**Service Request:** K1708841  
**Date Collected:** 08/19/17 16:29  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>9.0</b>	mg/Kg	4.0	0.8	2	08/29/17 16:58	08/23/17	
Lead	6010C	<b>126</b>	mg/Kg	2.0	0.4	2	08/29/17 16:58	08/23/17	

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-J08-081917  
**Lab Code:** K1708841-010

**Service Request:** K1708841  
**Date Collected:** 08/19/17 16:30  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>14.4</b>	mg/Kg	4.0	0.8	2	08/29/17 17:01	08/23/17	
Lead	6010C	<b>272</b>	mg/Kg	2.0	0.4	2	08/29/17 17:01	08/23/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-J09-081917  
**Lab Code:** K1708841-011

**Service Request:** K1708841  
**Date Collected:** 08/19/17 16:32  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>10.7</b>	mg/Kg	3.8	0.8	2	08/29/17 17:03	08/23/17	
Lead	6010C	<b>308</b>	mg/Kg	1.9	0.4	2	08/29/17 17:03	08/23/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-J10-081917  
**Lab Code:** K1708841-012

**Service Request:** K1708841  
**Date Collected:** 08/19/17 16:33  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>10.7</b>	mg/Kg	3.9	0.8	2	08/29/17 17:05	08/23/17	
Lead	6010C	<b>75.6</b>	mg/Kg	1.9	0.4	2	08/29/17 17:05	08/23/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-J05-081917-D  
**Lab Code:** K1708841-013

**Service Request:** K1708841  
**Date Collected:** 08/19/17 16:25  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>10.9</b>	mg/Kg	4.2	0.8	2	08/29/17 17:07	08/23/17	
Lead	6010C	<b>146</b>	mg/Kg	2.1	0.4	2	08/29/17 17:07	08/23/17	



ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-A06-081617  
**Lab Code:** K1708841-014

**Service Request:** K1708841  
**Date Collected:** 08/16/17 11:03  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>58.2</b>	mg/Kg	4.1	0.8	2	08/29/17 17:10	08/23/17	
Lead	6010C	<b>1020</b>	mg/Kg	2.1	0.4	2	08/29/17 17:10	08/23/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-A07-081617  
**Lab Code:** K1708841-015

**Service Request:** K1708841  
**Date Collected:** 08/16/17 13:03  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	24.1	mg/Kg	4.2	0.8	2	08/29/17 17:19	08/23/17	
Lead	6010C	451	mg/Kg	2.1	0.4	2	08/29/17 17:19	08/23/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-A08-081617  
**Lab Code:** K1708841-016

**Service Request:** K1708841  
**Date Collected:** 08/16/17 14:00  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>36.6</b>	mg/Kg	4.2	0.8	2	08/29/17 17:21	08/23/17	
Lead	6010C	<b>445</b>	mg/Kg	2.1	0.4	2	08/29/17 17:21	08/23/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-A09-081617  
**Lab Code:** K1708841-017

**Service Request:** K1708841  
**Date Collected:** 08/16/17 15:04  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>23.0</b>	mg/Kg	4.1	0.8	2	08/29/17 17:24	08/23/17	
Lead	6010C	<b>222</b>	mg/Kg	2.0	0.4	2	08/29/17 17:24	08/23/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-A10-081617  
**Lab Code:** K1708841-018

**Service Request:** K1708841  
**Date Collected:** 08/16/17 16:08  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>28.1</b>	mg/Kg	3.9	0.8	2	08/29/17 17:26	08/23/17	
Lead	6010C	<b>450</b>	mg/Kg	2.0	0.4	2	08/29/17 17:26	08/23/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-B06-081617  
**Lab Code:** K1708841-019

**Service Request:** K1708841  
**Date Collected:** 08/16/17 11:12  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>54.3</b>	mg/Kg	4.2	0.8	2	08/29/17 17:28	08/23/17	
Lead	6010C	<b>839</b>	mg/Kg	2.1	0.4	2	08/29/17 17:28	08/23/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-B07-081617  
**Lab Code:** K1708841-020

**Service Request:** K1708841  
**Date Collected:** 08/16/17 13:11  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>42.4</b>	mg/Kg	3.8	0.8	2	08/29/17 17:31	08/23/17	
Lead	6010C	<b>371</b>	mg/Kg	1.9	0.4	2	08/29/17 17:31	08/23/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** Method Blank  
**Lab Code:** KQ1712039-02

**Service Request:** K1708841  
**Date Collected:** NA  
**Date Received:** NA  
**Basis:** Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6010C	ND U	mg/Kg	4	0.8	2	08/29/17 16:20	08/23/17	
Lead	6010C	ND U	mg/Kg	2	0.4	2	08/29/17 16:20	08/23/17	



ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708841  
**Date Collected:** 08/19/17  
**Date Received:** 08/22/17  
**Date Analyzed:** 08/29/17  
**Date Extracted:** 08/23/17

**Duplicate Matrix Spike Summary  
Total Metals**

**Sample Name:** 258-2-I09-081917  
**Lab Code:** K1708841-001  
**Analysis Method:** 6010C  
**Prep Method:** EPA 3050B

**Units:** mg/Kg  
**Basis:** Dry

Analyte Name	Sample Result	Result	Matrix Spike KQ1712039-03		Result	Duplicate Matrix Spike KQ1712039-04		% Rec Limits	RPD	RPD Limit
			Spike Amount	% Rec		Spike Amount	% Rec			
Arsenic	18.3	112	97.7	96	112	98.2	96	75-125	<1	30
Lead	136	227	97.7	93	222	98.2	87	75-125	2	30

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708841  
**Date Analyzed:** 08/29/17

**Lab Control Sample Summary**  
**Total Metals**

**Units:**mg/Kg  
**Basis:**Dry

**Lab Control Sample**  
KQ1712039-01

<b>Analyte Name</b>	<b>Analytical Method</b>	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>% Rec Limits</b>
Arsenic	6010C	503	500	101	80-120
Lead	6010C	492	500	98	80-120



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ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

September 05, 2017

**Analytical Report for Service Request No: K1708842**

Dave Enos  
Teck American Incorporated  
501 North Riverpoint Blvd., Suite 300  
Spokane, WA 99202

**RE: August 2017 Sampling SAT Study / B0095010.0005.00001**

Dear Dave,

Enclosed are the results of the sample(s) submitted to our laboratory August 22, 2017  
For your reference, these analyses have been assigned our service request number **K1708842**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at [www.alsglobal.com](http://www.alsglobal.com). All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at [Jeff.Coronado@alsglobal.com](mailto:Jeff.Coronado@alsglobal.com).

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**

Jeff Coronado  
Metals Department  
Manager



---

ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

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## Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

### **Inorganic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

### **Metals Data Qualifiers**

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.  
  - i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Organic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.  
  - i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Additional Petroleum Hydrocarbon Specific Qualifiers**

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

**ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso  
State Certifications, Accreditations, and Licenses**

<b>Agency</b>	<b>Web Site</b>	<b>Number</b>
Alaska DEH	<a href="http://dec.alaska.gov/eh/lab/cs/csapproval.htm">http://dec.alaska.gov/eh/lab/cs/csapproval.htm</a>	UST-040
Arizona DHS	<a href="http://www.azdhs.gov/lab/license/env.htm">http://www.azdhs.gov/lab/license/env.htm</a>	AZ0339
Arkansas - DEQ	<a href="http://www.adeq.state.ar.us/techsvs/labcert.htm">http://www.adeq.state.ar.us/techsvs/labcert.htm</a>	88-0637
California DHS (ELAP)	<a href="http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx">http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx</a>	2795
DOD ELAP	<a href="http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm">http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm</a>	L14-51
Florida DOH	<a href="http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm">http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm</a>	E87412
Hawaii DOH	<a href="http://health.hawaii.gov/">http://health.hawaii.gov/</a>	-
ISO 17025	<a href="http://www.pjlabs.com/">http://www.pjlabs.com/</a>	L16-57
Louisiana DEQ	<a href="http://www.deq.louisiana.gov/page/la-lab-accreditation">http://www.deq.louisiana.gov/page/la-lab-accreditation</a>	03016
Maine DHS	<a href="http://www.maine.gov/dhhs/">http://www.maine.gov/dhhs/</a>	WA01276
Minnesota DOH	<a href="http://www.health.state.mn.us/accreditation">http://www.health.state.mn.us/accreditation</a>	053-999-457
Nevada DEP	<a href="http://ndep.nv.gov/bsdw/labservice.htm">http://ndep.nv.gov/bsdw/labservice.htm</a>	WA01276
New Jersey DEP	<a href="http://www.nj.gov/dep/enforcement/oqa.html">http://www.nj.gov/dep/enforcement/oqa.html</a>	WA005
New York - DOH	<a href="https://www.wadsworth.org/regulatory/elap">https://www.wadsworth.org/regulatory/elap</a>	12060
North Carolina DEQ	<a href="https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification">https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification</a>	605
Oklahoma DEQ	<a href="http://www.deq.state.ok.us/CSDnew/labcert.htm">http://www.deq.state.ok.us/CSDnew/labcert.htm</a>	9801
Oregon – DEQ (NELAP)	<a href="http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx">http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx</a>	WA100010
South Carolina DHEC	<a href="http://www.scdhec.gov/environment/EnvironmentalLabCertification/">http://www.scdhec.gov/environment/EnvironmentalLabCertification/</a>	61002
Texas CEQ	<a href="http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html">http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html</a>	T104704427
Washington DOE	<a href="http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html">http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html</a>	C544
Wyoming (EPA Region 8)	<a href="https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water">https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water</a>	-
Kelso Laboratory Website	<a href="http://www.alsglobal.com">www.alsglobal.com</a>	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at [www.ALSGlobal.com](http://www.ALSGlobal.com) or at the accreditation bodies web site. Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.



## Case Narrative

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)



**ALS ENVIRONMENTAL**

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/  
B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request No.:** K1708842  
**Date Received:** 08/22/17

**Case Narrative**

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

**Sample Receipt**

Twenty soil samples were received for analysis at ALS Environmental on 08/22/17. The samples were received in good condition and consistent with the accompanying chain of custody form, except where noted on the cooler receipt and preservation form included in this report.. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

**Total Metals**

No anomalies associated with the analysis of these samples were observed.

Approved by  \_\_\_\_\_



# Chain of Custody

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

*K1708842*

Date

PAGE 24 OF 2010  
SR# won 8/19/17 won 8/19/17

**Project Name:** Teck American - UCR SATES **Project Number:** B0095010.0005.00001

**Project Contact:** Kady Young **Company:** Arcadis

**Company/Address:** 189 North Cedar Street **Phone:** 307-203-3510 or 810-588-1488

**City, State, Zip:** Buffalo, WY 82834 **FAX:** 307-684-5961

**Sampler's Signature:** \_\_\_\_\_

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	Analysis Requested					REMARKS
						lead/arsenic 3050B/6010					
401-2-806-081617	08/16/17	11:12		S	1	X					
↓ 307 ↓	↓ ↓	13:11		S	1	X					
↓ 308 ↓	↓ ↓	14:03		S	1	X					
↓ 309 ↓	↓ ↓	15:07		S	1	X					
↓ 310 ↓	↓ ↓	16:12		S	1	X					
401-2-807-081617-D	↓	13:11		S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					

**TURNAROUND REQUIREMENTS**

24 hr  48 hr  5 day

Standard (10 days)

Provide FAX Preliminary Results

Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**

I. Routine Report: Results, Method Blank, Surrogate, as required

II. Report Dup., MS, MSD as required

III. Data Validation Report (includes raw data)

IV. CLP Deliverable Report

V. EDD

**Comments/Special Instructions:**

Hold Remainder

**Invoice Information**

P.O. # \_\_\_\_\_

Bill to: Dave Enos - Teck American

501 N Riverpoint Blvd, Suite 300 Spokane, WA 99201

**RELINQUISHED BY:**

Signature: [Signature]

Printed Name: Watson Metsutnan

Firm: Arcadis

Date/Time: 8/21/17 1300

**RECEIVED BY:**

Signature: [Signature]

Printed Name: SNOW

Firm: ALS

Date/Time: 8/22/17 0950

**RELINQUISHED BY:**

Signature: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Firm: \_\_\_\_\_

Date/Time: \_\_\_\_\_

**RECEIVED BY:**

Signature: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Firm: \_\_\_\_\_

Date/Time: \_\_\_\_\_

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

K1708842

Date

PAGE 36 OF 2010  
SR# 2008/19/17 2008/19/11

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001  
 Project Contact: Kady Young Company: Arcadis  
 Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488  
 City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961  
 Sampler's Signature: \_\_\_\_\_

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	Analysis Requested					REMARKS
						lead/arsenic 3050B/6010					
401-2-C06-081617	08/16/17	11:15		S	1	X					
↓ C07 ↓	↓	13:15		S	1	X					
↓ C08 ↓	↓	14:06		S	1	X					
↓ C09 ↓	↓	15:11		S	1	X					
↓ C10 ↓	↓	16:17		S	1	X					
401-2-C09-081617-D	↓	15:11		S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					

**TURNAROUND REQUIREMENTS**  
 \_\_\_ 24 hr \_\_\_ 48 hr \_\_\_ 5 day  
 Standard (10 days)  
 \_\_\_ Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 \_\_\_ I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 \_\_\_ III. Data Validation Report (includes raw data)  
 \_\_\_ IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # \_\_\_\_\_  
 Bill to: Dave Enos - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99208

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Watson Metsutman  
 Firm: Arcadis  
 Date/Time: 8/21/17 1300

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: SWOLF  
 Firm: ALS  
 Date/Time: 8/22/17 0950

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

K1708842

Date                       
 PAGE 48 OF 2010  
 SR# WA 8/19/17 2018/1/17

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001  
 Project Contact: Kady Young Company: Arcadis  
 Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488  
 City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961  
 Sampler's Signature: \_\_\_\_\_

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	Analysis Requested					REMARKS
						lead/arsenic 3050B/6010					
401-2-D06-081617	08/16/17	11:22		S	1	X					
↓ D07 ↓	↓	13:19		S	1	X					
↓ D08 ↓	↓	14:13		S	1	X					
↓ D09 ↓	↓	15:34		S	1	X					
↓ D10 ↓	↓	16:21		S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					

**TURNAROUND REQUIREMENTS**  
 24 hr  48 hr  5 day  
 Standard (10 days)  
 Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes raw data)  
 IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # \_\_\_\_\_  
 Bill to: Dave Enos - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99201

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Watson Melbourn  
 Firm: Arcadis  
 Date/Time: 8/21/17 1300

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: [Signature]  
 Firm: ALS  
 Date/Time: 8/22/17 0950

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

K1708842

Date

PAGE 510 OF 2010  
 SR# 200 8/19/17 200 8/19/17

Project Name: <u>Teck American - UCR SATES</u> Project Number: <u>B0095010.0005.00001</u>					Number of Containers	Analysis Requested						
Project Contact: <u>Kady Young</u> Company: <u>Arcadis</u>						lead/arsenic 3050B/6010						
Company/Address: <u>189 North Cedar Street</u> Phone: <u>307-203-3510</u> or <u>810-588-1488</u>												
City, State, Zip: <u>Buffalo, WY 82834</u> FAX: <u>307-684-5961</u>												
Sampler's Signature: _____												
Sample I.D.	Date	Time	LAB ID	Matrix								REMARKS
401-2-E06-081617	08/16/17	11:36		S	1	X						
E07		13:22		S	1	X						
E08		14:15		S	1	X						
E09		15:38		S	1	X						
E10		16:25		S	1	X						
				S	1	X						
				S	1	X						
				S	1	X						
				S	1	X						

**TURNAROUND REQUIREMENTS**  
 \_\_\_ 24 hr \_\_\_ 48 hr \_\_\_ 5 day  
 Standard (10 days)  
 \_\_\_ Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes raw data)  
 IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # \_\_\_\_\_  
 Bill to: Dave Enos - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99208

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Watson Metsutnon  
 Firm: Arcadis  
 Date/Time: 8/21/17 1300

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: [Signature]  
 Firm: ALS  
 Date/Time: 8/22/17 0950

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_



PC 16

### Cooler Receipt and Preservation Form

Client: Teck America Service Request KI7 08842  
Received: 8/22/17 Opened: 8/22/17 By: KM Unloaded: 8/22/17 By: KM

Samples were received via? USPS FedEx 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 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
5.2	5.4	13.1	13.3	+0.2	325		8745 6738 5575		
7.8	7.9	11.5	11.6	+0.1	373		8745 6738 5586		
7.3	7.6	14.1	14.4	+0.3	349		8745 6738 5564		
7.7	7.2	7.2	7.4	+0.2	379		8105 9112 1296		
7.3	7.9	14.2	14.1	-0.1	328		8745 6738 5597		

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

Were samples received in good condition (temperature, unbroken)? Indicate in the table below. NA Y N

If applicable, tissue samples were received: Frozen Partially Thawed Thawed

Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N KM

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:
<u>401-2-602-081717</u>	<u>401-2-602-0817-0</u>	<u>"602-D" on Sample jar Lid</u>
<u>401-1-C1-081817</u>	<u>401-1-C01-081817</u>	<u>(Dates + times match COC. <del>COI-COQ that way.</del>)</u>

Sample ID	Bottle Count	Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Discrepancies, & Resolutions: In all of the Coolers, there wasn't enough ice and what was there was melted.



# Total Solids

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)



**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1708842  
**Date Collected:** 08/16/17  
**Date Received:** 08/22/17  
**Units:** Percent  
**Basis:** As Received

**Solids, Total**

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
401-2-B08-081617	K1708842-001	93.7	-	-	1	08/25/17 16:15	
401-2-B09-081617	K1708842-002	95.3	-	-	1	08/25/17 16:15	
401-2-B10-081617	K1708842-003	95.2	-	-	1	08/25/17 16:15	
401-2-B07-081617-D	K1708842-004	95.6	-	-	1	08/25/17 16:15	
401-2-C06-081617	K1708842-005	94.4	-	-	1	08/25/17 16:15	
401-2-C07-081617	K1708842-006	94.1	-	-	1	08/25/17 16:15	
401-2-C08-081617	K1708842-007	95.4	-	-	1	08/25/17 16:15	
401-2-C09-081617	K1708842-008	96.7	-	-	1	08/25/17 16:15	
401-2-C10-081617	K1708842-009	96.3	-	-	1	08/25/17 16:15	
401-2-C09-081617-D	K1708842-010	95.8	-	-	1	08/25/17 16:15	
401-2-D06-081617	K1708842-011	93.8	-	-	1	08/25/17 16:15	
401-2-D07-081617	K1708842-012	95.7	-	-	1	08/25/17 16:15	
401-2-D08-081617	K1708842-013	95.2	-	-	1	08/25/17 16:15	
401-2-D09-081617	K1708842-014	95.0	-	-	1	08/25/17 16:15	
401-2-D10-081617	K1708842-015	96.2	-	-	1	08/25/17 16:15	
401-2-E06-081617	K1708842-016	92.1	-	-	1	08/25/17 16:15	
401-2-E07-081617	K1708842-017	92.4	-	-	1	08/25/17 16:15	
401-2-E08-081617	K1708842-018	95.1	-	-	1	08/25/17 16:15	
401-2-E09-081617	K1708842-019	95.4	-	-	1	08/25/17 16:15	
401-2-E10-081617	K1708842-020	90.7	-	-	1	08/25/17 16:15	

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1708842  
**Date Collected:** 08/16/17  
**Date Received:** 08/22/17

**Units:** Percent  
**Basis:** As Received

Replicate Sample Summary

Inorganic Parameters

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
401-2-B08-081617	K1708842-001DUP	-	93.7	93.0	93.4	<1	20	08/25/17
401-2-D06-081617	K1708842-011DUP	-	93.8	94.2	94.0	<1	20	08/25/17

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



# Metals

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-B08-081617  
**Lab Code:** K1708842-001

**Service Request:** K1708842  
**Date Collected:** 08/16/17 14:03  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>35.8</b>	mg/Kg	4.0	0.8	2	08/29/17 17:38	08/23/17	
Lead	6010C	<b>723</b>	mg/Kg	2.0	0.4	2	08/29/17 17:38	08/23/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-B09-081617  
**Lab Code:** K1708842-002

**Service Request:** K1708842  
**Date Collected:** 08/16/17 15:07  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>45.6</b>	mg/Kg	4.1	0.8	2	08/29/17 17:58	08/23/17	
Lead	6010C	<b>488</b>	mg/Kg	2.1	0.4	2	08/29/17 17:58	08/23/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-B10-081617  
**Lab Code:** K1708842-003

**Service Request:** K1708842  
**Date Collected:** 08/16/17 16:12  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>32.0</b>	mg/Kg	3.9	0.8	2	08/29/17 18:01	08/23/17	
Lead	6010C	<b>287</b>	mg/Kg	1.9	0.4	2	08/29/17 18:01	08/23/17	

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-B07-081617-D  
**Lab Code:** K1708842-004

**Service Request:** K1708842  
**Date Collected:** 08/16/17 13:11  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>34.1</b>	mg/Kg	4.0	0.8	2	08/29/17 18:03	08/23/17	
Lead	6010C	<b>298</b>	mg/Kg	2.0	0.4	2	08/29/17 18:03	08/23/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-C06-081617  
**Lab Code:** K1708842-005

**Service Request:** K1708842  
**Date Collected:** 08/16/17 11:15  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>55.5</b>	mg/Kg	4.1	0.8	2	08/29/17 18:05	08/23/17	
Lead	6010C	<b>507</b>	mg/Kg	2.1	0.4	2	08/29/17 18:05	08/23/17	



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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-C07-081617  
**Lab Code:** K1708842-006

**Service Request:** K1708842  
**Date Collected:** 08/16/17 13:15  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>62.8</b>	mg/Kg	4.1	0.8	2	08/29/17 18:08	08/23/17	
Lead	6010C	<b>666</b>	mg/Kg	2.1	0.4	2	08/29/17 18:08	08/23/17	

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-C08-081617  
**Lab Code:** K1708842-007

**Service Request:** K1708842  
**Date Collected:** 08/16/17 14:06  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>34.5</b>	mg/Kg	3.8	0.8	2	08/29/17 18:10	08/23/17	
Lead	6010C	<b>550</b>	mg/Kg	1.9	0.4	2	08/29/17 18:10	08/23/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-C09-081617  
**Lab Code:** K1708842-008

**Service Request:** K1708842  
**Date Collected:** 08/16/17 15:11  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>17.5</b>	mg/Kg	4.0	0.8	2	08/29/17 18:12	08/23/17	
Lead	6010C	<b>154</b>	mg/Kg	2.0	0.4	2	08/29/17 18:12	08/23/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-C10-081617  
**Lab Code:** K1708842-009

**Service Request:** K1708842  
**Date Collected:** 08/16/17 16:17  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>81.6</b>	mg/Kg	4.0	0.8	2	08/29/17 18:22	08/23/17	
Lead	6010C	<b>494</b>	mg/Kg	2.0	0.4	2	08/29/17 18:22	08/23/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-C09-081617-D  
**Lab Code:** K1708842-010

**Service Request:** K1708842  
**Date Collected:** 08/16/17 15:11  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>19.3</b>	mg/Kg	4.1	0.8	2	08/29/17 18:24	08/23/17	
Lead	6010C	<b>298</b>	mg/Kg	2.1	0.4	2	08/29/17 18:24	08/23/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-D06-081617  
**Lab Code:** K1708842-011

**Service Request:** K1708842  
**Date Collected:** 08/16/17 11:22  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>65.3</b>	mg/Kg	4.1	0.8	2	08/29/17 18:26	08/23/17	
Lead	6010C	<b>1430</b>	mg/Kg	2.1	0.4	2	08/29/17 18:26	08/23/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-D07-081617  
**Lab Code:** K1708842-012

**Service Request:** K1708842  
**Date Collected:** 08/16/17 13:19  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>49.8</b>	mg/Kg	4.1	0.8	2	08/29/17 18:29	08/23/17	
Lead	6010C	<b>340</b>	mg/Kg	2.0	0.4	2	08/29/17 18:29	08/23/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-D08-081617  
**Lab Code:** K1708842-013

**Service Request:** K1708842  
**Date Collected:** 08/16/17 14:13  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>48.1</b>	mg/Kg	4.0	0.8	2	08/29/17 18:31	08/23/17	
Lead	6010C	<b>572</b>	mg/Kg	2.0	0.4	2	08/29/17 18:31	08/23/17	



ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-D09-081617  
**Lab Code:** K1708842-014

**Service Request:** K1708842  
**Date Collected:** 08/16/17 15:34  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	45.2	mg/Kg	4.0	0.8	2	08/29/17 18:33	08/23/17	
Lead	6010C	499	mg/Kg	2.0	0.4	2	08/29/17 18:33	08/23/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-D10-081617  
**Lab Code:** K1708842-015

**Service Request:** K1708842  
**Date Collected:** 08/16/17 16:21  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>53.1</b>	mg/Kg	4.0	0.8	2	08/29/17 18:36	08/23/17	
Lead	6010C	<b>1020</b>	mg/Kg	2.0	0.4	2	08/29/17 18:36	08/23/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-E06-081617  
**Lab Code:** K1708842-016

**Service Request:** K1708842  
**Date Collected:** 08/16/17 11:36  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>73.2</b>	mg/Kg	4.2	0.8	2	08/29/17 18:38	08/23/17	
Lead	6010C	<b>1020</b>	mg/Kg	2.1	0.4	2	08/29/17 18:38	08/23/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-E07-081617  
**Lab Code:** K1708842-017

**Service Request:** K1708842  
**Date Collected:** 08/16/17 13:22  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>71.8</b>	mg/Kg	4.1	0.8	2	08/29/17 18:40	08/23/17	
Lead	6010C	<b>1010</b>	mg/Kg	2.1	0.4	2	08/29/17 18:40	08/23/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-E08-081617  
**Lab Code:** K1708842-018

**Service Request:** K1708842  
**Date Collected:** 08/16/17 14:15  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>35.2</b>	mg/Kg	4.1	0.8	2	08/29/17 18:42	08/23/17	
Lead	6010C	<b>580</b>	mg/Kg	2.0	0.4	2	08/29/17 18:42	08/23/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-E09-081617  
**Lab Code:** K1708842-019

**Service Request:** K1708842  
**Date Collected:** 08/16/17 15:38  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>49.9</b>	mg/Kg	4.0	0.8	2	08/29/17 18:52	08/23/17	
Lead	6010C	<b>1080</b>	mg/Kg	2.0	0.4	2	08/29/17 18:52	08/23/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-E10-081617  
**Lab Code:** K1708842-020

**Service Request:** K1708842  
**Date Collected:** 08/16/17 16:25  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	55.4	mg/Kg	4.2	0.8	2	08/29/17 18:54	08/23/17	
Lead	6010C	1370	mg/Kg	2.1	0.4	2	08/29/17 18:54	08/23/17	

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** Method Blank  
**Lab Code:** KQ1712059-02

**Service Request:** K1708842  
**Date Collected:** NA  
**Date Received:** NA  
**Basis:** Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6010C	ND U	mg/Kg	4	0.8	2	08/29/17 17:33	08/23/17	
Lead	6010C	ND U	mg/Kg	2	0.4	2	08/29/17 17:33	08/23/17	



ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708842  
**Date Collected:** 08/16/17  
**Date Received:** 08/22/17  
**Date Analyzed:** 08/29/17  
**Date Extracted:** 08/23/17

**Duplicate Matrix Spike Summary  
Total Metals**

**Sample Name:** 401-2-B08-081617  
**Lab Code:** K1708842-001  
**Analysis Method:** 6010C  
**Prep Method:** EPA 3050B

**Units:** mg/Kg  
**Basis:** Dry

Analyte Name	Sample Result	Result	Matrix Spike KQ1712059-03		Duplicate Matrix Spike KQ1712059-04		% Rec Limits	RPD	RPD Limit	
			Spike Amount	% Rec	Result	Spike Amount				% Rec
Arsenic	35.8	134	101	97	135	101	98	75-125	<1	30
Lead	723	794	101	71 #	654	101	-68 #	75-125	19	30

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708842

**Date Analyzed:** 08/29/17

**Lab Control Sample Summary**  
**Total Metals**

**Units:**mg/Kg

**Basis:**Dry

**Lab Control Sample**  
KQ1712059-01

<b>Analyte Name</b>	<b>Analytical Method</b>	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>% Rec Limits</b>
Arsenic	6010C	493	500	99	80-120
Lead	6010C	482	500	96	80-120



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ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

September 05, 2017

**Analytical Report for Service Request No: K1708843**

Dave Enos  
Teck American Incorporated  
501 North Riverpoint Blvd., Suite 300  
Spokane, WA 99202

**RE: August 2017 Sampling SAT Study / B0095010.0005.00001**

Dear Dave,

Enclosed are the results of the sample(s) submitted to our laboratory August 22, 2017  
For your reference, these analyses have been assigned our service request number **K1708843**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at [www.alsglobal.com](http://www.alsglobal.com). All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at [Jeff.Coronado@alsglobal.com](mailto:Jeff.Coronado@alsglobal.com).

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**

Jeff Coronado  
Metals Department  
Manager



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ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

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## Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

### **Inorganic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

### **Metals Data Qualifiers**

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.  
  - i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Organic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Additional Petroleum Hydrocarbon Specific Qualifiers**

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

**ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso  
State Certifications, Accreditations, and Licenses**

<b>Agency</b>	<b>Web Site</b>	<b>Number</b>
Alaska DEH	<a href="http://dec.alaska.gov/eh/lab/cs/csapproval.htm">http://dec.alaska.gov/eh/lab/cs/csapproval.htm</a>	UST-040
Arizona DHS	<a href="http://www.azdhs.gov/lab/license/env.htm">http://www.azdhs.gov/lab/license/env.htm</a>	AZ0339
Arkansas - DEQ	<a href="http://www.adeq.state.ar.us/techsvs/labcert.htm">http://www.adeq.state.ar.us/techsvs/labcert.htm</a>	88-0637
California DHS (ELAP)	<a href="http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx">http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx</a>	2795
DOD ELAP	<a href="http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm">http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm</a>	L14-51
Florida DOH	<a href="http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm">http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm</a>	E87412
Hawaii DOH	<a href="http://health.hawaii.gov/">http://health.hawaii.gov/</a>	-
ISO 17025	<a href="http://www.pjllabs.com/">http://www.pjllabs.com/</a>	L16-57
Louisiana DEQ	<a href="http://www.deq.louisiana.gov/page/la-lab-accreditation">http://www.deq.louisiana.gov/page/la-lab-accreditation</a>	03016
Maine DHS	<a href="http://www.maine.gov/dhhs/">http://www.maine.gov/dhhs/</a>	WA01276
Minnesota DOH	<a href="http://www.health.state.mn.us/accreditation">http://www.health.state.mn.us/accreditation</a>	053-999-457
Nevada DEP	<a href="http://ndep.nv.gov/bsdw/labservice.htm">http://ndep.nv.gov/bsdw/labservice.htm</a>	WA01276
New Jersey DEP	<a href="http://www.nj.gov/dep/enforcement/oqa.html">http://www.nj.gov/dep/enforcement/oqa.html</a>	WA005
New York - DOH	<a href="https://www.wadsworth.org/regulatory/elap">https://www.wadsworth.org/regulatory/elap</a>	12060
North Carolina DEQ	<a href="https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification">https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification</a>	605
Oklahoma DEQ	<a href="http://www.deq.state.ok.us/CSDnew/labcert.htm">http://www.deq.state.ok.us/CSDnew/labcert.htm</a>	9801
Oregon – DEQ (NELAP)	<a href="http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx">http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx</a>	WA100010
South Carolina DHEC	<a href="http://www.scdhec.gov/environment/EnvironmentalLabCertification/">http://www.scdhec.gov/environment/EnvironmentalLabCertification/</a>	61002
Texas CEQ	<a href="http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html">http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html</a>	T104704427
Washington DOE	<a href="http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html">http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html</a>	C544
Wyoming (EPA Region 8)	<a href="https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water">https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water</a>	-
Kelso Laboratory Website	<a href="http://www.alsglobal.com">www.alsglobal.com</a>	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at [www.ALSGlobal.com](http://www.ALSGlobal.com) or at the accreditation bodies web site. Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.



## Case Narrative

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)



**ALS ENVIRONMENTAL**

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/  
B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request No.:** K1708843  
**Date Received:** 08/22/17

**Case Narrative**

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

**Sample Receipt**

Twenty soil samples were received for analysis at ALS Environmental on 08/22/17. The samples were received in good condition and consistent with the accompanying chain of custody form, except where noted on the cooler receipt and preservation form included in this report.. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

**Total Metals**

**Relative Percent Difference Exceptions:**

The Relative Percent Difference (RPD) for the replicate analysis of Lead in sample 401-2-F08-081617 was outside the project specified control limits. The variability in the results was attributed to the heterogeneous character of the sample. Standard mixing techniques were used, but were not sufficient for complete homogenization of this sample.

**Matrix Spike Recovery Exceptions:**

The matrix spike recovery of Lead for sample 401-2-F08-081617 was outside the project specified control criteria as a result of the heterogeneous character of the sample. The Relative Percent Difference (RPD) for the replicate analysis supported this. Since the unspiked sample contained high analyte concentrations relative to the amount spiked, the variability between replicates was sufficient to bias the percent recoveries outside the control criteria. The associated QA/QC results (e.g. control sample, calibration standards, etc.) indicated the analysis was in control. No further corrective action was appropriate.

No other anomalies associated with the analysis of these samples were observed.

Approved by  \_\_\_\_\_



# Chain of Custody

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

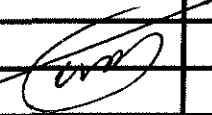
ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

K1708849

Date 8/22/17  
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Project Name: <u>Teck American - UCR SATES</u> Project Number: <u>B0095010.0005.00001</u> Project Contact: <u>Kady Young</u> Company: <u>Arcadis</u> Company/Address: <u>189 North Cedar Street</u> Phone: <u>307-203-3510 or 810-588-1488</u> City, State, Zip: <u>Buffalo, WY 82834</u> FAX: <u>307-684-5961</u> Sampler's Signature: _____					Analysis Requested						
Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	lead/arsenic 3050B/6010					REMARKS
401 - 2 - F06 - 081617	08/16/17	11:39		S	1	X					
↓ F07 ↓	↓ ↓	13:27		S	1	X					
↓ F08 ↓	↓ ↓	14:20		S	1	X					
↓ F09 ↓	↓ ↓	15:42		S	1	X					
↓ F10 ↓	↓ ↓	16:29		S	1	X					
					S	1	X				
					S	1	X				
					S	1	X				
					S	1	X				
					S	1	X				
TURNAROUND REQUIREMENTS <input type="checkbox"/> 24 hr <input type="checkbox"/> 48 hr <input type="checkbox"/> 5 day <input checked="" type="checkbox"/> Standard (10 days) <input type="checkbox"/> Provide FAX Preliminary Results Requested Report Date: _____			REPORT REQUIREMENTS I. Routine Report: Results, Method Blank, Surrogate, as required <input checked="" type="checkbox"/> II. Report Dup., MS, MSD as required III. Data Validation Report (includes raw data) IV. CLP Deliverable Report <input checked="" type="checkbox"/> V. EDD			Comments/Special Instructions: Hold Remainder					
Invoice Information P.O. # _____ Bill to: <u>Dave Enos - Teck American</u> 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99201											
RELINQUISHED BY: Signature: <u>Watson Metztraum</u> Printed Name: <u>Watson Metztraum</u> Firm: <u>Arcadis</u> Date/Time: <u>8/21/17 1300</u>			RECEIVED BY: Signature: <u>[Signature]</u> Printed Name: <u>AMOLF</u> Firm: <u>ALS</u> Date/Time: <u>8/22/17 0950</u>			RELINQUISHED BY: Signature: _____ Printed Name: _____ Firm: _____ Date/Time: _____			RECEIVED BY: Signature: _____ Printed Name: _____ Firm: _____ Date/Time: _____		

ALS Environmental-Kelso

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K1708843

Date

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SR# WMS 8/19/17 WMS 8/19/17

Project Name: <u>Teck American - UCR SATES</u> Project Number: <u>B0095010.0005.00001</u> Project Contact: <u>Kady Young</u> Company: <u>Arcadis</u> Company/Address: <u>189 North Cedar Street</u> Phone: <u>307-203-3510 or 810-588-1488</u> City, State, Zip: <u>Buffalo, WY 82834</u> FAX: <u>307-684-5961</u> Sampler's Signature: _____					Analysis Requested								
					Number of Containers	lead/arsenic 3050B/6010							
Sample I.D.	Date	Time	LAB ID	Matrix									REMARKS
401-2-606-081617	08/16/17	11:43		S			1	X					
G07		13:31		S			1	X					
G08		14:44		S			1	X					
G09		15:46		S			1	X					
G10		16:32		S			1	X					
				S			1	X					
				S			1	X					
				S			1	X					
<b>TURNAROUND REQUIREMENTS</b> ___ 24 hr ___ 48 hr ___ 5 day <input checked="" type="checkbox"/> Standard (10 days) ___ Provide FAX Preliminary Results Requested Report Date: _____				<b>REPORT REQUIREMENTS</b> I. Routine Report: Results, Method Blank, Surrogate, as required <input checked="" type="checkbox"/> II. Report Dup., MS, MSD as required III. Data Validation Report (includes raw data) IV. CLP Deliverable Report <input checked="" type="checkbox"/> V. EDD				<b>Comments/Special Instructions:</b> Hold Remainder					
<b>Invoice Information</b> P.O. # _____ Bill to: <u>Dave Enos - Teck American</u> 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99208													
<b>RELINQUISHED BY:</b> Signature: <u>[Signature]</u> Printed Name: <u>Watson Metsutnan</u> Firm: <u>Arcadis</u> Date/Time: <u>8/21/17 1300</u>				<b>RECEIVED BY:</b> Signature: <u>[Signature]</u> Printed Name: <u>SWOLF</u> Firm: <u>[Signature]</u> Date/Time: <u>8/22/17 0950</u>				<b>RELINQUISHED BY:</b> Signature: _____ Printed Name: _____ Firm: _____ Date/Time: _____					
								<b>RECEIVED BY:</b> Signature: _____ Printed Name: _____ Firm: _____ Date/Time: _____					

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

K1708843

Date

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SR# 6/28/17/17 6/28/17/17

Project Name: <u>Teck American - UCR SATES</u> Project Number: <u>B0095010.0005.00001</u> Project Contact: <u>Kady Young</u> Company: <u>Arcadis</u> Company/Address: <u>189 North Cedar Street</u> Phone: <u>307-203-3510 or 810-588-1488</u> City, State, Zip: <u>Buffalo, WY 82834</u> FAX: <u>307-684-5961</u> Sampler's Signature: _____					Number of Containers	Analysis Requested					
Sample I.D.	Date	Time	LAB ID	Matrix		lead/arsenic 3050B/6010					REMARKS
401-2-H06-081617	08/16/17	11:46		S	1	X					
H07		13:35		S	1	X					
H08		14:49		S	1	X					
H09		15:52		S	1	X					
H10		16:36		S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					
TURNAROUND REQUIREMENTS <input type="checkbox"/> 24 hr <input type="checkbox"/> 48 hr <input type="checkbox"/> 5 day <input checked="" type="checkbox"/> Standard (10 days) <input type="checkbox"/> Provide FAX Preliminary Results Requested Report Date: _____			REPORT REQUIREMENTS <input type="checkbox"/> I. Routine Report: Results, Method Blank, Surrogate, as required <input checked="" type="checkbox"/> II. Report Dup., MS, MSD as required <input type="checkbox"/> III. Data Validation Report (includes raw data) <input type="checkbox"/> IV. CLP Deliverable Report <input checked="" type="checkbox"/> V. EDD			Comments/Special Instructions: Hold Remainder					
Invoice Information P.O. # _____ Bill to: <u>Dave Enos - Teck American</u> 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99201											
RELINQUISHED BY: Signature: <u>[Signature]</u> Printed Name: <u>Watson Metsutim</u> Firm: <u>Arcadis</u> Date/Time: <u>8/21/17 1300</u>			RECEIVED BY: Signature: <u>[Signature]</u> Printed Name: <u>SUOZE</u> Firm: <u>ALS</u> Date/Time: <u>8/22/17 0950</u>			RELINQUISHED BY: Signature: _____ Printed Name: _____ Firm: _____ Date/Time: _____			RECEIVED BY: Signature: _____ Printed Name: _____ Firm: _____ Date/Time: _____		

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

K1708843

Date 9/18 OF 20-10  
 SR# WM 8/19/17 WM 8/19/17

Project Name: <u>Teck American - UCR SATES</u> Project Number: <u>B0095010.0005.00001</u> Project Contact: <u>Kady Young</u> Company: <u>Arcadis</u> Company/Address: <u>189 North Cedar Street</u> Phone: <u>307-203-3510 or 810-588-1488</u> City, State, Zip: <u>Buffalo, WY 82834</u> FAX: <u>307-684-5961</u> Sampler's Signature: _____					Number of Containers	Analysis Requested									
						lead/arsenic 3050B/6010									
Sample I.D.	Date	Time	LAB ID	Matrix							REMARKS				
401-2-I06-081617	08/16/17	11:52		S	1	X									
↓ I07 ↓	↓ ↓	↓ 13:40 ↓		S	1	X									
↓ I08 ↓	↓ ↓	↓ 14:55 ↓		S	1	X									
↓ I09 ↓	↓ ↓	↓ 15:55 ↓		S	1	X									
↓ I10 ↓	↓ ↓	↓ 16:39 ↓		S	1	X									
					S	1	X								
					S	1	X								
					S	1	X								
					S	1	X								
					S	1	X								
<b>TURNAROUND REQUIREMENTS</b> ___ 24 hr ___ 48 hr ___ 5 day <input checked="" type="checkbox"/> Standard (10 days) ___ Provide FAX Preliminary Results Requested Report Date: _____				<b>REPORT REQUIREMENTS</b> I. Routine Report: Results, Method Blank, Surrogate, as required <input checked="" type="checkbox"/> II. Report Dup., MS, MSD as required III. Data Validation Report (includes raw data) IV. CLP Deliverable Report <input checked="" type="checkbox"/> V. EDD				<b>Comments/Special Instructions:</b> Hold Remainder							
<b>Invoice Information</b> P.O. # _____ Bill to: <u>Dave Enos - Teck American</u> 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99201															
<b>RELINQUISHED BY:</b> Signature: Printed Name: <u>Watson Metzner</u> Firm: <u>Arcadis</u> Date/Time: <u>8/21/17 1300</u>				<b>RECEIVED BY:</b> Signature: Printed Name: <u>R. WOLF</u> Firm: <u>ARC</u> Date/Time: <u>8/22/17 0950</u>				<b>RELINQUISHED BY:</b> Signature: _____ Printed Name: _____ Firm: _____ Date/Time: _____				<b>RECEIVED BY:</b> Signature: _____ Printed Name: _____ Firm: _____ Date/Time: _____			



PC J. Lee

### Cooler Receipt and Preservation Form

Client: Teck America Service Request K17 08843  
 Received: 8/22/17 Opened: 8/22/17 By: KM Unloaded: 8/22/17 By: KM

Samples were received via?  USPS  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 Front  
 If present, were custody seals intact?  Y  N If present, were they signed and dated?  Y  N

Raw Bottle Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID NA	Tracking Number NA	Filed
5.2	5.4	13.1	13.3	+0.2	325		8745 6738 5575	
7.8	7.9	11.5	11.6	+0.1	373		8745 6738 5586	
7.3	7.6	14.1	14.4	+0.3	340		8745 6738 5564	
7.7	7.2	7.2	7.4	+0.2	379		8105 9112 1296	
7.3	7.2	14.2	14.1	-0.1	328		8745 6738 5597	

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  
 Were samples received in good condition (temperature, unbroken)? *Indicate in the table below.* NA  Y  N  
 If applicable, tissue samples were received:  Frozen  Partially Thawed  Thawed  
 Were all sample labels complete (i.e analysis, preservation, etc.)? NA  Y  ~~N~~ KM  
 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:
401-2-602-081717	401-2-602-0817-D	"602-D" on Sample jar Lid
401-1-C1-081817	401-1-C01-081817	(Dates + times match COC. <del>VOA</del> that way. "

Sample ID	Bottle Count Bottle Type	Out of Temp	Head- space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

*s, Discrepancies, & Resolutions:* In all of the Coolers, there wasn't enough ice and what was there was melted.



# Total Solids

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)



**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1708843  
**Date Collected:** 08/16/17  
**Date Received:** 08/22/17  
**Units:** Percent  
**Basis:** As Received

**Solids, Total**

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
401-2-F06-081617	K1708843-001	94.1	-	-	1	08/25/17 16:15	
401-2-F07-081617	K1708843-002	84.2	-	-	1	08/25/17 16:15	
401-2-F08-081617	K1708843-003	94.4	-	-	1	08/25/17 16:15	
401-2-F09-081617	K1708843-004	94.4	-	-	1	08/25/17 16:15	
401-2-F10-081617	K1708843-005	95.1	-	-	1	08/25/17 16:15	
401-2-G06-081617	K1708843-006	95.4	-	-	1	08/25/17 16:15	
401-2-G07-081617	K1708843-007	94.1	-	-	1	08/25/17 16:15	
401-2-G08-081617	K1708843-008	91.9	-	-	1	08/25/17 16:15	
401-2-G09-081617	K1708843-009	91.7	-	-	1	08/25/17 16:15	
401-2-G10-081617	K1708843-010	91.0	-	-	1	08/25/17 16:15	
401-2-H06-081617	K1708843-011	91.5	-	-	1	08/25/17 16:15	
401-2-H07-081617	K1708843-012	92.4	-	-	1	08/25/17 16:15	
401-2-H08-081617	K1708843-013	87.7	-	-	1	08/25/17 16:15	
401-2-H09-081617	K1708843-014	94.3	-	-	1	08/25/17 16:15	
401-2-H10-081617	K1708843-015	95.4	-	-	1	08/25/17 16:15	
401-2-I06-081617	K1708843-016	94.6	-	-	1	08/25/17 16:15	
401-2-I07-081617	K1708843-017	85.9	-	-	1	08/25/17 16:15	
401-2-I08-081617	K1708843-018	79.5	-	-	1	08/25/17 16:15	
401-2-I09-081617	K1708843-019	94.6	-	-	1	08/25/17 16:15	
401-2-I10-081617	K1708843-020	94.4	-	-	1	08/25/17 16:15	

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QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:**K1708843  
**Date Collected:**08/16/17  
**Date Received:**08/22/17

**Units:**Percent  
**Basis:**As Received

Replicate Sample Summary

Inorganic Parameters

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
401-2-F06-081617	K1708843-001DUP	-	94.1	93.9	94.0	<1	20	08/25/17
401-2-H06-081617	K1708843-011DUP	-	91.5	89.5	90.5	2	20	08/25/17

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



# Metals

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[www.alsglobal.com](http://www.alsglobal.com)

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-F06-081617  
**Lab Code:** K1708843-001

**Service Request:** K1708843  
**Date Collected:** 08/16/17 11:39  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>45.0</b>	mg/Kg	4.2	0.8	2	08/29/17 19:12	08/24/17	
Lead	6010C	<b>706</b>	mg/Kg	2.1	0.4	2	08/29/17 19:12	08/24/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-F07-081617  
**Lab Code:** K1708843-002

**Service Request:** K1708843  
**Date Collected:** 08/16/17 13:27  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>13.8</b>	mg/Kg	4.4	0.9	2	08/29/17 19:22	08/24/17	
Lead	6010C	<b>402</b>	mg/Kg	2.2	0.4	2	08/29/17 19:22	08/24/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-F08-081617  
**Lab Code:** K1708843-003

**Service Request:** K1708843  
**Date Collected:** 08/16/17 14:20  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>39.7</b>	mg/Kg	4.2	0.8	2	08/29/17 19:01	08/24/17	
Lead	6010C	<b>347</b>	mg/Kg	2.1	0.4	2	08/29/17 19:01	08/24/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-F09-081617  
**Lab Code:** K1708843-004

**Service Request:** K1708843  
**Date Collected:** 08/16/17 15:42  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>29.4</b>	mg/Kg	4.0	0.8	2	08/29/17 19:24	08/24/17	
Lead	6010C	<b>478</b>	mg/Kg	2.0	0.4	2	08/29/17 19:24	08/24/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-F10-081617  
**Lab Code:** K1708843-005

**Service Request:** K1708843  
**Date Collected:** 08/16/17 16:29  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>77.8</b>	mg/Kg	3.8	0.8	2	08/29/17 19:26	08/24/17	
Lead	6010C	<b>809</b>	mg/Kg	1.9	0.4	2	08/29/17 19:26	08/24/17	



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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-G06-081617  
**Lab Code:** K1708843-006

**Service Request:** K1708843  
**Date Collected:** 08/16/17 11:43  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>84.3</b>	mg/Kg	4.0	0.8	2	08/29/17 19:29	08/24/17	
Lead	6010C	<b>907</b>	mg/Kg	2.0	0.4	2	08/29/17 19:29	08/24/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-G07-081617  
**Lab Code:** K1708843-007

**Service Request:** K1708843  
**Date Collected:** 08/16/17 13:31  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>63.0</b>	mg/Kg	4.1	0.8	2	08/29/17 19:31	08/24/17	
Lead	6010C	<b>357</b>	mg/Kg	2.0	0.4	2	08/29/17 19:31	08/24/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-G08-081617  
**Lab Code:** K1708843-008

**Service Request:** K1708843  
**Date Collected:** 08/16/17 14:44  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>35.2</b>	mg/Kg	4.0	0.8	2	08/29/17 19:33	08/24/17	
Lead	6010C	<b>641</b>	mg/Kg	2.0	0.4	2	08/29/17 19:33	08/24/17	

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-G09-081617  
**Lab Code:** K1708843-009

**Service Request:** K1708843  
**Date Collected:** 08/16/17 15:46  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>41.8</b>	mg/Kg	4.2	0.8	2	08/29/17 19:36	08/24/17	
Lead	6010C	<b>551</b>	mg/Kg	2.1	0.4	2	08/29/17 19:36	08/24/17	

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-G10-081617  
**Lab Code:** K1708843-010

**Service Request:** K1708843  
**Date Collected:** 08/16/17 16:32  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>54.8</b>	mg/Kg	4.3	0.9	2	08/29/17 19:38	08/24/17	
Lead	6010C	<b>646</b>	mg/Kg	2.2	0.4	2	08/29/17 19:38	08/24/17	

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-H06-081617  
**Lab Code:** K1708843-011

**Service Request:** K1708843  
**Date Collected:** 08/16/17 11:46  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>82.8</b>	mg/Kg	4.0	0.8	2	08/29/17 19:40	08/24/17	
Lead	6010C	<b>1000</b>	mg/Kg	2.0	0.4	2	08/29/17 19:40	08/24/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-H07-081617  
**Lab Code:** K1708843-012

**Service Request:** K1708843  
**Date Collected:** 08/16/17 13:35  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>53.7</b>	mg/Kg	4.0	0.8	2	08/29/17 19:43	08/24/17	
Lead	6010C	<b>466</b>	mg/Kg	2.0	0.4	2	08/29/17 19:43	08/24/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-H08-081617  
**Lab Code:** K1708843-013

**Service Request:** K1708843  
**Date Collected:** 08/16/17 14:49  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>29.5</b>	mg/Kg	4.3	0.9	2	08/29/17 19:52	08/24/17	
Lead	6010C	<b>974</b>	mg/Kg	2.1	0.4	2	08/29/17 19:52	08/24/17	



ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-H09-081617  
**Lab Code:** K1708843-014

**Service Request:** K1708843  
**Date Collected:** 08/16/17 15:52  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>15.7</b>	mg/Kg	4.2	0.8	2	08/29/17 19:54	08/24/17	
Lead	6010C	<b>580</b>	mg/Kg	2.1	0.4	2	08/29/17 19:54	08/24/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-H10-081617  
**Lab Code:** K1708843-015

**Service Request:** K1708843  
**Date Collected:** 08/16/17 16:36  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	22.7	mg/Kg	4.1	0.8	2	08/29/17 19:56	08/24/17	
Lead	6010C	475	mg/Kg	2.1	0.4	2	08/29/17 19:56	08/24/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-I06-081617  
**Lab Code:** K1708843-016

**Service Request:** K1708843  
**Date Collected:** 08/16/17 11:52  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>49.0</b>	mg/Kg	4.1	0.8	2	08/29/17 19:59	08/24/17	
Lead	6010C	<b>533</b>	mg/Kg	2.1	0.4	2	08/29/17 19:59	08/24/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-I07-081617  
**Lab Code:** K1708843-017

**Service Request:** K1708843  
**Date Collected:** 08/16/17 13:40  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>65.7</b>	mg/Kg	4.3	0.9	2	08/29/17 20:01	08/24/17	
Lead	6010C	<b>384</b>	mg/Kg	2.2	0.4	2	08/29/17 20:01	08/24/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-I08-081617  
**Lab Code:** K1708843-018

**Service Request:** K1708843  
**Date Collected:** 08/16/17 14:55  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>82.6</b>	mg/Kg	4.8	1.0	2	08/29/17 20:04	08/24/17	
Lead	6010C	<b>1100</b>	mg/Kg	2.4	0.5	2	08/29/17 20:04	08/24/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-I09-081617  
**Lab Code:** K1708843-019

**Service Request:** K1708843  
**Date Collected:** 08/16/17 15:55  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>37.0</b>	mg/Kg	4.1	0.8	2	08/29/17 20:06	08/24/17	
Lead	6010C	<b>472</b>	mg/Kg	2.0	0.4	2	08/29/17 20:06	08/24/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-I10-081617  
**Lab Code:** K1708843-020

**Service Request:** K1708843  
**Date Collected:** 08/16/17 16:39  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>29.0</b>	mg/Kg	4.1	0.8	2	08/29/17 20:08	08/24/17	
Lead	6010C	<b>287</b>	mg/Kg	2.0	0.4	2	08/29/17 20:08	08/24/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** Method Blank  
**Lab Code:** KQ1712068-02

**Service Request:** K1708843  
**Date Collected:** NA  
**Date Received:** NA  
**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	ND U	mg/Kg	4	0.8	2	08/29/17 18:56	08/24/17	
Lead	6010C	ND U	mg/Kg	2	0.4	2	08/29/17 18:56	08/24/17	



ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708843  
**Date Collected:** 08/16/17  
**Date Received:** 08/22/17  
**Date Analyzed:** 08/29/17  
**Date Extracted:** 08/24/17

**Duplicate Matrix Spike Summary  
Total Metals**

**Sample Name:** 401-2-F08-081617  
**Lab Code:** K1708843-003  
**Analysis Method:** 6010C  
**Prep Method:** EPA 3050B

**Units:** mg/Kg  
**Basis:** Dry

Analyte Name	Sample Result	Result	Matrix Spike KQ1712068-03		Result	Duplicate Matrix Spike KQ1712068-04		% Rec Limits	RPD	RPD Limit
			Spike Amount	% Rec		Spike Amount	% Rec			
Arsenic	39.7	136	103	93	139	103	96	75-125	2	30
Lead	347	647	103	290 N	440	103	89	75-125	38*	30

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708843

**Date Analyzed:** 08/29/17

**Lab Control Sample Summary**  
**Total Metals**

**Units:**mg/Kg

**Basis:**Dry

**Lab Control Sample**  
KQ1712068-01

<b>Analyte Name</b>	<b>Analytical Method</b>	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>% Rec Limits</b>
Arsenic	6010C	491	500	98	80-120
Lead	6010C	467	500	93	80-120



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ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

September 05, 2017

**Analytical Report for Service Request No: K1708844**

Dave Enos  
Teck American Incorporated  
501 North Riverpoint Blvd., Suite 300  
Spokane, WA 99202

**RE: August 2017 Sampling SAT Study / B0095010.0005.00001**

Dear Dave,

Enclosed are the results of the sample(s) submitted to our laboratory August 22, 2017  
For your reference, these analyses have been assigned our service request number **K1708844**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at [www.alsglobal.com](http://www.alsglobal.com). All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at [Jeff.Coronado@alsglobal.com](mailto:Jeff.Coronado@alsglobal.com).

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**

Jeff Coronado  
Metals Department  
Manager



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ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

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## Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

### **Inorganic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

### **Metals Data Qualifiers**

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.  
  - i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Organic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.  
  - i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Additional Petroleum Hydrocarbon Specific Qualifiers**

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

**ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso  
State Certifications, Accreditations, and Licenses**

<b>Agency</b>	<b>Web Site</b>	<b>Number</b>
Alaska DEH	<a href="http://dec.alaska.gov/eh/lab/cs/csapproval.htm">http://dec.alaska.gov/eh/lab/cs/csapproval.htm</a>	UST-040
Arizona DHS	<a href="http://www.azdhs.gov/lab/license/env.htm">http://www.azdhs.gov/lab/license/env.htm</a>	AZ0339
Arkansas - DEQ	<a href="http://www.adeq.state.ar.us/techsvs/labcert.htm">http://www.adeq.state.ar.us/techsvs/labcert.htm</a>	88-0637
California DHS (ELAP)	<a href="http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx">http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx</a>	2795
DOD ELAP	<a href="http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm">http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm</a>	L14-51
Florida DOH	<a href="http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm">http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm</a>	E87412
Hawaii DOH	<a href="http://health.hawaii.gov/">http://health.hawaii.gov/</a>	-
ISO 17025	<a href="http://www.pjllabs.com/">http://www.pjllabs.com/</a>	L16-57
Louisiana DEQ	<a href="http://www.deq.louisiana.gov/page/la-lab-accreditation">http://www.deq.louisiana.gov/page/la-lab-accreditation</a>	03016
Maine DHS	<a href="http://www.maine.gov/dhhs/">http://www.maine.gov/dhhs/</a>	WA01276
Minnesota DOH	<a href="http://www.health.state.mn.us/accreditation">http://www.health.state.mn.us/accreditation</a>	053-999-457
Nevada DEP	<a href="http://ndep.nv.gov/bsdw/labservice.htm">http://ndep.nv.gov/bsdw/labservice.htm</a>	WA01276
New Jersey DEP	<a href="http://www.nj.gov/dep/enforcement/oqa.html">http://www.nj.gov/dep/enforcement/oqa.html</a>	WA005
New York - DOH	<a href="https://www.wadsworth.org/regulatory/elap">https://www.wadsworth.org/regulatory/elap</a>	12060
North Carolina DEQ	<a href="https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification">https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification</a>	605
Oklahoma DEQ	<a href="http://www.deq.state.ok.us/CSDnew/labcert.htm">http://www.deq.state.ok.us/CSDnew/labcert.htm</a>	9801
Oregon – DEQ (NELAP)	<a href="http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx">http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx</a>	WA100010
South Carolina DHEC	<a href="http://www.scdhec.gov/environment/EnvironmentalLabCertification/">http://www.scdhec.gov/environment/EnvironmentalLabCertification/</a>	61002
Texas CEQ	<a href="http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html">http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html</a>	T104704427
Washington DOE	<a href="http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html">http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html</a>	C544
Wyoming (EPA Region 8)	<a href="https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water">https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water</a>	-
Kelso Laboratory Website	<a href="http://www.alsglobal.com">www.alsglobal.com</a>	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at [www.ALSGlobal.com](http://www.ALSGlobal.com) or at the accreditation bodies web site. Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.



## Case Narrative

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)



## ALS ENVIRONMENTAL

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/  
B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request No.:** K1708844  
**Date Received:** 08/22/17

### Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

### Sample Receipt

Twenty soil samples were received for analysis at ALS Environmental on 08/22/17. The samples were received in good condition and consistent with the accompanying chain of custody form, except where noted on the cooler receipt and preservation form included in this report.. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

### Total Metals

#### **Matrix Spike Recovery Exceptions:**

The duplicate matrix spike recovery of Lead for sample 401-2-J06-081617 was outside control criteria. Recovery in the Laboratory Control Sample (LCS) was acceptable, which indicated the analytical batch was in control. No further corrective action was appropriate.

No other anomalies associated with the analysis of these samples were observed.

Approved by \_\_\_\_\_





# Chain of Custody

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

KI 7088441

Date 10/20 OF 2010  
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 SR# 08/16/17 08/11/17

Project Name: <u>Teck American - UCR SATES</u> Project Number: <u>B0095010.0005.00001</u> Project Contact: <u>Kady Young</u> Company: <u>Arcadis</u> Company/Address: <u>189 North Cedar Street</u> Phone: <u>307-203-3510 or 810-588-1488</u> City, State, Zip: <u>Buffalo, WY 82834</u> FAX: <u>307-684-5961</u> Sampler's Signature: _____					Analysis Requested														
					Number of Containers	lead/arsenic 3050B/6010													
Sample I.D.	Date	Time	LAB ID	Matrix							REMARKS								
401-2-J06-081617	08/16/17	11:56		S		1	X												
↓ J07 ↓	↓ ↓	↓ 13:53 ↓		S		1	X												
↓ J08 ↓	↓ ↓	↓ 14:59 ↓		S		1	X												
↓ J09 ↓	↓ ↓	↓ 16:03 ↓		S		1	X												
↓ J10 ↓	↓ ↓	↓ 16:42 ↓		S		1	X												
						S	1	X											
						S	1	X											
						S	1	X											
					S	1	X												
<b>TURNAROUND REQUIREMENTS</b> <input type="checkbox"/> 24 hr <input type="checkbox"/> 48 hr <input type="checkbox"/> 5 day <input checked="" type="checkbox"/> Standard (10 days) <input type="checkbox"/> Provide FAX Preliminary Results Requested Report Date: _____					<b>REPORT REQUIREMENTS</b> <input type="checkbox"/> I. Routine Report: Results, Method Blank, Surrogate, as required <input checked="" type="checkbox"/> II. Report Dup., MS, MSD as required <input type="checkbox"/> III. Data Validation Report (includes raw data) <input type="checkbox"/> IV. CLP Deliverable Report <input checked="" type="checkbox"/> V. EDD					<b>Comments/Special Instructions:</b> Hold Remainder									
<b>Invoice Information</b> P.O. # _____ Bill to: <u>Dave Enos - Teck American</u> 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99208																			
<b>RELINQUISHED BY:</b> Signature: Printed Name: <u>Watson Metsutnam</u> Firm: <u>Arcadis</u> Date/Time: <u>8/21/17 1300</u>					<b>RECEIVED BY:</b> Signature: Printed Name: <u>J. Wolf</u> Firm: <u>ALS</u> Date/Time: <u>8/22/17 0950</u>					<b>RELINQUISHED BY:</b> Signature: _____ Printed Name: _____ Firm: _____ Date/Time: _____					<b>RECEIVED BY:</b> Signature: _____ Printed Name: _____ Firm: _____ Date/Time: _____				

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

K1708844

Date \_\_\_\_\_  
 PAGE 1 OF 20  
 SR# WA 8/19/17

**Project Name:** Teck American - UCR SATES **Project Number:** B0095010.0005.00001

**Project Contact:** Kady Young **Company:** Arcadis

**Company/Address:** 189 North Cedar Street **Phone:** 307-203-3510 or 810-588-1488

**City, State, Zip:** Buffalo, WY 82834 **FAX:** 307-684-5961

**Sampler's Signature:** \_\_\_\_\_

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	Analysis Requested					REMARKS
						lead/arsenic 3050B/6010					
401-2-A01-081717	08/17/17	10:51		S	1	X					
A02		10:55		S	1	X					
A03		11:01		S	1	X					
A04		11:06		S	1	X					
A05		11:09		S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					

**TURNAROUND REQUIREMENTS**

24 hr  48 hr  5 day

Standard (10 days)

Provide FAX Preliminary Results

Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**

I. Routine Report: Results, Method Blank, Surrogate, as required

II. Report Dup., MS, MSD as required

III. Data Validation Report (includes raw data)

IV. CLP Deliverable Report

V. EDD

**Comments/Special Instructions:**

Hold Remainder

**Invoice Information**

P.O. # \_\_\_\_\_

Bill to: Dave Enos - Teck American

501 N Riverpoint Blvd, Suite 300 Spokane, WA 99201

**RELINQUISHED BY:**

Signature: [Signature]

Printed Name: Watson Matsutani

Firm: Arcadis

Date/Time: 8/21/17 1300

**RECEIVED BY:**

Signature: [Signature]

Printed Name: SWOLF

Firm: ALS

Date/Time: 8/22/17 0950

**RELINQUISHED BY:**

Signature: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Firm: \_\_\_\_\_

Date/Time: \_\_\_\_\_

**RECEIVED BY:**

Signature: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Firm: \_\_\_\_\_

Date/Time: \_\_\_\_\_

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

K1708844

Date                       
 PAGE 23 OF 2010  
 SR# 201811417 201811411

Project Name: <u>Teck American - UCR SATES</u> Project Number: <u>B0095010.0005.00001</u> Project Contact: <u>Kady Young</u> Company: <u>Arcadis</u> Company/Address: <u>189 North Cedar Street</u> Phone: <u>307-203-3510 or 810-588-1488</u> City, State, Zip: <u>Buffalo, WY 82834</u> FAX: <u>307-684-5961</u> Sampler's Signature: _____					Number of Containers	Analysis Requested									
						lead/arsenic 3050B/6010									
Sample I.D.	Date	Time	LAB ID	Matrix							REMARKS				
401 - 2 - B01 - 081717	08/17/17	11:16		S	1	X									
↓ B02 ↓	↓	↓ 11:19 ↓		S	1	X									
↓ B03 ↓	↓	↓ 11:24 ↓		S	1	X									
↓ B04 ↓	↓	↓ 11:28 ↓		S	1	X									
↓ B05 ↓	↓	↓ 11:34 ↓		S	1	X									
					S	1	X								
					S	1	X								
					S	1	X								
					S	1	X								
					S	1	X								
<b>TURNAROUND REQUIREMENTS</b> <input type="checkbox"/> 24 hr <input type="checkbox"/> 48 hr <input type="checkbox"/> 5 day <input checked="" type="checkbox"/> Standard (10 days) <input type="checkbox"/> Provide FAX Preliminary Results Requested Report Date: _____				<b>REPORT REQUIREMENTS</b> I. Routine Report: Results, Method Blank, Surrogate, as required <input checked="" type="checkbox"/> II. Report Dup., MS, MSD as required III. Data Validation Report (includes raw data) IV. CLP Deliverable Report <input checked="" type="checkbox"/> V. EDD				<b>Comments/Special Instructions:</b> Hold Remainder							
<b>Invoice Information</b> P.O. # _____ Bill to: <u>Dave Enos - Teck American</u> 501 N Riverpoint Blvd, Suite 300 Spokane, WA 992															
<b>RELINQUISHED BY:</b> Signature: Printed Name: <u>Watson Metsotnan</u> Firm: <u>Arcadis</u> Date/Time: <u>8/21/17 1300</u>				<b>RECEIVED BY:</b> Signature: Printed Name: <u>Dave Enos</u> Firm: <u>Arcadis</u> Date/Time: <u>8/22/17 0950</u>				<b>RELINQUISHED BY:</b> Signature: _____ Printed Name: _____ Firm: _____ Date/Time: _____				<b>RECEIVED BY:</b> Signature: _____ Printed Name: _____ Firm: _____ Date/Time: _____			

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

K1708844

Date

PAGE 35 OF 2010  
SR# W08 8/19/17 W08 8/19/17

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001  
 Project Contact: Kady Young Company: Arcadis  
 Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488  
 City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961  
 Sampler's Signature: \_\_\_\_\_

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	Analysis Requested					REMARKS
						lead/arsenic 3050B/6010					
401-2-C01-081717	08/17/17	11:45		S	1	X					
C02		11:48		S	1	X					
C03		11:52		S	1	X					
C04		11:57		S	1	X					
C05		12:00		S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					

**TURNAROUND REQUIREMENTS**  
 \_\_\_ 24 hr \_\_\_ 48 hr \_\_\_ 5 day  
 Standard (10 days)  
 \_\_\_ Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 \_\_\_ II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes raw data)  
 \_\_\_ IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # \_\_\_\_\_  
 Bill to: Dave Enos - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99201

**RELINQUISHED BY:**  
 Signature: W. Metzman  
 Printed Name: Watson Metzman  
 Firm: Arcadis  
 Date/Time: 8/21/17 1300

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: SWOLF  
 Firm: AES  
 Date/Time: 8/22/17 0950

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_



PC 1.6

### Cooler Receipt and Preservation Form

Client: Teck America Service Request K17 08844  
Received: 8/22/17 Opened: 8/22/17 By: KM Unloaded: 8/22/17 By: KM

Samples were received via? USPS 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 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
5.2	5.4	13.1	13.3	+0.2	325		8745 6738 5575		
7.8	7.9	11.5	11.6	+0.1	373		8745 6738 5586		
7.3	7.6	14.1	14.4	+0.3	349		8745 6738 5564		
7.7	7.2	7.2	7.4	+0.2	379		8105 9112 1296		
7.3	7.9	14.2	14.1	-0.1	328		8745 6738 5597		

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  
Were samples received in good condition (temperature, unbroken)? Indicate in the table below. NA Y N  
If applicable, tissue samples were received: Frozen Partially Thawed Thawed  
Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N KM  
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:
<u>401-2-G02-081717</u>	<u>401-2-G02-0817-0</u>	<u>"G02-D" on Sample jar Lid</u>
<u>401-1-C1-081817</u>	<u>401-1-C01-081817</u>	<u>(Dates + times match COC. <del>CO1-C01</del> that way.)</u>

Sample ID	Bottle Count	Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

s, Discrepancies, & Resolutions: In all of the Coolers, there wasn't enough ice and what was there was melted.



# Total Solids

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)



**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1708844  
**Date Collected:** 08/16/17 - 08/17/17  
**Date Received:** 08/22/17

**Units:** Percent  
**Basis:** As Received

**Solids, Total**

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
401-2-J06-081617	K1708844-001	94.7	-	-	1	08/23/17 16:44	
401-2-J07-081617	K1708844-002	76.6	-	-	1	08/23/17 16:44	
401-2-J08-081617	K1708844-003	86.3	-	-	1	08/23/17 16:44	
401-2-J09-081617	K1708844-004	93.8	-	-	1	08/23/17 16:44	
401-2-J10-081617	K1708844-005	95.4	-	-	1	08/23/17 16:44	
401-2-A01-081717	K1708844-006	96.2	-	-	1	08/23/17 16:44	
401-2-A02-081717	K1708844-007	95.4	-	-	1	08/23/17 16:44	
401-2-A03-081717	K1708844-008	95.7	-	-	1	08/23/17 16:44	
401-2-A04-081717	K1708844-009	95.6	-	-	1	08/23/17 16:44	
401-2-A05-081717	K1708844-010	96.0	-	-	1	08/23/17 16:44	
401-2-B01-081717	K1708844-011	95.2	-	-	1	08/23/17 16:44	
401-2-B02-081717	K1708844-012	97.0	-	-	1	08/23/17 16:44	
401-2-B03-081717	K1708844-013	93.6	-	-	1	08/23/17 16:44	
401-2-B04-081717	K1708844-014	93.8	-	-	1	08/23/17 16:44	
401-2-B05-081717	K1708844-015	92.1	-	-	1	08/23/17 16:44	
401-2-C01-081717	K1708844-016	97.1	-	-	1	08/23/17 16:44	
401-2-C02-081717	K1708844-017	96.7	-	-	1	08/23/17 16:44	
401-2-C03-081717	K1708844-018	93.6	-	-	1	08/23/17 16:44	
401-2-C04-081717	K1708844-019	94.9	-	-	1	08/23/17 16:44	
401-2-C05-081717	K1708844-020	94.6	-	-	1	08/23/17 16:44	

**ALS Group USA, Corp.**  
**dba ALS Environmental**

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1708844  
**Date Collected:** 08/16/17 - 08/17/17  
**Date Received:** 08/22/17

**Units:** Percent  
**Basis:** As Received

**Replicate Sample Summary**  
**Inorganic Parameters**

<b>Sample Name:</b>	<b>Lab Code:</b>	<b>MRL</b>	<b>Sample Result</b>	<b>Duplicate Result</b>	<b>Average</b>	<b>RPD</b>	<b>RPD Limit</b>	<b>Date Analyzed</b>
Batch QC	K1708841-001DUP	-	99.2	99.2	99.2	<1	20	08/23/17
Batch QC	K1708841-011DUP	-	98.6	98.8	98.7	<1	20	08/23/17
401-2-J06-081617	K1708844-001DUP	-	94.7	94.7	94.7	<1	20	08/23/17
401-2-B01-081717	K1708844-011DUP	-	95.2	95.1	95.2	<1	20	08/23/17

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



# Metals

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-J06-081617  
**Lab Code:** K1708844-001

**Service Request:** K1708844  
**Date Collected:** 08/16/17 11:56  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>26.4</b>	mg/Kg	4.2	2.1	2	08/30/17 17:54	08/23/17	
Lead	6010C	<b>288</b>	mg/Kg	2.1	0.7	2	08/30/17 17:54	08/23/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-J07-081617  
**Lab Code:** K1708844-002

**Service Request:** K1708844  
**Date Collected:** 08/16/17 13:53  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>44.7</b>	mg/Kg	4.5	2.2	2	08/30/17 18:12	08/23/17	
Lead	6010C	<b>926</b>	mg/Kg	2.2	0.8	2	08/30/17 18:12	08/23/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-J08-081617  
**Lab Code:** K1708844-003

**Service Request:** K1708844  
**Date Collected:** 08/16/17 14:59  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>36.9</b>	mg/Kg	4.5	2.2	2	08/30/17 18:14	08/23/17	
Lead	6010C	<b>1300</b>	mg/Kg	2.2	0.8	2	08/30/17 18:14	08/23/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-J09-081617  
**Lab Code:** K1708844-004

**Service Request:** K1708844  
**Date Collected:** 08/16/17 16:03  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>37.4</b>	mg/Kg	3.8	1.9	2	08/30/17 18:16	08/23/17	
Lead	6010C	<b>574</b>	mg/Kg	1.9	0.7	2	08/30/17 18:16	08/23/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-J10-081617  
**Lab Code:** K1708844-005

**Service Request:** K1708844  
**Date Collected:** 08/16/17 16:42  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>28.8</b>	mg/Kg	4.0	2.0	2	08/30/17 18:19	08/23/17	
Lead	6010C	<b>317</b>	mg/Kg	2.0	0.7	2	08/30/17 18:19	08/23/17	



ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-A01-081717  
**Lab Code:** K1708844-006

**Service Request:** K1708844  
**Date Collected:** 08/17/17 10:51  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>18.3</b>	mg/Kg	3.9	1.9	2	08/30/17 18:21	08/23/17	
Lead	6010C	<b>273</b>	mg/Kg	1.9	0.7	2	08/30/17 18:21	08/23/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-A02-081717  
**Lab Code:** K1708844-007

**Service Request:** K1708844  
**Date Collected:** 08/17/17 10:55  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>32.8</b>	mg/Kg	3.8	1.9	2	08/30/17 18:23	08/23/17	
Lead	6010C	<b>495</b>	mg/Kg	1.9	0.7	2	08/30/17 18:23	08/23/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-A03-081717  
**Lab Code:** K1708844-008

**Service Request:** K1708844  
**Date Collected:** 08/17/17 11:01  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>38.7</b>	mg/Kg	4.0	2.0	2	08/30/17 18:26	08/23/17	
Lead	6010C	<b>377</b>	mg/Kg	2.0	0.7	2	08/30/17 18:26	08/23/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-A04-081717  
**Lab Code:** K1708844-009

**Service Request:** K1708844  
**Date Collected:** 08/17/17 11:06  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>68.9</b>	mg/Kg	3.5	1.8	2	08/30/17 18:28	08/23/17	
Lead	6010C	<b>788</b>	mg/Kg	1.8	0.6	2	08/30/17 18:28	08/23/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-A05-081717  
**Lab Code:** K1708844-010

**Service Request:** K1708844  
**Date Collected:** 08/17/17 11:09  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>76.0</b>	mg/Kg	4.2	2.1	2	08/30/17 18:30	08/23/17	
Lead	6010C	<b>1130</b>	mg/Kg	2.1	0.7	2	08/30/17 18:30	08/23/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-B01-081717  
**Lab Code:** K1708844-011

**Service Request:** K1708844  
**Date Collected:** 08/17/17 11:16  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>18.1</b>	mg/Kg	3.8	1.9	2	08/30/17 18:33	08/23/17	
Lead	6010C	<b>329</b>	mg/Kg	1.9	0.7	2	08/30/17 18:33	08/23/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-B02-081717  
**Lab Code:** K1708844-012

**Service Request:** K1708844  
**Date Collected:** 08/17/17 11:19  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	20.7	mg/Kg	3.9	1.9	2	08/30/17 18:42	08/23/17	
Lead	6010C	326	mg/Kg	1.9	0.7	2	08/30/17 18:42	08/23/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-B03-081717  
**Lab Code:** K1708844-013

**Service Request:** K1708844  
**Date Collected:** 08/17/17 11:24  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>62.1</b>	mg/Kg	4.2	2.1	2	08/30/17 18:44	08/23/17	
Lead	6010C	<b>674</b>	mg/Kg	2.1	0.7	2	08/30/17 18:44	08/23/17	



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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-B04-081717  
**Lab Code:** K1708844-014

**Service Request:** K1708844  
**Date Collected:** 08/17/17 11:28  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>55.1</b>	mg/Kg	3.9	2.0	2	08/30/17 18:46	08/23/17	
Lead	6010C	<b>916</b>	mg/Kg	2.0	0.7	2	08/30/17 18:46	08/23/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-B05-081717  
**Lab Code:** K1708844-015

**Service Request:** K1708844  
**Date Collected:** 08/17/17 11:34  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>53.9</b>	mg/Kg	4.0	2.0	2	08/30/17 18:49	08/23/17	
Lead	6010C	<b>419</b>	mg/Kg	2.0	0.7	2	08/30/17 18:49	08/23/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-C01-081717  
**Lab Code:** K1708844-016

**Service Request:** K1708844  
**Date Collected:** 08/17/17 11:45  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>19.6</b>	mg/Kg	3.7	1.9	2	08/30/17 18:51	08/23/17	
Lead	6010C	<b>534</b>	mg/Kg	1.9	0.7	2	08/30/17 18:51	08/23/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-C02-081717  
**Lab Code:** K1708844-017

**Service Request:** K1708844  
**Date Collected:** 08/17/17 11:48  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>26.4</b>	mg/Kg	4.1	2.0	2	08/30/17 18:53	08/23/17	
Lead	6010C	<b>393</b>	mg/Kg	2.0	0.7	2	08/30/17 18:53	08/23/17	

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-C03-081717  
**Lab Code:** K1708844-018

**Service Request:** K1708844  
**Date Collected:** 08/17/17 11:52  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>43.1</b>	mg/Kg	4.0	2.0	2	08/30/17 18:56	08/23/17	
Lead	6010C	<b>1210</b>	mg/Kg	2.0	0.7	2	08/30/17 18:56	08/23/17	

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-C04-081717  
**Lab Code:** K1708844-019

**Service Request:** K1708844  
**Date Collected:** 08/17/17 11:57  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>22.0</b>	mg/Kg	4.0	2.0	2	08/30/17 18:58	08/23/17	
Lead	6010C	<b>291</b>	mg/Kg	2.0	0.7	2	08/30/17 18:58	08/23/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-C05-081717  
**Lab Code:** K1708844-020

**Service Request:** K1708844  
**Date Collected:** 08/17/17 12:00  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6010C	40.0	mg/Kg	3.9	1.9	2	08/30/17 19:00	08/23/17	
Lead	6010C	858	mg/Kg	1.9	0.7	2	08/30/17 19:00	08/23/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** Method Blank  
**Lab Code:** KQ1712050-02

**Service Request:** K1708844  
**Date Collected:** NA  
**Date Received:** NA  
**Basis:** Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6010C	ND U	mg/Kg	4	2.0	2	08/30/17 17:49	08/23/17	
Lead	6010C	ND U	mg/Kg	2	0.7	2	08/30/17 17:49	08/23/17	



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QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708844  
**Date Collected:** 08/16/17  
**Date Received:** 08/22/17  
**Date Analyzed:** 08/30/17  
**Date Extracted:** 08/23/17

**Duplicate Matrix Spike Summary  
Total Metals**

**Sample Name:** 401-2-J06-081617  
**Lab Code:** K1708844-001  
**Analysis Method:** 6010C  
**Prep Method:** EPA 3050B

**Units:** mg/Kg  
**Basis:** Dry

Analyte Name	Sample Result	Result	Matrix Spike KQ1712050-03		Duplicate Matrix Spike KQ1712050-04		% Rec Limits	RPD	RPD Limit	
			Spike Amount	% Rec	Result	Spike Amount				% Rec
Arsenic	26.4	126	104	95	121	100	95	75-125	3	30
Lead	288	418	104	125	426	100	138 N	75-125	2	30

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.  
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QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708844

**Date Analyzed:** 08/30/17

**Lab Control Sample Summary**  
**Total Metals**

**Units:**mg/Kg

**Basis:**Dry

**Lab Control Sample**  
KQ1712050-01

<b>Analyte Name</b>	<b>Analytical Method</b>	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>% Rec Limits</b>
Arsenic	6010C	472	500	94	80-120
Lead	6010C	468	500	94	80-120



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ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

September 05, 2017

**Analytical Report for Service Request No: K1708845**

Dave Enos  
Teck American Incorporated  
501 North Riverpoint Blvd., Suite 300  
Spokane, WA 99202

**RE: August 2017 Sampling SAT Study / B0095010.0005.00001**

Dear Dave,

Enclosed are the results of the sample(s) submitted to our laboratory August 22, 2017  
For your reference, these analyses have been assigned our service request number **K1708845**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at [www.alsglobal.com](http://www.alsglobal.com). All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at [Jeff.Coronado@alsglobal.com](mailto:Jeff.Coronado@alsglobal.com).

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**

Jeff Coronado  
Metals Department  
Manager



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ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

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## Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

### **Inorganic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

### **Metals Data Qualifiers**

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.  
  - i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Organic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.  
  - i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Additional Petroleum Hydrocarbon Specific Qualifiers**

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

**ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso  
State Certifications, Accreditations, and Licenses**

<b>Agency</b>	<b>Web Site</b>	<b>Number</b>
Alaska DEH	<a href="http://dec.alaska.gov/eh/lab/cs/csapproval.htm">http://dec.alaska.gov/eh/lab/cs/csapproval.htm</a>	UST-040
Arizona DHS	<a href="http://www.azdhs.gov/lab/license/env.htm">http://www.azdhs.gov/lab/license/env.htm</a>	AZ0339
Arkansas - DEQ	<a href="http://www.adeq.state.ar.us/techsvs/labcert.htm">http://www.adeq.state.ar.us/techsvs/labcert.htm</a>	88-0637
California DHS (ELAP)	<a href="http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx">http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx</a>	2795
DOD ELAP	<a href="http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm">http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm</a>	L14-51
Florida DOH	<a href="http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm">http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm</a>	E87412
Hawaii DOH	<a href="http://health.hawaii.gov/">http://health.hawaii.gov/</a>	-
ISO 17025	<a href="http://www.pjllabs.com/">http://www.pjllabs.com/</a>	L16-57
Louisiana DEQ	<a href="http://www.deq.louisiana.gov/page/la-lab-accreditation">http://www.deq.louisiana.gov/page/la-lab-accreditation</a>	03016
Maine DHS	<a href="http://www.maine.gov/dhhs/">http://www.maine.gov/dhhs/</a>	WA01276
Minnesota DOH	<a href="http://www.health.state.mn.us/accreditation">http://www.health.state.mn.us/accreditation</a>	053-999-457
Nevada DEP	<a href="http://ndep.nv.gov/bsdw/labservice.htm">http://ndep.nv.gov/bsdw/labservice.htm</a>	WA01276
New Jersey DEP	<a href="http://www.nj.gov/dep/enforcement/oqa.html">http://www.nj.gov/dep/enforcement/oqa.html</a>	WA005
New York - DOH	<a href="https://www.wadsworth.org/regulatory/elap">https://www.wadsworth.org/regulatory/elap</a>	12060
North Carolina DEQ	<a href="https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification">https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification</a>	605
Oklahoma DEQ	<a href="http://www.deq.state.ok.us/CSDnew/labcert.htm">http://www.deq.state.ok.us/CSDnew/labcert.htm</a>	9801
Oregon – DEQ (NELAP)	<a href="http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx">http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx</a>	WA100010
South Carolina DHEC	<a href="http://www.scdhec.gov/environment/EnvironmentalLabCertification/">http://www.scdhec.gov/environment/EnvironmentalLabCertification/</a>	61002
Texas CEQ	<a href="http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html">http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html</a>	T104704427
Washington DOE	<a href="http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html">http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html</a>	C544
Wyoming (EPA Region 8)	<a href="https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water">https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water</a>	-
Kelso Laboratory Website	<a href="http://www.alsglobal.com">www.alsglobal.com</a>	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at [www.ALSGlobal.com](http://www.ALSGlobal.com) or at the accreditation bodies web site.  
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.



## Case Narrative

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)



**ALS ENVIRONMENTAL**

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/  
B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request No.:** K1708845  
**Date Received:** 08/22/17

**Case Narrative**

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

**Sample Receipt**

Twenty soil samples were received for analysis at ALS Environmental on 08/22/17. The samples were received in good condition and consistent with the accompanying chain of custody form, except where noted on the cooler receipt and preservation form included in this report.. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

**Total Metals**

No anomalies associated with the analysis of these samples were observed.

Approved by  \_\_\_\_\_



## Chain of Custody

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

K1708845

Date 8/20/17  
 PAGE 1 OF 15  
 SR#

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001

Project Contact: Kady Young Company: Arcadis

Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488

City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961

Sampler's Signature: \_\_\_\_\_

Number of Containers	Analysis Requested					REMARKS
	lead/arsenic 3050B/6010					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					

Sample I.D.	Date	Time	LAB ID	Matrix
401 - 1 - A01 - 081817	8/18/17	0927		S
A02		0930		S
A03		0932		S
A04		0934		S
A05		0936		S
A06		0940		S
A07		0942		S
A08		0944		S
A09		0947		S
A10		0949		S

**TURNAROUND REQUIREMENTS**  
 24 hr \_\_\_\_\_ 48 hr \_\_\_\_\_ 5 day \_\_\_\_\_  
 Standard (10 days)  
 Provide FAX Preliminary Results \_\_\_\_\_  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes raw data)  
 IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99204

**RELINQUISHED BY:**  
 Signature: Watson  
 Printed Name: Watson Netsutnam  
 Firm: Arcadis  
 Date/Time: 8/21/17 13:00

**RECEIVED BY:**  
 Signature: Cooney  
 Printed Name: COOY GRAVES  
 Firm: ALS  
 Date/Time: 8/22/17 0950

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

K1708845

Date 8/20/17  
 PAGE 2 OF 15  
 SR#

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001  
 Project Contact: Kady Young Company: Arcadis  
 Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488  
 City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961  
 Sampler's Signature: \_\_\_\_\_

Number of Containers	Analysis Requested					REMARKS
	lead/arsenic 3050B/6010					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					

Sample I.D.	Date	Time	LAB ID	Matrix
401-1-A06-081817-08	8/18/17	0940		S
				S
				S
				S
				S
				S
				S
				S
				S
				S

**TURNAROUND REQUIREMENTS**  
 \_\_\_ 24 hr \_\_\_ 48 hr \_\_\_ 5 day  
 Standard (10 days)  
 \_\_\_ Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes raw data)  
 IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99201

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Watson Metcalf  
 Firm: Arcadis  
 Date/Time: 8/21/17 13:00

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: CODY GRAVES  
 Firm: ALS  
 Date/Time: 8/22/17 0950

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

K1708845

Date 8/20/17  
 PAGE 3 OF 15  
 SR#

**ALS Environmental-Kelso**

1317 South 13th, Kelso, WA 98626 (360) 577-7222 FAX (360) 636-1068

**Project Name:** Teck American - UCR SATES **Project Number:** B0095010.0005.00001  
**Project Contact:** Kady Young **Company:** Arcadis  
**Company/Address:** 189 North Cedar Street **Phone:** 307-203-3510 or 810-588-1488  
**City, State, Zip:** Buffalo, WY 82834 **FAX:** 307-684-5961  
**Sampler's Signature:** \_\_\_\_\_

Number of Containers	Analysis Requested					REMARKS
	lead/arsenic 3050B/6010					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	lead/arsenic 3050B/6010					REMARKS
401-1-301-081817	8/18/17	0953		S	1	X					
B02		0955		S	1	X					
B03		0957		S	1	X					
B04		1000		S	1	X					
B05		1002		S	1	X					
B06		1004		S	1	X					
B07		1008		S	1	X					
B08		1010		S	1	X					
B09		1012		S	1	X					
B10		1015		S	1	X					

**TURNAROUND REQUIREMENTS**  
 \_\_\_ 24 hr \_\_\_ 48 hr \_\_\_ 5 day  
 Standard (10 days)  
 \_\_\_ Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 \_\_\_ III. Data Validation Report (includes raw data)  
 \_\_\_ IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99208

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Watson Metzger  
 Firm: Arcadis  
 Date/Time: 8/21/17 13:00

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: CODY GRAVES  
 Firm: ALS  
 Date/Time: 8/22/17 0950

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

K1708845

Date 8/20/17  
 PAGE 4 OF 15  
 SR#

ALS Environmental-Kelso  
 1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001  
 Project Contact: Kady Young Company: Arcadis  
 Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488  
 City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961  
 Sampler's Signature: \_\_\_\_\_

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	Analysis Requested				REMARKS
						lead/arsenic 3050B/6010				
401-1-C01-021817	8/18/17	1033		S	1	X				
C02		1035		S	1	X				
C03		1038		S	1	X				
C04		1040		S	1	X				
C05		1042		S	1	X				
C06		1045		S	1	X				
C07		1048		S	1	X				
C08		1051		S	1	X				
C09		1054		S	1	X				
C10		1057		S	1	X				

**URNAROUND REQUIREMENTS**  
 24 hr  48 hr  5 day  
 Standard (10 days)  
 Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_  
**Invoice Information**  
 I.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
501 N Riverpoint Blvd, Suite 300 Spokane, WA 99208

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes raw data)  
 IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**RELINQUISHED BY:**  
 Signature: Watson  
 Printed Name: Watson Metsutnam  
 Firm: Arcadis  
 Date/Time: 8/21/17 13:00

**RECEIVED BY:**  
 Signature: Graves  
 Printed Name: CODY GRAVES  
 Firm: ALS  
 Date/Time: 8/22/17 0950

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_



PC JL

### Cooler Receipt and Preservation Form

Client: Teck America Service Request KI7 08845  
 Received: 8/22/17 Opened: 8/22/17 By: KM Unloaded: 8/22/17 By: KM

Samples were received via? USPS 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 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
5.2	5.4	13.1	13.3	+0.2	325		8745 6738 5575		
7.8	7.9	11.5	11.6	+0.1	373		8745 6738 5586		
7.3	7.6	14.1	14.4	+0.3	349		8745 6738 5564		
7.7	7.2	7.2	7.4	+0.2	379		8105 9112 1296		
7.3	7.2	14.2	14.1	-0.1	328		8745 6738 5597		

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  
 Were samples received in good condition (temperature, unbroken)? Indicate in the table below. NA Y N  
 If applicable, tissue samples were received: Frozen Partially Thawed Thawed  
 Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N KM  
 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:
<u>401-2-602-081717</u>	<u>401-2-602-0817-0</u>	<u>"602-D" on Sample jar Lid</u>
<u>401-1-C1-081817</u>	<u>401-1-C01-081817</u>	<u>(Dates + times match COC. <del>COA</del> that CO1-C01 that way. "</u>

Sample ID	Bottle Count	Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

s, Discrepancies, & Resolutions: In all of the Coolers, there wasn't enough ice and what was there was melted.



# Total Solids

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)



**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1708845  
**Date Collected:** 08/18/17  
**Date Received:** 08/22/17  
**Units:** Percent  
**Basis:** As Received

**Solids, Total**

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
401-1-A03-081817	K1708845-001	96.9	-	-	1	08/25/17 16:15	
401-1-A04-081817	K1708845-002	97.0	-	-	1	08/25/17 16:15	
401-1-A05-081817	K1708845-003	97.2	-	-	1	08/25/17 16:15	
401-1-A06-081817	K1708845-004	95.0	-	-	1	08/25/17 16:15	
401-1-A07-081817	K1708845-005	98.0	-	-	1	08/25/17 16:15	
401-1-A08-081817	K1708845-006	96.9	-	-	1	08/25/17 16:15	
401-1-A09-081817	K1708845-007	97.2	-	-	1	08/25/17 16:15	
401-1-A10-081817	K1708845-008	94.7	-	-	1	08/25/17 16:15	
401-1-A06-081817-D	K1708845-009	94.3	-	-	1	08/25/17 16:15	
401-1-B01-081817	K1708845-010	94.7	-	-	1	08/25/17 16:15	
401-1-B02-081817	K1708845-011	87.5	-	-	1	08/25/17 16:15	
401-1-B03-081817	K1708845-012	97.4	-	-	1	08/25/17 16:15	
401-1-B04-081817	K1708845-013	97.1	-	-	1	08/25/17 16:15	
401-1-B05-081817	K1708845-014	96.3	-	-	1	08/25/17 16:15	
401-1-B06-081817	K1708845-015	96.6	-	-	1	08/25/17 16:15	
401-1-B07-081817	K1708845-016	96.9	-	-	1	08/25/17 16:15	
401-1-B08-081817	K1708845-017	97.2	-	-	1	08/25/17 16:15	
401-1-B09-081817	K1708845-018	97.3	-	-	1	08/25/17 16:15	
401-1-B10-081817	K1708845-019	97.7	-	-	1	08/25/17 16:15	
401-1-C01-081817	K1708845-020	96.5	-	-	1	08/25/17 16:15	

ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1708845  
**Date Collected:** 08/18/17  
**Date Received:** 08/22/17

**Units:** Percent  
**Basis:** As Received

Replicate Sample Summary  
Inorganic Parameters

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
401-1-A03-081817	K1708845-001DUP	-	96.9	97.0	97.0	<1	20	08/25/17
401-1-B02-081817	K1708845-011DUP	-	87.5	88.3	87.9	<1	20	08/25/17

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



# Metals

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-A03-081817  
**Lab Code:** K1708845-001

**Service Request:** K1708845  
**Date Collected:** 08/18/17 09:32  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>27.0</b>	mg/Kg	3.6	1.8	2	08/31/17 15:47	08/30/17	
Lead	6010C	<b>512</b>	mg/Kg	1.8	0.6	2	08/31/17 15:47	08/30/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-A04-081817  
**Lab Code:** K1708845-002

**Service Request:** K1708845  
**Date Collected:** 08/18/17 09:34  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6010C	19.0	mg/Kg	3.4	1.7	2	08/31/17 15:58	08/30/17	
Lead	6010C	277	mg/Kg	1.7	0.6	2	08/31/17 15:58	08/30/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-A05-081817  
**Lab Code:** K1708845-003

**Service Request:** K1708845  
**Date Collected:** 08/18/17 09:36  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>20.1</b>	mg/Kg	3.8	1.9	2	08/31/17 16:00	08/30/17	
Lead	6010C	<b>290</b>	mg/Kg	1.9	0.7	2	08/31/17 16:00	08/30/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-A06-081817  
**Lab Code:** K1708845-004

**Service Request:** K1708845  
**Date Collected:** 08/18/17 09:40  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>51.1</b>	mg/Kg	3.7	1.8	2	08/31/17 16:02	08/30/17	
Lead	6010C	<b>387</b>	mg/Kg	1.8	0.6	2	08/31/17 16:02	08/30/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-A07-081817  
**Lab Code:** K1708845-005

**Service Request:** K1708845  
**Date Collected:** 08/18/17 09:42  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>33.1</b>	mg/Kg	3.3	1.7	2	08/31/17 16:10	08/30/17	
Lead	6010C	<b>495</b>	mg/Kg	1.7	0.6	2	08/31/17 16:10	08/30/17	



ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-A08-081817  
**Lab Code:** K1708845-006

**Service Request:** K1708845  
**Date Collected:** 08/18/17 09:44  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>15.9</b>	mg/Kg	3.7	1.8	2	08/31/17 16:13	08/30/17	
Lead	6010C	<b>235</b>	mg/Kg	1.8	0.6	2	08/31/17 16:13	08/30/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-A09-081817  
**Lab Code:** K1708845-007

**Service Request:** K1708845  
**Date Collected:** 08/18/17 09:47  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>29.6</b>	mg/Kg	3.4	1.7	2	08/31/17 16:15	08/30/17	
Lead	6010C	<b>433</b>	mg/Kg	1.7	0.6	2	08/31/17 16:15	08/30/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-A10-081817  
**Lab Code:** K1708845-008

**Service Request:** K1708845  
**Date Collected:** 08/18/17 09:49  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>26.9</b>	mg/Kg	3.7	1.9	2	08/31/17 16:17	08/30/17	
Lead	6010C	<b>970</b>	mg/Kg	1.9	0.7	2	08/31/17 16:17	08/30/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-A06-081817-D  
**Lab Code:** K1708845-009

**Service Request:** K1708845  
**Date Collected:** 08/18/17 09:40  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>54.0</b>	mg/Kg	3.5	1.7	2	08/31/17 16:19	08/30/17	
Lead	6010C	<b>435</b>	mg/Kg	1.7	0.6	2	08/31/17 16:19	08/30/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-B01-081817  
**Lab Code:** K1708845-010

**Service Request:** K1708845  
**Date Collected:** 08/18/17 09:53  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>40.2</b>	mg/Kg	4.1	2.1	2	08/31/17 16:21	08/30/17	
Lead	6010C	<b>767</b>	mg/Kg	2.1	0.7	2	08/31/17 16:21	08/30/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-B02-081817  
**Lab Code:** K1708845-011

**Service Request:** K1708845  
**Date Collected:** 08/18/17 09:55  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>27.3</b>	mg/Kg	4.4	2.2	2	08/31/17 16:23	08/30/17	
Lead	6010C	<b>1160</b>	mg/Kg	2.2	0.8	2	08/31/17 16:23	08/30/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-B03-081817  
**Lab Code:** K1708845-012

**Service Request:** K1708845  
**Date Collected:** 08/18/17 09:57  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>15.6</b>	mg/Kg	3.2	1.6	2	08/31/17 16:25	08/30/17	
Lead	6010C	<b>198</b>	mg/Kg	1.6	0.6	2	08/31/17 16:25	08/30/17	

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-B04-081817  
**Lab Code:** K1708845-013

**Service Request:** K1708845  
**Date Collected:** 08/18/17 10:00  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>14.5</b>	mg/Kg	3.7	1.9	2	08/31/17 16:27	08/30/17	
Lead	6010C	<b>206</b>	mg/Kg	1.9	0.7	2	08/31/17 16:27	08/30/17	



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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-B05-081817  
**Lab Code:** K1708845-014

**Service Request:** K1708845  
**Date Collected:** 08/18/17 10:02  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>18.2</b>	mg/Kg	3.6	1.8	2	08/31/17 16:30	08/30/17	
Lead	6010C	<b>348</b>	mg/Kg	1.8	0.6	2	08/31/17 16:30	08/30/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-B06-081817  
**Lab Code:** K1708845-015

**Service Request:** K1708845  
**Date Collected:** 08/18/17 10:04  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>19.9</b>	mg/Kg	3.6	1.8	2	08/31/17 16:38	08/30/17	
Lead	6010C	<b>306</b>	mg/Kg	1.8	0.6	2	08/31/17 16:38	08/30/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-B07-081817  
**Lab Code:** K1708845-016

**Service Request:** K1708845  
**Date Collected:** 08/18/17 10:08  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>19.2</b>	mg/Kg	3.4	1.7	2	08/31/17 16:40	08/30/17	
Lead	6010C	<b>176</b>	mg/Kg	1.7	0.6	2	08/31/17 16:40	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-B08-081817  
**Lab Code:** K1708845-017

**Service Request:** K1708845  
**Date Collected:** 08/18/17 10:10  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>32.8</b>	mg/Kg	3.3	1.7	2	08/31/17 16:42	08/30/17	
Lead	6010C	<b>548</b>	mg/Kg	1.7	0.6	2	08/31/17 16:42	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-B09-081817  
**Lab Code:** K1708845-018

**Service Request:** K1708845  
**Date Collected:** 08/18/17 10:12  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	23.4	mg/Kg	4.0	2.0	2	08/31/17 16:44	08/30/17	
Lead	6010C	376	mg/Kg	2.0	0.7	2	08/31/17 16:44	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-B10-081817  
**Lab Code:** K1708845-019

**Service Request:** K1708845  
**Date Collected:** 08/18/17 10:15  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>13.6</b>	mg/Kg	3.5	1.8	2	08/31/17 16:47	08/30/17	
Lead	6010C	<b>134</b>	mg/Kg	1.8	0.6	2	08/31/17 16:47	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-C01-081817  
**Lab Code:** K1708845-020

**Service Request:** K1708845  
**Date Collected:** 08/18/17 10:33  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	24.0	mg/Kg	3.5	1.8	2	08/31/17 16:49	08/30/17	
Lead	6010C	265	mg/Kg	1.8	0.6	2	08/31/17 16:49	08/30/17	

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** Method Blank  
**Lab Code:** KQ1712391-02

**Service Request:** K1708845  
**Date Collected:** NA  
**Date Received:** NA  
**Basis:** Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6010C	ND U	mg/Kg	4	2.0	2	08/31/17 15:43	08/30/17	
Lead	6010C	ND U	mg/Kg	2	0.7	2	08/31/17 15:43	08/30/17	



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QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708845  
**Date Collected:** 08/18/17  
**Date Received:** 08/22/17  
**Date Analyzed:** 08/31/17  
**Date Extracted:** 08/30/17

**Duplicate Matrix Spike Summary  
Total Metals**

**Sample Name:** 401-1-A03-081817  
**Lab Code:** K1708845-001  
**Analysis Method:** 6010C  
**Prep Method:** EPA 3050B

**Units:** mg/Kg  
**Basis:** Dry

Analyte Name	Sample Result	Result	Matrix Spike KQ1712391-03		Duplicate Matrix Spike KQ1712391-04		% Rec Limits	RPD	RPD Limit	
			Spike Amount	% Rec	Result	Spike Amount				% Rec
Arsenic	27.0	116	90.5	98	123	97.3	99	75-125	6	30
Lead	512	624	90.5	124 #	647	97.3	139 #	75-125	4	30

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708845

**Date Analyzed:** 08/31/17

**Lab Control Sample Summary**  
**Total Metals**

**Units:**mg/Kg

**Basis:**Dry

**Lab Control Sample**  
KQ1712391-01

<b>Analyte Name</b>	<b>Analytical Method</b>	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>% Rec Limits</b>
Arsenic	6010C	509	500	102	80-120
Lead	6010C	520	500	104	80-120



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ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

September 05, 2017

**Analytical Report for Service Request No: K1708846**

Dave Enos  
Teck American Incorporated  
501 North Riverpoint Blvd., Suite 300  
Spokane, WA 99202

**RE: August 2017 Sampling SAT Study / B0095010.0005.00001**

Dear Dave,

Enclosed are the results of the sample(s) submitted to our laboratory August 22, 2017  
For your reference, these analyses have been assigned our service request number **K1708846**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at [www.alsglobal.com](http://www.alsglobal.com). All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at [Jeff.Coronado@alsglobal.com](mailto:Jeff.Coronado@alsglobal.com).

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**

Jeff Coronado  
Metals Department  
Manager



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ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

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## Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

### **Inorganic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

### **Metals Data Qualifiers**

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.  
  - i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Organic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Additional Petroleum Hydrocarbon Specific Qualifiers**

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

**ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso  
State Certifications, Accreditations, and Licenses**

<b>Agency</b>	<b>Web Site</b>	<b>Number</b>
Alaska DEH	<a href="http://dec.alaska.gov/eh/lab/cs/csapproval.htm">http://dec.alaska.gov/eh/lab/cs/csapproval.htm</a>	UST-040
Arizona DHS	<a href="http://www.azdhs.gov/lab/license/env.htm">http://www.azdhs.gov/lab/license/env.htm</a>	AZ0339
Arkansas - DEQ	<a href="http://www.adeq.state.ar.us/techsvs/labcert.htm">http://www.adeq.state.ar.us/techsvs/labcert.htm</a>	88-0637
California DHS (ELAP)	<a href="http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx">http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx</a>	2795
DOD ELAP	<a href="http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm">http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm</a>	L14-51
Florida DOH	<a href="http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm">http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm</a>	E87412
Hawaii DOH	<a href="http://health.hawaii.gov/">http://health.hawaii.gov/</a>	-
ISO 17025	<a href="http://www.pjllabs.com/">http://www.pjllabs.com/</a>	L16-57
Louisiana DEQ	<a href="http://www.deq.louisiana.gov/page/la-lab-accreditation">http://www.deq.louisiana.gov/page/la-lab-accreditation</a>	03016
Maine DHS	<a href="http://www.maine.gov/dhhs/">http://www.maine.gov/dhhs/</a>	WA01276
Minnesota DOH	<a href="http://www.health.state.mn.us/accreditation">http://www.health.state.mn.us/accreditation</a>	053-999-457
Nevada DEP	<a href="http://ndep.nv.gov/bsdw/labservice.htm">http://ndep.nv.gov/bsdw/labservice.htm</a>	WA01276
New Jersey DEP	<a href="http://www.nj.gov/dep/enforcement/oqa.html">http://www.nj.gov/dep/enforcement/oqa.html</a>	WA005
New York - DOH	<a href="https://www.wadsworth.org/regulatory/elap">https://www.wadsworth.org/regulatory/elap</a>	12060
North Carolina DEQ	<a href="https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification">https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification</a>	605
Oklahoma DEQ	<a href="http://www.deq.state.ok.us/CSDnew/labcert.htm">http://www.deq.state.ok.us/CSDnew/labcert.htm</a>	9801
Oregon – DEQ (NELAP)	<a href="http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx">http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx</a>	WA100010
South Carolina DHEC	<a href="http://www.scdhec.gov/environment/EnvironmentalLabCertification/">http://www.scdhec.gov/environment/EnvironmentalLabCertification/</a>	61002
Texas CEQ	<a href="http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html">http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html</a>	T104704427
Washington DOE	<a href="http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html">http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html</a>	C544
Wyoming (EPA Region 8)	<a href="https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water">https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water</a>	-
Kelso Laboratory Website	<a href="http://www.alsglobal.com">www.alsglobal.com</a>	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at [www.ALSGlobal.com](http://www.ALSGlobal.com) or at the accreditation bodies web site.  
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.



## Case Narrative

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)



**ALS ENVIRONMENTAL**

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/  
B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request No.:** K1708846  
**Date Received:** 08/22/17

**Case Narrative**


All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

**Sample Receipt**

Twenty soil samples were received for analysis at ALS Environmental on 08/22/17. The samples were received in good condition and consistent with the accompanying chain of custody form, except where noted on the cooler receipt and preservation form included in this report.. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

**Total Metals**

No anomalies associated with the analysis of these samples were observed.

Approved by  \_\_\_\_\_



# Chain of Custody

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

*71408846*

Date 47 OF 20-10  
 SR# 0078719/17 0078719/17

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001  
 Project Contact: Kady Young Company: Arcadis  
 Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488  
 City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961  
 Sampler's Signature: \_\_\_\_\_

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	Analysis Requested					REMARKS
						lead/arsenic 3050B/6010					
401 - 2 - D01 - 081717	08/17/17	12:04		S	1	X					
D02		12:09		S	1	X					
D03		12:12		S	1	X					
D04		12:15		S	1	X					
D05		12:18		S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					

**TURNAROUND REQUIREMENTS**  
 \_\_\_ 24 hr \_\_\_ 48 hr \_\_\_ 5 day  
 Standard (10 days)  
 \_\_\_ Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes raw data)  
 IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # \_\_\_\_\_  
 Bill to: Dave Enos - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99201

**RELINQUISHED BY:**  
 Signature: *Watson Metsotran*  
 Printed Name: Watson Metsotran  
 Firm: Arcadis  
 Date/Time: 8/21/17 1300

**RECEIVED BY:**  
 Signature: *SVVOZF*  
 Printed Name: SVVOZF  
 Firm: ALS  
 Date/Time: 8/22/17 0950

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

K1708846

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001  
 Project Contact: Kady Young Company: Arcadis  
 Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488  
 City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961  
 Sampler's Signature: \_\_\_\_\_

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	Analysis Requested					REMARKS
						lead/arsenic 3050B/6010					
401-2 - E01 - 081717	08/17/17	12:49		S	1	X					
E02		12:56		S	1	X					
E03		13:00		S	1	X					
E04		13:03		S	1	X					
E05		13:07		S	1	X					
401-2 - E05 - 081717 - D		13:07		S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					

**TURNAROUND REQUIREMENTS**  
 \_\_\_ 24 hr \_\_\_ 48 hr \_\_\_ 5 day  
 Standard (10 days)  
 \_\_\_ Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 \_\_\_ I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 \_\_\_ III. Data Validation Report (includes raw data)  
 \_\_\_ IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # \_\_\_\_\_  
 Bill to: Dave Enos - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99201

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Watson Metzman  
 Firm: Arcadis  
 Date/Time: 8/21/17 1300

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: JWOLF  
 Firm: ALS  
 Date/Time: 8/22/17 0950

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

K-1708846

Date 8/20/17  
 PAGE 64 OF 20 10  
 SR# 0081917 0081917

**Project Name:** Teck American - UCR SATES **Project Number:** B0095010.0005.00001

**Project Contact:** Kady Young **Company:** Arcadis

**Company/Address:** 189 North Cedar Street **Phone:** 307-203-3510 or 810-588-1488

**City, State, Zip:** Buffalo, WY 82834 **FAX:** 307-684-5961

**Sampler's Signature:** \_\_\_\_\_

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	Analysis Requested					REMARKS
						lead	arsenic	3050B	6010		
401-2-F01-081717	08/17/17	13:14		S	1	X					
F02		13:17		S	1	X					
F03		13:19		S	1	X					
F04		13:22		S	1	X					
F05		13:25		S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					

**TURNAROUND REQUIREMENTS**  
 24 hr  48 hr  5 day  
 Standard (10 days)  
 Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes raw data)  
 IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # \_\_\_\_\_  
 Bill to: Dave Enos - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99201

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Watson Metzstrom  
 Firm: Arcadis  
 Date/Time: 8/21/17 1300

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: SWOLF  
 Firm: ARS  
 Date/Time: 8/22/17 0950

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

K1708846

Date 7/13 OF 2010  
 SR# W07 8/19/17 W07 8/19/17

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001  
 Project Contact: Kady Young Company: Arcadis  
 Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488  
 City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961  
 Sampler's Signature: \_\_\_\_\_

Number of Containers	Analysis Requested					REMARKS
	lead/arsenic 3050B/6010					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					

Sample I.D.	Date	Time	LAB ID	Matrix
401-2-G01-081717	08/17/17	13:33		S
G02		13:37		S
G03		13:42		S
G04		13:46		S
G05		13:49		S
401-2-G02-081717-D		13:37		S
				S
				S
				S
				S

**TURNAROUND REQUIREMENTS**  
 24 hr  48 hr  5 day  
 Standard (10 days)  
 Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes raw data)  
 IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # \_\_\_\_\_  
 Bill to: Dave Enos - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 992

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Watson Metsutnam  
 Firm: Arcadis  
 Date/Time: 8/21/17 1300

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: SWOFF  
 Firm: AZS  
 Date/Time: 8/22/17 0950

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_



PC 16

### Cooler Receipt and Preservation Form

Client: Teck America Service Request KI7 08846  
 Received: 8/22/17 Opened: 8/22/17 By: KM Unloaded: 8/22/17 By: KM

Samples were received via? USPS FedEx 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 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 NA	Tracking Number NA	Filed
5.2	5.4	13.1	13.3	+0.2	325		8745 6738 5575	
7.8	7.9	11.5	11.6	+0.1	373		8745 6738 5586	
7.3	7.6	14.1	14.4	+0.3	349		8745 6738 5564	
7.7	7.2	7.2	7.4	+0.2	379		8105 9112 1296	
7.3	7.9	14.2	14.1	-0.1	328		8745 6738 5597	

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  
 Were samples received in good condition (temperature, unbroken)? Indicate in the table below. NA Y N  
 If applicable, tissue samples were received: Frozen Partially Thawed Thawed  
 Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N KM  
 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:
<u>401-2-602-081717</u>	<u>401-2-602-0817-D</u>	<u>"602-D" on Sample jar Lid</u>
<u>401-1-C1-081817</u>	<u>401-1-C01-081817</u>	<u>(Dates + times match COC. <del>COI-C01 that way.</del>)</u>

Sample ID	Bottle Count	Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Discrepancies, & Resolutions: In all of the Coolers, there wasn't enough ice and what was there was melted.



# Total Solids

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)



**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1708846  
**Date Collected:** 08/17/17  
**Date Received:** 08/22/17  
**Units:** Percent  
**Basis:** As Received

**Solids, Total**

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
401-2-D01-081717	K1708846-001	96.5	-	-	1	08/25/17 16:15	
401-2-D02-081717	K1708846-002	95.4	-	-	1	08/25/17 16:15	
401-2-D03-081717	K1708846-003	95.0	-	-	1	08/25/17 16:15	
401-2-D04-081717	K1708846-004	95.4	-	-	1	08/25/17 16:15	
401-2-D05-081717	K1708846-005	95.5	-	-	1	08/25/17 16:15	
401-2-E01-081717	K1708846-006	94.0	-	-	1	08/25/17 16:15	
401-2-E02-081717	K1708846-007	94.1	-	-	1	08/25/17 16:15	
401-2-E03-081717	K1708846-008	96.5	-	-	1	08/25/17 16:15	
401-2-E04-081717	K1708846-009	95.9	-	-	1	08/25/17 16:15	
401-2-E05-081717	K1708846-010	94.2	-	-	1	08/25/17 16:15	
401-2-E05-081717-D	K1708846-011	94.8	-	-	1	08/25/17 16:15	
401-2-F01-081717	K1708846-012	95.0	-	-	1	08/25/17 16:15	
401-2-F02-081717	K1708846-013	95.2	-	-	1	08/25/17 16:15	
401-2-F03-081717	K1708846-014	95.5	-	-	1	08/25/17 16:15	
401-2-F04-081717	K1708846-015	90.6	-	-	1	08/25/17 16:15	
401-2-F05-081717	K1708846-016	94.6	-	-	1	08/25/17 16:15	
401-2-G01-081717	K1708846-017	92.5	-	-	1	08/25/17 16:15	
401-2-G02-081717	K1708846-018	94.4	-	-	1	08/25/17 16:15	
401-2-G03-081717	K1708846-019	92.0	-	-	1	08/25/17 16:15	
401-2-G04-081717	K1708846-020	93.2	-	-	1	08/25/17 16:15	

ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1708846  
**Date Collected:** 08/17/17  
**Date Received:** 08/22/17

**Units:** Percent  
**Basis:** As Received

**Replicate Sample Summary**  
**Inorganic Parameters**

<b>Sample Name:</b>	<b>Lab Code:</b>	<b>MRL</b>	<b>Sample Result</b>	<b>Duplicate Result</b>	<b>Average</b>	<b>RPD</b>	<b>RPD Limit</b>	<b>Date Analyzed</b>
401-2-D01-081717	K1708846-001DUP	-	96.5	96.2	96.4	<1	20	08/25/17
401-2-E05-081717-D	K1708846-011DUP	-	94.8	95.2	95.0	<1	20	08/25/17

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



# Metals

**ALS Environmental—Kelso Laboratory**  
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Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-D01-081717  
**Lab Code:** K1708846-001

**Service Request:** K1708846  
**Date Collected:** 08/17/17 12:04  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>43.8</b>	mg/Kg	3.9	1.9	2	08/31/17 16:55	08/30/17	
Lead	6010C	<b>913</b>	mg/Kg	1.9	0.7	2	08/31/17 16:55	08/30/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-D02-081717  
**Lab Code:** K1708846-002

**Service Request:** K1708846  
**Date Collected:** 08/17/17 12:09  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>53.2</b>	mg/Kg	4.2	2.1	2	08/31/17 17:14	08/30/17	
Lead	6010C	<b>665</b>	mg/Kg	2.1	0.7	2	08/31/17 17:14	08/30/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-D03-081717  
**Lab Code:** K1708846-003

**Service Request:** K1708846  
**Date Collected:** 08/17/17 12:12  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>54.5</b>	mg/Kg	4.2	2.1	2	08/31/17 17:17	08/30/17	
Lead	6010C	<b>558</b>	mg/Kg	2.1	0.7	2	08/31/17 17:17	08/30/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-D04-081717  
**Lab Code:** K1708846-004

**Service Request:** K1708846  
**Date Collected:** 08/17/17 12:15  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	40.2	mg/Kg	4.1	2.1	2	08/31/17 17:19	08/30/17	
Lead	6010C	459	mg/Kg	2.1	0.7	2	08/31/17 17:19	08/30/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-D05-081717  
**Lab Code:** K1708846-005

**Service Request:** K1708846  
**Date Collected:** 08/17/17 12:18  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>53.2</b>	mg/Kg	3.9	1.9	2	08/31/17 17:21	08/30/17	
Lead	6010C	<b>661</b>	mg/Kg	1.9	0.7	2	08/31/17 17:21	08/30/17	



ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-E01-081717  
**Lab Code:** K1708846-006

**Service Request:** K1708846  
**Date Collected:** 08/17/17 12:49  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>37.4</b>	mg/Kg	4.1	2.1	2	08/31/17 17:23	08/30/17	
Lead	6010C	<b>745</b>	mg/Kg	2.1	0.7	2	08/31/17 17:23	08/30/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-E02-081717  
**Lab Code:** K1708846-007

**Service Request:** K1708846  
**Date Collected:** 08/17/17 12:56  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>98.2</b>	mg/Kg	4.1	2.1	2	08/31/17 17:25	08/30/17	
Lead	6010C	<b>684</b>	mg/Kg	2.1	0.7	2	08/31/17 17:25	08/30/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-E03-081717  
**Lab Code:** K1708846-008

**Service Request:** K1708846  
**Date Collected:** 08/17/17 13:00  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	43.1	mg/Kg	4.1	2.1	2	08/31/17 17:27	08/30/17	
Lead	6010C	943	mg/Kg	2.1	0.7	2	08/31/17 17:27	08/30/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-E04-081717  
**Lab Code:** K1708846-009

**Service Request:** K1708846  
**Date Collected:** 08/17/17 13:03  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>31.6</b>	mg/Kg	4.0	2.0	2	08/31/17 17:36	08/30/17	
Lead	6010C	<b>586</b>	mg/Kg	2.0	0.7	2	08/31/17 17:36	08/30/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-E05-081717  
**Lab Code:** K1708846-010

**Service Request:** K1708846  
**Date Collected:** 08/17/17 13:07  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>44.5</b>	mg/Kg	4.1	2.0	2	08/31/17 17:38	08/30/17	
Lead	6010C	<b>823</b>	mg/Kg	2.0	0.7	2	08/31/17 17:38	08/30/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-E05-081717-D  
**Lab Code:** K1708846-011

**Service Request:** K1708846  
**Date Collected:** 08/17/17 13:07  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>48.6</b>	mg/Kg	4.2	2.1	2	08/31/17 17:40	08/30/17	
Lead	6010C	<b>1040</b>	mg/Kg	2.1	0.7	2	08/31/17 17:40	08/30/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-F01-081717  
**Lab Code:** K1708846-012

**Service Request:** K1708846  
**Date Collected:** 08/17/17 13:14  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6010C	40.2	mg/Kg	4.2	2.1	2	08/31/17 17:42	08/30/17	
Lead	6010C	304	mg/Kg	2.1	0.7	2	08/31/17 17:42	08/30/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-F02-081717  
**Lab Code:** K1708846-013

**Service Request:** K1708846  
**Date Collected:** 08/17/17 13:17  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>33.3</b>	mg/Kg	4.0	2.0	2	08/31/17 17:44	08/30/17	
Lead	6010C	<b>155</b>	mg/Kg	2.0	0.7	2	08/31/17 17:44	08/30/17	



ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-F03-081717  
**Lab Code:** K1708846-014

**Service Request:** K1708846  
**Date Collected:** 08/17/17 13:19  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>57.3</b>	mg/Kg	4.1	2.1	2	08/31/17 17:46	08/30/17	
Lead	6010C	<b>701</b>	mg/Kg	2.1	0.7	2	08/31/17 17:46	08/30/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-F04-081717  
**Lab Code:** K1708846-015

**Service Request:** K1708846  
**Date Collected:** 08/17/17 13:22  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>65.3</b>	mg/Kg	4.4	2.2	2	08/31/17 17:48	08/30/17	
Lead	6010C	<b>1800</b>	mg/Kg	2.2	0.8	2	08/31/17 17:48	08/30/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-F05-081717  
**Lab Code:** K1708846-016

**Service Request:** K1708846  
**Date Collected:** 08/17/17 13:25  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>41.1</b>	mg/Kg	4.2	2.1	2	08/31/17 17:51	08/30/17	
Lead	6010C	<b>703</b>	mg/Kg	2.1	0.7	2	08/31/17 17:51	08/30/17	

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-G01-081717  
**Lab Code:** K1708846-017

**Service Request:** K1708846  
**Date Collected:** 08/17/17 13:33  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>10.3</b>	mg/Kg	4.2	2.1	2	08/31/17 17:53	08/30/17	
Lead	6010C	<b>117</b>	mg/Kg	2.1	0.7	2	08/31/17 17:53	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-G02-081717  
**Lab Code:** K1708846-018

**Service Request:** K1708846  
**Date Collected:** 08/17/17 13:37  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>28.3</b>	mg/Kg	4.2	2.1	2	08/31/17 17:55	08/30/17	
Lead	6010C	<b>360</b>	mg/Kg	2.1	0.7	2	08/31/17 17:55	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-G03-081717  
**Lab Code:** K1708846-019

**Service Request:** K1708846  
**Date Collected:** 08/17/17 13:42  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>60.4</b>	mg/Kg	4.3	2.2	2	08/31/17 18:03	08/30/17	
Lead	6010C	<b>1030</b>	mg/Kg	2.2	0.8	2	08/31/17 18:03	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-G04-081717  
**Lab Code:** K1708846-020

**Service Request:** K1708846  
**Date Collected:** 08/17/17 13:46  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>61.8</b>	mg/Kg	4.2	2.1	2	08/31/17 18:05	08/30/17	
Lead	6010C	<b>1060</b>	mg/Kg	2.1	0.7	2	08/31/17 18:05	08/30/17	

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** Method Blank  
**Lab Code:** KQ1712057-02

**Service Request:** K1708846  
**Date Collected:** NA  
**Date Received:** NA  
**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	ND U	mg/Kg	4	2.0	2	08/31/17 16:51	08/30/17	
Lead	6010C	ND U	mg/Kg	2	0.7	2	08/31/17 16:51	08/30/17	



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QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708846  
**Date Collected:** 08/17/17  
**Date Received:** 08/22/17  
**Date Analyzed:** 08/31/17  
**Date Extracted:** 08/30/17

**Duplicate Matrix Spike Summary  
Total Metals**

**Sample Name:** 401-2-D01-081717  
**Lab Code:** K1708846-001  
**Analysis Method:** 6010C  
**Prep Method:** EPA 3050B

**Units:** mg/Kg  
**Basis:** Dry

Analyte Name	Sample Result	Result	Matrix Spike KQ1712057-03		Duplicate Matrix Spike KQ1712057-04		% Rec Limits	RPD	RPD Limit	
			Spike Amount	% Rec	Result	Spike Amount				% Rec
Arsenic	43.8	142	99.7	99	141	102	96	75-125	<1	30
Lead	913	1090	99.7	180 #	1080	102	161 #	75-125	<1	30

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708846

**Date Analyzed:** 08/31/17

**Lab Control Sample Summary**  
**Total Metals**

**Units:**mg/Kg

**Basis:**Dry

**Lab Control Sample**  
KQ1712057-01

<b>Analyte Name</b>	<b>Analytical Method</b>	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>% Rec Limits</b>
Arsenic	6010C	495	500	99	80-120
Lead	6010C	514	500	103	80-120



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ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

September 05, 2017

**Analytical Report for Service Request No: K1708847**

Dave Enos  
Teck American Incorporated  
501 North Riverpoint Blvd., Suite 300  
Spokane, WA 99202

**RE: August 2017 Sampling SAT Study / B0095010.0005.00001**

Dear Dave,

Enclosed are the results of the sample(s) submitted to our laboratory August 22, 2017  
For your reference, these analyses have been assigned our service request number **K1708847**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at [www.alsglobal.com](http://www.alsglobal.com). All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at [Jeff.Coronado@alsglobal.com](mailto:Jeff.Coronado@alsglobal.com).

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**

Jeff Coronado  
Metals Department  
Manager



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ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

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Case Narrative

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Metals

## Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

### **Inorganic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

### **Metals Data Qualifiers**

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.  
  - i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Organic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Additional Petroleum Hydrocarbon Specific Qualifiers**

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

**ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso  
State Certifications, Accreditations, and Licenses**

<b>Agency</b>	<b>Web Site</b>	<b>Number</b>
Alaska DEH	<a href="http://dec.alaska.gov/eh/lab/cs/csapproval.htm">http://dec.alaska.gov/eh/lab/cs/csapproval.htm</a>	UST-040
Arizona DHS	<a href="http://www.azdhs.gov/lab/license/env.htm">http://www.azdhs.gov/lab/license/env.htm</a>	AZ0339
Arkansas - DEQ	<a href="http://www.adeq.state.ar.us/techsvs/labcert.htm">http://www.adeq.state.ar.us/techsvs/labcert.htm</a>	88-0637
California DHS (ELAP)	<a href="http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx">http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx</a>	2795
DOD ELAP	<a href="http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm">http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm</a>	L14-51
Florida DOH	<a href="http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm">http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm</a>	E87412
Hawaii DOH	<a href="http://health.hawaii.gov/">http://health.hawaii.gov/</a>	-
ISO 17025	<a href="http://www.pjlabs.com/">http://www.pjlabs.com/</a>	L16-57
Louisiana DEQ	<a href="http://www.deq.louisiana.gov/page/la-lab-accreditation">http://www.deq.louisiana.gov/page/la-lab-accreditation</a>	03016
Maine DHS	<a href="http://www.maine.gov/dhhs/">http://www.maine.gov/dhhs/</a>	WA01276
Minnesota DOH	<a href="http://www.health.state.mn.us/accreditation">http://www.health.state.mn.us/accreditation</a>	053-999-457
Nevada DEP	<a href="http://ndep.nv.gov/bsdw/labservice.htm">http://ndep.nv.gov/bsdw/labservice.htm</a>	WA01276
New Jersey DEP	<a href="http://www.nj.gov/dep/enforcement/oqa.html">http://www.nj.gov/dep/enforcement/oqa.html</a>	WA005
New York - DOH	<a href="https://www.wadsworth.org/regulatory/elap">https://www.wadsworth.org/regulatory/elap</a>	12060
North Carolina DEQ	<a href="https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification">https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification</a>	605
Oklahoma DEQ	<a href="http://www.deq.state.ok.us/CSDnew/labcert.htm">http://www.deq.state.ok.us/CSDnew/labcert.htm</a>	9801
Oregon – DEQ (NELAP)	<a href="http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx">http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx</a>	WA100010
South Carolina DHEC	<a href="http://www.scdhec.gov/environment/EnvironmentalLabCertification/">http://www.scdhec.gov/environment/EnvironmentalLabCertification/</a>	61002
Texas CEQ	<a href="http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html">http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html</a>	T104704427
Washington DOE	<a href="http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html">http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html</a>	C544
Wyoming (EPA Region 8)	<a href="https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water">https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water</a>	-
Kelso Laboratory Website	<a href="http://www.alsglobal.com">www.alsglobal.com</a>	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at [www.ALSGlobal.com](http://www.ALSGlobal.com) or at the accreditation bodies web site.  
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.



## Case Narrative

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)



**ALS ENVIRONMENTAL**

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/  
B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request No.:** K1708847  
**Date Received:** 08/22/17

**Case Narrative**


All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

**Sample Receipt**

Twenty soil samples were received for analysis at ALS Environmental on 08/22/17. The samples were received in good condition and consistent with the accompanying chain of custody form, except where noted on the cooler receipt and preservation form included in this report.. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

**Total Metals**

No anomalies associated with the analysis of these samples were observed.

Approved by  \_\_\_\_\_



# Chain of Custody

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

K1708847

Date 7/13 OF 2010  
 SR# 008/19/17 008/19/17

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001  
 Project Contact: Kady Young Company: Arcadis  
 Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488  
 City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961  
 Sampler's Signature: \_\_\_\_\_

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	Analysis Requested					REMARKS
						lead/arsenic 3050B/6010					
401-2-G01-081717	08/17/17	13:33		S	1	X					
↓ G02 ↓	↓ ↓	13:37		S	1	X					
↓ G03 ↓	↓ ↓	13:42		S	1	X					
↓ G04 ↓	↓ ↓	13:46		S	1	X					
↓ G05 ↓	↓ ↓	13:49		S	1	X					
401-2-G02-081717-D	↓	13:37		S	1	X					
<del>_____</del>				S	1	X					
<del>_____</del>				S	1	X					
<del>_____</del>				S	1	X					
<del>_____</del>				S	1	X					

**TURNAROUND REQUIREMENTS**  
 24 hr  48 hr  5 day  
 Standard (10 days)  
 Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes raw data)  
 IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # \_\_\_\_\_  
 Bill to: Dave Enos - Teck American  
501 N Riverpoint Blvd, Suite 300 Spokane, WA 99201

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Watson Metsutnam  
 Firm: Arcadis  
 Date/Time: 8/21/17 1300

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: MORF  
 Firm: A25  
 Date/Time: 8/22/17 0950

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

K1708847

Date 8/15 OF 2010  
 SR# W08 8/19/17 W08 8/19/17

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001  
 Project Contact: Kady Young Company: Arcadis  
 Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488  
 City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961  
 Sampler's Signature: \_\_\_\_\_

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	Analysis Requested					REMARKS
						lead/arsenic 3050B/6010					
401-2-H01-081717	08/17/17	14:12		S	1	X					
H02		14:15		S	1	X					
H03		14:18		S	1	X					
H04		14:21		S	1	X					
H05		14:24		S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					

**TURNAROUND REQUIREMENTS**  
 \_\_\_ 24 hr \_\_\_ 48 hr \_\_\_ 5 day  
 Standard (10 days)  
 \_\_\_ Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 \_\_\_ II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes raw data)  
 \_\_\_ IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # \_\_\_\_\_  
 Bill to: Dave Enos - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99201

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Watson Metschan  
 Firm: Arcadis  
 Date/Time: 8/21/17 1300

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: SWOLF  
 Firm: ALS  
 Date/Time: 8/22/17 0950

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

K1708847

Date

PAGE 9 of 2010

SR# 2008/19/17 2008/19/17

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001

Project Contact: Kady Young Company: Arcadis

Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488

City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961

Sampler's Signature: \_\_\_\_\_

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	Analysis Requested					REMARKS
						lead/arsenic 3050B/6010					
401-2-101-081717	08/17/17	14:32		S	1	X					
I02		14:35		S	1	X					
I03		14:38		S	1	X					
I04		14:40		S	1	X					
I05		14:43		S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					

**TURNAROUND REQUIREMENTS**

24 hr  48 hr  5 day

Standard (10 days)

Provide FAX Preliminary Results

Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**

I. Routine Report: Results, Method Blank, Surrogate, as required

II. Report Dup., MS, MSD as required

III. Data Validation Report (includes raw data)

IV. CLP Deliverable Report

V. EDD

**Comments/Special Instructions:**

Hold Remainder

**Invoice Information**

P.O. # \_\_\_\_\_

Bill to: Dave Enos - Teck American

501 N Riverpoint Blvd, Suite 300 Spokane, WA 99201

**RELINQUISHED BY:**

Signature: [Signature]

Printed Name: Watson Metzner

Firm: Arcadis

Date/Time: 8/21/17 1300

**RECEIVED BY:**

Signature: [Signature]

Printed Name: Snork

Firm: ARS

Date/Time: 8/22/17 0950

**RELINQUISHED BY:**

Signature: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Firm: \_\_\_\_\_

Date/Time: \_\_\_\_\_

**RECEIVED BY:**

Signature: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Firm: \_\_\_\_\_

Date/Time: \_\_\_\_\_

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

K1708847

Date 10/19 OF 2010  
 SR# WM 8/19/17 5/8/19/17

**Project Name:** Teck American - UCR SATES **Project Number:** B0095010.0005.00001

**Project Contact:** Kady Young **Company:** Arcadis

**Company/Address:** 189 North Cedar Street **Phone:** 307-203-3510 or 810-588-1488

**City, State, Zip:** Buffalo, WY 82834 **FAX:** 307-684-5961

**Sampler's Signature:** \_\_\_\_\_

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	lead/arsenic 3050B/6010	Analysis Requested				REMARKS	
401-2-101-081717	08/17/17	14:52		S	1	X						
↓ J02 ↓	↓ ↓	14:54		S	1	X						
↓ J03 ↓	↓ ↓	14:56		S	1	X						
↓ J04 ↓	↓ ↓	14:59		S	1	X						
↓ J05 ↓	↓ ↓	15:02		S	1	X						
401-2-104-081717-D	↓	14:59		S	1	X						
<del>_____</del>				S	1	X						
<del>_____</del>				S	1	X						
<del>_____</del>				S	1	X						
<del>_____</del>				S	1	X						

**TURNAROUND REQUIREMENTS**

24 hr  48 hr  5 day

Standard (10 days)

Provide FAX Preliminary Results

**Requested Report Date:** \_\_\_\_\_

**REPORT REQUIREMENTS**

I. Routine Report: Results, Method Blank, Surrogate, as required

II. Report Dup., MS, MSD as required

III. Data Validation Report (includes raw data)

IV. CLP Deliverable Report

V. EDD

**Comments/Special Instructions:**

Hold Remainder

**Invoice Information**

P.O. # \_\_\_\_\_

**Bill to:** Dave Enos - Teck American

501 N Riverpoint Blvd, Suite 300 Spokane, WA 992

**RELINQUISHED BY:**

Signature: [Signature]

Printed Name: Watson Metzger

Firm: Arcadis

Date/Time: 8/21/17 1300

**RECEIVED BY:**

Signature: [Signature]

Printed Name: SWOLF

Firm: A25

Date/Time: 8/22/17 0950

**RELINQUISHED BY:**

Signature: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Firm: \_\_\_\_\_

Date/Time: \_\_\_\_\_

**RECEIVED BY:**

Signature: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Firm: \_\_\_\_\_

Date/Time: \_\_\_\_\_

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

K1708847

Date 8/20/17  
PAGE 1 OF 15  
SR#

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001

Project Contact: Kady Young Company: Arcadis

Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488

City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961

Sampler's Signature: \_\_\_\_\_

Number of Containers	Analysis Requested					REMARKS
	lead/arsenic 3050B/6010					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					

Sample I.D.	Date	Time	LAB ID	Matrix
401-1-A01-081817	8/18/17	0927		S
A02		0930		S
A03		0932		S
A04		0934		S
A05		0936		S
A06		0940		S
A07		0942		S
A08		0944		S
A09		0947		S
∇ A10 ∇	∇	0949		S

**URNAROUND REQUIREMENTS**  
 \_\_\_ 24 hr \_\_\_ 48 hr \_\_\_ 5 day  
 Standard (10 days)  
 \_\_\_ Provide FAX Preliminary Results  
 requested Report Date: \_\_\_\_\_

**Invoice Information**  
 I.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99201

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes raw data)  
 IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Watson Metsutnam  
 Firm: Arcadis  
 Date/Time: 8/21/17 13:00

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: [Signature]  
 Firm: [Signature]  
 Date/Time: 8/22/17 0950

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_



PC 16

### Cooler Receipt and Preservation Form

Patient: Teck America Service Request K17 08847  
Received: 8/22/17 Opened: 8/22/17 By: KM Unloaded: 8/22/17 By: KM

Samples were received via? USPS 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 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
5.2	5.4	13.1	13.3	+0.2	325		8745 6738 5575		
7.8	7.9	11.5	11.6	+0.1	373		8745 6738 5586		
7.3	7.6	14.1	14.4	+0.3	349		8745 6738 5564		
7.7	7.2	7.2	7.4	-0.2	379		8105 9112 1296		
7.3	7.2	14.2	14.1	-0.1	328		8745 6738 5597		

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

Were samples received in good condition (temperature, unbroken)? Indicate in the table below. NA Y N

If applicable, tissue samples were received: Frozen Partially Thawed Thawed

Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N KM

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:
<u>401-2-G02-081717</u>	<u>401-2-G02-0817-D</u>	<u>"G02-D" on Sample jar Lid</u>
<u>401-1-C1-081817</u>	<u>401-1-C01-081817</u>	<u>(Dates + times match COC. <del>NA</del> that CO1-C01 that way.)</u>

Sample ID	Bottle Count	Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

s, Discrepancies, & Resolutions: In all of the Coolers, there wasn't enough ice and what was there was melted.





# Total Solids

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1708847  
**Date Collected:** 08/17/17 - 08/18/17  
**Date Received:** 08/22/17

**Units:** Percent  
**Basis:** As Received

**Solids, Total**

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
401-2-G05-081717	K1708847-001	95.1	-	-	1	08/25/17 16:15	
401-2-G02-081717-D	K1708847-002	94.6	-	-	1	08/25/17 16:15	
401-2-H01-081717	K1708847-003	94.5	-	-	1	08/25/17 16:15	
401-2-H02-081717	K1708847-004	92.9	-	-	1	08/25/17 16:15	
401-2-H03-081717	K1708847-005	92.6	-	-	1	08/25/17 16:15	
401-2-H04-081717	K1708847-006	94.8	-	-	1	08/25/17 16:15	
401-2-H05-081717	K1708847-007	95.4	-	-	1	08/25/17 16:15	
401-2-I01-081717	K1708847-008	94.1	-	-	1	08/25/17 16:15	
401-2-I02-081717	K1708847-009	95.5	-	-	1	08/25/17 16:15	
401-2-I03-081717	K1708847-010	96.7	-	-	1	08/25/17 16:15	
401-2-I04-081717	K1708847-011	96.6	-	-	1	08/25/17 16:15	
401-2-I05-081717	K1708847-012	96.2	-	-	1	08/25/17 16:15	
401-2-J01-081717	K1708847-013	95.2	-	-	1	08/25/17 16:15	
401-2-J02-081717	K1708847-014	94.6	-	-	1	08/25/17 16:15	
401-2-J03-081717	K1708847-015	96.2	-	-	1	08/25/17 16:15	
401-2-J04-081717	K1708847-016	62.3	-	-	1	08/25/17 16:15	
401-2-J05-081717	K1708847-017	95.7	-	-	1	08/25/17 16:15	
401-2-J04-081717-D	K1708847-018	96.0	-	-	1	08/25/17 16:15	
401-1-A01-081817	K1708847-019	93.9	-	-	1	08/25/17 16:15	
401-1-A02-081817	K1708847-020	97.5	-	-	1	08/25/17 16:15	

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1708847  
**Date Collected:** 08/17/17  
**Date Received:** 08/22/17

**Units:** Percent  
**Basis:** As Received

**Replicate Sample Summary**  
**Inorganic Parameters**

<b>Sample Name:</b>	<b>Lab Code:</b>	<b>MRL</b>	<b>Sample Result</b>	<b>Duplicate Result</b>	<b>Average</b>	<b>RPD</b>	<b>RPD Limit</b>	<b>Date Analyzed</b>
401-2-G05-081717	K1708847-001DUP	-	95.1	95.2	95.2	<1	20	08/25/17
401-2-I04-081717	K1708847-011DUP	-	96.6	96.5	96.6	<1	20	08/25/17

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



# Metals

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

ALS Group USA, Corp.  
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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-G05-081717  
**Lab Code:** K1708847-001

**Service Request:** K1708847  
**Date Collected:** 08/17/17 13:49  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>42.3</b>	mg/Kg	4.1	2.0	2	08/31/17 18:12	08/30/17	
Lead	6010C	<b>423</b>	mg/Kg	2.0	0.7	2	08/31/17 18:12	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-G02-081717-D  
**Lab Code:** K1708847-002

**Service Request:** K1708847  
**Date Collected:** 08/17/17 13:37  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>32.1</b>	mg/Kg	4.2	2.1	2	08/31/17 18:22	08/30/17	
Lead	6010C	<b>368</b>	mg/Kg	2.1	0.7	2	08/31/17 18:22	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-H01-081717  
**Lab Code:** K1708847-003

**Service Request:** K1708847  
**Date Collected:** 08/17/17 14:12  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>45.2</b>	mg/Kg	4.1	2.0	2	08/31/17 18:31	08/30/17	
Lead	6010C	<b>1100</b>	mg/Kg	2.0	0.7	2	08/31/17 18:31	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-H02-081717  
**Lab Code:** K1708847-004

**Service Request:** K1708847  
**Date Collected:** 08/17/17 14:15  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>68.3</b>	mg/Kg	3.6	1.8	2	08/31/17 18:33	08/30/17	
Lead	6010C	<b>1280</b>	mg/Kg	1.8	0.6	2	08/31/17 18:33	08/30/17	



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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-H03-081717  
**Lab Code:** K1708847-005

**Service Request:** K1708847  
**Date Collected:** 08/17/17 14:18  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>44.1</b>	mg/Kg	4.2	2.1	2	08/31/17 18:35	08/30/17	
Lead	6010C	<b>1110</b>	mg/Kg	2.1	0.7	2	08/31/17 18:35	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-H04-081717  
**Lab Code:** K1708847-006

**Service Request:** K1708847  
**Date Collected:** 08/17/17 14:21  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>48.8</b>	mg/Kg	4.0	2.0	2	08/31/17 18:37	08/30/17	
Lead	6010C	<b>420</b>	mg/Kg	2.0	0.7	2	08/31/17 18:37	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-H05-081717  
**Lab Code:** K1708847-007

**Service Request:** K1708847  
**Date Collected:** 08/17/17 14:24  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>25.9</b>	mg/Kg	4.0	2.0	2	08/31/17 18:39	08/30/17	
Lead	6010C	<b>337</b>	mg/Kg	2.0	0.7	2	08/31/17 18:39	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-I01-081717  
**Lab Code:** K1708847-008

**Service Request:** K1708847  
**Date Collected:** 08/17/17 14:32  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>36.8</b>	mg/Kg	3.8	1.9	2	08/31/17 18:41	08/30/17	
Lead	6010C	<b>837</b>	mg/Kg	1.9	0.7	2	08/31/17 18:41	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-I02-081717  
**Lab Code:** K1708847-009

**Service Request:** K1708847  
**Date Collected:** 08/17/17 14:35  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>29.3</b>	mg/Kg	4.1	2.1	2	08/31/17 18:43	08/30/17	
Lead	6010C	<b>544</b>	mg/Kg	2.1	0.7	2	08/31/17 18:43	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-I03-081717  
**Lab Code:** K1708847-010

**Service Request:** K1708847  
**Date Collected:** 08/17/17 14:38  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>28.0</b>	mg/Kg	3.9	2.0	2	08/31/17 18:45	08/30/17	
Lead	6010C	<b>572</b>	mg/Kg	2.0	0.7	2	08/31/17 18:45	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-I04-081717  
**Lab Code:** K1708847-011

**Service Request:** K1708847  
**Date Collected:** 08/17/17 14:40  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>19.0</b>	mg/Kg	4.1	2.0	2	08/31/17 18:48	08/30/17	
Lead	6010C	<b>251</b>	mg/Kg	2.0	0.7	2	08/31/17 18:48	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-I05-081717  
**Lab Code:** K1708847-012

**Service Request:** K1708847  
**Date Collected:** 08/17/17 14:43  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	23.7	mg/Kg	3.8	1.9	2	08/31/17 18:50	08/30/17	
Lead	6010C	287	mg/Kg	1.9	0.7	2	08/31/17 18:50	08/30/17	



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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-J01-081717  
**Lab Code:** K1708847-013

**Service Request:** K1708847  
**Date Collected:** 08/17/17 14:52  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>34.5</b>	mg/Kg	3.9	1.9	2	08/31/17 18:58	08/30/17	
Lead	6010C	<b>298</b>	mg/Kg	1.9	0.7	2	08/31/17 18:58	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-J02-081717  
**Lab Code:** K1708847-014

**Service Request:** K1708847  
**Date Collected:** 08/17/17 14:54  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>36.1</b>	mg/Kg	4.0	2.0	2	08/31/17 19:00	08/30/17	
Lead	6010C	<b>1100</b>	mg/Kg	2.0	0.7	2	08/31/17 19:00	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-J03-081717  
**Lab Code:** K1708847-015

**Service Request:** K1708847  
**Date Collected:** 08/17/17 14:56  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>20.2</b>	mg/Kg	4.1	2.1	2	08/31/17 19:02	08/30/17	
Lead	6010C	<b>394</b>	mg/Kg	2.1	0.7	2	08/31/17 19:02	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-J04-081717  
**Lab Code:** K1708847-016

**Service Request:** K1708847  
**Date Collected:** 08/17/17 14:59  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>59.4</b>	mg/Kg	3.7	1.9	2	08/31/17 19:05	08/30/17	
Lead	6010C	<b>850</b>	mg/Kg	1.9	0.6	2	08/31/17 19:05	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-J05-081717  
**Lab Code:** K1708847-017

**Service Request:** K1708847  
**Date Collected:** 08/17/17 15:02  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>79.8</b>	mg/Kg	4.1	2.0	2	08/31/17 19:07	08/30/17	
Lead	6010C	<b>893</b>	mg/Kg	2.0	0.7	2	08/31/17 19:07	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-2-J04-081717-D  
**Lab Code:** K1708847-018

**Service Request:** K1708847  
**Date Collected:** 08/17/17 14:59  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>62.7</b>	mg/Kg	4.0	2.0	2	08/31/17 19:09	08/30/17	
Lead	6010C	<b>839</b>	mg/Kg	2.0	0.7	2	08/31/17 19:09	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-A01-081817  
**Lab Code:** K1708847-019

**Service Request:** K1708847  
**Date Collected:** 08/18/17 09:27  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>48.7</b>	mg/Kg	4.1	2.0	2	08/31/17 19:11	08/30/17	
Lead	6010C	<b>574</b>	mg/Kg	2.0	0.7	2	08/31/17 19:11	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-A02-081817  
**Lab Code:** K1708847-020

**Service Request:** K1708847  
**Date Collected:** 08/18/17 09:30  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>12.5</b>	mg/Kg	3.4	1.7	2	08/31/17 19:13	08/30/17	
Lead	6010C	<b>219</b>	mg/Kg	1.7	0.6	2	08/31/17 19:13	08/30/17	



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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** Method Blank  
**Lab Code:** KQ1712439-02

**Service Request:** K1708847  
**Date Collected:** NA  
**Date Received:** NA  
**Basis:** Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6010C	ND U	mg/Kg	4	2.0	2	08/31/17 18:07	08/30/17	
Lead	6010C	ND U	mg/Kg	2	0.7	2	08/31/17 18:07	08/30/17	

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QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708847  
**Date Collected:** 08/17/17  
**Date Received:** 08/22/17  
**Date Analyzed:** 08/31/17  
**Date Extracted:** 08/30/17

**Duplicate Matrix Spike Summary  
Total Metals**

**Sample Name:** 401-2-G05-081717  
**Lab Code:** K1708847-001  
**Analysis Method:** 6010C  
**Prep Method:** EPA 3050B

**Units:** mg/Kg  
**Basis:** Dry

Analyte Name	Sample Result	Result	Matrix Spike KQ1712439-03		Result	Duplicate Matrix Spike KQ1712439-04		% Rec Limits	RPD	RPD Limit
			Spike Amount	% Rec		Spike Amount	% Rec			
Arsenic	42.3	131	94.7	93	138	98.3	98	75-125	6	30
Lead	423	449	94.7	27 #	480	98.3	57 #	75-125	7	30

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708847

**Date Analyzed:** 08/31/17

**Lab Control Sample Summary**  
**Total Metals**

**Units:**mg/Kg

**Basis:**Dry

**Lab Control Sample**  
KQ1712439-01

<b>Analyte Name</b>	<b>Analytical Method</b>	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>% Rec Limits</b>
Arsenic	6010C	499	500	100	80-120
Lead	6010C	528	500	106	80-120



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ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

September 05, 2017

**Analytical Report for Service Request No: K1708848**

Dave Enos  
Teck American Incorporated  
501 North Riverpoint Blvd., Suite 300  
Spokane, WA 99202

**RE: August 2017 Sampling SAT Study / B0095010.0005.00001**

Dear Dave,

Enclosed are the results of the sample(s) submitted to our laboratory August 22, 2017  
For your reference, these analyses have been assigned our service request number **K1708848**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at [www.alsglobal.com](http://www.alsglobal.com). All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at [Jeff.Coronado@alsglobal.com](mailto:Jeff.Coronado@alsglobal.com).

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**

Jeff Coronado  
Metals Department  
Manager



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ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

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## Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

### **Inorganic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

### **Metals Data Qualifiers**

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.  
  - i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Organic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.  
  - i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Additional Petroleum Hydrocarbon Specific Qualifiers**

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

**ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso  
State Certifications, Accreditations, and Licenses**

<b>Agency</b>	<b>Web Site</b>	<b>Number</b>
Alaska DEH	<a href="http://dec.alaska.gov/eh/lab/cs/csapproval.htm">http://dec.alaska.gov/eh/lab/cs/csapproval.htm</a>	UST-040
Arizona DHS	<a href="http://www.azdhs.gov/lab/license/env.htm">http://www.azdhs.gov/lab/license/env.htm</a>	AZ0339
Arkansas - DEQ	<a href="http://www.adeq.state.ar.us/techsvs/labcert.htm">http://www.adeq.state.ar.us/techsvs/labcert.htm</a>	88-0637
California DHS (ELAP)	<a href="http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx">http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx</a>	2795
DOD ELAP	<a href="http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm">http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm</a>	L14-51
Florida DOH	<a href="http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm">http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm</a>	E87412
Hawaii DOH	<a href="http://health.hawaii.gov/">http://health.hawaii.gov/</a>	-
ISO 17025	<a href="http://www.pjlabs.com/">http://www.pjlabs.com/</a>	L16-57
Louisiana DEQ	<a href="http://www.deq.louisiana.gov/page/la-lab-accreditation">http://www.deq.louisiana.gov/page/la-lab-accreditation</a>	03016
Maine DHS	<a href="http://www.maine.gov/dhhs/">http://www.maine.gov/dhhs/</a>	WA01276
Minnesota DOH	<a href="http://www.health.state.mn.us/accreditation">http://www.health.state.mn.us/accreditation</a>	053-999-457
Nevada DEP	<a href="http://ndep.nv.gov/bsdw/labservice.htm">http://ndep.nv.gov/bsdw/labservice.htm</a>	WA01276
New Jersey DEP	<a href="http://www.nj.gov/dep/enforcement/oqa.html">http://www.nj.gov/dep/enforcement/oqa.html</a>	WA005
New York - DOH	<a href="https://www.wadsworth.org/regulatory/elap">https://www.wadsworth.org/regulatory/elap</a>	12060
North Carolina DEQ	<a href="https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification">https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification</a>	605
Oklahoma DEQ	<a href="http://www.deq.state.ok.us/CSDnew/labcert.htm">http://www.deq.state.ok.us/CSDnew/labcert.htm</a>	9801
Oregon – DEQ (NELAP)	<a href="http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx">http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx</a>	WA100010
South Carolina DHEC	<a href="http://www.scdhec.gov/environment/EnvironmentalLabCertification/">http://www.scdhec.gov/environment/EnvironmentalLabCertification/</a>	61002
Texas CEQ	<a href="http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html">http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html</a>	T104704427
Washington DOE	<a href="http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html">http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html</a>	C544
Wyoming (EPA Region 8)	<a href="https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water">https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water</a>	-
Kelso Laboratory Website	<a href="http://www.alsglobal.com">www.alsglobal.com</a>	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at [www.ALSGlobal.com](http://www.ALSGlobal.com) or at the accreditation bodies web site. Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.





## Case Narrative

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

**ALS ENVIRONMENTAL**

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/  
B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request No.:** K1708848  
**Date Received:** 08/22/17

**Case Narrative**

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

**Sample Receipt**

Twenty soil samples were received for analysis at ALS Environmental on 08/22/17. The samples were received in good condition and consistent with the accompanying chain of custody form, except where noted on the cooler receipt and preservation form included in this report.. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

**Total Metals**

No anomalies associated with the analysis of these samples were observed.

Approved by  \_\_\_\_\_



# Chain of Custody

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

*K1708848*

Date 8/20/17  
 PAGE 9 OF 15  
 SR#

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001  
 Project Contact: Kady Young Company: Arcadis  
 Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488  
 City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961  
 Sampler's Signature: \_\_\_\_\_

Number of Containers	Analysis Requested					REMARKS
	lead/arsenic 3050B/6010					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					

Sample I.D.	Date	Time	LAB ID	Matrix
401-1-F01	8/18/17	1306		S
F02		1308		S
F03		1311		S
F04		1314		S
F05		1317		S
F06		1320		S
F07		1323		S
F08		1346		S
F09		1349		S
F90		1352		S

**TURNAROUND REQUIREMENTS**  
 \_\_\_ 24 hr \_\_\_ 48 hr \_\_\_ 5 day  
 Standard (10 days)  
 \_\_\_ Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99208

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes raw data)  
 IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**RELINQUISHED BY:**  
 Signature: *Watson*  
 Printed Name: Watson Metsulnam  
 Firm: Arcadis  
 Date/Time: 8/21/17 13:00

**RECEIVED BY:**  
 Signature: *[Signature]*  
 Printed Name: [Name]  
 Firm: [Firm]  
 Date/Time: 8/22/17 0950

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

K1708848

Date 8/20/17  
 PAGE 10 OF 15  
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 City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961  
 Sampler's Signature: \_\_\_\_\_

Number of Containers	Analysis Requested					REMARKS
	lead/arsenic 3050B/6010					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					

Sample I.D.	Date	Time	LAB ID	Matrix
401-1-G01-081817	8/18/17	1409		S
G02		1412		S
G03		1415		S
G04		1418		S
G05		1422		S
G06		1425		S
G07		1431		S
G08		1432		S
G09		1437		S
G10		1440		S

**TURNAROUND REQUIREMENTS**  
 \_\_\_ 24 hr \_\_\_ 48 hr \_\_\_ 5 day  
 Standard (10 days)  
 \_\_\_ Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 \_\_\_ I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 \_\_\_ III. Data Validation Report (includes raw data)  
 \_\_\_ IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99201

**RELINQUISHED BY:**  
 Signature: Watson M.  
 Printed Name: Watson Metsutnam  
 Firm: Arcadis  
 Date/Time: 8/21/17 1300

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: SNOW  
 Firm: ALS  
 Date/Time: 8/22/17 0950

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

*21708848*

Date 8/20/17  
 PAGE 11 OF 15  
 SR#

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001  
 Project Contact: Kady Young Company: Arcadis  
 Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488  
 City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961  
 Sampler's Signature: \_\_\_\_\_

Number of Containers	Analysis Requested					REMARKS
	lead/arsenic 3050B/6010					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					

Sample I.D.	Date	Time	LAB ID	Matrix
<u>401-1-609-081817-D</u>	<u>8/18/17</u>	<u>1437</u>		S
				S
				S
				S
				S
				S
				S
				S
				S
				S

**TURNAROUND REQUIREMENTS**  
 24 hr  48 hr  5 day  
 Standard (10 days)  
 Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes raw data)  
 IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99248

**RELINQUISHED BY:**  
 Signature: *Watson Metzner*  
 Printed Name: Watson Metzner  
 Firm: Arcadis  
 Date/Time: 8/21/17 1300

**RECEIVED BY:**  
 Signature: *[Signature]*  
 Printed Name: *[Name]*  
 Firm: *[Firm]*  
 Date/Time: 8/22/17 0950

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

K1708848

Date 8/20/17  
 PAGE 12 OF 15  
 SR#

ALS Environmental-Kelso  
 1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001  
 Project Contact: Kady Young Company: Arcadis  
 Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488  
 City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961  
 Sampler's Signature: \_\_\_\_\_

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	lead/arsenic 3050B/6010	Analysis Requested				REMARKS	
401-1-401-081817	8/18/17	1458		S	1	X						
H02		1502		S	1	X						
H03		1506		S	1	X						
H04		1509		S	1	X						
H05		1513		S	1	X						
H06		1516		S	1	X						
H07		1519		S	1	X						
H08		1522		S	1	X						
H09		1525		S	1	X						
H10		1528		S	1	X						

**URNAROUND REQUIREMENTS**  
 24 hr  48 hr  5 day  
 Standard (10 days)  
 Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_  
**Invoice Information**  
 I.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
501 N Riverpoint Blvd, Suite 300 Spokane, WA 99208

**REPORT REQUIREMENTS**  
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 II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes raw data)  
 IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Watson Metzner  
 Firm: Arcadis  
 Date/Time: 8/21/17 1300

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: [Signature]  
 Firm: [Signature]  
 Date/Time: 8/22/17 0950

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_



PC 10

### Cooler Receipt and Preservation Form

Client: Teck America Service Request K17 08848  
Received: 8/22/17 Opened: 8/22/17 By: KM Unloaded: 8/22/17 By: KM

Samples were received via?  USPS  FedEx  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 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
5.2	5.4	13.1	13.3	+0.2	325		8745 6738 5575		
7.8	7.9	11.5	11.6	+0.1	373		8745 6738 5586		
7.3	7.6	14.1	14.4	+0.3	349		8745 6738 5564		
7.7	7.2	7.2	7.4	+0.2	379		8105 9112 1296		
7.3	7.2	14.2	14.1	-0.1	328		8745 6738 5597		

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  
Were samples received in good condition (temperature, unbroken)? *Indicate in the table below.*  NA  Y  N  
If applicable, tissue samples were received:  Frozen  Partially Thawed  Thawed  
Were all sample labels complete (i.e analysis, preservation, etc.)?  NA  Y  N KM  
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:
401-2-602-081717	401-2-602-0817-0	"602-D" on Sample jar Lid
401-1-C1-081817	401-1-C01-081817	(Dates + times match COC. <del>COI-COQ that way.</del> )

Sample ID	Bottle Count	Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

s, Discrepancies, & Resolutions: In all of the Coolers, there wasn't enough ice and what was there was melted.





# Total Solids

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1708848  
**Date Collected:** 08/18/17  
**Date Received:** 08/22/17  
**Units:** Percent  
**Basis:** As Received

**Solids, Total**

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
401-1-F10-081817	K1708848-001	93.0	-	-	1	08/26/17 10:27	
401-1-G01-081817	K1708848-002	97.8	-	-	1	08/26/17 10:27	
401-1-G02-081817	K1708848-003	97.8	-	-	1	08/26/17 10:27	
401-1-G03-081817	K1708848-004	97.0	-	-	1	08/26/17 10:27	
401-1-G04-081817	K1708848-005	97.1	-	-	1	08/26/17 10:27	
401-1-G05-081817	K1708848-006	96.4	-	-	1	08/26/17 10:27	
401-1-G06-081817	K1708848-007	95.3	-	-	1	08/26/17 10:27	
401-1-G07-081817	K1708848-008	96.8	-	-	1	08/26/17 10:27	
401-1-G08-081817	K1708848-009	92.4	-	-	1	08/26/17 10:27	
401-1-G09-081817	K1708848-010	93.7	-	-	1	08/26/17 10:27	
401-1-G10-081817	K1708848-011	95.7	-	-	1	08/26/17 10:27	
401-1-G09-081817-D	K1708848-012	93.5	-	-	1	08/26/17 10:27	
401-1-H01-081817	K1708848-013	97.2	-	-	1	08/26/17 10:27	
401-1-H02-081817	K1708848-014	96.5	-	-	1	08/26/17 10:27	
401-1-H03-081817	K1708848-015	95.3	-	-	1	08/26/17 10:27	
401-1-H04-081817	K1708848-016	96.4	-	-	1	08/26/17 10:27	
401-1-H05-081817	K1708848-017	97.7	-	-	1	08/26/17 10:27	
401-1-H06-081817	K1708848-018	93.6	-	-	1	08/26/17 10:27	
401-1-H07-081817	K1708848-019	95.5	-	-	1	08/26/17 10:27	
401-1-H08-081817	K1708848-020	96.1	-	-	1	08/26/17 10:27	

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QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:**K1708848  
**Date Collected:**08/18/17  
**Date Received:**08/22/17

**Units:**Percent  
**Basis:**As Received

**Replicate Sample Summary**  
**Inorganic Parameters**

<b>Sample Name:</b>	<b>Lab Code:</b>	<b>MRL</b>	<b>Sample Result</b>	<b>Duplicate Result</b>	<b>Average</b>	<b>RPD</b>	<b>RPD Limit</b>	<b>Date Analyzed</b>
401-1-F10-081817	K1708848-001DUP	-	93.0	93.8	93.4	<1	20	08/26/17
401-1-G10-081817	K1708848-011DUP	-	95.7	95.3	95.5	<1	20	08/26/17

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



# Metals

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-F10-081817  
**Lab Code:** K1708848-001

**Service Request:** K1708848  
**Date Collected:** 08/18/17 13:52  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>50.3</b>	mg/Kg	3.8	0.8	2	08/31/17 17:08	08/30/17	
Lead	6010C	<b>657</b>	mg/Kg	1.9	0.4	2	08/31/17 17:08	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-G01-081817  
**Lab Code:** K1708848-002

**Service Request:** K1708848  
**Date Collected:** 08/18/17 14:09  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>27.6</b>	mg/Kg	3.8	0.8	2	08/31/17 17:19	08/30/17	
Lead	6010C	<b>391</b>	mg/Kg	1.9	0.4	2	08/31/17 17:19	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-G02-081817  
**Lab Code:** K1708848-003

**Service Request:** K1708848  
**Date Collected:** 08/18/17 14:12  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	20.7	mg/Kg	3.8	0.8	2	08/31/17 17:22	08/30/17	
Lead	6010C	311	mg/Kg	1.9	0.4	2	08/31/17 17:22	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-G03-081817  
**Lab Code:** K1708848-004

**Service Request:** K1708848  
**Date Collected:** 08/18/17 14:15  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>30.9</b>	mg/Kg	3.9	0.8	2	08/31/17 17:24	08/30/17	
Lead	6010C	<b>409</b>	mg/Kg	2.0	0.4	2	08/31/17 17:24	08/30/17	



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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-G04-081817  
**Lab Code:** K1708848-005

**Service Request:** K1708848  
**Date Collected:** 08/18/17 14:18  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>28.7</b>	mg/Kg	3.4	0.7	2	08/31/17 17:33	08/30/17	
Lead	6010C	<b>385</b>	mg/Kg	1.7	0.3	2	08/31/17 17:33	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-G05-081817  
**Lab Code:** K1708848-006

**Service Request:** K1708848  
**Date Collected:** 08/18/17 14:22  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>19.9</b>	mg/Kg	4.0	0.8	2	08/31/17 17:36	08/30/17	
Lead	6010C	<b>231</b>	mg/Kg	2.0	0.4	2	08/31/17 17:36	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-G06-081817  
**Lab Code:** K1708848-007

**Service Request:** K1708848  
**Date Collected:** 08/18/17 14:25  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>43.0</b>	mg/Kg	3.5	0.7	2	08/31/17 17:38	08/30/17	
Lead	6010C	<b>588</b>	mg/Kg	1.8	0.4	2	08/31/17 17:38	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-G07-081817  
**Lab Code:** K1708848-008

**Service Request:** K1708848  
**Date Collected:** 08/18/17 14:31  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>26.7</b>	mg/Kg	4.1	0.8	2	08/31/17 17:40	08/30/17	
Lead	6010C	<b>301</b>	mg/Kg	2.1	0.4	2	08/31/17 17:40	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-G08-081817  
**Lab Code:** K1708848-009

**Service Request:** K1708848  
**Date Collected:** 08/18/17 14:32  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>90.5</b>	mg/Kg	4.0	0.8	2	08/31/17 17:42	08/30/17	
Lead	6010C	<b>1360</b>	mg/Kg	2.0	0.4	2	08/31/17 17:42	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-G09-081817  
**Lab Code:** K1708848-010

**Service Request:** K1708848  
**Date Collected:** 08/18/17 14:37  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>41.3</b>	mg/Kg	3.8	0.8	2	08/31/17 17:45	08/30/17	
Lead	6010C	<b>309</b>	mg/Kg	1.9	0.4	2	08/31/17 17:45	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-G10-081817  
**Lab Code:** K1708848-011

**Service Request:** K1708848  
**Date Collected:** 08/18/17 14:40  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>59.6</b>	mg/Kg	4.1	0.8	2	08/31/17 17:47	08/30/17	
Lead	6010C	<b>1740</b>	mg/Kg	2.1	0.4	2	08/31/17 17:47	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-G09-081817-D  
**Lab Code:** K1708848-012

**Service Request:** K1708848  
**Date Collected:** 08/18/17 14:37  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>39.0</b>	mg/Kg	4.2	0.8	2	08/31/17 17:49	08/30/17	
Lead	6010C	<b>288</b>	mg/Kg	2.1	0.4	2	08/31/17 17:49	08/30/17	



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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-H01-081817  
**Lab Code:** K1708848-013

**Service Request:** K1708848  
**Date Collected:** 08/18/17 14:58  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	38.4	mg/Kg	4.0	0.8	2	08/31/17 17:52	08/30/17	
Lead	6010C	444	mg/Kg	2.0	0.4	2	08/31/17 17:52	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-H02-081817  
**Lab Code:** K1708848-014

**Service Request:** K1708848  
**Date Collected:** 08/18/17 15:02  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>32.9</b>	mg/Kg	4.1	0.8	2	08/31/17 17:54	08/30/17	
Lead	6010C	<b>508</b>	mg/Kg	2.1	0.4	2	08/31/17 17:54	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-H03-081817  
**Lab Code:** K1708848-015

**Service Request:** K1708848  
**Date Collected:** 08/18/17 15:06  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>37.4</b>	mg/Kg	4.1	0.8	2	08/31/17 18:06	08/30/17	
Lead	6010C	<b>693</b>	mg/Kg	2.0	0.4	2	08/31/17 18:06	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-H04-081817  
**Lab Code:** K1708848-016

**Service Request:** K1708848  
**Date Collected:** 08/18/17 15:09  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>25.8</b>	mg/Kg	3.6	0.7	2	08/31/17 18:08	08/30/17	
Lead	6010C	<b>360</b>	mg/Kg	1.8	0.4	2	08/31/17 18:08	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-H05-081817  
**Lab Code:** K1708848-017

**Service Request:** K1708848  
**Date Collected:** 08/18/17 15:13  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	26.2	mg/Kg	3.6	0.7	2	08/31/17 18:10	08/30/17	
Lead	6010C	333	mg/Kg	1.8	0.4	2	08/31/17 18:10	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-H06-081817  
**Lab Code:** K1708848-018

**Service Request:** K1708848  
**Date Collected:** 08/18/17 15:16  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>45.0</b>	mg/Kg	4.1	0.8	2	08/31/17 18:13	08/30/17	
Lead	6010C	<b>566</b>	mg/Kg	2.1	0.4	2	08/31/17 18:13	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-H07-081817  
**Lab Code:** K1708848-019

**Service Request:** K1708848  
**Date Collected:** 08/18/17 15:19  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6010C	33.8	mg/Kg	4.1	0.8	2	08/31/17 18:15	08/30/17	
Lead	6010C	336	mg/Kg	2.1	0.4	2	08/31/17 18:15	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-H08-081817  
**Lab Code:** K1708848-020

**Service Request:** K1708848  
**Date Collected:** 08/18/17 15:22  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>43.7</b>	mg/Kg	3.9	0.8	2	08/31/17 18:17	08/30/17	
Lead	6010C	<b>190</b>	mg/Kg	2.0	0.4	2	08/31/17 18:17	08/30/17	



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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** Method Blank  
**Lab Code:** KQ1712440-02

**Service Request:** K1708848  
**Date Collected:** NA  
**Date Received:** NA  
**Basis:** Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6010C	ND U	mg/Kg	4	0.8	2	08/31/17 17:03	08/30/17	
Lead	6010C	ND U	mg/Kg	2	0.4	2	08/31/17 17:03	08/30/17	

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QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708848  
**Date Collected:** 08/18/17  
**Date Received:** 08/22/17  
**Date Analyzed:** 08/31/17  
**Date Extracted:** 08/30/17

**Duplicate Matrix Spike Summary  
Total Metals**

**Sample Name:** 401-1-F10-081817  
**Lab Code:** K1708848-001  
**Analysis Method:** 6010C  
**Prep Method:** EPA 3050B

**Units:** mg/Kg  
**Basis:** Dry

Analyte Name	Sample Result	Result	Matrix Spike KQ1712440-03		Result	Duplicate Matrix Spike KQ1712440-04		% Rec Limits	RPD	RPD Limit
			Spike Amount	% Rec		Spike Amount	% Rec			
Arsenic	50.3	152	103	99	153	103	99	75-125	<1	30
Lead	657	775	103	115 #	774	103	113 #	75-125	<1	30

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708848

**Date Analyzed:** 08/31/17

**Lab Control Sample Summary**  
**Total Metals**

**Units:**mg/Kg

**Basis:**Dry

**Lab Control Sample**  
KQ1712440-01

<b>Analyte Name</b>	<b>Analytical Method</b>	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>% Rec Limits</b>
Arsenic	6010C	494	500	99	80-120
Lead	6010C	494	500	99	80-120



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ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

September 05, 2017

**Analytical Report for Service Request No: K1708849**

Dave Enos  
Teck American Incorporated  
501 North Riverpoint Blvd., Suite 300  
Spokane, WA 99202

**RE: August 2017 Sampling SAT Study / B0095010.0005.00001**

Dear Dave,

Enclosed are the results of the sample(s) submitted to our laboratory August 22, 2017  
For your reference, these analyses have been assigned our service request number **K1708849**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at [www.alsglobal.com](http://www.alsglobal.com). All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at [Jeff.Coronado@alsglobal.com](mailto:Jeff.Coronado@alsglobal.com).

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**

Jeff Coronado  
Metals Department  
Manager



---

ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

## Table of Contents

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## Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

### **Inorganic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

### **Metals Data Qualifiers**

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.  
  - i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Organic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.  
  - i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Additional Petroleum Hydrocarbon Specific Qualifiers**

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

**ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso  
State Certifications, Accreditations, and Licenses**

<b>Agency</b>	<b>Web Site</b>	<b>Number</b>
Alaska DEH	<a href="http://dec.alaska.gov/eh/lab/cs/csapproval.htm">http://dec.alaska.gov/eh/lab/cs/csapproval.htm</a>	UST-040
Arizona DHS	<a href="http://www.azdhs.gov/lab/license/env.htm">http://www.azdhs.gov/lab/license/env.htm</a>	AZ0339
Arkansas - DEQ	<a href="http://www.adeq.state.ar.us/techsvs/labcert.htm">http://www.adeq.state.ar.us/techsvs/labcert.htm</a>	88-0637
California DHS (ELAP)	<a href="http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx">http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx</a>	2795
DOD ELAP	<a href="http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm">http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm</a>	L14-51
Florida DOH	<a href="http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm">http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm</a>	E87412
Hawaii DOH	<a href="http://health.hawaii.gov/">http://health.hawaii.gov/</a>	-
ISO 17025	<a href="http://www.pjllabs.com/">http://www.pjllabs.com/</a>	L16-57
Louisiana DEQ	<a href="http://www.deq.louisiana.gov/page/la-lab-accreditation">http://www.deq.louisiana.gov/page/la-lab-accreditation</a>	03016
Maine DHS	<a href="http://www.maine.gov/dhhs/">http://www.maine.gov/dhhs/</a>	WA01276
Minnesota DOH	<a href="http://www.health.state.mn.us/accreditation">http://www.health.state.mn.us/accreditation</a>	053-999-457
Nevada DEP	<a href="http://ndep.nv.gov/bsdw/labservice.htm">http://ndep.nv.gov/bsdw/labservice.htm</a>	WA01276
New Jersey DEP	<a href="http://www.nj.gov/dep/enforcement/oqa.html">http://www.nj.gov/dep/enforcement/oqa.html</a>	WA005
New York - DOH	<a href="https://www.wadsworth.org/regulatory/elap">https://www.wadsworth.org/regulatory/elap</a>	12060
North Carolina DEQ	<a href="https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification">https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification</a>	605
Oklahoma DEQ	<a href="http://www.deq.state.ok.us/CSDnew/labcert.htm">http://www.deq.state.ok.us/CSDnew/labcert.htm</a>	9801
Oregon – DEQ (NELAP)	<a href="http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx">http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx</a>	WA100010
South Carolina DHEC	<a href="http://www.scdhec.gov/environment/EnvironmentalLabCertification/">http://www.scdhec.gov/environment/EnvironmentalLabCertification/</a>	61002
Texas CEQ	<a href="http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html">http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html</a>	T104704427
Washington DOE	<a href="http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html">http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html</a>	C544
Wyoming (EPA Region 8)	<a href="https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water">https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water</a>	-
Kelso Laboratory Website	<a href="http://www.alsglobal.com">www.alsglobal.com</a>	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at [www.ALSGlobal.com](http://www.ALSGlobal.com) or at the accreditation bodies web site.  
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.





## Case Narrative

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

**ALS ENVIRONMENTAL**

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/  
B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request No.:** K1708849  
**Date Received:** 08/22/17

**Case Narrative**

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

**Sample Receipt**

Twenty soil samples were received for analysis at ALS Environmental on 08/22/17. The samples were received in good condition and consistent with the accompanying chain of custody form, except where noted on the cooler receipt and preservation form included in this report.. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

**Total Metals**

No anomalies associated with the analysis of these samples were observed.

Approved by  \_\_\_\_\_



## Chain of Custody

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

K1708849

Date 8/20/17  
PAGE 4 OF 15  
SR#

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001

Project Contact: Kady Young Company: Arcadis

Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488

City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961

Sampler's Signature: \_\_\_\_\_

Number of Containers

Analysis Requested

lead/arsenic 3050B/6010

REMARKS

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	lead/arsenic 3050B/6010	Analysis Requested	REMARKS
401-1-C01-081817	8/18/17	1033		S	1	X		
C02		1035		S	1	X		
C03		1038		S	1	X		
C04		1040		S	1	X		
C05		1042		S	1	X		
C06		1045		S	1	X		
C07		1048		S	1	X		
C08		1051		S	1	X		
C09		1054		S	1	X		
C10		1057		S	1	X		

**TURNAROUND REQUIREMENTS**  
 24 hr  48 hr  5 day  
 Standard (10 days)  
 Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes raw data)  
 IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99201

**RELINQUISHED BY:**  
 Signature: Watson  
 Printed Name: Watson Metzger  
 Firm: Arcadis  
 Date/Time: 8/21/17 13:00

**RECEIVED BY:**  
 Signature: Graves  
 Printed Name: COOY GRAVES  
 Firm: ALS  
 Date/Time: 8/22/17 0950

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

K1708849

Date 8/20/17  
 PAGE 5 OF 15  
 SR#

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001  
 Project Contact: Kady Young Company: Arcadis  
 Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488  
 City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961  
 Sampler's Signature: \_\_\_\_\_

Number of Containers	Analysis Requested					REMARKS
	lead/arsenic 3050B/6010					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					

Sample I.D.	Date	Time	LAB ID	Matrix
401-1-C09-081817-D	8/18/17	1054		S
				S
				S
				S
				S
				S
				S
				S
				S
				S

**TURNAROUND REQUIREMENTS**  
 \_\_\_ 24 hr \_\_\_ 48 hr \_\_\_ 5 day  
 Standard (10 days)  
 \_\_\_ Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 \_\_\_ I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 \_\_\_ III. Data Validation Report (includes raw data)  
 \_\_\_ IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99204

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Watson Metzger  
 Firm: Arcadis  
 Date/Time: 8/21/17 13:00

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: CODY GRAVES  
 Firm: ALS  
 Date/Time: 8/22/17 0950

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

K1708849

Date 8/20/17  
 PAGE 6 OF 15  
 SR#

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001  
 Project Contact: Kady Young Company: Arcadis  
 Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488  
 City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961  
 Sampler's Signature: \_\_\_\_\_

Number of Containers	Analysis Requested					REMARKS
	lead/arsenic 3050B/6010					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					

Sample I.D.	Date	Time	LAB ID	Matrix
401-1-D01-081817	8/18/17	1111		S
D02		1115		S
D03		1117		S
D04		1119		S
D05		1122		S
D06		1124		S
D07		1127		S
D08		1130		S
D09		1133		S
D10		1136		S

**TURNAROUND REQUIREMENTS**  
 24 hr \_\_\_\_\_ 48 hr \_\_\_\_\_ 5 day \_\_\_\_\_  
 Standard (10 days)  
 Provide FAX Preliminary Results \_\_\_\_\_  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required \_\_\_\_\_  
 II. Report Dup., MS, MSD as required \_\_\_\_\_  
 III. Data Validation Report (includes raw data) \_\_\_\_\_  
 IV. CLP Deliverable Report \_\_\_\_\_  
 V. EDD \_\_\_\_\_

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
501 N Riverpoint Blvd, Suite 300 Spokane, WA 99201

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Watson Metsutman  
 Firm: Arcadis  
 Date/Time: 8/21/17 13:00

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: CODY GRAVES  
 Firm: ALS  
 Date/Time: 8/22/17 0950

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_



PC JL

### Cooler Receipt and Preservation Form

Client: Teck America Service Request K1708849  
 Received: 8/22/17 Opened: 8/22/17 By: KM Unloaded: 8/22/17 By: KM

Samples were received via? USPS 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 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
5.2	5.4	13.1	13.3	+0.2	325		8745 6738 5575		
7.8	7.9	11.5	11.6	+0.1	373		8745 6738 5586		
7.3	7.6	14.1	14.4	+0.3	349		8745 6738 5564		
7.7	7.7	7.2	7.4	+0.2	379		8105 9112 1296		
7.3	7.9	14.2	14.1	-0.1	328		8745 6738 5597		

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  
 Were samples received in good condition (temperature, unbroken)? Indicate in the table below. NA Y N  
 If applicable, tissue samples were received: Frozen Partially Thawed Thawed  
 Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N KM  
 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:
<u>401-2-602-081717</u>	<u>401-2-602-0817-D</u>	<u>"602-D" on Sample jar Lid</u>
<u>401-1-C1-081817</u>	<u>401-1-C01-081817</u>	<u>(Dates + times match COC. <del>COI-009 that way.</del>)</u>

Sample ID	Bottle Count	Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Discrepancies, & Resolutions: In all of the Coolers, there wasn't enough ice and what was there was melted.



# Total Solids

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)



**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1708849  
**Date Collected:** 08/18/17  
**Date Received:** 08/22/17  
**Units:** Percent  
**Basis:** As Received

**Solids, Total**

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
401-1-C02-081817	K1708849-001	95.2	-	-	1	08/26/17 10:27	
401-1-C03-081817	K1708849-002	97.8	-	-	1	08/26/17 10:27	
401-1-C04-081817	K1708849-003	97.5	-	-	1	08/26/17 10:27	
401-1-C05-081817	K1708849-004	95.5	-	-	1	08/26/17 10:27	
401-1-C06-081817	K1708849-005	95.9	-	-	1	08/26/17 10:27	
401-1-C07-081817	K1708849-006	95.4	-	-	1	08/26/17 10:27	
401-1-C08-081817	K1708849-007	94.7	-	-	1	08/26/17 10:27	
401-1-C09-081817	K1708849-008	95.5	-	-	1	08/26/17 10:27	
401-1-C10-081817	K1708849-009	96.9	-	-	1	08/26/17 10:27	
401-1-C09-081817-D	K1708849-010	95.5	-	-	1	08/26/17 10:27	
401-1-D01-081817	K1708849-011	97.1	-	-	1	08/26/17 10:27	
401-1-D02-081817	K1708849-012	97.4	-	-	1	08/26/17 10:27	
401-1-D03-081817	K1708849-013	97.0	-	-	1	08/26/17 10:27	
401-1-D04-081817	K1708849-014	94.3	-	-	1	08/26/17 10:27	
401-1-D05-081817	K1708849-015	96.0	-	-	1	08/26/17 10:27	
401-1-D06-081817	K1708849-016	95.8	-	-	1	08/26/17 10:27	
401-1-D07-081817	K1708849-017	96.3	-	-	1	08/26/17 10:27	
401-1-D08-081817	K1708849-018	93.4	-	-	1	08/26/17 10:27	
401-1-D09-081817	K1708849-019	89.4	-	-	1	08/26/17 10:27	
401-1-D10-081817	K1708849-020	93.7	-	-	1	08/26/17 10:27	

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QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1708849  
**Date Collected:** 08/18/17  
**Date Received:** 08/22/17

**Units:** Percent  
**Basis:** As Received

Replicate Sample Summary  
Inorganic Parameters

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
401-1-C02-081817	K1708849-001DUP	-	95.2	95.2	95.2	<1	20	08/26/17
401-1-D01-081817	K1708849-011DUP	-	97.1	97.3	97.2	<1	20	08/26/17

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



# Metals

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-C02-081817  
**Lab Code:** K1708849-001

**Service Request:** K1708849  
**Date Collected:** 08/18/17 10:35  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>33.3</b>	mg/Kg	4.1	0.8	2	08/31/17 18:24	08/30/17	
Lead	6010C	<b>730</b>	mg/Kg	2.1	0.4	2	08/31/17 18:24	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-C03-081817  
**Lab Code:** K1708849-002

**Service Request:** K1708849  
**Date Collected:** 08/18/17 10:38  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	22.2	mg/Kg	4.1	0.8	2	08/31/17 18:42	08/30/17	
Lead	6010C	322	mg/Kg	2.0	0.4	2	08/31/17 18:42	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-C04-081817  
**Lab Code:** K1708849-003

**Service Request:** K1708849  
**Date Collected:** 08/18/17 10:40  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>25.5</b>	mg/Kg	3.9	0.8	2	08/31/17 18:45	08/30/17	
Lead	6010C	<b>304</b>	mg/Kg	1.9	0.4	2	08/31/17 18:45	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-C05-081817  
**Lab Code:** K1708849-004

**Service Request:** K1708849  
**Date Collected:** 08/18/17 10:42  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>28.6</b>	mg/Kg	4.1	0.8	2	08/31/17 18:47	08/30/17	
Lead	6010C	<b>785</b>	mg/Kg	2.1	0.4	2	08/31/17 18:47	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-C06-081817  
**Lab Code:** K1708849-005

**Service Request:** K1708849  
**Date Collected:** 08/18/17 10:45  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>34.2</b>	mg/Kg	4.1	0.8	2	08/31/17 18:49	08/30/17	
Lead	6010C	<b>648</b>	mg/Kg	2.0	0.4	2	08/31/17 18:49	08/30/17	



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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-C07-081817  
**Lab Code:** K1708849-006

**Service Request:** K1708849  
**Date Collected:** 08/18/17 10:48  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>32.8</b>	mg/Kg	4.2	0.8	2	08/31/17 18:52	08/30/17	
Lead	6010C	<b>565</b>	mg/Kg	2.1	0.4	2	08/31/17 18:52	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-C08-081817  
**Lab Code:** K1708849-007

**Service Request:** K1708849  
**Date Collected:** 08/18/17 10:51  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>32.0</b>	mg/Kg	4.1	0.8	2	08/31/17 18:54	08/30/17	
Lead	6010C	<b>365</b>	mg/Kg	2.1	0.4	2	08/31/17 18:54	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-C09-081817  
**Lab Code:** K1708849-008

**Service Request:** K1708849  
**Date Collected:** 08/18/17 10:54  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>28.2</b>	mg/Kg	4.1	0.8	2	08/31/17 18:56	08/30/17	
Lead	6010C	<b>405</b>	mg/Kg	2.1	0.4	2	08/31/17 18:56	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-C10-081817  
**Lab Code:** K1708849-009

**Service Request:** K1708849  
**Date Collected:** 08/18/17 10:57  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>34.3</b>	mg/Kg	4.0	0.8	2	08/31/17 19:06	08/30/17	
Lead	6010C	<b>258</b>	mg/Kg	2.0	0.4	2	08/31/17 19:06	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-C09-081817-D  
**Lab Code:** K1708849-010

**Service Request:** K1708849  
**Date Collected:** 08/18/17 10:54  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>30.2</b>	mg/Kg	4.2	0.8	2	08/31/17 19:08	08/30/17	
Lead	6010C	<b>539</b>	mg/Kg	2.1	0.4	2	08/31/17 19:08	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-D01-081817  
**Lab Code:** K1708849-011

**Service Request:** K1708849  
**Date Collected:** 08/18/17 11:11  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>26.0</b>	mg/Kg	3.9	0.8	2	08/31/17 19:10	08/30/17	
Lead	6010C	<b>369</b>	mg/Kg	2.0	0.4	2	08/31/17 19:10	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-D02-081817  
**Lab Code:** K1708849-012

**Service Request:** K1708849  
**Date Collected:** 08/18/17 11:15  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>37.1</b>	mg/Kg	4.1	0.8	2	08/31/17 19:13	08/30/17	
Lead	6010C	<b>343</b>	mg/Kg	2.1	0.4	2	08/31/17 19:13	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-D03-081817  
**Lab Code:** K1708849-013

**Service Request:** K1708849  
**Date Collected:** 08/18/17 11:17  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	25.2	mg/Kg	4.1	0.8	2	08/31/17 19:15	08/30/17	
Lead	6010C	273	mg/Kg	2.0	0.4	2	08/31/17 19:15	08/30/17	



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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-D04-081817  
**Lab Code:** K1708849-014

**Service Request:** K1708849  
**Date Collected:** 08/18/17 11:19  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>29.6</b>	mg/Kg	3.9	0.8	2	08/31/17 19:17	08/30/17	
Lead	6010C	<b>719</b>	mg/Kg	2.0	0.4	2	08/31/17 19:17	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-D05-081817  
**Lab Code:** K1708849-015

**Service Request:** K1708849  
**Date Collected:** 08/18/17 11:22  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	28.7	mg/Kg	4.0	0.8	2	08/31/17 19:20	08/30/17	
Lead	6010C	492	mg/Kg	2.0	0.4	2	08/31/17 19:20	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-D06-081817  
**Lab Code:** K1708849-016

**Service Request:** K1708849  
**Date Collected:** 08/18/17 11:24  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>48.1</b>	mg/Kg	3.9	0.8	2	08/31/17 19:22	08/30/17	
Lead	6010C	<b>819</b>	mg/Kg	2.0	0.4	2	08/31/17 19:22	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-D07-081817  
**Lab Code:** K1708849-017

**Service Request:** K1708849  
**Date Collected:** 08/18/17 11:27  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>29.6</b>	mg/Kg	4.0	0.8	2	08/31/17 19:24	08/30/17	
Lead	6010C	<b>381</b>	mg/Kg	2.0	0.4	2	08/31/17 19:24	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-D08-081817  
**Lab Code:** K1708849-018

**Service Request:** K1708849  
**Date Collected:** 08/18/17 11:30  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>41.9</b>	mg/Kg	4.2	0.8	2	08/31/17 19:27	08/30/17	
Lead	6010C	<b>718</b>	mg/Kg	2.1	0.4	2	08/31/17 19:27	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-D09-081817  
**Lab Code:** K1708849-019

**Service Request:** K1708849  
**Date Collected:** 08/18/17 11:33  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>71.6</b>	mg/Kg	4.3	0.9	2	08/31/17 19:36	08/30/17	
Lead	6010C	<b>2060</b>	mg/Kg	2.1	0.4	2	08/31/17 19:36	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-D10-081817  
**Lab Code:** K1708849-020

**Service Request:** K1708849  
**Date Collected:** 08/18/17 11:36  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6010C	84.9	mg/Kg	4.2	0.8	2	08/31/17 19:38	08/30/17	
Lead	6010C	1190	mg/Kg	2.1	0.4	2	08/31/17 19:38	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** Method Blank  
**Lab Code:** KQ1712441-02

**Service Request:** K1708849  
**Date Collected:** NA  
**Date Received:** NA  
**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	ND U	mg/Kg	4	0.8	2	08/31/17 18:20	08/30/17	
Lead	6010C	ND U	mg/Kg	2	0.4	2	08/31/17 18:20	08/30/17	



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QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708849  
**Date Collected:** 08/18/17  
**Date Received:** 08/22/17  
**Date Analyzed:** 08/31/17  
**Date Extracted:** 08/30/17

**Duplicate Matrix Spike Summary  
Total Metals**

**Sample Name:** 401-1-C02-081817  
**Lab Code:** K1708849-001  
**Analysis Method:** 6010C  
**Prep Method:** EPA 3050B

**Units:** mg/Kg  
**Basis:** Dry

Analyte Name	Sample Result	Result	Matrix Spike KQ1712441-03		Duplicate Matrix Spike KQ1712441-04		% Rec Limits	RPD	RPD Limit	
			Spike Amount	% Rec	Result	Spike Amount				% Rec
Arsenic	33.3	131	101	97	137	104	100	75-125	5	30
Lead	730	871	101	139 #	944	104	205 #	75-125	8	30

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708849

**Date Analyzed:** 08/31/17

**Lab Control Sample Summary**  
**Total Metals**

**Units:**mg/Kg

**Basis:**Dry

**Lab Control Sample**  
KQ1712441-01

<b>Analyte Name</b>	<b>Analytical Method</b>	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>% Rec Limits</b>
Arsenic	6010C	508	500	102	80-120
Lead	6010C	492	500	98	80-120



---

ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

September 05, 2017

**Analytical Report for Service Request No: K1708850**

Dave Enos  
Teck American Incorporated  
501 North Riverpoint Blvd., Suite 300  
Spokane, WA 99202

**RE: August 2017 Sampling SAT Study / B0095010.0005.00001**

Dear Dave,

Enclosed are the results of the sample(s) submitted to our laboratory August 22, 2017  
For your reference, these analyses have been assigned our service request number **K1708850**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at [www.alsglobal.com](http://www.alsglobal.com). All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at [Jeff.Coronado@alsglobal.com](mailto:Jeff.Coronado@alsglobal.com).

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**

Jeff Coronado  
Metals Department  
Manager



---

ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

## Table of Contents

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## Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

### **Inorganic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

### **Metals Data Qualifiers**

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.  
  - i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Organic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Additional Petroleum Hydrocarbon Specific Qualifiers**

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

**ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso  
State Certifications, Accreditations, and Licenses**

<b>Agency</b>	<b>Web Site</b>	<b>Number</b>
Alaska DEH	<a href="http://dec.alaska.gov/eh/lab/cs/csapproval.htm">http://dec.alaska.gov/eh/lab/cs/csapproval.htm</a>	UST-040
Arizona DHS	<a href="http://www.azdhs.gov/lab/license/env.htm">http://www.azdhs.gov/lab/license/env.htm</a>	AZ0339
Arkansas - DEQ	<a href="http://www.adeq.state.ar.us/techsvs/labcert.htm">http://www.adeq.state.ar.us/techsvs/labcert.htm</a>	88-0637
California DHS (ELAP)	<a href="http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx">http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx</a>	2795
DOD ELAP	<a href="http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm">http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm</a>	L14-51
Florida DOH	<a href="http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm">http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm</a>	E87412
Hawaii DOH	<a href="http://health.hawaii.gov/">http://health.hawaii.gov/</a>	-
ISO 17025	<a href="http://www.pjlabs.com/">http://www.pjlabs.com/</a>	L16-57
Louisiana DEQ	<a href="http://www.deq.louisiana.gov/page/la-lab-accreditation">http://www.deq.louisiana.gov/page/la-lab-accreditation</a>	03016
Maine DHS	<a href="http://www.maine.gov/dhhs/">http://www.maine.gov/dhhs/</a>	WA01276
Minnesota DOH	<a href="http://www.health.state.mn.us/accreditation">http://www.health.state.mn.us/accreditation</a>	053-999-457
Nevada DEP	<a href="http://ndep.nv.gov/bsdw/labservice.htm">http://ndep.nv.gov/bsdw/labservice.htm</a>	WA01276
New Jersey DEP	<a href="http://www.nj.gov/dep/enforcement/oqa.html">http://www.nj.gov/dep/enforcement/oqa.html</a>	WA005
New York - DOH	<a href="https://www.wadsworth.org/regulatory/elap">https://www.wadsworth.org/regulatory/elap</a>	12060
North Carolina DEQ	<a href="https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification">https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification</a>	605
Oklahoma DEQ	<a href="http://www.deq.state.ok.us/CSDnew/labcert.htm">http://www.deq.state.ok.us/CSDnew/labcert.htm</a>	9801
Oregon – DEQ (NELAP)	<a href="http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx">http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx</a>	WA100010
South Carolina DHEC	<a href="http://www.scdhec.gov/environment/EnvironmentalLabCertification/">http://www.scdhec.gov/environment/EnvironmentalLabCertification/</a>	61002
Texas CEQ	<a href="http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html">http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html</a>	T104704427
Washington DOE	<a href="http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html">http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html</a>	C544
Wyoming (EPA Region 8)	<a href="https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water">https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water</a>	-
Kelso Laboratory Website	<a href="http://www.alsglobal.com">www.alsglobal.com</a>	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at [www.ALSGlobal.com](http://www.ALSGlobal.com) or at the accreditation bodies web site.  
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.



## Case Narrative

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)



**ALS ENVIRONMENTAL**

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/  
B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request No.:** K1708850  
**Date Received:** 08/22/17

**Case Narrative**


All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

**Sample Receipt**

Twenty soil samples were received for analysis at ALS Environmental on 08/22/17. The samples were received in good condition and consistent with the accompanying chain of custody form, except where noted on the cooler receipt and preservation form included in this report.. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

**Total Metals**

No anomalies associated with the analysis of these samples were observed.

Approved by  \_\_\_\_\_



# Chain of Custody

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

K1-708850

Date 8/20/17  
 PAGE 12 OF 15  
 SR#

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001

Project Contact: Kady Young Company: Arcadis

Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488

City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961

Sampler's Signature: \_\_\_\_\_

Number of Containers	Analysis Requested					REMARKS
	lead/arsenic 3050B/6010					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					

Sample I.D.	Date	Time	LAB ID	Matrix
401-1-H01-081817	8/18/17	1458		S
H02		1502		S
H03		1506		S
H04		1509		S
H05		1513		S
H06		1516		S
H07		1519		S
H08		1522		S
H09		1525		S
H10		1528		S

**TURNAROUND REQUIREMENTS**  
 \_\_\_ 24 hr \_\_\_ 48 hr \_\_\_ 5 day  
 Standard (10 days)  
 \_\_\_ Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 \_\_\_ I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 \_\_\_ III. Data Validation Report (includes raw data)  
 \_\_\_ IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99201

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Watson Metzstman  
 Firm: Arcadis  
 Date/Time: 8/21/17 1300

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: [Signature]  
 Firm: ALS  
 Date/Time: 8/22/17 0950

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

K1708856

Date 8/20/17  
 PAGE 13 OF 15  
 SR#

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001

Project Contact: Kady Young Company: Arcadis

Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488

City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961

Sampler's Signature: \_\_\_\_\_

Number of Containers	Analysis Requested					REMARKS
	lead/arsenic 3050B/6010					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					

Sample I.D.	Date	Time	LAB ID	Matrix
401-1-I01-081817	8/18/17	1546		S
I02		1548		S
I03		1550		S
I04		1552		S
I05		1554		S
I06		1556		S
I07		1559		S
I08		1601		S
I09		1603		S
I10		1607		S

**TURNAROUND REQUIREMENTS**  
 \_\_\_ 24 hr \_\_\_ 48 hr \_\_\_ 5 day  
 Standard (10 days)  
 \_\_\_ Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes raw data)  
 IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99201

**RELINQUISHED BY:**  
 Signature: Watson  
 Printed Name: Watson Metsutnam  
 Firm: Arcadis  
 Date/Time: 8/21/17 1300

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: [Name]  
 Firm: ALS  
 Date/Time: 8/22/17 0950

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

K1708850

Date 8/20/17  
 PAGE 14 OF 15  
 SR# \_\_\_\_\_

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001

Project Contact: Kady Young Company: Arcadis

Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488

City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961

Sampler's Signature: \_\_\_\_\_

Number of Containers	Analysis Requested					REMARKS
	lead/arsenic 3050B/6010					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					

Sample I.D.	Date	Time	LAB ID	Matrix
<u>401-1-105-081817-D</u>	<u>8/18/17</u>	<u>1554</u>		S
				S
				S
				S
				S
				S
				S
				S
				S
				S

**TURNAROUND REQUIREMENTS**  
 \_\_\_\_\_ 24 hr \_\_\_\_\_ 48 hr \_\_\_\_\_ 5 day  
 Standard (10 days)  
 \_\_\_\_\_ Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 \_\_\_\_\_ I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 \_\_\_\_\_ III. Data Validation Report (includes raw data)  
 \_\_\_\_\_ IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99204

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Watson Metzner  
 Firm: Arcadis  
 Date/Time: 8/21/17 13:00

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: Sworff  
 Firm: ALS  
 Date/Time: 8/22/17 0950

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

K1708850

Date 8/20/17  
 PAGE 15 OF 15  
 SR#

ALS Environmental-Kelso  
 1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001  
 Project Contact: Kady Young Company: Arcadis  
 Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488  
 City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961  
 Sampler's Signature: \_\_\_\_\_

Number of Containers	Analysis Requested					REMARKS
	lead/arsenic 3050B/6010					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					

Sample I.D.	Date	Time	LAB ID	Matrix
401-1-J01-081817	8/18/17	1629		S
J02		1632		S
J03		1635		S
J04		1638		S
J05		1641		S
J06		1643		S
J07		1646		S
J08		1649		S
J09		1651		S
J10		1654		S

**URNAROUND REQUIREMENTS**  
 24 hr  48 hr  5 day  
 Standard (10 days)  
 Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_  
 Invoice Information  
 I.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99208

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes raw data)  
 IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Watson Metsutnam  
 Firm: Arcadis  
 Date/Time: 8/21/17 1300

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: SuorF  
 Firm: ARS  
 Date/Time: 8/22/17 0950

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_



PC Co

### Cooler Receipt and Preservation Form

Client: Teck America Service Request KI7 08850  
Received: 8/22/17 Opened: 8/22/17 By: KM Unloaded: 8/22/17 By: KM

Samples were received via? USPS 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 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
5.2	5.4	13.1	13.3	+0.2	325		8745 6738 5575		
7.8	7.9	11.5	11.6	+0.1	373		8745 6738 5586		
7.3	7.6	14.1	14.4	+0.3	349		8745 6738 5564		
7.7	7.2	7.2	7.4	+0.2	379		8105 9112 1296		
7.3	7.9	14.2	14.1	-0.1	328		8745 6738 5597		

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  
Were samples received in good condition (temperature, unbroken)? Indicate in the table below. NA Y N  
If applicable, tissue samples were received: Frozen Partially Thawed Thawed  
Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N KM  
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:
<u>401-2-602-081717</u>	<u>401-2-602-0817-0</u>	<u>"602-D" on Sample jar lid</u>
<u>401-1-C1-081817</u>	<u>401-1-C01-081817</u>	<u>(Dates + times match COC. <del>COI-COC that way.</del>)</u>

Sample ID	Bottle Count	Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Discrepancies, & Resolutions: In all of the Coolers, there wasn't enough ice and what was there was melted.



# Total Solids

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)



**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1708850  
**Date Collected:** 08/18/17  
**Date Received:** 08/22/17  
**Units:** Percent  
**Basis:** As Received

**Solids, Total**

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
401-1-H09-081817	K1708850-001	94.0	-	-	1	08/26/17 10:27	
401-1-H10-081817	K1708850-002	95.6	-	-	1	08/26/17 10:27	
401-1-I01-081817	K1708850-003	96.5	-	-	1	08/26/17 10:27	
401-1-I02-081817	K1708850-004	95.4	-	-	1	08/26/17 10:27	
401-1-I03-081817	K1708850-005	94.8	-	-	1	08/26/17 10:27	
401-1-I04-081817	K1708850-006	93.9	-	-	1	08/26/17 10:27	
401-1-I05-081817	K1708850-007	97.2	-	-	1	08/26/17 10:27	
401-1-I06-081817	K1708850-008	94.7	-	-	1	08/26/17 10:27	
401-1-I07-081817	K1708850-009	96.7	-	-	1	08/26/17 10:27	
401-1-I08-081817	K1708850-010	95.2	-	-	1	08/26/17 10:27	
401-1-I09-081817	K1708850-011	94.1	-	-	1	08/26/17 10:27	
401-1-I10-081817	K1708850-012	96.4	-	-	1	08/26/17 10:27	
401-1-I05-081817-D	K1708850-013	96.7	-	-	1	08/26/17 10:27	
401-1-J01-081817	K1708850-014	97.0	-	-	1	08/26/17 10:27	
401-1-J02-081817	K1708850-015	96.9	-	-	1	08/26/17 10:27	
401-1-J03-081817	K1708850-016	96.1	-	-	1	08/26/17 10:27	
401-1-J04-081817	K1708850-017	93.3	-	-	1	08/26/17 10:27	
401-1-J05-081817	K1708850-018	96.4	-	-	1	08/26/17 10:27	
401-1-J06-081817	K1708850-019	96.7	-	-	1	08/26/17 10:27	
401-1-J07-081817	K1708850-020	95.9	-	-	1	08/26/17 10:27	

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QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1708850  
**Date Collected:** 08/18/17  
**Date Received:** 08/22/17

**Units:** Percent  
**Basis:** As Received

Replicate Sample Summary  
Inorganic Parameters

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
401-1-H09-081817	K1708850-001DUP	-	94.0	95.2	94.6	1	20	08/26/17
401-1-I09-081817	K1708850-011DUP	-	94.1	95.6	94.9	2	20	08/26/17

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



# Metals

**ALS Environmental—Kelso Laboratory**  
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[www.alsglobal.com](http://www.alsglobal.com)

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-H09-081817  
**Lab Code:** K1708850-001

**Service Request:** K1708850  
**Date Collected:** 08/18/17 15:25  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>41.1</b>	mg/Kg	4.2	2.1	2	08/31/17 19:26	08/30/17	
Lead	6010C	<b>1350</b>	mg/Kg	2.1	0.7	2	08/31/17 19:26	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-H10-081817  
**Lab Code:** K1708850-002

**Service Request:** K1708850  
**Date Collected:** 08/18/17 15:28  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>36.2</b>	mg/Kg	4.2	2.1	2	08/31/17 19:36	08/30/17	
Lead	6010C	<b>1190</b>	mg/Kg	2.1	0.7	2	08/31/17 19:36	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-I01-081817  
**Lab Code:** K1708850-003

**Service Request:** K1708850  
**Date Collected:** 08/18/17 15:46  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	23.7	mg/Kg	3.9	1.9	2	08/31/17 19:38	08/30/17	
Lead	6010C	486	mg/Kg	1.9	0.7	2	08/31/17 19:38	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-I02-081817  
**Lab Code:** K1708850-004

**Service Request:** K1708850  
**Date Collected:** 08/18/17 15:48  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>29.8</b>	mg/Kg	4.2	2.1	2	08/31/17 19:40	08/30/17	
Lead	6010C	<b>767</b>	mg/Kg	2.1	0.7	2	08/31/17 19:40	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-I03-081817  
**Lab Code:** K1708850-005

**Service Request:** K1708850  
**Date Collected:** 08/18/17 15:50  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>29.8</b>	mg/Kg	4.1	2.0	2	08/31/17 19:42	08/30/17	
Lead	6010C	<b>684</b>	mg/Kg	2.0	0.7	2	08/31/17 19:42	08/30/17	



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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-I04-081817  
**Lab Code:** K1708850-006

**Service Request:** K1708850  
**Date Collected:** 08/18/17 15:52  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>33.0</b>	mg/Kg	4.0	2.0	2	08/31/17 19:44	08/30/17	
Lead	6010C	<b>656</b>	mg/Kg	2.0	0.7	2	08/31/17 19:44	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-I05-081817  
**Lab Code:** K1708850-007

**Service Request:** K1708850  
**Date Collected:** 08/18/17 15:54  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>37.2</b>	mg/Kg	4.1	2.0	2	08/31/17 19:53	08/30/17	
Lead	6010C	<b>708</b>	mg/Kg	2.0	0.7	2	08/31/17 19:53	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-I06-081817  
**Lab Code:** K1708850-008

**Service Request:** K1708850  
**Date Collected:** 08/18/17 15:56  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>37.0</b>	mg/Kg	4.1	2.0	2	08/31/17 19:55	08/30/17	
Lead	6010C	<b>831</b>	mg/Kg	2.0	0.7	2	08/31/17 19:55	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-I07-081817  
**Lab Code:** K1708850-009

**Service Request:** K1708850  
**Date Collected:** 08/18/17 15:59  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>42.1</b>	mg/Kg	3.9	1.9	2	08/31/17 19:57	08/30/17	
Lead	6010C	<b>797</b>	mg/Kg	1.9	0.7	2	08/31/17 19:57	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-I08-081817  
**Lab Code:** K1708850-010

**Service Request:** K1708850  
**Date Collected:** 08/18/17 16:01  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>67.3</b>	mg/Kg	4.1	2.0	2	08/31/17 19:59	08/30/17	
Lead	6010C	<b>527</b>	mg/Kg	2.0	0.7	2	08/31/17 19:59	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-I09-081817  
**Lab Code:** K1708850-011

**Service Request:** K1708850  
**Date Collected:** 08/18/17 16:03  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>54.3</b>	mg/Kg	4.1	2.1	2	08/31/17 20:01	08/30/17	
Lead	6010C	<b>1430</b>	mg/Kg	2.1	0.7	2	08/31/17 20:01	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-I10-081817  
**Lab Code:** K1708850-012

**Service Request:** K1708850  
**Date Collected:** 08/18/17 16:07  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>38.9</b>	mg/Kg	3.9	2.0	2	08/31/17 20:03	08/30/17	
Lead	6010C	<b>684</b>	mg/Kg	2.0	0.7	2	08/31/17 20:03	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-I05-081817-D  
**Lab Code:** K1708850-013

**Service Request:** K1708850  
**Date Collected:** 08/18/17 15:54  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>35.3</b>	mg/Kg	4.0	2.0	2	08/31/17 20:06	08/30/17	
Lead	6010C	<b>632</b>	mg/Kg	2.0	0.7	2	08/31/17 20:06	08/30/17	



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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-J01-081817  
**Lab Code:** K1708850-014

**Service Request:** K1708850  
**Date Collected:** 08/18/17 16:29  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>24.9</b>	mg/Kg	4.0	2.0	2	08/31/17 20:08	08/30/17	
Lead	6010C	<b>480</b>	mg/Kg	2.0	0.7	2	08/31/17 20:08	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-J02-081817  
**Lab Code:** K1708850-015

**Service Request:** K1708850  
**Date Collected:** 08/18/17 16:32  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>26.3</b>	mg/Kg	4.1	2.0	2	08/31/17 20:10	08/30/17	
Lead	6010C	<b>470</b>	mg/Kg	2.0	0.7	2	08/31/17 20:10	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-J03-081817  
**Lab Code:** K1708850-016

**Service Request:** K1708850  
**Date Collected:** 08/18/17 16:35  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>21.5</b>	mg/Kg	4.1	2.0	2	08/31/17 20:12	08/30/17	
Lead	6010C	<b>300</b>	mg/Kg	2.0	0.7	2	08/31/17 20:12	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-J04-081817  
**Lab Code:** K1708850-017

**Service Request:** K1708850  
**Date Collected:** 08/18/17 16:38  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>39.4</b>	mg/Kg	4.2	2.1	2	08/31/17 20:20	08/30/17	
Lead	6010C	<b>805</b>	mg/Kg	2.1	0.7	2	08/31/17 20:20	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-J05-081817  
**Lab Code:** K1708850-018

**Service Request:** K1708850  
**Date Collected:** 08/18/17 16:41  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>37.4</b>	mg/Kg	3.8	1.9	2	08/31/17 20:23	08/30/17	
Lead	6010C	<b>591</b>	mg/Kg	1.9	0.7	2	08/31/17 20:23	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-J06-081817  
**Lab Code:** K1708850-019

**Service Request:** K1708850  
**Date Collected:** 08/18/17 16:43  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>18.8</b>	mg/Kg	3.8	1.9	2	08/31/17 20:25	08/30/17	
Lead	6010C	<b>266</b>	mg/Kg	1.9	0.7	2	08/31/17 20:25	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-J07-081817  
**Lab Code:** K1708850-020

**Service Request:** K1708850  
**Date Collected:** 08/18/17 16:46  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	23.2	mg/Kg	4.0	2.0	2	08/31/17 20:27	08/30/17	
Lead	6010C	419	mg/Kg	2.0	0.7	2	08/31/17 20:27	08/30/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** Method Blank  
**Lab Code:** KQ1712442-02

**Service Request:** K1708850  
**Date Collected:** NA  
**Date Received:** NA  
**Basis:** Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6010C	ND U	mg/Kg	4	2.0	2	08/31/17 19:15	08/30/17	
Lead	6010C	ND U	mg/Kg	2	0.7	2	08/31/17 19:15	08/30/17	



ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708850  
**Date Collected:** 08/18/17  
**Date Received:** 08/22/17  
**Date Analyzed:** 08/31/17  
**Date Extracted:** 08/30/17

**Duplicate Matrix Spike Summary  
Total Metals**

**Sample Name:** 401-1-H09-081817  
**Lab Code:** K1708850-001  
**Analysis Method:** 6010C  
**Prep Method:** EPA 3050B

**Units:** mg/Kg  
**Basis:** Dry

Analyte Name	Sample Result	Result	Matrix Spike KQ1712442-03		Duplicate Matrix Spike KQ1712442-04		% Rec Limits	RPD	RPD Limit	
			Spike Amount	% Rec	Result	Spike Amount				% Rec
Arsenic	41.1	149	106	102	147	102	104	75-125	1	30
Lead	1350	1960	106	576 #	1880	102	512 #	75-125	5	30

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708850

**Date Analyzed:** 08/31/17

**Lab Control Sample Summary**  
**Total Metals**

**Units:**mg/Kg

**Basis:**Dry

**Lab Control Sample**  
KQ1712442-01

<b>Analyte Name</b>	<b>Analytical Method</b>	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>% Rec Limits</b>
Arsenic	6010C	493	500	99	80-120
Lead	6010C	519	500	104	80-120



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ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

September 05, 2017

**Analytical Report for Service Request No: K1708851**

Dave Enos  
Teck American Incorporated  
501 North Riverpoint Blvd., Suite 300  
Spokane, WA 99202

**RE: August 2017 Sampling SAT Study / B0095010.0005.00001**

Dear Dave,

Enclosed are the results of the sample(s) submitted to our laboratory August 22, 2017  
For your reference, these analyses have been assigned our service request number **K1708851**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at [www.alsglobal.com](http://www.alsglobal.com). All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at [Jeff.Coronado@alsglobal.com](mailto:Jeff.Coronado@alsglobal.com).

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**

Jeff Coronado  
Metals Department  
Manager



---

ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

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## Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

### **Inorganic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

### **Metals Data Qualifiers**

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.  
  - i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Organic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.  
  - i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Additional Petroleum Hydrocarbon Specific Qualifiers**

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

**ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso  
State Certifications, Accreditations, and Licenses**

<b>Agency</b>	<b>Web Site</b>	<b>Number</b>
Alaska DEH	<a href="http://dec.alaska.gov/eh/lab/cs/csapproval.htm">http://dec.alaska.gov/eh/lab/cs/csapproval.htm</a>	UST-040
Arizona DHS	<a href="http://www.azdhs.gov/lab/license/env.htm">http://www.azdhs.gov/lab/license/env.htm</a>	AZ0339
Arkansas - DEQ	<a href="http://www.adeq.state.ar.us/techsvs/labcert.htm">http://www.adeq.state.ar.us/techsvs/labcert.htm</a>	88-0637
California DHS (ELAP)	<a href="http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx">http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx</a>	2795
DOD ELAP	<a href="http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm">http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm</a>	L14-51
Florida DOH	<a href="http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm">http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm</a>	E87412
Hawaii DOH	<a href="http://health.hawaii.gov/">http://health.hawaii.gov/</a>	-
ISO 17025	<a href="http://www.pjllabs.com/">http://www.pjllabs.com/</a>	L16-57
Louisiana DEQ	<a href="http://www.deq.louisiana.gov/page/la-lab-accreditation">http://www.deq.louisiana.gov/page/la-lab-accreditation</a>	03016
Maine DHS	<a href="http://www.maine.gov/dhhs/">http://www.maine.gov/dhhs/</a>	WA01276
Minnesota DOH	<a href="http://www.health.state.mn.us/accreditation">http://www.health.state.mn.us/accreditation</a>	053-999-457
Nevada DEP	<a href="http://ndep.nv.gov/bsdw/labservice.htm">http://ndep.nv.gov/bsdw/labservice.htm</a>	WA01276
New Jersey DEP	<a href="http://www.nj.gov/dep/enforcement/oqa.html">http://www.nj.gov/dep/enforcement/oqa.html</a>	WA005
New York - DOH	<a href="https://www.wadsworth.org/regulatory/elap">https://www.wadsworth.org/regulatory/elap</a>	12060
North Carolina DEQ	<a href="https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification">https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification</a>	605
Oklahoma DEQ	<a href="http://www.deq.state.ok.us/CSDnew/labcert.htm">http://www.deq.state.ok.us/CSDnew/labcert.htm</a>	9801
Oregon – DEQ (NELAP)	<a href="http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx">http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx</a>	WA100010
South Carolina DHEC	<a href="http://www.scdhec.gov/environment/EnvironmentalLabCertification/">http://www.scdhec.gov/environment/EnvironmentalLabCertification/</a>	61002
Texas CEQ	<a href="http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html">http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html</a>	T104704427
Washington DOE	<a href="http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html">http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html</a>	C544
Wyoming (EPA Region 8)	<a href="https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water">https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water</a>	-
Kelso Laboratory Website	<a href="http://www.alsglobal.com">www.alsglobal.com</a>	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at [www.ALSGlobal.com](http://www.ALSGlobal.com) or at the accreditation bodies web site.  
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.



## Case Narrative

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)



**ALS ENVIRONMENTAL**

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/  
B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request No.:** K1708851  
**Date Received:** 08/22/17

**Case Narrative**

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

**Sample Receipt**

Twenty soil samples were received for analysis at ALS Environmental on 08/22/17. The samples were received in good condition and consistent with the accompanying chain of custody form, except where noted on the cooler receipt and preservation form included in this report.. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

**Total Metals**

No anomalies associated with the analysis of these samples were observed.

Approved by  \_\_\_\_\_



## Chain of Custody

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

K1708851

Date 8/20/17  
 PAGE 7 OF 15  
 SR#

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001

Project Contact: Kady Young Company: Arcadis

Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488

City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961

Sampler's Signature: \_\_\_\_\_

Number of Containers

Analysis Requested

Lead/arsenic 3050B/6010

REMARKS

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	Lead/arsenic 3050B/6010					REMARKS
401-1-E01-081817	8/18/17	1154		S	1	X					
E02		1157		S	1	X					
E03		1200		S	1	X					
E04		1203		S	1	X					
E05		1206		S	1	X					
E06		1208		S	1	X					
E07		1210		S	1	X					
E08		1213		S	1	X					
E09		1216		S	1	X					
E10		1219		S	1	X					

**TURNAROUND REQUIREMENTS**  
 24 hr  48 hr  5 day  
 Standard (10 days)  
 Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes raw data)  
 IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99204

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Watson Metzmann  
 Firm: Arcadis  
 Date/Time: 8/21/17 13:00

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: COOY GRAVES  
 Firm: ALS  
 Date/Time: 8/22/17 0950

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

K1708851

Date 8/20/17  
 PAGE 8 OF 15  
 SR# \_\_\_\_\_

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001  
 Project Contact: Kady Young Company: Arcadis  
 Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488  
 City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961  
 Sampler's Signature: \_\_\_\_\_

Number of Containers	Analysis Requested					REMARKS
	lead/arsenic 3050B/6010					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					

Sample I.D.	Date	Time	LAB ID	Matrix
<u>401-1-E02-081817-D</u>	<u>8/18/17</u>	<u>1157</u>		<u>S</u>
				<u>S</u>
				<u>S</u>
				<u>S</u>
				<u>S</u>
				<u>S</u>
				<u>S</u>
				<u>S</u>
				<u>S</u>
				<u>S</u>

**TURNAROUND REQUIREMENTS**  
 \_\_\_ 24 hr \_\_\_ 48 hr \_\_\_ 5 day  
 Standard (10 days)  
 \_\_\_ Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 \_\_\_ I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 \_\_\_ III. Data Validation Report (includes raw data)  
 \_\_\_ IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
501 N Riverpoint Blvd, Suite 300 Spokane, WA 99201

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Watson Matsun  
 Firm: Arcadis  
 Date/Time: 8/21/17 13:00

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: CODY GARVES  
 Firm: ALS  
 Date/Time: 8/22/17 0950

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

K1708851

Date 8/20/17  
 PAGE 9 OF 15  
 SR#

ALS Environmental-Kelso  
 1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001

Project Contact: Kady Young Company: Arcadis

Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488

City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961

Sampler's Signature: \_\_\_\_\_

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	lead/arsenic 3050B/6010	Analysis Requested				REMARKS
401-1-F01-081817	8/18/17	1306		S	1	X					
F02		1308		S	1	X					
F03		1311		S	1	X					
F04		1314		S	1	X					
F05		1317		S	1	X					
F06		1320		S	1	X					
F07		1323		S	1	X					
F08		1346		S	1	X					
F09		1349		S	1	X					
F90		1352		S	1	X					

**URNAROUND REQUIREMENTS**

24 hr  48 hr  5 day  
 Standard (10 days)  
 Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**Invoice Information**

PO # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99208

**REPORT REQUIREMENTS**

I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes raw data)  
 IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**RELINQUISHED BY:**

Signature: [Signature]  
 Printed Name: Watson Metzger  
 Firm: Arcadis  
 Date/Time: 8/21/17 13:00

**RECEIVED BY:**

Signature: [Signature]  
 Printed Name: CODY GRAVES  
 Firm: ALS  
 Date/Time: 8/22/17 0950

**RELINQUISHED BY:**

Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**

Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_



PC JC

### Cooler Receipt and Preservation Form

Client: Teck America Service Request K17 08851  
 Received: 8/22/17 Opened: 8/22/17 By: KM Unloaded: 8/22/17 By: KM

Samples were received via? USPS 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 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	NA	Filed
5.2	5.4	13.1	13.3	+0.2	325		8745 6738 5575			
7.8	7.9	11.5	11.6	+0.1	373		8745 6738 5586			
7.3	7.6	14.1	14.4	+0.3	340		8745 6738 5564			
7.7	7.2	7.2	7.4	+0.2	379		8105 9112 1296			
7.3	7.9	14.2	14.1	-0.1	328		8745 6738 5597			

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  
 Were samples received in good condition (temperature, unbroken)? Indicate in the table below. NA Y N  
 If applicable, tissue samples were received: Frozen Partially Thawed Thawed  
 Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N KM  
 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:
<u>401-2-G02-081717</u>	<u>401-2-G02-0817-0</u>	<u>"G02-D" on Sample jar lid</u>
<u>401-1-C1-081817</u>	<u>401-1-C01-081817</u>	<u>(Dates + times match COC. <del>CO1-C01</del> that way.</u>

Sample ID	Bottle Count	Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Discrepancies, & Resolutions: In all of the Coolers, there wasn't enough ice and what was there was melted.



# Total Solids

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1708851  
**Date Collected:** 08/18/17  
**Date Received:** 08/22/17  
**Units:** Percent  
**Basis:** As Received

**Solids, Total**

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
401-1-E01-081817	K1708851-001	96.5	-	-	1	08/25/17 16:15	
401-1-E02-081817	K1708851-002	95.4	-	-	1	08/25/17 16:15	
401-1-E03-081817	K1708851-003	94.3	-	-	1	08/25/17 16:15	
401-1-E04-081817	K1708851-004	97.5	-	-	1	08/25/17 16:15	
401-1-E05-081817	K1708851-005	97.6	-	-	1	08/25/17 16:15	
401-1-E06-081817	K1708851-006	96.8	-	-	1	08/25/17 16:15	
401-1-E07-081817	K1708851-007	97.1	-	-	1	08/25/17 16:15	
401-1-E08-081817	K1708851-008	93.8	-	-	1	08/25/17 16:15	
401-1-E09-081817	K1708851-009	95.3	-	-	1	08/25/17 16:15	
401-1-E10-081817	K1708851-010	94.8	-	-	1	08/25/17 16:15	
401-1-E02-081817-D	K1708851-011	94.1	-	-	1	08/25/17 16:15	
401-1-F01-081817	K1708851-012	95.1	-	-	1	08/25/17 16:15	
401-1-F02-081817	K1708851-013	96.9	-	-	1	08/25/17 16:15	
401-1-F03-081817	K1708851-014	93.6	-	-	1	08/25/17 16:15	
401-1-F04-081817	K1708851-015	95.4	-	-	1	08/25/17 16:15	
401-1-F05-081817	K1708851-016	96.6	-	-	1	08/25/17 16:15	
401-1-F06-081817	K1708851-017	95.4	-	-	1	08/25/17 16:15	
401-1-F07-081817	K1708851-018	96.3	-	-	1	08/25/17 16:15	
401-1-F08-081817	K1708851-019	95.0	-	-	1	08/25/17 16:15	
401-1-F09-081817	K1708851-020	96.5	-	-	1	08/25/17 16:15	



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QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1708851  
**Date Collected:** 08/18/17  
**Date Received:** 08/22/17

**Units:** Percent  
**Basis:** As Received

**Replicate Sample Summary**  
**Inorganic Parameters**

<b>Sample Name:</b>	<b>Lab Code:</b>	<b>MRL</b>	<b>Sample Result</b>	<b>Duplicate Result</b>	<b>Average</b>	<b>RPD</b>	<b>RPD Limit</b>	<b>Date Analyzed</b>
401-1-E01-081817	K1708851-001DUP	-	96.5	96.7	96.6	<1	20	08/25/17
401-1-E02-081817-D	K1708851-011DUP	-	94.1	95.0	94.6	<1	20	08/25/17

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



# Metals

**ALS Environmental—Kelso Laboratory**  
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Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-E01-081817  
**Lab Code:** K1708851-001

**Service Request:** K1708851  
**Date Collected:** 08/18/17 11:54  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	23.1	mg/Kg	4.0	0.8	2	08/31/17 19:45	08/30/17	
Lead	6010C	305	mg/Kg	2.0	0.4	2	08/31/17 19:45	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-E02-081817  
**Lab Code:** K1708851-002

**Service Request:** K1708851  
**Date Collected:** 08/18/17 11:57  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	22.1	mg/Kg	4.0	0.8	2	08/31/17 19:56	08/30/17	
Lead	6010C	241	mg/Kg	2.0	0.4	2	08/31/17 19:56	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-E03-081817  
**Lab Code:** K1708851-003

**Service Request:** K1708851  
**Date Collected:** 08/18/17 12:00  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>21.8</b>	mg/Kg	4.0	0.8	2	08/31/17 20:06	08/30/17	
Lead	6010C	<b>822</b>	mg/Kg	2.0	0.4	2	08/31/17 20:06	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-E04-081817  
**Lab Code:** K1708851-004

**Service Request:** K1708851  
**Date Collected:** 08/18/17 12:03  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>22.9</b>	mg/Kg	4.0	0.8	2	08/31/17 20:08	08/30/17	
Lead	6010C	<b>313</b>	mg/Kg	2.0	0.4	2	08/31/17 20:08	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-E05-081817  
**Lab Code:** K1708851-005

**Service Request:** K1708851  
**Date Collected:** 08/18/17 12:06  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>32.2</b>	mg/Kg	4.0	0.8	2	08/31/17 20:10	08/30/17	
Lead	6010C	<b>416</b>	mg/Kg	2.0	0.4	2	08/31/17 20:10	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-E06-081817  
**Lab Code:** K1708851-006

**Service Request:** K1708851  
**Date Collected:** 08/18/17 12:08  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>39.2</b>	mg/Kg	4.0	0.8	2	08/31/17 20:12	08/30/17	
Lead	6010C	<b>423</b>	mg/Kg	2.0	0.4	2	08/31/17 20:12	08/30/17	



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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-E07-081817  
**Lab Code:** K1708851-007

**Service Request:** K1708851  
**Date Collected:** 08/18/17 12:10  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>27.0</b>	mg/Kg	4.1	0.8	2	08/31/17 20:15	08/30/17	
Lead	6010C	<b>348</b>	mg/Kg	2.0	0.4	2	08/31/17 20:15	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-E08-081817  
**Lab Code:** K1708851-008

**Service Request:** K1708851  
**Date Collected:** 08/18/17 12:13  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>36.8</b>	mg/Kg	4.2	0.8	2	08/31/17 20:17	08/30/17	
Lead	6010C	<b>756</b>	mg/Kg	2.1	0.4	2	08/31/17 20:17	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-E09-081817  
**Lab Code:** K1708851-009

**Service Request:** K1708851  
**Date Collected:** 08/18/17 12:16  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>53.8</b>	mg/Kg	4.0	0.8	2	08/31/17 20:20	08/30/17	
Lead	6010C	<b>416</b>	mg/Kg	2.0	0.4	2	08/31/17 20:20	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-E10-081817  
**Lab Code:** K1708851-010

**Service Request:** K1708851  
**Date Collected:** 08/18/17 12:19  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>82.3</b>	mg/Kg	4.0	0.8	2	08/31/17 20:22	08/30/17	
Lead	6010C	<b>634</b>	mg/Kg	2.0	0.4	2	08/31/17 20:22	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-E02-081817-D  
**Lab Code:** K1708851-011

**Service Request:** K1708851  
**Date Collected:** 08/18/17 11:57  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>20.8</b>	mg/Kg	4.2	0.8	2	08/31/17 20:24	08/30/17	
Lead	6010C	<b>235</b>	mg/Kg	2.1	0.4	2	08/31/17 20:24	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-F01-081817  
**Lab Code:** K1708851-012

**Service Request:** K1708851  
**Date Collected:** 08/18/17 13:06  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>40.1</b>	mg/Kg	4.1	0.8	2	08/31/17 20:27	08/30/17	
Lead	6010C	<b>671</b>	mg/Kg	2.1	0.4	2	08/31/17 20:27	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-F02-081817  
**Lab Code:** K1708851-013

**Service Request:** K1708851  
**Date Collected:** 08/18/17 13:08  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>23.7</b>	mg/Kg	3.8	0.8	2	08/31/17 20:36	08/30/17	
Lead	6010C	<b>279</b>	mg/Kg	1.9	0.4	2	08/31/17 20:36	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-F03-081817  
**Lab Code:** K1708851-014

**Service Request:** K1708851  
**Date Collected:** 08/18/17 13:11  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>29.5</b>	mg/Kg	4.2	0.8	2	08/31/17 20:38	08/30/17	
Lead	6010C	<b>1020</b>	mg/Kg	2.1	0.4	2	08/31/17 20:38	08/30/17	



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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-F04-081817  
**Lab Code:** K1708851-015

**Service Request:** K1708851  
**Date Collected:** 08/18/17 13:14  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>31.3</b>	mg/Kg	4.1	0.8	2	08/31/17 20:40	08/30/17	
Lead	6010C	<b>282</b>	mg/Kg	2.1	0.4	2	08/31/17 20:40	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-F05-081817  
**Lab Code:** K1708851-016

**Service Request:** K1708851  
**Date Collected:** 08/18/17 13:17  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>27.0</b>	mg/Kg	4.0	0.8	2	08/31/17 20:43	08/30/17	
Lead	6010C	<b>238</b>	mg/Kg	2.0	0.4	2	08/31/17 20:43	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-F06-081817  
**Lab Code:** K1708851-017

**Service Request:** K1708851  
**Date Collected:** 08/18/17 13:20  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>43.5</b>	mg/Kg	4.2	0.8	2	08/31/17 20:45	08/30/17	
Lead	6010C	<b>354</b>	mg/Kg	2.1	0.4	2	08/31/17 20:45	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-F07-081817  
**Lab Code:** K1708851-018

**Service Request:** K1708851  
**Date Collected:** 08/18/17 13:23  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>38.8</b>	mg/Kg	4.0	0.8	2	08/31/17 20:47	08/30/17	
Lead	6010C	<b>595</b>	mg/Kg	2.0	0.4	2	08/31/17 20:47	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-F08-081817  
**Lab Code:** K1708851-019

**Service Request:** K1708851  
**Date Collected:** 08/18/17 13:46  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>32.6</b>	mg/Kg	4.1	0.8	2	08/31/17 20:50	08/30/17	
Lead	6010C	<b>377</b>	mg/Kg	2.1	0.4	2	08/31/17 20:50	08/30/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-F09-081817  
**Lab Code:** K1708851-020

**Service Request:** K1708851  
**Date Collected:** 08/18/17 13:49  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>38.4</b>	mg/Kg	3.8	0.8	2	08/31/17 20:52	08/30/17	
Lead	6010C	<b>578</b>	mg/Kg	1.9	0.4	2	08/31/17 20:52	08/30/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** Method Blank  
**Lab Code:** KQ1712444-02

**Service Request:** K1708851  
**Date Collected:** NA  
**Date Received:** NA  
**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	ND U	mg/Kg	4	0.8	2	08/31/17 19:40	08/30/17	
Lead	6010C	ND U	mg/Kg	2	0.4	2	08/31/17 19:40	08/30/17	

ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708851  
**Date Collected:** 08/18/17  
**Date Received:** 08/22/17  
**Date Analyzed:** 08/31/17  
**Date Extracted:** 08/30/17

**Duplicate Matrix Spike Summary  
Total Metals**

**Sample Name:** 401-1-E01-081817  
**Lab Code:** K1708851-001  
**Analysis Method:** 6010C  
**Prep Method:** EPA 3050B

**Units:** mg/Kg  
**Basis:** Dry

Analyte Name	Sample Result	Result	Matrix Spike KQ1712444-03		Duplicate Matrix Spike KQ1712444-04		% Rec Limits	RPD	RPD Limit	
			Spike Amount	% Rec	Result	Spike Amount				% Rec
Arsenic	23.1	119	98.1	98	119	96.9	99	75-125	<1	30
Lead	305	389	98.1	86	391	96.9	89	75-125	<1	30

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708851  
**Date Analyzed:** 08/31/17

**Lab Control Sample Summary**  
**Total Metals**

**Units:**mg/Kg  
**Basis:**Dry

**Lab Control Sample**  
KQ1712444-01

<b>Analyte Name</b>	<b>Analytical Method</b>	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>% Rec Limits</b>
Arsenic	6010C	505	500	101	80-120
Lead	6010C	476	500	95	80-120



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ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

September 07, 2017

**Analytical Report for Service Request No: K1708852**

Dave Enos  
Teck American Incorporated  
501 North Riverpoint Blvd., Suite 300  
Spokane, WA 99202

**RE: August 2017 Sampling SAT Study / B0095010.0005.00001**

Dear Dave,

Enclosed are the results of the sample(s) submitted to our laboratory August 22, 2017  
For your reference, these analyses have been assigned our service request number **K1708852**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at [www.alsglobal.com](http://www.alsglobal.com). All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at [Jeff.Coronado@alsglobal.com](mailto:Jeff.Coronado@alsglobal.com).

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**

Jeff Coronado  
Metals Department  
Manager



---

ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

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## Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

### **Inorganic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

### **Metals Data Qualifiers**

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.  
  - i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Organic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.  
  - i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Additional Petroleum Hydrocarbon Specific Qualifiers**

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

**ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso  
State Certifications, Accreditations, and Licenses**

<b>Agency</b>	<b>Web Site</b>	<b>Number</b>
Alaska DEH	<a href="http://dec.alaska.gov/eh/lab/cs/csapproval.htm">http://dec.alaska.gov/eh/lab/cs/csapproval.htm</a>	UST-040
Arizona DHS	<a href="http://www.azdhs.gov/lab/license/env.htm">http://www.azdhs.gov/lab/license/env.htm</a>	AZ0339
Arkansas - DEQ	<a href="http://www.adeq.state.ar.us/techsvs/labcert.htm">http://www.adeq.state.ar.us/techsvs/labcert.htm</a>	88-0637
California DHS (ELAP)	<a href="http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx">http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx</a>	2795
DOD ELAP	<a href="http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm">http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm</a>	L14-51
Florida DOH	<a href="http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm">http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm</a>	E87412
Hawaii DOH	<a href="http://health.hawaii.gov/">http://health.hawaii.gov/</a>	-
ISO 17025	<a href="http://www.pjllabs.com/">http://www.pjllabs.com/</a>	L16-57
Louisiana DEQ	<a href="http://www.deq.louisiana.gov/page/la-lab-accreditation">http://www.deq.louisiana.gov/page/la-lab-accreditation</a>	03016
Maine DHS	<a href="http://www.maine.gov/dhhs/">http://www.maine.gov/dhhs/</a>	WA01276
Minnesota DOH	<a href="http://www.health.state.mn.us/accreditation">http://www.health.state.mn.us/accreditation</a>	053-999-457
Nevada DEP	<a href="http://ndep.nv.gov/bsdw/labservice.htm">http://ndep.nv.gov/bsdw/labservice.htm</a>	WA01276
New Jersey DEP	<a href="http://www.nj.gov/dep/enforcement/oqa.html">http://www.nj.gov/dep/enforcement/oqa.html</a>	WA005
New York - DOH	<a href="https://www.wadsworth.org/regulatory/elap">https://www.wadsworth.org/regulatory/elap</a>	12060
North Carolina DEQ	<a href="https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification">https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification</a>	605
Oklahoma DEQ	<a href="http://www.deq.state.ok.us/CSDnew/labcert.htm">http://www.deq.state.ok.us/CSDnew/labcert.htm</a>	9801
Oregon – DEQ (NELAP)	<a href="http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx">http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx</a>	WA100010
South Carolina DHEC	<a href="http://www.scdhec.gov/environment/EnvironmentalLabCertification/">http://www.scdhec.gov/environment/EnvironmentalLabCertification/</a>	61002
Texas CEQ	<a href="http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html">http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html</a>	T104704427
Washington DOE	<a href="http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html">http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html</a>	C544
Wyoming (EPA Region 8)	<a href="https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water">https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water</a>	-
Kelso Laboratory Website	<a href="http://www.alsglobal.com">www.alsglobal.com</a>	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at [www.ALSGlobal.com](http://www.ALSGlobal.com) or at the accreditation bodies web site.  
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.



## Case Narrative

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

**ALS ENVIRONMENTAL**

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/  
B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request No.:** K1708852  
**Date Received:** 08/22/17

**Case Narrative**

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

**Sample Receipt**

Three soil samples were received for analysis at ALS Environmental on 08/22/17. The samples were received in good condition and consistent with the accompanying chain of custody form, except where noted on the cooler receipt and preservation form included in this report.. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

**Total Metals**

No anomalies associated with the analysis of these samples were observed.

Approved by  \_\_\_\_\_





## Chain of Custody

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

*K1708852*

Date 8/20/17  
 PAGE 15 OF 15  
 SR#

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001  
 Project Contact: Kadv Young Company: Arcadis  
 Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488  
 City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961  
 Sampler's Signature: \_\_\_\_\_

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	Analysis Requested					REMARKS
						lead/arsenic 3050B/6010					
401-1-J01-081817	8/18/17	1629		S	1	X					
J02		1632		S	1	X					
J03		1635		S	1	X					
J04		1638		S	1	X					
J05		1641		S	1	X					
J06		1643		S	1	X					
J07		1646		S	1	X					
J08		1649		S	1	X					
J09		1651		S	1	X					
J10		1654		S	1	X					

**TURNAROUND REQUIREMENTS**  
 \_\_\_ 24 hr \_\_\_ 48 hr \_\_\_ 5 day  
 Standard (10 days)  
 \_\_\_ Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 \_\_\_ I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 \_\_\_ III. Data Validation Report (includes raw data)  
 \_\_\_ IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 992

**RELINQUISHED BY:**  
 Signature: *[Signature]*  
 Printed Name: Watson Metzgerman  
 Firm: Arcadis  
 Date/Time: 8/21/17 1300

**RECEIVED BY:**  
 Signature: *[Signature]*  
 Printed Name: Swort  
 Firm: ALS  
 Date/Time: 8/22/17 0950

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_



PC 60

### Cooler Receipt and Preservation Form

Client: Teck America Service Request K17 08852  
Received: 8/22/17 Opened: 8/22/17 By: KM Unloaded: 8/22/17 By: KM

Samples were received via? USPS 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 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
5.2	5.4	13.1	13.3	+0.2	325		8745 6738 5575		
7.8	7.9	11.5	11.6	+0.1	373		8745 6738 5586		
7.3	7.6	14.1	14.4	+0.3	349		8745 6738 5564		
7.7	7.2	7.2	7.4	+0.2	379		8105 9112 1296		
7.3	7.2	14.2	14.1	-0.1	328		8745 6738 5597		

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

Were samples received in good condition (temperature, unbroken)? Indicate in the table below. NA Y N

If applicable, tissue samples were received: Frozen Partially Thawed Thawed

Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N KM

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:
<u>401-2-602-081717</u>	<u>401-2-602-0817-0</u>	<u>"602-D" on Sample jar Lid</u>
<u>401-1-C1-081817</u>	<u>401-1-C01-081817</u>	<u>(Dates + times match COC. <del>COI-DOQ that way.</del>)</u>

Sample ID	Bottle Count	Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Discrepancies, & Resolutions: In all of the Coolers, there wasn't enough ice and what was there was melted.



# Total Solids

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1708852  
**Date Collected:** 08/18/17  
**Date Received:** 08/22/17

**Units:** Percent  
**Basis:** As Received

**Solids, Total**

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
401-1-J08-081817	K1708852-001	94.7	-	-	1	08/25/17 16:15	
401-1-J09-081817	K1708852-002	94.9	-	-	1	08/25/17 16:15	
401-1-J10-081817	K1708852-003	96.4	-	-	1	08/25/17 16:15	

ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1708852  
**Date Collected:** 08/18/17  
**Date Received:** 08/22/17

**Units:** Percent  
**Basis:** As Received

Replicate Sample Summary  
Inorganic Parameters

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
401-1-J08-081817	K1708852-001DUP	-	94.7	94.9	94.8	<1	20	08/25/17

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



# Metals

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-J08-081817  
**Lab Code:** K1708852-001

**Service Request:** K1708852  
**Date Collected:** 08/18/17 16:49  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>60.8</b>	mg/Kg	4.2	2.1	2	09/05/17 09:03	08/30/17	
Lead	6010C	<b>947</b>	mg/Kg	2.1	0.7	2	09/05/17 09:03	08/30/17	



ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-J09-081817  
**Lab Code:** K1708852-002

**Service Request:** K1708852  
**Date Collected:** 08/18/17 16:51  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>44.6</b>	mg/Kg	3.9	2.0	2	09/05/17 09:13	08/30/17	
Lead	6010C	<b>721</b>	mg/Kg	2.0	0.7	2	09/05/17 09:13	08/30/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 401-1-J10-081817  
**Lab Code:** K1708852-003

**Service Request:** K1708852  
**Date Collected:** 08/18/17 16:54  
**Date Received:** 08/22/17 09:50

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>32.8</b>	mg/Kg	4.0	2.0	2	09/05/17 09:15	08/30/17	
Lead	6010C	<b>486</b>	mg/Kg	2.0	0.7	2	09/05/17 09:15	08/30/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** Method Blank  
**Lab Code:** KQ1712446-02

**Service Request:** K1708852  
**Date Collected:** NA  
**Date Received:** NA  
**Basis:** Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6010C	ND U	mg/Kg	4	2.0	2	09/05/17 08:59	08/30/17	
Lead	6010C	ND U	mg/Kg	2	0.7	2	09/05/17 08:59	08/30/17	

ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708852  
**Date Collected:** 08/18/17  
**Date Received:** 08/22/17  
**Date Analyzed:** 09/5/17  
**Date Extracted:** 08/30/17

**Duplicate Matrix Spike Summary  
Total Metals**

**Sample Name:** 401-1-J08-081817  
**Lab Code:** K1708852-001  
**Analysis Method:** 6010C  
**Prep Method:** EPA 3050B

**Units:** mg/Kg  
**Basis:** Dry

Analyte Name	Sample Result	Result	Matrix Spike KQ1712446-03		Result	Duplicate Matrix Spike KQ1712446-04		% Rec Limits	RPD	RPD Limit
			Spike Amount	% Rec		Spike Amount	% Rec			
Arsenic	60.8	160	104	95	164	104	99	75-125	2	30
Lead	947	1030	104	81 #	1010	104	65 #	75-125	2	30

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708852

**Date Analyzed:** 09/05/17

**Lab Control Sample Summary**  
**Total Metals**

**Units:**mg/Kg

**Basis:**Dry

**Lab Control Sample**  
KQ1712446-01

<b>Analyte Name</b>	<b>Analytical Method</b>	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>% Rec Limits</b>
Arsenic	6010C	492	500	98	80-120
Lead	6010C	504	500	101	80-120



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ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

September 07, 2017

**Analytical Report for Service Request No: K1708945**

Dave Enos  
Teck American Incorporated  
501 North Riverpoint Blvd., Suite 300  
Spokane, WA 99202

**RE: August 2017 Sampling SAT Study / B0095010.0005.00001**

Dear Dave,

Enclosed are the results of the sample(s) submitted to our laboratory August 24, 2017  
For your reference, these analyses have been assigned our service request number **K1708945**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at [www.alsglobal.com](http://www.alsglobal.com). All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at [Jeff.Coronado@alsglobal.com](mailto:Jeff.Coronado@alsglobal.com).

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**

Jeff Coronado  
Metals Department  
Manager



---

ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

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## Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.



### **Inorganic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

### **Metals Data Qualifiers**

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.  
  - i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Organic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.  
  - i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Additional Petroleum Hydrocarbon Specific Qualifiers**

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

**ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso  
State Certifications, Accreditations, and Licenses**

<b>Agency</b>	<b>Web Site</b>	<b>Number</b>
Alaska DEH	<a href="http://dec.alaska.gov/eh/lab/cs/csapproval.htm">http://dec.alaska.gov/eh/lab/cs/csapproval.htm</a>	UST-040
Arizona DHS	<a href="http://www.azdhs.gov/lab/license/env.htm">http://www.azdhs.gov/lab/license/env.htm</a>	AZ0339
Arkansas - DEQ	<a href="http://www.adeq.state.ar.us/techsvs/labcert.htm">http://www.adeq.state.ar.us/techsvs/labcert.htm</a>	88-0637
California DHS (ELAP)	<a href="http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx">http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx</a>	2795
DOD ELAP	<a href="http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm">http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm</a>	L14-51
Florida DOH	<a href="http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm">http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm</a>	E87412
Hawaii DOH	<a href="http://health.hawaii.gov/">http://health.hawaii.gov/</a>	-
ISO 17025	<a href="http://www.pjllabs.com/">http://www.pjllabs.com/</a>	L16-57
Louisiana DEQ	<a href="http://www.deq.louisiana.gov/page/la-lab-accreditation">http://www.deq.louisiana.gov/page/la-lab-accreditation</a>	03016
Maine DHS	<a href="http://www.maine.gov/dhhs/">http://www.maine.gov/dhhs/</a>	WA01276
Minnesota DOH	<a href="http://www.health.state.mn.us/accreditation">http://www.health.state.mn.us/accreditation</a>	053-999-457
Nevada DEP	<a href="http://ndep.nv.gov/bsdw/labservice.htm">http://ndep.nv.gov/bsdw/labservice.htm</a>	WA01276
New Jersey DEP	<a href="http://www.nj.gov/dep/enforcement/oqa.html">http://www.nj.gov/dep/enforcement/oqa.html</a>	WA005
New York - DOH	<a href="https://www.wadsworth.org/regulatory/elap">https://www.wadsworth.org/regulatory/elap</a>	12060
North Carolina DEQ	<a href="https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification">https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification</a>	605
Oklahoma DEQ	<a href="http://www.deq.state.ok.us/CSDnew/labcert.htm">http://www.deq.state.ok.us/CSDnew/labcert.htm</a>	9801
Oregon – DEQ (NELAP)	<a href="http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx">http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx</a>	WA100010
South Carolina DHEC	<a href="http://www.scdhec.gov/environment/EnvironmentalLabCertification/">http://www.scdhec.gov/environment/EnvironmentalLabCertification/</a>	61002
Texas CEQ	<a href="http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html">http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html</a>	T104704427
Washington DOE	<a href="http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html">http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html</a>	C544
Wyoming (EPA Region 8)	<a href="https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water">https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water</a>	-
Kelso Laboratory Website	<a href="http://www.alsglobal.com">www.alsglobal.com</a>	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at [www.ALSGlobal.com](http://www.ALSGlobal.com) or at the accreditation bodies web site.  
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.



## Case Narrative

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

**ALS ENVIRONMENTAL**

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/  
B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request No.:** K1708945  
**Date Received:** 08/24/17

**Case Narrative**


All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

**Sample Receipt**

Twenty soil samples were received for analysis at ALS Environmental on 08/24/17. The samples were received in good condition and consistent with the accompanying chain of custody form, except where noted on the cooler receipt and preservation form included in this report.. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

**Total Metals**

No anomalies associated with the analysis of these samples were observed.

Approved by  \_\_\_\_\_



# Chain of Custody

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

Date 8/20/17  
 PAGE 1 OF 15  
 SR# 4708945

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001  
 Project Contact: Kady Young Company: Arcadis  
 Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488  
 City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961  
 Sampler's Signature: \_\_\_\_\_

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	Analysis Requested					REMARKS	
						lead	arsenic	3050B	6010			
258-2-A01-081917	8/19/17	1145		S	1	X						
A02		1147		S	1	X						
A03		1149		S	1	X						
A04		1151		S	1	X						
A05		1155		S	1	X						
A06		1157		S	1	X						
A07		1159		S	1	X						
A08		1202		S	1	X						
A09		1203		S	1	X						
A10		1205		S	1	X						

**TURNAROUND REQUIREMENTS**  
 \_\_\_ 24 hr \_\_\_ 48 hr \_\_\_ 5 day  
 Standard (10 days)  
 \_\_\_ Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 \_\_\_ I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 \_\_\_ III. Data Validation Report (includes raw data)  
 \_\_\_ IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99201

**RELINQUISHED BY:**  
 Signature: Watson  
 Printed Name: Watson Metzner  
 Firm: Arcadis  
 Date/Time: 8/21/17 1300

**RECEIVED BY:**  
 Signature: Stawis  
 Printed Name: Stawis  
 Firm: ALS-Kelso  
 Date/Time: 8/24/17 1030

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

Date 8/20/17  
 PAGE 2 OF 15  
 SR# K1708945

Project Name: <u>Teck American - UCR SATES</u> Project Number: <u>B0095010.0005.00001</u> Project Contact: <u>Kady Young</u> Company: <u>Arcadis</u> Company/Address: <u>189 North Cedar Street</u> Phone: <u>307-203-3510</u> or <u>810-588-1488</u> City, State, Zip: <u>Buffalo, WY 82834</u> FAX: <u>307-684-5961</u> Sampler's Signature: _____	Number of Containers	Analysis Requested				
--	----------------------	--------------------	--	--	--	--

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	lead/arsenic 3050B/6010					REMARKS
<u>258-2-B01-081917</u>	<u>8/19/17</u>	<u>1208</u>		S	1	X					
<u>B02</u>		<u>1210</u>		S	1	X					
<u>B03</u>		<u>1212</u>		S	1	X					
<u>B04</u>		<u>1213</u>		S	1	X					
<u>B05</u>		<u>1215</u>		S	1	X					
<u>B06</u>		<u>1217</u>		S	1	X					
<u>B07</u>		<u>1218</u>		S	1	X					
<u>B08</u>		<u>1220</u>		S	1	X					
<u>B09</u>		<u>1221</u>		S	1	X					
<u>B10</u>		<u>1223</u>		S	1	X					

<b>FURNAROUND REQUIREMENTS</b> ___ 24 hr ___ 48 hr ___ 5 day <input checked="" type="checkbox"/> Standard (10 days) ___ Provide FAX Preliminary Results Requested Report Date: _____	<b>REPORT REQUIREMENTS</b> I. Routine Report: Results, Method Blank, Surrogate, as required <input checked="" type="checkbox"/> II. Report Dup., MS, MSD as required ___ III. Data Validation Report (includes raw data) ___ IV. CLP Deliverable Report <input checked="" type="checkbox"/> V. EDD	<b>Comments/Special Instructions:</b> Hold Remainder
<b>Invoice Information</b> P.O. # <u>UCR-ALS-D34-17</u> Bill to: <u>Cristy Kessel - Teck American</u> 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99201		

<b>RELINQUISHED BY:</b> Signature: <u>[Signature]</u> Printed Name: <u>Watson Metzner</u> Firm: <u>Arcadis</u> Date/Time: <u>8/21/17 1300</u>	<b>RECEIVED BY:</b> Signature: <u>[Signature]</u> Printed Name: <u>Stawis</u> Firm: <u>ALS Kelso</u> Date/Time: <u>8/24/17 1030</u>	<b>RELINQUISHED BY:</b> Signature: _____ Printed Name: _____ Firm: _____ Date/Time: _____	<b>RECEIVED BY:</b> Signature: _____ Printed Name: _____ Firm: _____ Date/Time: _____
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Jeff  
PCCoverado

### Cooler Receipt and Preservation Form

Client TELL AMERICAN Service Request K1708945

Received: Aug 24, 17 Opened: 8/24 By: SA Unloaded: 8/24 By: SA

Samples were received via? USPS  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

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
20.7	20.7	19.7	19.7	0.0	374	<input checked="" type="radio"/> <u>NA</u>	787472169213		

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

Were samples received in good condition (temperature, unbroken)? *Indicate in the table below.* NA  Y  N #

If applicable, tissue samples were received: Frozen Partially Thawed Thawed

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
<u>All</u>			<input checked="" type="checkbox"/>								

es, Discrepancies, & Resolutions: All samples were out of temp.





# Total Solids

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1708945  
**Date Collected:** 08/19/17  
**Date Received:** 08/24/17  
**Units:** Percent  
**Basis:** As Received

**Solids, Total**

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
258-2-A01-081917	K1708945-001	97.3	-	-	1	08/29/17 09:57	
258-2-A02-081917	K1708945-002	97.0	-	-	1	08/29/17 09:57	
258-2-A03-081917	K1708945-003	96.7	-	-	1	08/29/17 09:57	
258-2-A04-081917	K1708945-004	96.1	-	-	1	08/29/17 09:57	
258-2-A05-081917	K1708945-005	96.0	-	-	1	08/29/17 09:57	
258-2-A06-081917	K1708945-006	97.5	-	-	1	08/29/17 09:57	
258-2-A07-081917	K1708945-007	97.5	-	-	1	08/29/17 09:57	
258-2-A08-081917	K1708945-008	95.9	-	-	1	08/29/17 09:57	
258-2-A09-081917	K1708945-009	95.3	-	-	1	08/29/17 09:57	
258-2-A10-081917	K1708945-010	96.4	-	-	1	08/29/17 09:57	
258-2-B01-081917	K1708945-011	97.9	-	-	1	08/29/17 09:57	
258-2-B02-081917	K1708945-012	96.1	-	-	1	08/29/17 09:57	
258-2-B03-081917	K1708945-013	97.4	-	-	1	08/29/17 09:57	
258-2-B04-081917	K1708945-014	96.9	-	-	1	08/29/17 09:57	
258-2-B05-081917	K1708945-015	96.3	-	-	1	08/29/17 09:57	
258-2-B06-081917	K1708945-016	95.4	-	-	1	08/29/17 09:57	
258-2-B07-081917	K1708945-017	96.9	-	-	1	08/29/17 09:57	
258-2-B08-081917	K1708945-018	98.0	-	-	1	08/29/17 09:57	
258-2-B09-081917	K1708945-019	98.0	-	-	1	08/29/17 09:57	
258-2-B10-081917	K1708945-020	98.3	-	-	1	08/29/17 09:57	

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QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1708945  
**Date Collected:** 08/19/17  
**Date Received:** 08/24/17

**Units:** Percent  
**Basis:** As Received

Replicate Sample Summary  
Inorganic Parameters

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
258-2-A01-081917	K1708945-001DUP	-	97.3	97.2	97.3	<1	20	08/29/17
258-2-B01-081917	K1708945-011DUP	-	97.9	97.8	97.9	<1	20	08/29/17

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



# Metals

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-A01-081917  
**Lab Code:** K1708945-001

**Service Request:** K1708945  
**Date Collected:** 08/19/17 11:45  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>12.6</b>	mg/Kg	4.1	2.1	2	09/05/17 09:31	08/31/17	
Lead	6010C	<b>193</b>	mg/Kg	2.1	0.7	2	09/05/17 09:31	08/31/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-A02-081917  
**Lab Code:** K1708945-002

**Service Request:** K1708945  
**Date Collected:** 08/19/17 11:47  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>14.8</b>	mg/Kg	4.1	2.1	2	09/05/17 09:41	08/31/17	
Lead	6010C	<b>208</b>	mg/Kg	2.1	0.7	2	09/05/17 09:41	08/31/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-A03-081917  
**Lab Code:** K1708945-003

**Service Request:** K1708945  
**Date Collected:** 08/19/17 11:49  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>29.1</b>	mg/Kg	4.1	2.0	2	09/05/17 09:43	08/31/17	
Lead	6010C	<b>718</b>	mg/Kg	2.0	0.7	2	09/05/17 09:43	08/31/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-A04-081917  
**Lab Code:** K1708945-004

**Service Request:** K1708945  
**Date Collected:** 08/19/17 11:51  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>13.4</b>	mg/Kg	4.1	2.0	2	09/05/17 09:45	08/31/17	
Lead	6010C	<b>214</b>	mg/Kg	2.0	0.7	2	09/05/17 09:45	08/31/17	



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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-A05-081917  
**Lab Code:** K1708945-005

**Service Request:** K1708945  
**Date Collected:** 08/19/17 11:55  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>15.6</b>	mg/Kg	4.0	2.0	2	09/05/17 09:47	08/31/17	
Lead	6010C	<b>249</b>	mg/Kg	2.0	0.7	2	09/05/17 09:47	08/31/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-A06-081917  
**Lab Code:** K1708945-006

**Service Request:** K1708945  
**Date Collected:** 08/19/17 11:57  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>7.9</b>	mg/Kg	3.9	2.0	2	09/05/17 09:56	08/31/17	
Lead	6010C	<b>109</b>	mg/Kg	2.0	0.7	2	09/05/17 09:56	08/31/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-A07-081917  
**Lab Code:** K1708945-007

**Service Request:** K1708945  
**Date Collected:** 08/19/17 11:59  
**Date Received:** 08/24/17 10:30  
**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>12.7</b>	mg/Kg	4.0	2.0	2	09/05/17 09:58	08/31/17	
Lead	6010C	<b>138</b>	mg/Kg	2.0	0.7	2	09/05/17 09:58	08/31/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-A08-081917  
**Lab Code:** K1708945-008

**Service Request:** K1708945  
**Date Collected:** 08/19/17 12:02  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>21.3</b>	mg/Kg	4.1	2.0	2	09/05/17 10:00	08/31/17	
Lead	6010C	<b>303</b>	mg/Kg	2.0	0.7	2	09/05/17 10:00	08/31/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-A09-081917  
**Lab Code:** K1708945-009

**Service Request:** K1708945  
**Date Collected:** 08/19/17 12:03  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>15.2</b>	mg/Kg	3.9	1.9	2	09/05/17 10:02	08/31/17	
Lead	6010C	<b>240</b>	mg/Kg	1.9	0.7	2	09/05/17 10:02	08/31/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-A10-081917  
**Lab Code:** K1708945-010

**Service Request:** K1708945  
**Date Collected:** 08/19/17 12:05  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>25.3</b>	mg/Kg	4.0	2.0	2	09/05/17 10:04	08/31/17	
Lead	6010C	<b>450</b>	mg/Kg	2.0	0.7	2	09/05/17 10:04	08/31/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-B01-081917  
**Lab Code:** K1708945-011

**Service Request:** K1708945  
**Date Collected:** 08/19/17 12:08  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	8.5	mg/Kg	4.0	2.0	2	09/05/17 10:06	08/31/17	
Lead	6010C	132	mg/Kg	2.0	0.7	2	09/05/17 10:06	08/31/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-B02-081917  
**Lab Code:** K1708945-012

**Service Request:** K1708945  
**Date Collected:** 08/19/17 12:10  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6010C	13.2	mg/Kg	4.1	2.1	2	09/05/17 10:09	08/31/17	
Lead	6010C	308	mg/Kg	2.1	0.7	2	09/05/17 10:09	08/31/17	



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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-B03-081917  
**Lab Code:** K1708945-013

**Service Request:** K1708945  
**Date Collected:** 08/19/17 12:12  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	14.4	mg/Kg	3.9	2.0	2	09/05/17 10:11	08/31/17	
Lead	6010C	242	mg/Kg	2.0	0.7	2	09/05/17 10:11	08/31/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-B04-081917  
**Lab Code:** K1708945-014

**Service Request:** K1708945  
**Date Collected:** 08/19/17 12:13  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>11.7</b>	mg/Kg	3.8	1.9	2	09/05/17 10:13	08/31/17	
Lead	6010C	<b>227</b>	mg/Kg	1.9	0.7	2	09/05/17 10:13	08/31/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-B05-081917  
**Lab Code:** K1708945-015

**Service Request:** K1708945  
**Date Collected:** 08/19/17 12:15  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>15.6</b>	mg/Kg	4.0	2.0	2	09/05/17 10:15	08/31/17	
Lead	6010C	<b>296</b>	mg/Kg	2.0	0.7	2	09/05/17 10:15	08/31/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-B06-081917  
**Lab Code:** K1708945-016

**Service Request:** K1708945  
**Date Collected:** 08/19/17 12:17  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>15.5</b>	mg/Kg	4.1	2.1	2	09/05/17 10:23	08/31/17	
Lead	6010C	<b>262</b>	mg/Kg	2.1	0.7	2	09/05/17 10:23	08/31/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-B07-081917  
**Lab Code:** K1708945-017

**Service Request:** K1708945  
**Date Collected:** 08/19/17 12:18  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>17.2</b>	mg/Kg	4.0	2.0	2	09/05/17 10:26	08/31/17	
Lead	6010C	<b>282</b>	mg/Kg	2.0	0.7	2	09/05/17 10:26	08/31/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-B08-081917  
**Lab Code:** K1708945-018

**Service Request:** K1708945  
**Date Collected:** 08/19/17 12:20  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>11.9</b>	mg/Kg	4.0	2.0	2	09/05/17 10:28	08/31/17	
Lead	6010C	<b>121</b>	mg/Kg	2.0	0.7	2	09/05/17 10:28	08/31/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-B09-081917  
**Lab Code:** K1708945-019

**Service Request:** K1708945  
**Date Collected:** 08/19/17 12:21  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>15.6</b>	mg/Kg	3.8	1.9	2	09/05/17 10:30	08/31/17	
Lead	6010C	<b>291</b>	mg/Kg	1.9	0.7	2	09/05/17 10:30	08/31/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-B10-081917  
**Lab Code:** K1708945-020

**Service Request:** K1708945  
**Date Collected:** 08/19/17 12:23  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>14.9</b>	mg/Kg	4.0	2.0	2	09/05/17 10:32	08/31/17	
Lead	6010C	<b>350</b>	mg/Kg	2.0	0.7	2	09/05/17 10:32	08/31/17	



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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** Method Blank  
**Lab Code:** KQ1712490-02

**Service Request:** K1708945  
**Date Collected:** NA  
**Date Received:** NA  
**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	ND U	mg/Kg	4	2.0	2	09/05/17 09:18	08/31/17	
Lead	6010C	ND U	mg/Kg	2	0.7	2	09/05/17 09:18	08/31/17	

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QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708945  
**Date Collected:** 08/19/17  
**Date Received:** 08/24/17  
**Date Analyzed:** 09/5/17  
**Date Extracted:** 08/31/17

**Duplicate Matrix Spike Summary  
Total Metals**

**Sample Name:** 258-2-A01-081917  
**Lab Code:** K1708945-001  
**Analysis Method:** 6010C  
**Prep Method:** EPA 3050B

**Units:** mg/Kg  
**Basis:** Dry

Analyte Name	Sample Result	Result	Matrix Spike KQ1712490-03		Result	Duplicate Matrix Spike KQ1712490-04		% Rec Limits	RPD	RPD Limit
			Spike Amount	% Rec		Spike Amount	% Rec			
Arsenic	12.6	105	97.8	94	111	103	96	75-125	6	30
Lead	193	285	97.8	94	296	103	100	75-125	4	30

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708945

**Date Analyzed:** 09/05/17

**Lab Control Sample Summary**  
**Total Metals**

**Units:**mg/Kg

**Basis:**Dry

**Lab Control Sample**  
KQ1712490-01

<b>Analyte Name</b>	<b>Analytical Method</b>	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>% Rec Limits</b>
Arsenic	6010C	481	500	96	80-120
Lead	6010C	510	500	102	80-120



---

ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

September 07, 2017

**Analytical Report for Service Request No: K1708951**

Dave Enos  
Teck American Incorporated  
501 North Riverpoint Blvd., Suite 300  
Spokane, WA 99202

**RE: August 2017 Sampling SAT Study / B0095010.0005.00001**

Dear Dave,

Enclosed are the results of the sample(s) submitted to our laboratory August 24, 2017  
For your reference, these analyses have been assigned our service request number **K1708951**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at [www.alsglobal.com](http://www.alsglobal.com). All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at [Jeff.Coronado@alsglobal.com](mailto:Jeff.Coronado@alsglobal.com).

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**

Jeff Coronado  
Metals Department  
Manager



---

ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

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## Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

### **Inorganic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

### **Metals Data Qualifiers**

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.  
  - i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Organic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Additional Petroleum Hydrocarbon Specific Qualifiers**

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

**ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso  
State Certifications, Accreditations, and Licenses**

<b>Agency</b>	<b>Web Site</b>	<b>Number</b>
Alaska DEH	<a href="http://dec.alaska.gov/eh/lab/cs/csapproval.htm">http://dec.alaska.gov/eh/lab/cs/csapproval.htm</a>	UST-040
Arizona DHS	<a href="http://www.azdhs.gov/lab/license/env.htm">http://www.azdhs.gov/lab/license/env.htm</a>	AZ0339
Arkansas - DEQ	<a href="http://www.adeq.state.ar.us/techsvs/labcert.htm">http://www.adeq.state.ar.us/techsvs/labcert.htm</a>	88-0637
California DHS (ELAP)	<a href="http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx">http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx</a>	2795
DOD ELAP	<a href="http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm">http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm</a>	L14-51
Florida DOH	<a href="http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm">http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm</a>	E87412
Hawaii DOH	<a href="http://health.hawaii.gov/">http://health.hawaii.gov/</a>	-
ISO 17025	<a href="http://www.pjlabs.com/">http://www.pjlabs.com/</a>	L16-57
Louisiana DEQ	<a href="http://www.deq.louisiana.gov/page/la-lab-accreditation">http://www.deq.louisiana.gov/page/la-lab-accreditation</a>	03016
Maine DHS	<a href="http://www.maine.gov/dhhs/">http://www.maine.gov/dhhs/</a>	WA01276
Minnesota DOH	<a href="http://www.health.state.mn.us/accreditation">http://www.health.state.mn.us/accreditation</a>	053-999-457
Nevada DEP	<a href="http://ndep.nv.gov/bsdw/labservice.htm">http://ndep.nv.gov/bsdw/labservice.htm</a>	WA01276
New Jersey DEP	<a href="http://www.nj.gov/dep/enforcement/oqa.html">http://www.nj.gov/dep/enforcement/oqa.html</a>	WA005
New York - DOH	<a href="https://www.wadsworth.org/regulatory/elap">https://www.wadsworth.org/regulatory/elap</a>	12060
North Carolina DEQ	<a href="https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification">https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification</a>	605
Oklahoma DEQ	<a href="http://www.deq.state.ok.us/CSDnew/labcert.htm">http://www.deq.state.ok.us/CSDnew/labcert.htm</a>	9801
Oregon – DEQ (NELAP)	<a href="http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx">http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx</a>	WA100010
South Carolina DHEC	<a href="http://www.scdhec.gov/environment/EnvironmentalLabCertification/">http://www.scdhec.gov/environment/EnvironmentalLabCertification/</a>	61002
Texas CEQ	<a href="http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html">http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html</a>	T104704427
Washington DOE	<a href="http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html">http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html</a>	C544
Wyoming (EPA Region 8)	<a href="https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water">https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water</a>	-
Kelso Laboratory Website	<a href="http://www.alsglobal.com">www.alsglobal.com</a>	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at [www.ALSGlobal.com](http://www.ALSGlobal.com) or at the accreditation bodies web site.  
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.





## Case Narrative

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

**ALS ENVIRONMENTAL**

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/  
B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request No.:** K1708951  
**Date Received:** 08/24/17

**Case Narrative**

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

**Sample Receipt**

Twenty soil samples were received for analysis at ALS Environmental on 08/24/17. The samples were received in good condition and consistent with the accompanying chain of custody form, except where noted on the cooler receipt and preservation form included in this report.. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

**Total Metals**

No anomalies associated with the analysis of these samples were observed.

Approved by  \_\_\_\_\_



## Chain of Custody

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

Date 8/20/17  
 PAGE 3 OF 15  
 SR# 1708531

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001

Project Contact: Kady Young Company: Arcadis

Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488

City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961

Sampler's Signature: \_\_\_\_\_

Number of Containers	Analysis Requested					REMARKS
	lead/arsenic 3050B/6010					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					

Sample I.D.	Date	Time	LAB ID	Matrix
258-2-C01-081917	8/19/17	1305		S
C02		1307		S
C03		1309		S
C04		1311		S
C05		1313		S
C06		1315		S
C07		1317		S
C08		1318		S
C09		1319		S
C10		1321		S

**TURNAROUND REQUIREMENTS**  
 24 hr \_\_\_\_\_ 48 hr \_\_\_\_\_ 5 day \_\_\_\_\_  
 Standard (10 days)  
 Provide FAX Preliminary Results \_\_\_\_\_  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required \_\_\_\_\_  
 II. Report Dup., MS, MSD as required \_\_\_\_\_  
 III. Data Validation Report (includes raw data) \_\_\_\_\_  
 IV. CLP Deliverable Report \_\_\_\_\_  
 V. EDD \_\_\_\_\_

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99205

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Watson Metzger  
 Firm: Arcadis  
 Date/Time: 8/21/17 1300

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: SDAVIS  
 Firm: ALS-KELSO  
 Date/Time: 8/21/17 1030

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001

Project Contact: Kady Young Company: Arcadis

Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488

City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961

Sampler's Signature: \_\_\_\_\_

Number of Containers	Analysis Requested					REMARKS
	lead/arsenic 3050B/6010					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					

Sample I.D.	Date	Time	LAB ID	Matrix
<u>258-2-C06-081917-D</u>	<u>8/19/17</u>	<u>1315</u>		S
				S
				S
				S
				S
				S
				S
				S
				S
				S

**TURNAROUND REQUIREMENTS**  
 24 hr  48 hr  5 day  
 Standard (10 days)  
 Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes raw data)  
 IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
501 N Riverpoint Blvd, Suite 300 Spokane, WA 99201

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Watson Metstrom  
 Firm: Arcadis  
 Date/Time: 8/21/17 1300

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: SDawis  
 Firm: ALS-KELSO  
 Date/Time: 8/24/17 1030

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

Date 8/20/17  
 PAGE 5 OF 15  
 SR# 1708961

<p><b>Project Name:</b> <u>Teck American - UCR SATES</u> <b>Project Number:</b> <u>B0095010.0005.00001</u></p> <p><b>Project Contact:</b> <u>Kady Young</u> <b>Company:</b> <u>Arcadis</u></p> <p><b>Company/Address:</b> <u>189 North Cedar Street</u> <b>Phone:</b> <u>307-203-3510 or 810-588-1488</u></p> <p><b>City, State, Zip:</b> <u>Buffalo, WY 82834</u> <b>FAX:</b> <u>307-684-5961</u></p> <p><b>Sampler's Signature:</b> _____</p>	Number of Containers	Analysis Requested
---	----------------------	--------------------

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	lead/arsenic 3050B/6010	REMARKS
258 - 2 - D01 - 081917	8/19/17	1324		S	1	X	
3   D02		1326		S	1	X	
4   D03		1329		S	1	X	
5   D04		1330		S	1	X	
6   D05		1333		S	1	X	
7   D06		1337		S	1	X	
8   D07		1338		S	1	X	
9   D08		1340		S	1	X	
10   D09		1342		S	1	X	
<del>11   D10</del>		<del>1345</del>		<del>S</del>	<del>1</del>	<del>X</del>	

**URNAROUND REQUIREMENTS**  
 24 hr     48 hr     5 day  
 Standard (10 days)  
 Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**Invoice Information**  
 I.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99201

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes raw data)  
 IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Watson Metsutan  
 Firm: Arcadis  
 Date/Time: 8/21/17 1300

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: SDavis  
 Firm: ALS-KELSO  
 Date/Time: 8/24/17 1030

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_



Jeff  
PCCoveredo

### Cooler Receipt and Preservation Form

Client TELU American Service Request KI728445 1708951  
Received: Aug 24 17 Opened: 8/24 By: CA Unloaded: 8/24 By: CA

Samples were received via?  USPS  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  
If present, were custody seals intact?  Y  N If present, were they signed and dated?  Y  N

Raw Water Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	NA	Filed
12.7	20.7	19.7	19.7	0.0	374	NA	787472169213		

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

Were samples received in good condition (temperature, unbroken)? *Indicate in the table below.*  NA  Y  N

If applicable, tissue samples were received:  Frozen  Partially Thawed  Thawed

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
ALL		✓								

Discrepancies, & Resolutions: ALL samples were out of temp.



# Total Solids

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)



**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1708951  
**Date Collected:** 08/19/17  
**Date Received:** 08/24/17  
**Units:** Percent  
**Basis:** As Received

**Solids, Total**

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
258-2-C01-081917	K1708951-001	97.0	-	-	1	08/29/17 09:57	
258-2-C02-081917	K1708951-002	97.3	-	-	1	08/29/17 09:57	
258-2-C03-081917	K1708951-003	98.2	-	-	1	08/29/17 09:57	
258-2-C04-081917	K1708951-004	95.7	-	-	1	08/29/17 09:57	
258-2-C05-081917	K1708951-005	94.1	-	-	1	08/29/17 09:57	
258-2-C06-081917	K1708951-006	97.1	-	-	1	08/29/17 09:57	
258-2-C07-081917	K1708951-007	97.3	-	-	1	08/29/17 09:57	
258-2-C08-081917	K1708951-008	98.3	-	-	1	08/29/17 09:57	
258-2-C09-081917	K1708951-009	97.3	-	-	1	08/29/17 09:57	
258-2-C10-081917	K1708951-010	97.7	-	-	1	08/29/17 09:57	
258-2-C06-081917-D	K1708951-011	97.1	-	-	1	08/29/17 09:57	
258-2-D01-081917	K1708951-012	96.6	-	-	1	08/29/17 09:57	
258-2-D02-081917	K1708951-013	94.5	-	-	1	08/29/17 09:57	
258-2-D03-081917	K1708951-014	96.9	-	-	1	08/29/17 09:57	
258-2-D04-081917	K1708951-015	97.3	-	-	1	08/29/17 09:57	
258-2-D05-081917	K1708951-016	95.7	-	-	1	08/29/17 09:57	
258-2-D06-081917	K1708951-017	96.8	-	-	1	08/29/17 09:57	
258-2-D07-081917	K1708951-018	96.2	-	-	1	08/29/17 09:57	
258-2-D08-081917	K1708951-019	95.5	-	-	1	08/29/17 09:57	
258-2-D09-081917	K1708951-020	96.6	-	-	1	08/29/17 09:57	

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QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1708951  
**Date Collected:** 08/19/17  
**Date Received:** 08/24/17

**Units:** Percent  
**Basis:** As Received

**Replicate Sample Summary**  
**Inorganic Parameters**

<b>Sample Name:</b>	<b>Lab Code:</b>	<b>MRL</b>	<b>Sample Result</b>	<b>Duplicate Result</b>	<b>Average</b>	<b>RPD</b>	<b>RPD Limit</b>	<b>Date Analyzed</b>
258-2-C01-081917	K1708951-001DUP	-	97.0	96.7	96.9	<1	20	08/29/17
258-2-C06-081917-D	K1708951-011DUP	-	97.1	97.1	97.1	<1	20	08/29/17

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



# Metals

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-C01-081917  
**Lab Code:** K1708951-001

**Service Request:** K1708951  
**Date Collected:** 08/19/17 13:05  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>10.4</b>	mg/Kg	4.0	2.0	2	09/05/17 10:38	08/31/17	
Lead	6010C	<b>294</b>	mg/Kg	2.0	0.7	2	09/05/17 10:38	08/31/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-C02-081917  
**Lab Code:** K1708951-002

**Service Request:** K1708951  
**Date Collected:** 08/19/17 13:07  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>10.4</b>	mg/Kg	4.1	2.0	2	09/05/17 10:58	08/31/17	
Lead	6010C	<b>145</b>	mg/Kg	2.0	0.7	2	09/05/17 10:58	08/31/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-C03-081917  
**Lab Code:** K1708951-003

**Service Request:** K1708951  
**Date Collected:** 08/19/17 13:09  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	7.5	mg/Kg	3.9	1.9	2	09/05/17 11:00	08/31/17	
Lead	6010C	213	mg/Kg	1.9	0.7	2	09/05/17 11:00	08/31/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-C04-081917  
**Lab Code:** K1708951-004

**Service Request:** K1708951  
**Date Collected:** 08/19/17 13:11  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>21.8</b>	mg/Kg	3.9	2.0	2	09/05/17 11:02	08/31/17	
Lead	6010C	<b>560</b>	mg/Kg	2.0	0.7	2	09/05/17 11:02	08/31/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-C05-081917  
**Lab Code:** K1708951-005

**Service Request:** K1708951  
**Date Collected:** 08/19/17 13:13  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>16.0</b>	mg/Kg	4.1	2.1	2	09/05/17 11:04	08/31/17	
Lead	6010C	<b>351</b>	mg/Kg	2.1	0.7	2	09/05/17 11:04	08/31/17	



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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-C06-081917  
**Lab Code:** K1708951-006

**Service Request:** K1708951  
**Date Collected:** 08/19/17 13:15  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>14.5</b>	mg/Kg	4.0	2.0	2	09/05/17 11:06	08/31/17	
Lead	6010C	<b>227</b>	mg/Kg	2.0	0.7	2	09/05/17 11:06	08/31/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-C07-081917  
**Lab Code:** K1708951-007

**Service Request:** K1708951  
**Date Collected:** 08/19/17 13:17  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>10.9</b>	mg/Kg	3.8	1.9	2	09/05/17 11:08	08/31/17	
Lead	6010C	<b>112</b>	mg/Kg	1.9	0.7	2	09/05/17 11:08	08/31/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-C08-081917  
**Lab Code:** K1708951-008

**Service Request:** K1708951  
**Date Collected:** 08/19/17 13:18  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>18.9</b>	mg/Kg	3.7	1.9	2	09/05/17 11:10	08/31/17	
Lead	6010C	<b>222</b>	mg/Kg	1.9	0.7	2	09/05/17 11:10	08/31/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-C09-081917  
**Lab Code:** K1708951-009

**Service Request:** K1708951  
**Date Collected:** 08/19/17 13:19  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>16.1</b>	mg/Kg	4.0	2.0	2	09/05/17 11:12	08/31/17	
Lead	6010C	<b>208</b>	mg/Kg	2.0	0.7	2	09/05/17 11:12	08/31/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-C10-081917  
**Lab Code:** K1708951-010

**Service Request:** K1708951  
**Date Collected:** 08/19/17 13:21  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>9.3</b>	mg/Kg	3.9	1.9	2	09/05/17 11:21	08/31/17	
Lead	6010C	<b>198</b>	mg/Kg	1.9	0.7	2	09/05/17 11:21	08/31/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-C06-081917-D  
**Lab Code:** K1708951-011

**Service Request:** K1708951  
**Date Collected:** 08/19/17 13:15  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>15.0</b>	mg/Kg	4.0	2.0	2	09/05/17 11:23	08/31/17	
Lead	6010C	<b>234</b>	mg/Kg	2.0	0.7	2	09/05/17 11:23	08/31/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-D01-081917  
**Lab Code:** K1708951-012

**Service Request:** K1708951  
**Date Collected:** 08/19/17 13:24  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>11.5</b>	mg/Kg	4.1	2.0	2	09/05/17 11:25	08/31/17	
Lead	6010C	<b>411</b>	mg/Kg	2.0	0.7	2	09/05/17 11:25	08/31/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-D02-081917  
**Lab Code:** K1708951-013

**Service Request:** K1708951  
**Date Collected:** 08/19/17 13:26  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>8.4</b>	mg/Kg	4.1	2.0	2	09/05/17 11:27	08/31/17	
Lead	6010C	<b>281</b>	mg/Kg	2.0	0.7	2	09/05/17 11:27	08/31/17	



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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-D03-081917  
**Lab Code:** K1708951-014

**Service Request:** K1708951  
**Date Collected:** 08/19/17 13:29  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>13.1</b>	mg/Kg	4.0	2.0	2	09/05/17 11:29	08/31/17	
Lead	6010C	<b>186</b>	mg/Kg	2.0	0.7	2	09/05/17 11:29	08/31/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-D04-081917  
**Lab Code:** K1708951-015

**Service Request:** K1708951  
**Date Collected:** 08/19/17 13:30  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6010C	12.3	mg/Kg	4.0	2.0	2	09/05/17 11:31	08/31/17	
Lead	6010C	400	mg/Kg	2.0	0.7	2	09/05/17 11:31	08/31/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-D05-081917  
**Lab Code:** K1708951-016

**Service Request:** K1708951  
**Date Collected:** 08/19/17 13:33  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>16.2</b>	mg/Kg	3.9	1.9	2	09/05/17 11:33	08/31/17	
Lead	6010C	<b>247</b>	mg/Kg	1.9	0.7	2	09/05/17 11:33	08/31/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-D06-081917  
**Lab Code:** K1708951-017

**Service Request:** K1708951  
**Date Collected:** 08/19/17 13:37  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	4.4	mg/Kg	4.1	2.0	2	09/05/17 11:36	08/31/17	
Lead	6010C	71.2	mg/Kg	2.0	0.7	2	09/05/17 11:36	08/31/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-D07-081917  
**Lab Code:** K1708951-018

**Service Request:** K1708951  
**Date Collected:** 08/19/17 13:38  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>15.0</b>	mg/Kg	4.0	2.0	2	09/05/17 11:38	08/31/17	
Lead	6010C	<b>635</b>	mg/Kg	2.0	0.7	2	09/05/17 11:38	08/31/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-D08-081917  
**Lab Code:** K1708951-019

**Service Request:** K1708951  
**Date Collected:** 08/19/17 13:40  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>20.4</b>	mg/Kg	4.1	2.0	2	09/05/17 11:40	08/31/17	
Lead	6010C	<b>289</b>	mg/Kg	2.0	0.7	2	09/05/17 11:40	08/31/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-D09-081917  
**Lab Code:** K1708951-020

**Service Request:** K1708951  
**Date Collected:** 08/19/17 13:42  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>10.6</b>	mg/Kg	4.0	2.0	2	09/05/17 11:48	08/31/17	
Lead	6010C	<b>182</b>	mg/Kg	2.0	0.7	2	09/05/17 11:48	08/31/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** Method Blank  
**Lab Code:** KQ1712491-02

**Service Request:** K1708951  
**Date Collected:** NA  
**Date Received:** NA  
**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	ND U	mg/Kg	4	2.0	2	09/05/17 10:34	08/31/17	
Lead	6010C	ND U	mg/Kg	2	0.7	2	09/05/17 10:34	08/31/17	



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QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708951  
**Date Collected:** 08/19/17  
**Date Received:** 08/24/17  
**Date Analyzed:** 09/5/17  
**Date Extracted:** 08/31/17

**Duplicate Matrix Spike Summary  
Total Metals**

**Sample Name:** 258-2-C01-081917  
**Lab Code:** K1708951-001  
**Analysis Method:** 6010C  
**Prep Method:** EPA 3050B

**Units:** mg/Kg  
**Basis:** Dry

Analyte Name	Sample Result	Result	Matrix Spike KQ1712491-03		Duplicate Matrix Spike KQ1712491-04		% Rec Limits	RPD	RPD Limit	
			Spike Amount	% Rec	Result	Spike Amount				% Rec
Arsenic	10.4	104	100	94	107	103	93	75-125	3	30
Lead	294	392	100	98	397	103	100	75-125	1	30

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708951  
**Date Analyzed:** 09/05/17

**Lab Control Sample Summary**  
**Total Metals**

**Units:**mg/Kg  
**Basis:**Dry

**Lab Control Sample**  
KQ1712491-01

<b>Analyte Name</b>	<b>Analytical Method</b>	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>% Rec Limits</b>
Arsenic	6010C	486	500	97	80-120
Lead	6010C	507	500	101	80-120



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ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

September 08, 2017

**Analytical Report for Service Request No: K1708957**

Dave Enos  
Teck American Incorporated  
501 North Riverpoint Blvd., Suite 300  
Spokane, WA 99202

**RE: August 2017 Sampling SAT Study / B0095010.0005.00001**

Dear Dave,

Enclosed are the results of the sample(s) submitted to our laboratory August 24, 2017  
For your reference, these analyses have been assigned our service request number **K1708957**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at [www.alsglobal.com](http://www.alsglobal.com). All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at [Jeff.Coronado@alsglobal.com](mailto:Jeff.Coronado@alsglobal.com).

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**

Jeff Coronado  
Metals Department  
Manager



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ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

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## Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

### **Inorganic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

### **Metals Data Qualifiers**

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.  
  - i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Organic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Additional Petroleum Hydrocarbon Specific Qualifiers**

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

**ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso  
State Certifications, Accreditations, and Licenses**

<b>Agency</b>	<b>Web Site</b>	<b>Number</b>
Alaska DEH	<a href="http://dec.alaska.gov/eh/lab/cs/csapproval.htm">http://dec.alaska.gov/eh/lab/cs/csapproval.htm</a>	UST-040
Arizona DHS	<a href="http://www.azdhs.gov/lab/license/env.htm">http://www.azdhs.gov/lab/license/env.htm</a>	AZ0339
Arkansas - DEQ	<a href="http://www.adeq.state.ar.us/techsvs/labcert.htm">http://www.adeq.state.ar.us/techsvs/labcert.htm</a>	88-0637
California DHS (ELAP)	<a href="http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx">http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx</a>	2795
DOD ELAP	<a href="http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm">http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm</a>	L14-51
Florida DOH	<a href="http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm">http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm</a>	E87412
Hawaii DOH	<a href="http://health.hawaii.gov/">http://health.hawaii.gov/</a>	-
ISO 17025	<a href="http://www.pjllabs.com/">http://www.pjllabs.com/</a>	L16-57
Louisiana DEQ	<a href="http://www.deq.louisiana.gov/page/la-lab-accreditation">http://www.deq.louisiana.gov/page/la-lab-accreditation</a>	03016
Maine DHS	<a href="http://www.maine.gov/dhhs/">http://www.maine.gov/dhhs/</a>	WA01276
Minnesota DOH	<a href="http://www.health.state.mn.us/accreditation">http://www.health.state.mn.us/accreditation</a>	053-999-457
Nevada DEP	<a href="http://ndep.nv.gov/bsdw/labservice.htm">http://ndep.nv.gov/bsdw/labservice.htm</a>	WA01276
New Jersey DEP	<a href="http://www.nj.gov/dep/enforcement/oqa.html">http://www.nj.gov/dep/enforcement/oqa.html</a>	WA005
New York - DOH	<a href="https://www.wadsworth.org/regulatory/elap">https://www.wadsworth.org/regulatory/elap</a>	12060
North Carolina DEQ	<a href="https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification">https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification</a>	605
Oklahoma DEQ	<a href="http://www.deq.state.ok.us/CSDnew/labcert.htm">http://www.deq.state.ok.us/CSDnew/labcert.htm</a>	9801
Oregon – DEQ (NELAP)	<a href="http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx">http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx</a>	WA100010
South Carolina DHEC	<a href="http://www.scdhec.gov/environment/EnvironmentalLabCertification/">http://www.scdhec.gov/environment/EnvironmentalLabCertification/</a>	61002
Texas CEQ	<a href="http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html">http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html</a>	T104704427
Washington DOE	<a href="http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html">http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html</a>	C544
Wyoming (EPA Region 8)	<a href="https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water">https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water</a>	-
Kelso Laboratory Website	<a href="http://www.alsglobal.com">www.alsglobal.com</a>	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at [www.ALSGlobal.com](http://www.ALSGlobal.com) or at the accreditation bodies web site.  
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.



## Case Narrative

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)



**ALS ENVIRONMENTAL**

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/  
B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request No.:** K1708957  
**Date Received:** 08/24/17

**Case Narrative**

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

**Sample Receipt**

Twenty soil samples were received for analysis at ALS Environmental on 08/24/17. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

**Total Metals**

No anomalies associated with the analysis of these samples were observed.

Approved by  \_\_\_\_\_



## Chain of Custody

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

Date 8/20/17  
 PAGE 5 OF 15  
 SR# 1708557

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001  
 Project Contact: Kady Young Company: Arcadis  
 Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488  
 City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961  
 Sampler's Signature: \_\_\_\_\_

Number of Containers	Analysis Requested					REMARKS
	lead/arsenic 3050B/6010					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					

Sample I.D.	Date	Time	LAB ID	Matrix
<del>258-2 D01</del> <u>D01</u>	<del>08/19/17</del> <u>8/19/17</u>	<del>1324</del> <u>1324</u>		S
<del>D02</del>		<del>1326</del> <u>1326</u>		S
<del>D03</del>		<del>1329</del> <u>1329</u>		S
<del>D04</del>		<del>1330</del> <u>1330</u>		S
<del>D05</del>		<del>1333</del> <u>1333</u>		S
<del>D06</del>		<del>1337</del> <u>1337</u>		S
<del>D07</del>		<del>1338</del> <u>1338</u>		S
<del>D08</del>		<del>1340</del> <u>1340</u>		S
<del>D09</del>		<del>1342</del> <u>1342</u>		S
<del>D10</del>		<del>1345</del> <u>1345</u>		S

**TURNAROUND REQUIREMENTS**  
 24 hr  48 hr  5 day  
 Standard (10 days)  
 Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes raw data)  
 IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99201

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Watson Metsutan  
 Firm: Arcadis  
 Date/Time: 8/21/17 1300

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: Sidaris  
 Firm: ALS-KELSO  
 Date/Time: 8/24/17 1030

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001

Project Contact: Kady Young Company: Arcadis

Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488

City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961

Sampler's Signature: \_\_\_\_\_

Number of Containers	Analysis Requested					REMARKS
	lead/arsenic 3050B/6010					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					

Sample I.D.	Date	Time	LAB ID	Matrix
<u>258-2-D01-081917-D</u>	<u>8/19/17</u>	<u>13 24</u>		<u>S</u>
				<u>S</u>
				<u>S</u>
				<u>S</u>
				<u>S</u>
				<u>S</u>
				<u>S</u>
				<u>S</u>
				<u>S</u>
				<u>S</u>

**TURNAROUND REQUIREMENTS**  
 24 hr  48 hr  5 day  
 Standard (10 days)  
 Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes raw data)  
 IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
501 N Riverpoint Blvd, Suite 300 Spokane, WA 99201

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Watson Netsutran  
 Firm: Arcadis  
 Date/Time: 8/21/17 1300

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: Stewis  
 Firm: ALS-Kelso  
 Date/Time: 8/24/17 1030

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

Date 8/20/17  
 PAGE 7 OF 15  
 SR# 108957

Project Name: <u>Teck American - UCR SATES</u> Project Number: <u>B0095010.0005.00001</u> Project Contact: <u>Kady Young</u> Company: <u>Arcadis</u> Company/Address: <u>189 North Cedar Street</u> Phone: <u>307-203-3510</u> or <u>810-588-1488</u> City, State, Zip: <u>Buffalo, WY 82834</u> FAX: <u>307-684-5961</u> Sampler's Signature: _____	Number of Containers	Analysis Requested				
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Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	lead/arsenic 3050B/6010				REMARKS
<u>258-2-E01-081917</u>	<u>8/19/17</u>	<u>1408</u>		<u>S</u>	<u>1</u>	<u>X</u>				
<u>E02</u>		<u>1409</u>		<u>S</u>	<u>1</u>	<u>X</u>				
<u>E03</u>		<u>1411</u>		<u>S</u>	<u>1</u>	<u>X</u>				
<u>E04</u>		<u>1413</u>		<u>S</u>	<u>1</u>	<u>X</u>				
<u>E05</u>		<u>1414</u>		<u>S</u>	<u>1</u>	<u>X</u>				
<u>E06</u>		<u>1416</u>		<u>S</u>	<u>1</u>	<u>X</u>				
<u>E07</u>		<u>1417</u>		<u>S</u>	<u>1</u>	<u>X</u>				
<u>E08</u>		<u>1419</u>		<u>S</u>	<u>1</u>	<u>X</u>				
<u>E09</u>		<u>1420</u>		<u>S</u>	<u>1</u>	<u>X</u>				
<u>E10</u>		<u>1422</u>		<u>S</u>	<u>1</u>	<u>X</u>				

<b>TURNAROUND REQUIREMENTS</b> ___ 24 hr ___ 48 hr ___ 5 day <input checked="" type="checkbox"/> Standard (10 days) ___ Provide FAX Preliminary Results Requested Report Date: _____	<b>REPORT REQUIREMENTS</b> I. Routine Report: Results, Method Blank, Surrogate, as required <input checked="" type="checkbox"/> II. Report Dup., MS, MSD as required ___ III. Data Validation Report (includes raw data) ___ IV. CLP Deliverable Report <input checked="" type="checkbox"/> V. EDD	<b>Comments/Special Instructions:</b> Hold Remainder
<b>Invoice Information</b> P.O. # <u>UCR-ALS-D34-17</u> Bill to: <u>Cristy Kessel - Teck American</u> 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99204		

<b>RELINQUISHED BY:</b> Signature: <u>Watson</u> Printed Name: <u>Watson Metsutnan</u> Firm: <u>Arcadis</u> Date/Time: <u>8/21/17 1300</u>	<b>RECEIVED BY:</b> Signature: <u>SDavis</u> Printed Name: <u>SDavis</u> Firm: <u>ALS-Kelso</u> Date/Time: <u>8/24/17 1030</u>	<b>RELINQUISHED BY:</b> Signature: _____ Printed Name: _____ Firm: _____ Date/Time: _____	<b>RECEIVED BY:</b> Signature: _____ Printed Name: _____ Firm: _____ Date/Time: _____
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Jeff  
PCCovered10

### Cooler Receipt and Preservation Form

Client TELL AMERICAN Service Request K1708945 K1708957  
Received: AUG 24 17 Opened: 8/24 By: CA Unloaded: 8/24 By: CA

Samples were received via?  USPS  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  
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
20.7	20.7	19.7	19.7	0.0	374	NA	787472169213		

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

Were samples received in good condition (temperature, unbroken)? *Indicate in the table below.* NA  Y  N

If applicable, tissue samples were received: **Frozen** **Partially Thawed** **Thawed**

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
ALL		✓								

Discrepancies, & Resolutions: ALL samples were out of temp.



# Total Solids

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1708957  
**Date Collected:** 08/19/17  
**Date Received:** 08/24/17  
**Units:** Percent  
**Basis:** As Received

**Solids, Total**

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
258-2-D10-081917	K1708957-001	96.7	-	-	1	08/28/17 19:08	
258-2-D01-081917-D	K1708957-002	95.1	-	-	1	08/28/17 19:08	
258-2-E01-081917	K1708957-003	98.1	-	-	1	08/28/17 19:08	
258-2-E02-081917	K1708957-004	98.2	-	-	1	08/28/17 19:08	
258-2-E03-081917	K1708957-005	98.7	-	-	1	08/28/17 19:08	
258-2-E04-081917	K1708957-006	98.2	-	-	1	08/28/17 19:08	
258-2-E05-081917	K1708957-007	98.8	-	-	1	08/28/17 19:08	
258-2-E06-081917	K1708957-008	95.9	-	-	1	08/28/17 19:08	
258-2-E07-081917	K1708957-009	97.3	-	-	1	08/28/17 19:08	
258-2-E08-081917	K1708957-010	98.0	-	-	1	08/28/17 19:08	
258-2-E09-081917	K1708957-011	98.5	-	-	1	08/28/17 19:08	
258-2-E10-081917	K1708957-012	97.0	-	-	1	08/28/17 19:08	



ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1708957  
**Date Collected:** 08/19/17  
**Date Received:** 08/24/17

**Units:** Percent  
**Basis:** As Received

Replicate Sample Summary  
Inorganic Parameters

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
258-2-D10-081917	K1708957-001DUP	-	96.7	97.3	97.0	<1	20	08/28/17
258-2-E09-081917	K1708957-011DUP	-	98.5	98.1	98.3	<1	20	08/28/17

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



# Metals

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-D10-081917  
**Lab Code:** K1708957-001

**Service Request:** K1708957  
**Date Collected:** 08/19/17 13:45  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>11.7</b>	mg/Kg	4.0	2.0	2	09/05/17 11:55	08/31/17	
Lead	6010C	<b>229</b>	mg/Kg	2.0	0.7	2	09/05/17 11:55	08/31/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-D01-081917-D  
**Lab Code:** K1708957-002

**Service Request:** K1708957  
**Date Collected:** 08/19/17 13:24  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>11.2</b>	mg/Kg	4.0	2.0	2	09/05/17 12:05	08/31/17	
Lead	6010C	<b>303</b>	mg/Kg	2.0	0.7	2	09/05/17 12:05	08/31/17	

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-E01-081917  
**Lab Code:** K1708957-003

**Service Request:** K1708957  
**Date Collected:** 08/19/17 14:08  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>7.8</b>	mg/Kg	3.8	1.9	2	09/05/17 12:07	08/31/17	
Lead	6010C	<b>161</b>	mg/Kg	1.9	0.7	2	09/05/17 12:07	08/31/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-E02-081917  
**Lab Code:** K1708957-004

**Service Request:** K1708957  
**Date Collected:** 08/19/17 14:09  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>8.2</b>	mg/Kg	3.8	1.9	2	09/05/17 12:16	08/31/17	
Lead	6010C	<b>170</b>	mg/Kg	1.9	0.7	2	09/05/17 12:16	08/31/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-E03-081917  
**Lab Code:** K1708957-005

**Service Request:** K1708957  
**Date Collected:** 08/19/17 14:11  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>9.9</b>	mg/Kg	3.8	1.9	2	09/05/17 12:18	08/31/17	
Lead	6010C	<b>161</b>	mg/Kg	1.9	0.7	2	09/05/17 12:18	08/31/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-E04-081917  
**Lab Code:** K1708957-006

**Service Request:** K1708957  
**Date Collected:** 08/19/17 14:13  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6010C	10.3	mg/Kg	3.9	1.9	2	09/05/17 12:20	08/31/17	
Lead	6010C	183	mg/Kg	1.9	0.7	2	09/05/17 12:20	08/31/17	



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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-E05-081917  
**Lab Code:** K1708957-007

**Service Request:** K1708957  
**Date Collected:** 08/19/17 14:14  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>7.5</b>	mg/Kg	3.7	1.9	2	09/05/17 12:22	08/31/17	
Lead	6010C	<b>110</b>	mg/Kg	1.9	0.7	2	09/05/17 12:22	08/31/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-E06-081917  
**Lab Code:** K1708957-008

**Service Request:** K1708957  
**Date Collected:** 08/19/17 14:16  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>11.0</b>	mg/Kg	4.0	2.0	2	09/05/17 12:24	08/31/17	
Lead	6010C	<b>289</b>	mg/Kg	2.0	0.7	2	09/05/17 12:24	08/31/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-E07-081917  
**Lab Code:** K1708957-009

**Service Request:** K1708957  
**Date Collected:** 08/19/17 14:17  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>14.3</b>	mg/Kg	4.0	2.0	2	09/05/17 12:26	08/31/17	
Lead	6010C	<b>304</b>	mg/Kg	2.0	0.7	2	09/05/17 12:26	08/31/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-E08-081917  
**Lab Code:** K1708957-010

**Service Request:** K1708957  
**Date Collected:** 08/19/17 14:19  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>11.4</b>	mg/Kg	4.0	2.0	2	09/05/17 12:28	08/31/17	
Lead	6010C	<b>183</b>	mg/Kg	2.0	0.7	2	09/05/17 12:28	08/31/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-E09-081917  
**Lab Code:** K1708957-011

**Service Request:** K1708957  
**Date Collected:** 08/19/17 14:20  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	9.5	mg/Kg	3.8	1.9	2	09/05/17 12:31	08/31/17	
Lead	6010C	262	mg/Kg	1.9	0.7	2	09/05/17 12:31	08/31/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-2-E10-081917  
**Lab Code:** K1708957-012

**Service Request:** K1708957  
**Date Collected:** 08/19/17 14:22  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>8.0</b>	mg/Kg	4.0	2.0	2	09/05/17 12:33	08/31/17	
Lead	6010C	<b>307</b>	mg/Kg	2.0	0.7	2	09/05/17 12:33	08/31/17	

ALS Group USA, Corp.  
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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** Method Blank  
**Lab Code:** KQ1712493-02

**Service Request:** K1708957  
**Date Collected:** NA  
**Date Received:** NA  
**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	ND U	mg/Kg	4	2.0	2	09/05/17 11:50	08/31/17	
Lead	6010C	ND U	mg/Kg	2	0.7	2	09/05/17 11:50	08/31/17	

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QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708957  
**Date Collected:** 08/19/17  
**Date Received:** 08/24/17  
**Date Analyzed:** 09/5/17  
**Date Extracted:** 08/31/17

**Duplicate Matrix Spike Summary  
Total Metals**

**Sample Name:** 258-2-D10-081917  
**Lab Code:** K1708957-001  
**Analysis Method:** 6010C  
**Prep Method:** EPA 3050B

**Units:** mg/Kg  
**Basis:** Dry

Analyte Name	Sample Result	Result	Matrix Spike KQ1712493-03		Duplicate Matrix Spike KQ1712493-04		% Rec Limits	RPD	RPD Limit	
			Spike Amount	% Rec	Result	Spike Amount				% Rec
Arsenic	11.7	107	98.4	97	109	100	96	75-125	2	30
Lead	229	325	98.4	98	328	100	99	75-125	<1	30

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708957  
**Date Analyzed:** 09/05/17

**Lab Control Sample Summary**  
**Total Metals**

**Units:**mg/Kg  
**Basis:**Dry

**Lab Control Sample**  
KQ1712493-01

<b>Analyte Name</b>	<b>Analytical Method</b>	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>% Rec Limits</b>
Arsenic	6010C	490	500	98	80-120
Lead	6010C	510	500	102	80-120



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ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

September 08, 2017

**Analytical Report for Service Request No: K1708960**

Dave Enos  
Teck American Incorporated  
501 North Riverpoint Blvd., Suite 300  
Spokane, WA 99202

**RE: August 2017 Sampling SAT Study / B0095010.0005.00001**

Dear Dave,

Enclosed are the results of the sample(s) submitted to our laboratory August 24, 2017  
For your reference, these analyses have been assigned our service request number **K1708960**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at [www.alsglobal.com](http://www.alsglobal.com). All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at [Jeff.Coronado@alsglobal.com](mailto:Jeff.Coronado@alsglobal.com).

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**

Jeff Coronado  
Metals Department  
Manager



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ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

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## Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

### **Inorganic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

### **Metals Data Qualifiers**

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.  
  - i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Organic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Additional Petroleum Hydrocarbon Specific Qualifiers**

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

**ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso  
State Certifications, Accreditations, and Licenses**

<b>Agency</b>	<b>Web Site</b>	<b>Number</b>
Alaska DEH	<a href="http://dec.alaska.gov/eh/lab/cs/csapproval.htm">http://dec.alaska.gov/eh/lab/cs/csapproval.htm</a>	UST-040
Arizona DHS	<a href="http://www.azdhs.gov/lab/license/env.htm">http://www.azdhs.gov/lab/license/env.htm</a>	AZ0339
Arkansas - DEQ	<a href="http://www.adeq.state.ar.us/techsvs/labcert.htm">http://www.adeq.state.ar.us/techsvs/labcert.htm</a>	88-0637
California DHS (ELAP)	<a href="http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx">http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx</a>	2795
DOD ELAP	<a href="http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm">http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm</a>	L14-51
Florida DOH	<a href="http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm">http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm</a>	E87412
Hawaii DOH	<a href="http://health.hawaii.gov/">http://health.hawaii.gov/</a>	-
ISO 17025	<a href="http://www.pjllabs.com/">http://www.pjllabs.com/</a>	L16-57
Louisiana DEQ	<a href="http://www.deq.louisiana.gov/page/la-lab-accreditation">http://www.deq.louisiana.gov/page/la-lab-accreditation</a>	03016
Maine DHS	<a href="http://www.maine.gov/dhhs/">http://www.maine.gov/dhhs/</a>	WA01276
Minnesota DOH	<a href="http://www.health.state.mn.us/accreditation">http://www.health.state.mn.us/accreditation</a>	053-999-457
Nevada DEP	<a href="http://ndep.nv.gov/bsdw/labservice.htm">http://ndep.nv.gov/bsdw/labservice.htm</a>	WA01276
New Jersey DEP	<a href="http://www.nj.gov/dep/enforcement/oqa.html">http://www.nj.gov/dep/enforcement/oqa.html</a>	WA005
New York - DOH	<a href="https://www.wadsworth.org/regulatory/elap">https://www.wadsworth.org/regulatory/elap</a>	12060
North Carolina DEQ	<a href="https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification">https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification</a>	605
Oklahoma DEQ	<a href="http://www.deq.state.ok.us/CSDnew/labcert.htm">http://www.deq.state.ok.us/CSDnew/labcert.htm</a>	9801
Oregon – DEQ (NELAP)	<a href="http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx">http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx</a>	WA100010
South Carolina DHEC	<a href="http://www.scdhec.gov/environment/EnvironmentalLabCertification/">http://www.scdhec.gov/environment/EnvironmentalLabCertification/</a>	61002
Texas CEQ	<a href="http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html">http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html</a>	T104704427
Washington DOE	<a href="http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html">http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html</a>	C544
Wyoming (EPA Region 8)	<a href="https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water">https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water</a>	-
Kelso Laboratory Website	<a href="http://www.alsglobal.com">www.alsglobal.com</a>	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at [www.ALSGlobal.com](http://www.ALSGlobal.com) or at the accreditation bodies web site.  
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.



## Case Narrative

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

**ALS ENVIRONMENTAL**

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/  
B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request No.:** K1708960  
**Date Received:** 08/24/17

**Case Narrative**

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

**Sample Receipt**

Twenty soil samples were received for analysis at ALS Environmental on 08/24/17. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

**Total Metals**

No anomalies associated with the analysis of these samples were observed.

Approved by  \_\_\_\_\_





## Chain of Custody

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

Date 8/23/17  
 PAGE 5 OF 15  
 SR# 17085100

Project Name: Teek American - UCR SATES Project Number: B0095010.0005.00001

Project Contact: Kady Young Company: Arcadis

Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488

City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961

Sampler's Signature: \_\_\_\_\_

Number of Containers	Analysis Requested					REMARKS
	lead/arsenic 3050B/6010					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					

Sample I.D.	Date	Time	LAB ID	Matrix
258-3-D01-082217	8/22/17	0922		S
D02		0924		S
D03		0926		S
D04		0928		S
D05		0927		S
D06		0931		S
D07		0932		S
D08		0935		S
D09		0938		S
D10		0935		S

**TURNAROUND REQUIREMENTS**  
 \_\_\_ 24 hr \_\_\_ 48 hr \_\_\_ 5 day  
 Standard (10 days)  
 \_\_\_ Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 \_\_\_ III. Data Validation Report (includes raw data)  
 \_\_\_ IV. CLP Deliverable Report  
 V. EDD

Comments/Special Instructions:  
 Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teek American  
501 N Riverpoint Blvd, Suite 300 Spokane, WA 99201

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Joe Lathen  
 Firm: ANA  
 Date/Time: 8/23/17 1300

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: SDavis  
 Firm: ALS Kelso  
 Date/Time: 8/24/17 1030

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**Project Name:** Teck American - UCR SATES **Project Number:** B0095010.0005.00001

**Project Contact:** Kady Young **Company:** Arcadis

**Company/Address:** 189 North Cedar Street **Phone:** 307-203-3510 or 810-588-1488

**City, State, Zip:** Buffalo, WY 82834 **FAX:** 307-684-5961

**Sampler's Signature:** \_\_\_\_\_

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	Analysis Requested					REMARKS
						lead/arsenic 3050B/6010					
<u>258-3-D09-082217-D</u>	<u>8/22/17</u>	<u>0938</u>		S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					

**TURNAROUND REQUIREMENTS**

24 hr  48 hr  5 day

Standard (10 days)

Provide FAX Preliminary Results

**Requested Report Date:** \_\_\_\_\_

**REPORT REQUIREMENTS**

I. Routine Report: Results, Method Blank, Surrogate, as required

II. Report Dup., MS, MSD as required

III. Data Validation Report (includes raw data)

IV. CLP Deliverable Report

V. EDD

**Comments/Special Instructions:**

Hold Remainder

**Invoice Information**

P.O. # UCR-ALS-D34-17

Bill to: Cristy Kessel - Teck American

501 N Riverpoint Blvd, Suite 300 Spokane, WA 99204

**RELINQUISHED BY:**

Signature: [Signature]

Printed Name: Be Lathan

Firm: ANA

Date/Time: 8/23/17 1300

**RECEIVED BY:**

Signature: [Signature]

Printed Name: Stewis

Firm: ALS Kelso

Date/Time: 8/24/17 1030

**RELINQUISHED BY:**

Signature: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Firm: \_\_\_\_\_

Date/Time: \_\_\_\_\_

**RECEIVED BY:**

Signature: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Firm: \_\_\_\_\_

Date/Time: \_\_\_\_\_

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

Date 8/23/17  
 PAGE 7 OF 15  
 SR# 1708560

Project Name: <u>Teck American - UCR SATES</u> Project Number: <u>B0095010.0005.00001</u> Project Contact: <u>Kady Young</u> Company: <u>Arcadis</u> Company/Address: <u>189 North Cedar Street</u> Phone: <u>307-203-3510</u> or <u>810-588-1488</u> City, State, Zip: <u>Buffalo, WY 82834</u> FAX: <u>307-684-5961</u> Sampler's Signature: _____					Analysis Requested								
					Number of Containers	lead/arsenic 3050B/6010							
Sample I.D.	Date	Time	LAB ID	Matrix			REMARKS						
258-3-E01-082217	8/22/17	0939		S			1	X					
E02		0941		S			1	X					
E03		0943		S			1	X					
E04		0945		S			1	X					
E05		0946		S			1	X					
E06		0948		S			1	X					
E07		0950		S			1	X					
E08		0951		S			1	X					
E09		0952		S			1	X					
<del>E10</del>		<del>0954</del>		<del>S</del>	<del>1</del>	<del>X</del>							
URNAROUND REQUIREMENTS <input type="checkbox"/> 24 hr <input type="checkbox"/> 48 hr <input type="checkbox"/> 5 day <input checked="" type="checkbox"/> Standard (10 days) <input type="checkbox"/> Provide FAX Preliminary Results requested Report Date: _____				REPORT REQUIREMENTS <input type="checkbox"/> I. Routine Report: Results, Method Blank, Surrogate, as required <input checked="" type="checkbox"/> II. Report Dup., MS, MSD as required <input type="checkbox"/> III. Data Validation Report (includes raw data) <input type="checkbox"/> IV. CLP Deliverable Report <input checked="" type="checkbox"/> V. EDD				Comments/Special Instructions: Hold Remainder					
Invoice Information I.O. # <u>UCR-ALS-D34-17</u> Bill to: <u>Cristy Kessel - Teck American</u> 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99201				RELINQUISHED BY: Signature: <u>[Signature]</u> Printed Name: <u>Joe Lathan</u> Firm: <u>ANA</u> Date/Time: <u>8/23/17 1500</u>				RECEIVED BY: Signature: _____ Printed Name: _____ Firm: _____ Date/Time: _____					
RELINQUISHED BY: Signature: <u>[Signature]</u> Printed Name: <u>STAVIS</u> Firm: <u>ALS Kelso</u> Date/Time: <u>8/24/17 1030</u>				RECEIVED BY: Signature: _____ Printed Name: _____ Firm: _____ Date/Time: _____									



PCCORDNAD10

### Cooler Receipt and Preservation Form

Client Tell American Service Request K1704560

Received: Aug 24, 17 Opened: 8:24 By: CD Unloaded: 8:24 By: SD

Samples were received via?  USPS  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-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
1.1	1.1	1.4	1.4	0.0	380	(NA)	874567385483		

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

Were samples received in good condition (temperature, unbroken)? *Indicate in the table below.* NA  Y  N

If applicable, tissue samples were received:  Frozen  Partially Thawed  Thawed

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

es, Discrepancies, & Resolutions: \_\_\_\_\_



# Total Solids

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1708960  
**Date Collected:** 08/22/17  
**Date Received:** 08/24/17  
**Units:** Percent  
**Basis:** As Received

**Solids, Total**

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
258-3-D01-082217	K1708960-001	96.3	-	-	1	08/30/17 16:33	
258-3-D02-082217	K1708960-002	98.3	-	-	1	08/30/17 16:33	
258-3-D03-082217	K1708960-003	98.4	-	-	1	08/30/17 16:33	
258-3-D04-082217	K1708960-004	98.3	-	-	1	08/30/17 16:33	
258-3-D05-082217	K1708960-005	98.3	-	-	1	08/30/17 16:33	
258-3-D06-082217	K1708960-006	98.4	-	-	1	08/30/17 16:33	
258-3-D07-082217	K1708960-007	98.3	-	-	1	08/30/17 16:33	
258-3-D08-082217	K1708960-008	98.8	-	-	1	08/30/17 16:33	
258-3-D09-082217	K1708960-009	99.1	-	-	1	08/30/17 16:33	
258-3-D10-082217	K1708960-010	99.3	-	-	1	08/30/17 16:33	
258-3-D09-082217-D	K1708960-011	99.2	-	-	1	08/30/17 16:33	
258-3-E01-082217	K1708960-012	98.2	-	-	1	08/30/17 16:33	
258-3-E02-082217	K1708960-013	97.5	-	-	1	08/30/17 16:33	
258-3-E03-082217	K1708960-014	97.7	-	-	1	08/30/17 16:33	
258-3-E04-082217	K1708960-015	97.2	-	-	1	08/30/17 16:33	
258-3-E05-082217	K1708960-016	98.2	-	-	1	08/30/17 16:33	
258-3-E06-082217	K1708960-017	97.5	-	-	1	08/30/17 16:33	
258-3-E07-082217	K1708960-018	98.8	-	-	1	08/30/17 16:33	
258-3-E08-082217	K1708960-019	98.7	-	-	1	08/30/17 16:33	
258-3-E09-082217	K1708960-020	99.1	-	-	1	08/30/17 16:33	

ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1708960  
**Date Collected:** 08/22/17  
**Date Received:** 08/24/17

**Units:** Percent  
**Basis:** As Received

**Replicate Sample Summary**  
**Inorganic Parameters**

<b>Sample Name:</b>	<b>Lab Code:</b>	<b>MRL</b>	<b>Sample Result</b>	<b>Duplicate Result</b>	<b>Average</b>	<b>RPD</b>	<b>RPD Limit</b>	<b>Date Analyzed</b>
258-3-D01-082217	K1708960-001DUP	-	96.3	96.4	96.4	<1	20	08/30/17
258-3-D09-082217-D	K1708960-011DUP	-	99.2	99.1	99.2	<1	20	08/30/17

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.





# Metals

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-D01-082217  
**Lab Code:** K1708960-001

**Service Request:** K1708960  
**Date Collected:** 08/22/17 09:22  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>18.2</b>	mg/Kg	4.1	2.1	2	09/05/17 12:45	08/31/17	
Lead	6010C	<b>297</b>	mg/Kg	2.1	0.7	2	09/05/17 12:45	08/31/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-D02-082217  
**Lab Code:** K1708960-002

**Service Request:** K1708960  
**Date Collected:** 08/22/17 09:24  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>5.3</b>	mg/Kg	3.9	2.0	2	09/05/17 12:56	08/31/17	
Lead	6010C	<b>54.6</b>	mg/Kg	2.0	0.7	2	09/05/17 12:56	08/31/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-D03-082217  
**Lab Code:** K1708960-003

**Service Request:** K1708960  
**Date Collected:** 08/22/17 09:26  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	4.2	mg/Kg	4.0	2.0	2	09/05/17 12:58	08/31/17	
Lead	6010C	26.2	mg/Kg	2.0	0.7	2	09/05/17 12:58	08/31/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-D04-082217  
**Lab Code:** K1708960-004

**Service Request:** K1708960  
**Date Collected:** 08/22/17 09:28  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>4.8</b>	mg/Kg	3.8	1.9	2	09/05/17 13:00	08/31/17	
Lead	6010C	<b>51.0</b>	mg/Kg	1.9	0.7	2	09/05/17 13:00	08/31/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-D05-082217  
**Lab Code:** K1708960-005

**Service Request:** K1708960  
**Date Collected:** 08/22/17 09:27  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>5.5</b>	mg/Kg	4.0	2.0	2	09/05/17 13:02	08/31/17	
Lead	6010C	<b>67.4</b>	mg/Kg	2.0	0.7	2	09/05/17 13:02	08/31/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-D06-082217  
**Lab Code:** K1708960-006

**Service Request:** K1708960  
**Date Collected:** 08/22/17 09:31  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>7.8</b>	mg/Kg	3.8	1.9	2	09/05/17 13:11	08/31/17	
Lead	6010C	<b>101</b>	mg/Kg	1.9	0.7	2	09/05/17 13:11	08/31/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-D07-082217  
**Lab Code:** K1708960-007

**Service Request:** K1708960  
**Date Collected:** 08/22/17 09:32  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>9.6</b>	mg/Kg	4.0	2.0	2	09/05/17 13:13	08/31/17	
Lead	6010C	<b>143</b>	mg/Kg	2.0	0.7	2	09/05/17 13:13	08/31/17	



ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-D08-082217  
**Lab Code:** K1708960-008

**Service Request:** K1708960  
**Date Collected:** 08/22/17 09:35  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>10.9</b>	mg/Kg	3.7	1.9	2	09/05/17 13:15	08/31/17	
Lead	6010C	<b>153</b>	mg/Kg	1.9	0.7	2	09/05/17 13:15	08/31/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-D09-082217  
**Lab Code:** K1708960-009

**Service Request:** K1708960  
**Date Collected:** 08/22/17 09:38  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>9.5</b>	mg/Kg	4.0	2.0	2	09/05/17 13:17	08/31/17	
Lead	6010C	<b>124</b>	mg/Kg	2.0	0.7	2	09/05/17 13:17	08/31/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-D10-082217  
**Lab Code:** K1708960-010

**Service Request:** K1708960  
**Date Collected:** 08/22/17 09:35  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>12.3</b>	mg/Kg	3.9	2.0	2	09/05/17 13:19	08/31/17	
Lead	6010C	<b>146</b>	mg/Kg	2.0	0.7	2	09/05/17 13:19	08/31/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-D09-082217-D  
**Lab Code:** K1708960-011

**Service Request:** K1708960  
**Date Collected:** 08/22/17 09:38  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>9.9</b>	mg/Kg	3.9	2.0	2	09/05/17 13:21	08/31/17	
Lead	6010C	<b>130</b>	mg/Kg	2.0	0.7	2	09/05/17 13:21	08/31/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-E01-082217  
**Lab Code:** K1708960-012

**Service Request:** K1708960  
**Date Collected:** 08/22/17 09:39  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>9.6</b>	mg/Kg	3.8	1.9	2	09/05/17 13:24	08/31/17	
Lead	6010C	<b>139</b>	mg/Kg	1.9	0.7	2	09/05/17 13:24	08/31/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-E02-082217  
**Lab Code:** K1708960-013

**Service Request:** K1708960  
**Date Collected:** 08/22/17 09:41  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>9.7</b>	mg/Kg	4.1	2.0	2	09/05/17 13:26	08/31/17	
Lead	6010C	<b>170</b>	mg/Kg	2.0	0.7	2	09/05/17 13:26	08/31/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-E03-082217  
**Lab Code:** K1708960-014

**Service Request:** K1708960  
**Date Collected:** 08/22/17 09:43  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>12.3</b>	mg/Kg	3.9	1.9	2	09/05/17 13:28	08/31/17	
Lead	6010C	<b>216</b>	mg/Kg	1.9	0.7	2	09/05/17 13:28	08/31/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-E04-082217  
**Lab Code:** K1708960-015

**Service Request:** K1708960  
**Date Collected:** 08/22/17 09:45  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>10.0</b>	mg/Kg	4.0	2.0	2	09/05/17 13:30	08/31/17	
Lead	6010C	<b>146</b>	mg/Kg	2.0	0.7	2	09/05/17 13:30	08/31/17	



ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-E05-082217  
**Lab Code:** K1708960-016

**Service Request:** K1708960  
**Date Collected:** 08/22/17 09:46  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>5.6</b>	mg/Kg	4.0	2.0	2	09/05/17 13:38	08/31/17	
Lead	6010C	<b>59.1</b>	mg/Kg	2.0	0.7	2	09/05/17 13:38	08/31/17	

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-E06-082217  
**Lab Code:** K1708960-017

**Service Request:** K1708960  
**Date Collected:** 08/22/17 09:48  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>13.3</b>	mg/Kg	4.1	2.0	2	09/05/17 13:41	08/31/17	
Lead	6010C	<b>156</b>	mg/Kg	2.0	0.7	2	09/05/17 13:41	08/31/17	

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-E07-082217  
**Lab Code:** K1708960-018

**Service Request:** K1708960  
**Date Collected:** 08/22/17 09:50  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>7.9</b>	mg/Kg	4.0	2.0	2	09/05/17 13:43	08/31/17	
Lead	6010C	<b>51.1</b>	mg/Kg	2.0	0.7	2	09/05/17 13:43	08/31/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-E08-082217  
**Lab Code:** K1708960-019

**Service Request:** K1708960  
**Date Collected:** 08/22/17 09:51  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	7.5	mg/Kg	3.9	1.9	2	09/05/17 13:45	08/31/17	
Lead	6010C	87.0	mg/Kg	1.9	0.7	2	09/05/17 13:45	08/31/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-E09-082217  
**Lab Code:** K1708960-020

**Service Request:** K1708960  
**Date Collected:** 08/22/17 09:52  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	7.6	mg/Kg	3.9	1.9	2	09/05/17 13:47	08/31/17	
Lead	6010C	87.3	mg/Kg	1.9	0.7	2	09/05/17 13:47	08/31/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** Method Blank  
**Lab Code:** KQ1712495-02

**Service Request:** K1708960  
**Date Collected:** NA  
**Date Received:** NA  
**Basis:** Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6010C	ND U	mg/Kg	4	2.0	2	09/05/17 12:35	08/31/17	
Lead	6010C	ND U	mg/Kg	2	0.7	2	09/05/17 12:35	08/31/17	

ALS Group USA, Corp.  
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QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708960  
**Date Collected:** 08/22/17  
**Date Received:** 08/24/17  
**Date Analyzed:** 09/5/17  
**Date Extracted:** 08/31/17

**Duplicate Matrix Spike Summary  
Total Metals**

**Sample Name:** 258-3-D01-082217  
**Lab Code:** K1708960-001  
**Analysis Method:** 6010C  
**Prep Method:** EPA 3050B

**Units:** mg/Kg  
**Basis:** Dry

Analyte Name	Sample Result	Result	Matrix Spike KQ1712495-03		Duplicate Matrix Spike KQ1712495-04		% Rec Limits	RPD	RPD Limit	
			Spike Amount	% Rec	Result	Spike Amount				% Rec
Arsenic	18.2	113	102	93	112	99.9	94	75-125	<1	30
Lead	297	381	102	82	376	99.9	79	75-125	1	30

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708960

**Date Analyzed:** 09/05/17

**Lab Control Sample Summary**  
**Total Metals**

**Units:**mg/Kg

**Basis:**Dry

**Lab Control Sample**  
KQ1712495-01

<b>Analyte Name</b>	<b>Analytical Method</b>	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>% Rec Limits</b>
Arsenic	6010C	489	500	98	80-120
Lead	6010C	516	500	103	80-120





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ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

September 08, 2017

**Analytical Report for Service Request No: K1708961**

Dave Enos  
Teck American Incorporated  
501 North Riverpoint Blvd., Suite 300  
Spokane, WA 99202

**RE: August 2017 Sampling SAT Study / B0095010.0005.00001**

Dear Dave,

Enclosed are the results of the sample(s) submitted to our laboratory August 24, 2017  
For your reference, these analyses have been assigned our service request number **K1708961**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at [www.alsglobal.com](http://www.alsglobal.com). All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at [Jeff.Coronado@alsglobal.com](mailto:Jeff.Coronado@alsglobal.com).

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**

Jeff Coronado  
Metals Department  
Manager



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ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

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## Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

### **Inorganic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

### **Metals Data Qualifiers**

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.  
  - i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Organic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Additional Petroleum Hydrocarbon Specific Qualifiers**

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

**ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso  
State Certifications, Accreditations, and Licenses**

<b>Agency</b>	<b>Web Site</b>	<b>Number</b>
Alaska DEH	<a href="http://dec.alaska.gov/eh/lab/cs/csapproval.htm">http://dec.alaska.gov/eh/lab/cs/csapproval.htm</a>	UST-040
Arizona DHS	<a href="http://www.azdhs.gov/lab/license/env.htm">http://www.azdhs.gov/lab/license/env.htm</a>	AZ0339
Arkansas - DEQ	<a href="http://www.adeq.state.ar.us/techsvs/labcert.htm">http://www.adeq.state.ar.us/techsvs/labcert.htm</a>	88-0637
California DHS (ELAP)	<a href="http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx">http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx</a>	2795
DOD ELAP	<a href="http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm">http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm</a>	L14-51
Florida DOH	<a href="http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm">http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm</a>	E87412
Hawaii DOH	<a href="http://health.hawaii.gov/">http://health.hawaii.gov/</a>	-
ISO 17025	<a href="http://www.pjllabs.com/">http://www.pjllabs.com/</a>	L16-57
Louisiana DEQ	<a href="http://www.deq.louisiana.gov/page/la-lab-accreditation">http://www.deq.louisiana.gov/page/la-lab-accreditation</a>	03016
Maine DHS	<a href="http://www.maine.gov/dhhs/">http://www.maine.gov/dhhs/</a>	WA01276
Minnesota DOH	<a href="http://www.health.state.mn.us/accreditation">http://www.health.state.mn.us/accreditation</a>	053-999-457
Nevada DEP	<a href="http://ndep.nv.gov/bsdw/labservice.htm">http://ndep.nv.gov/bsdw/labservice.htm</a>	WA01276
New Jersey DEP	<a href="http://www.nj.gov/dep/enforcement/oqa.html">http://www.nj.gov/dep/enforcement/oqa.html</a>	WA005
New York - DOH	<a href="https://www.wadsworth.org/regulatory/elap">https://www.wadsworth.org/regulatory/elap</a>	12060
North Carolina DEQ	<a href="https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification">https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification</a>	605
Oklahoma DEQ	<a href="http://www.deq.state.ok.us/CSDnew/labcert.htm">http://www.deq.state.ok.us/CSDnew/labcert.htm</a>	9801
Oregon – DEQ (NELAP)	<a href="http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx">http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx</a>	WA100010
South Carolina DHEC	<a href="http://www.scdhec.gov/environment/EnvironmentalLabCertification/">http://www.scdhec.gov/environment/EnvironmentalLabCertification/</a>	61002
Texas CEQ	<a href="http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html">http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html</a>	T104704427
Washington DOE	<a href="http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html">http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html</a>	C544
Wyoming (EPA Region 8)	<a href="https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water">https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water</a>	-
Kelso Laboratory Website	<a href="http://www.alsglobal.com">www.alsglobal.com</a>	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at [www.ALSGlobal.com](http://www.ALSGlobal.com) or at the accreditation bodies web site.  
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.



## Case Narrative

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

**ALS ENVIRONMENTAL**

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/  
B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request No.:** K1708961  
**Date Received:** 08/24/17

**Case Narrative**

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

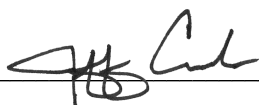
**Sample Receipt**

Twelve soil samples were received for analysis at ALS Environmental on 08/24/17. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

**Total Metals**

No anomalies associated with the analysis of these samples were observed.

Approved by \_\_\_\_\_

A handwritten signature in black ink, appearing to be 'JH Cook', is written over a horizontal line.



# Chain of Custody

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)



ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

Date 8/23/17  
 PAGE 7 OF 15  
 SR# 1708961

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001  
 Project Contact: Kady Young Company: Arcadis  
 Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488  
 City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961  
 Sampler's Signature: \_\_\_\_\_

Number of Containers	Analysis Requested					REMARKS
	lead/arsenic 3050B/6010					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					

Sample I.D.	Date	Time	LAB ID	Matrix
258-3-E01-082217	8/22/17	0939		S
E02		0941		S
E03		0943		S
E04		0945		S
E05		0946		S
E06		0948		S
E07		0950		S
E08		0951		S
E09		0952		S
E10		0954		S

**TURNAROUND REQUIREMENTS**  
 24 hr \_\_\_\_\_ 48 hr \_\_\_\_\_ 5 day \_\_\_\_\_  
 Standard (10 days)  
 Provide FAX Preliminary Results \_\_\_\_\_  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required \_\_\_\_\_  
 II. Report Dup., MS, MSD as required  \_\_\_\_\_  
 III. Data Validation Report (includes raw data) \_\_\_\_\_  
 IV. CLP Deliverable Report \_\_\_\_\_  
 V. EDD  \_\_\_\_\_

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99208

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Joe Lathan  
 Firm: ANA  
 Date/Time: 8/23/17 1500

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: SWIS  
 Firm: ALS Kelso  
 Date/Time: 8/24/17 1030

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

Date 8/23/17  
 PAGE 8 OF 15  
 SR# 17085601

**Project Name:** Teck American - UCR SATES **Project Number:** B0095010.0005.00001

**Project Contact:** Kady Young **Company:** Arcadis

**Company/Address:** 189 North Cedar Street **Phone:** 307-203-3510 or 810-588-1488

**City, State, Zip:** Buffalo, WY 82834 **FAX:** 307-684-5961

**Sampler's Signature:** \_\_\_\_\_

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	Analysis Requested					REMARKS
						lead	arsenic	3050B	6010		
258-3-F01-082217	8/22/17	1001		S	1	X					
F02		1004		S	1	X					
F03		1006		S	1	X					
F04		1008		S	1	X					
F05		1009		S	1	X					
F06		1011		S	1	X					
F07		1013		S	1	X					
F08		1017		S	1	X					
F09		1018		S	1	X					
F10		1022		S	1	X					

**TURNAROUND REQUIREMENTS**

24 hr  48 hr  5 day

Standard (10 days)

Provide FAX Preliminary Results

Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**

I. Routine Report: Results, Method Blank, Surrogate, as required

II. Report Dup., MS, MSD as required

III. Data Validation Report (includes raw data)

IV. CLP Deliverable Report

V. EDD

**Comments/Special Instructions:**

Hold Remainder

**Invoice Information**

P.O. # UCR-ALS-D34-17

Bill to: Cristy Kessel - Teck American

501 N Riverpoint Blvd, Suite 300 Spokane, WA 99205

**RELINQUISHED BY:**

Signature: [Signature]

Printed Name: Joe Lathan

Firm: ANA

Date/Time: 8/23/17 1300

**RECEIVED BY:**

Signature: [Signature]

Printed Name: S Davis

Firm: ALS-KELSO

Date/Time: 8/24/17 1030

**RELINQUISHED BY:**

Signature: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Firm: \_\_\_\_\_

Date/Time: \_\_\_\_\_

**RECEIVED BY:**

Signature: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Firm: \_\_\_\_\_

Date/Time: \_\_\_\_\_

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

Date 8/23/17  
 PAGE 9 OF 15  
 SR# 1708561

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001  
 Project Contact: Kady Young Company: Arcadis  
 Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488  
 City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961  
 Sampler's Signature: \_\_\_\_\_

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	Analysis Requested					REMARKS
						lead/arsenic 3050B/6010					
<u>258-3-FO1-082217-D</u>	<u>8/22/17</u>	<u>1001</u>		S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					

**TURNAROUND REQUIREMENTS**  
 24 hr  48 hr  5 day  
 Standard (10 days)  
 Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes raw data)  
 IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
501 N Riverpoint Blvd, Suite 300 Spokane, WA 99201

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Joe Lathan  
 Firm: ANA  
 Date/Time: 8/23/17 1300

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: SAVVIS  
 Firm: ALS-KELSO  
 Date/Time: 8/24/17 1030

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_



PC/Oronaco

### Cooler Receipt and Preservation Form

Client TOLL AMERICA Service Request K1708961  
 Received: AUG 24 17 Opened: 8124 By: SD Unloaded: 8124 By: SD

Samples were received via?  USPS  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-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
1.1	1.1	1.4	1.4	0.0	380	NA	874567385183		

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  
 Were samples received in good condition (temperature, unbroken)? *Indicate in the table below.*  NA  Y  N  
 If applicable, tissue samples were received:  Frozen  Partially Thawed  Thawed  
 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: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



# Total Solids

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1708961  
**Date Collected:** 08/22/17  
**Date Received:** 08/24/17  
**Units:** Percent  
**Basis:** As Received

**Solids, Total**

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
258-3-E10-082217	K1708961-001	<b>99.1</b>	-	-	1	08/30/17 16:33	
258-3-F01-082217	K1708961-002	<b>98.0</b>	-	-	1	08/30/17 16:33	
258-3-F02-082217	K1708961-003	<b>97.2</b>	-	-	1	08/30/17 16:33	
258-3-F03-082217	K1708961-004	<b>97.3</b>	-	-	1	08/30/17 16:33	
258-3-F04-082217	K1708961-005	<b>98.0</b>	-	-	1	08/30/17 16:33	
258-3-F05-082217	K1708961-006	<b>98.3</b>	-	-	1	08/30/17 16:33	
258-3-F06-082217	K1708961-007	<b>97.5</b>	-	-	1	08/30/17 16:33	
258-3-F07-082217	K1708961-008	<b>98.2</b>	-	-	1	08/30/17 16:33	
258-3-F08-082217	K1708961-009	<b>99.1</b>	-	-	1	08/30/17 16:33	
258-3-F09-082217	K1708961-010	<b>98.8</b>	-	-	1	08/30/17 16:33	
258-3-F10-082217	K1708961-011	<b>99.1</b>	-	-	1	08/30/17 16:33	
258-3-F01-082217-D	K1708961-012	<b>97.8</b>	-	-	1	08/30/17 16:33	

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:**K1708961  
**Date Collected:**08/22/17  
**Date Received:**08/24/17

**Units:**Percent  
**Basis:**As Received

Replicate Sample Summary

Inorganic Parameters

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
258-3-E10-082217	K1708961-001DUP	-	99.1	99.1	99.1	<1	20	08/30/17
258-3-F10-082217	K1708961-011DUP	-	99.1	99.1	99.1	<1	20	08/30/17

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



# Metals

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)



ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-E10-082217  
**Lab Code:** K1708961-001

**Service Request:** K1708961  
**Date Collected:** 08/22/17 09:54  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>12.1</b>	mg/Kg	3.9	0.8	2	09/06/17 13:36	09/01/17	
Lead	6010C	<b>130</b>	mg/Kg	2.0	0.4	2	09/06/17 13:36	09/01/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-F01-082217  
**Lab Code:** K1708961-002

**Service Request:** K1708961  
**Date Collected:** 08/22/17 10:01  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>10.0</b>	mg/Kg	4.0	0.8	2	09/06/17 13:47	09/01/17	
Lead	6010C	<b>112</b>	mg/Kg	2.0	0.4	2	09/06/17 13:47	09/01/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-F02-082217  
**Lab Code:** K1708961-003

**Service Request:** K1708961  
**Date Collected:** 08/22/17 10:04  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>10.9</b>	mg/Kg	4.0	0.8	2	09/06/17 13:49	09/01/17	
Lead	6010C	<b>178</b>	mg/Kg	2.0	0.4	2	09/06/17 13:49	09/01/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-F03-082217  
**Lab Code:** K1708961-004

**Service Request:** K1708961  
**Date Collected:** 08/22/17 10:06  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>10.4</b>	mg/Kg	4.1	0.8	2	09/06/17 13:51	09/01/17	
Lead	6010C	<b>142</b>	mg/Kg	2.0	0.4	2	09/06/17 13:51	09/01/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-F04-082217  
**Lab Code:** K1708961-005

**Service Request:** K1708961  
**Date Collected:** 08/22/17 10:08  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>14.3</b>	mg/Kg	4.0	0.8	2	09/06/17 14:00	09/01/17	
Lead	6010C	<b>226</b>	mg/Kg	2.0	0.4	2	09/06/17 14:00	09/01/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-F05-082217  
**Lab Code:** K1708961-006

**Service Request:** K1708961  
**Date Collected:** 08/22/17 10:09  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>11.0</b>	mg/Kg	3.8	0.8	2	09/06/17 14:02	09/01/17	
Lead	6010C	<b>114</b>	mg/Kg	1.9	0.4	2	09/06/17 14:02	09/01/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-F06-082217  
**Lab Code:** K1708961-007

**Service Request:** K1708961  
**Date Collected:** 08/22/17 10:11  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>15.9</b>	mg/Kg	3.8	0.8	2	09/06/17 14:04	09/01/17	
Lead	6010C	<b>206</b>	mg/Kg	1.9	0.4	2	09/06/17 14:04	09/01/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-F07-082217  
**Lab Code:** K1708961-008

**Service Request:** K1708961  
**Date Collected:** 08/22/17 10:13  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	14.5	mg/Kg	3.9	0.8	2	09/06/17 14:07	09/01/17	
Lead	6010C	137	mg/Kg	1.9	0.4	2	09/06/17 14:07	09/01/17	



ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-F08-082217  
**Lab Code:** K1708961-009

**Service Request:** K1708961  
**Date Collected:** 08/22/17 10:17  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	14.2	mg/Kg	3.8	0.8	2	09/06/17 14:09	09/01/17	
Lead	6010C	121	mg/Kg	1.9	0.4	2	09/06/17 14:09	09/01/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-F09-082217  
**Lab Code:** K1708961-010

**Service Request:** K1708961  
**Date Collected:** 08/22/17 10:18  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>16.7</b>	mg/Kg	3.9	0.8	2	09/06/17 14:11	09/01/17	
Lead	6010C	<b>224</b>	mg/Kg	1.9	0.4	2	09/06/17 14:11	09/01/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-F10-082217  
**Lab Code:** K1708961-011

**Service Request:** K1708961  
**Date Collected:** 08/22/17 10:22  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>10.7</b>	mg/Kg	3.9	0.8	2	09/06/17 14:13	09/01/17	
Lead	6010C	<b>216</b>	mg/Kg	1.9	0.4	2	09/06/17 14:13	09/01/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-F01-082217-D  
**Lab Code:** K1708961-012

**Service Request:** K1708961  
**Date Collected:** 08/22/17 10:01  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>10.3</b>	mg/Kg	4.0	0.8	2	09/06/17 14:15	09/01/17	
Lead	6010C	<b>116</b>	mg/Kg	2.0	0.4	2	09/06/17 14:15	09/01/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** Method Blank  
**Lab Code:** KQ1712514-02

**Service Request:** K1708961  
**Date Collected:** NA  
**Date Received:** NA  
**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	ND U	mg/Kg	4	0.8	2	09/06/17 13:32	09/01/17	
Lead	6010C	ND U	mg/Kg	2	0.4	2	09/06/17 13:32	09/01/17	

ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708961  
**Date Collected:** 08/22/17  
**Date Received:** 08/24/17  
**Date Analyzed:** 09/6/17  
**Date Extracted:** 09/1/17

**Duplicate Matrix Spike Summary  
Total Metals**

**Sample Name:** 258-3-E10-082217  
**Lab Code:** K1708961-001  
**Analysis Method:** 6010C  
**Prep Method:** EPA 3050B

**Units:** mg/Kg  
**Basis:** Dry

Analyte Name	Sample Result	Result	Matrix Spike KQ1712514-03		Duplicate Matrix Spike KQ1712514-04		% Rec Limits	RPD	RPD Limit	
			Spike Amount	% Rec	Result	Spike Amount				% Rec
Arsenic	12.1	106	101	93	106	98.9	95	75-125	<1	30
Lead	130	214	101	83	214	98.9	85	75-125	<1	30

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

**ALS Group USA, Corp.**

dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708961

**Date Analyzed:** 09/06/17

**Lab Control Sample Summary**

**Total Metals**

**Units:**mg/Kg

**Basis:**Dry

**Lab Control Sample**

KQ1712514-01

<b>Analyte Name</b>	<b>Analytical Method</b>	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>% Rec Limits</b>
Arsenic	6010C	504	500	101	80-120
Lead	6010C	493	500	99	80-120



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ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

September 08, 2017

**Analytical Report for Service Request No: K1708964**

Dave Enos  
Teck American Incorporated  
501 North Riverpoint Blvd., Suite 300  
Spokane, WA 99202

**RE: August 2017 Sampling SAT Study / B0095010.0005.00001**

Dear Dave,

Enclosed are the results of the sample(s) submitted to our laboratory August 24, 2017  
For your reference, these analyses have been assigned our service request number **K1708964**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at [www.alsglobal.com](http://www.alsglobal.com). All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at [Jeff.Coronado@alsglobal.com](mailto:Jeff.Coronado@alsglobal.com).

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**

Jeff Coronado  
Metals Department  
Manager





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ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

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## Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

### **Inorganic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

### **Metals Data Qualifiers**

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.  
  - i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Organic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Additional Petroleum Hydrocarbon Specific Qualifiers**

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

**ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso  
State Certifications, Accreditations, and Licenses**

<b>Agency</b>	<b>Web Site</b>	<b>Number</b>
Alaska DEH	<a href="http://dec.alaska.gov/eh/lab/cs/csapproval.htm">http://dec.alaska.gov/eh/lab/cs/csapproval.htm</a>	UST-040
Arizona DHS	<a href="http://www.azdhs.gov/lab/license/env.htm">http://www.azdhs.gov/lab/license/env.htm</a>	AZ0339
Arkansas - DEQ	<a href="http://www.adeq.state.ar.us/techsvs/labcert.htm">http://www.adeq.state.ar.us/techsvs/labcert.htm</a>	88-0637
California DHS (ELAP)	<a href="http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx">http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx</a>	2795
DOD ELAP	<a href="http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm">http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm</a>	L14-51
Florida DOH	<a href="http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm">http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm</a>	E87412
Hawaii DOH	<a href="http://health.hawaii.gov/">http://health.hawaii.gov/</a>	-
ISO 17025	<a href="http://www.pjllabs.com/">http://www.pjllabs.com/</a>	L16-57
Louisiana DEQ	<a href="http://www.deq.louisiana.gov/page/la-lab-accreditation">http://www.deq.louisiana.gov/page/la-lab-accreditation</a>	03016
Maine DHS	<a href="http://www.maine.gov/dhhs/">http://www.maine.gov/dhhs/</a>	WA01276
Minnesota DOH	<a href="http://www.health.state.mn.us/accreditation">http://www.health.state.mn.us/accreditation</a>	053-999-457
Nevada DEP	<a href="http://ndep.nv.gov/bsdw/labservice.htm">http://ndep.nv.gov/bsdw/labservice.htm</a>	WA01276
New Jersey DEP	<a href="http://www.nj.gov/dep/enforcement/oqa.html">http://www.nj.gov/dep/enforcement/oqa.html</a>	WA005
New York - DOH	<a href="https://www.wadsworth.org/regulatory/elap">https://www.wadsworth.org/regulatory/elap</a>	12060
North Carolina DEQ	<a href="https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification">https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification</a>	605
Oklahoma DEQ	<a href="http://www.deq.state.ok.us/CSDnew/labcert.htm">http://www.deq.state.ok.us/CSDnew/labcert.htm</a>	9801
Oregon – DEQ (NELAP)	<a href="http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx">http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx</a>	WA100010
South Carolina DHEC	<a href="http://www.scdhec.gov/environment/EnvironmentalLabCertification/">http://www.scdhec.gov/environment/EnvironmentalLabCertification/</a>	61002
Texas CEQ	<a href="http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html">http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html</a>	T104704427
Washington DOE	<a href="http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html">http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html</a>	C544
Wyoming (EPA Region 8)	<a href="https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water">https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water</a>	-
Kelso Laboratory Website	<a href="http://www.alsglobal.com">www.alsglobal.com</a>	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at [www.ALSGlobal.com](http://www.ALSGlobal.com) or at the accreditation bodies web site.  
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.



## Case Narrative

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

**ALS ENVIRONMENTAL**

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/  
B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request No.:** K1708964  
**Date Received:** 08/24/17

**Case Narrative**

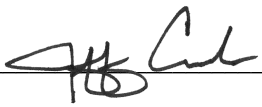
All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

**Sample Receipt**

Twenty soil samples were received for analysis at ALS Environmental on 08/24/17. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

**Total Metals**

No anomalies associated with the analysis of these samples were observed.

Approved by  \_\_\_\_\_



## Chain of Custody

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

Date 8/23/17  
 PAGE 5 OF 15  
 SR# 17085604

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001  
 Project Contact: Kady Young Company: Arcadis  
 Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488  
 City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961  
 Sampler's Signature: \_\_\_\_\_

Number of Containers	Analysis Requested					REMARKS
	lead/arsenic 3050B/6010					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					

Sample I.D.	Date	Time	LAB ID	Matrix
258-1-D01-082117	8/21/17	1248		S
D02		1250		S
D03		1252		S
D04		1254		S
D05		1256		S
D06		1258		S
D07		1300		S
D08		1302		S
D09		1304		S
D10		1306		S

**TURNAROUND REQUIREMENTS**  
 \_\_\_ 24 hr \_\_\_ 48 hr \_\_\_ 5 day  
 Standard (10 days)  
 \_\_\_ Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes raw data)  
 IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99201

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Joe Lathan  
 Firm: Arcadis  
 Date/Time: 8/23/17 1300

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: SIXWIS  
 Firm: ALS KELSO  
 Date/Time: 8/24/17 1030

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_



ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

Date 8/23/17  
 PAGE 6 OF 15  
 SR# 17085604

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001  
 Project Contact: Kadv Young Company: Arcadis  
 Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488  
 City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961  
 Sampler's Signature: \_\_\_\_\_

Number of Containers	Analysis Requested					REMARKS
	lead/arsenic 3050B/6010					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					

Sample I.D.	Date	Time	LAB ID	Matrix
<u>258-1-D05-082117</u>	<u>8/21/17</u>	<u>1256</u>		S
				S
				S
				S
				S
				S
				S
				S
				S
				S

**TURNAROUND REQUIREMENTS**  
 \_\_\_ 24 hr \_\_\_ 48 hr \_\_\_ 5 day  
 Standard (10 days)  
 \_\_\_ Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 \_\_\_ I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 \_\_\_ III. Data Validation Report (includes raw data)  
 \_\_\_ IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99208

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Joe Lathan  
 Firm: Arcadis  
 Date/Time: 8/23/17 1300

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: SIDAVIS  
 Firm: ALS-KELSO  
 Date/Time: 8/24/17 1030

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

Date 8/23/17  
 PAGE 7 OF 15  
 SR# 17089104

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001

Project Contact: Kady Young Company: Arcadis

Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488

City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961

Sampler's Signature: \_\_\_\_\_

Number of Containers	Analysis Requested					REMARKS
	lead/arsenic 3050B/6010					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					

Sample I.D.	Date	Time	LAB ID	Matrix
<u>258-1-E01-082117</u>	<u>8/21/17</u>			<u>S</u>
<u>E02</u>				<u>S</u>
<u>E03</u>				<u>S</u>
<u>E04</u>				<u>S</u>
<u>E05</u>				<u>S</u>
<u>E06</u>				<u>S</u>
<u>E07</u>				<u>S</u>
<u>E08</u>				<u>S</u>
<u>E09</u>				<u>S</u>
<u>E10</u>				<u>S</u>

**TURNAROUND REQUIREMENTS**  
 24 hr  48 hr  5 day  
 Standard (10 days)  
 Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes raw data)  
 IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
501 N Riverpoint Blvd, Suite 300 Spokane, WA 99205

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Joe Lathan  
 Firm: Arcadis  
 Date/Time: 8/23/17 1300

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: SIXEIS  
 Firm: ALS-KELSO  
 Date/Time: 8/24/17 1030

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_



PC0000010

### Cooler Receipt and Preservation Form

Client Tell American Service Request K17085104

Received: Aug. 24, 17 Opened: 8/24 By: SD Unloaded: 8/24 By: SD

Samples were received via? USPS  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 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
0.2	0.3	2.0	2.1	10.1	302	(NA)	810591105532		

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

Were samples received in good condition (temperature, unbroken)? Indicate in the table below. NA  Y  N

If applicable, tissue samples were received: Frozen Partially Thawed Thawed

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

es, Discrepancies, & Resolutions: \_\_\_\_\_



# Total Solids

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1708964  
**Date Collected:** 08/21/17  
**Date Received:** 08/24/17  
**Units:** Percent  
**Basis:** As Received

**Solids, Total**

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
258-1-D01-082117	K1708964-001	98.4	-	-	1	08/29/17 09:57	
258-1-D02-082117	K1708964-002	97.5	-	-	1	08/29/17 09:57	
258-1-D03-082117	K1708964-003	96.5	-	-	1	08/29/17 09:57	
258-1-D04-082117	K1708964-004	99.0	-	-	1	08/29/17 09:57	
258-1-D05-082117	K1708964-005	93.4	-	-	1	08/29/17 09:57	
258-1-D06-082117	K1708964-006	97.9	-	-	1	08/29/17 09:57	
258-1-D07-082117	K1708964-007	96.4	-	-	1	08/29/17 09:57	
258-1-D08-082117	K1708964-008	96.0	-	-	1	08/29/17 09:57	
258-1-D09-082117	K1708964-009	95.7	-	-	1	08/29/17 09:57	
258-1-D10-082117	K1708964-010	95.9	-	-	1	08/29/17 09:57	
258-1-D05-082117-D	K1708964-011	96.4	-	-	1	08/29/17 09:57	
258-1-E01-082117	K1708964-012	94.8	-	-	1	08/29/17 09:57	
258-1-E02-082117	K1708964-013	98.0	-	-	1	08/29/17 09:57	
258-1-E03-082117	K1708964-014	96.3	-	-	1	08/29/17 09:57	
258-1-E04-082117	K1708964-015	97.7	-	-	1	08/29/17 09:57	
258-1-E05-082117	K1708964-016	96.7	-	-	1	08/29/17 09:57	
258-1-E06-082117	K1708964-017	97.2	-	-	1	08/29/17 09:57	
258-1-E07-082117	K1708964-018	97.5	-	-	1	08/29/17 09:57	
258-1-E08-082117	K1708964-019	92.6	-	-	1	08/29/17 09:57	
258-1-E09-082117	K1708964-020	95.5	-	-	1	08/29/17 09:57	

ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1708964  
**Date Collected:** 08/21/17  
**Date Received:** 08/24/17

**Units:** Percent  
**Basis:** As Received

**Replicate Sample Summary**  
**Inorganic Parameters**

<b>Sample Name:</b>	<b>Lab Code:</b>	<b>MRL</b>	<b>Sample Result</b>	<b>Duplicate Result</b>	<b>Average</b>	<b>RPD</b>	<b>RPD Limit</b>	<b>Date Analyzed</b>
258-1-D01-082117	K1708964-001DUP	-	98.4	98.6	98.5	<1	20	08/29/17
258-1-D05-082117-D	K1708964-011DUP	-	96.4	95.6	96.0	<1	20	08/29/17

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



# Metals

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-D01-082117  
**Lab Code:** K1708964-001

**Service Request:** K1708964  
**Date Collected:** 08/21/17 12:48  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	4.1	mg/Kg	4.0	0.8	2	09/06/17 14:31	09/01/17	
Lead	6010C	33.5	mg/Kg	2.0	0.4	2	09/06/17 14:31	09/01/17	



ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-D02-082117  
**Lab Code:** K1708964-002

**Service Request:** K1708964  
**Date Collected:** 08/21/17 12:50  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>8.9</b>	mg/Kg	4.1	0.8	2	09/06/17 14:42	09/01/17	
Lead	6010C	<b>273</b>	mg/Kg	2.1	0.4	2	09/06/17 14:42	09/01/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-D03-082117  
**Lab Code:** K1708964-003

**Service Request:** K1708964  
**Date Collected:** 08/21/17 12:52  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>10.9</b>	mg/Kg	4.0	0.8	2	09/06/17 14:44	09/01/17	
Lead	6010C	<b>191</b>	mg/Kg	2.0	0.4	2	09/06/17 14:44	09/01/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-D04-082117  
**Lab Code:** K1708964-004

**Service Request:** K1708964  
**Date Collected:** 08/21/17 12:54  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>8.1</b>	mg/Kg	4.0	0.8	2	09/06/17 14:46	09/01/17	
Lead	6010C	<b>243</b>	mg/Kg	2.0	0.4	2	09/06/17 14:46	09/01/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-D05-082117  
**Lab Code:** K1708964-005

**Service Request:** K1708964  
**Date Collected:** 08/21/17 12:56  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>17.4</b>	mg/Kg	4.2	0.8	2	09/06/17 14:48	09/01/17	
Lead	6010C	<b>796</b>	mg/Kg	2.1	0.4	2	09/06/17 14:48	09/01/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-D06-082117  
**Lab Code:** K1708964-006

**Service Request:** K1708964  
**Date Collected:** 08/21/17 12:58  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>6.6</b>	mg/Kg	3.9	0.8	2	09/06/17 14:50	09/01/17	
Lead	6010C	<b>168</b>	mg/Kg	2.0	0.4	2	09/06/17 14:50	09/01/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-D07-082117  
**Lab Code:** K1708964-007

**Service Request:** K1708964  
**Date Collected:** 08/21/17 13:00  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>17.2</b>	mg/Kg	3.9	0.8	2	09/06/17 14:59	09/01/17	
Lead	6010C	<b>569</b>	mg/Kg	2.0	0.4	2	09/06/17 14:59	09/01/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-D08-082117  
**Lab Code:** K1708964-008

**Service Request:** K1708964  
**Date Collected:** 08/21/17 13:02  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>11.8</b>	mg/Kg	4.0	0.8	2	09/06/17 15:01	09/01/17	
Lead	6010C	<b>243</b>	mg/Kg	2.0	0.4	2	09/06/17 15:01	09/01/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-D09-082117  
**Lab Code:** K1708964-009

**Service Request:** K1708964  
**Date Collected:** 08/21/17 13:04  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>17.0</b>	mg/Kg	4.1	0.8	2	09/06/17 15:03	09/01/17	
Lead	6010C	<b>244</b>	mg/Kg	2.1	0.4	2	09/06/17 15:03	09/01/17	



ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-D10-082117  
**Lab Code:** K1708964-010

**Service Request:** K1708964  
**Date Collected:** 08/21/17 13:06  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>14.2</b>	mg/Kg	4.1	0.8	2	09/06/17 15:06	09/01/17	
Lead	6010C	<b>193</b>	mg/Kg	2.1	0.4	2	09/06/17 15:06	09/01/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-D05-082117-D  
**Lab Code:** K1708964-011

**Service Request:** K1708964  
**Date Collected:** 08/21/17 12:56  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	20.2	mg/Kg	4.0	0.8	2	09/06/17 15:08	09/01/17	
Lead	6010C	826	mg/Kg	2.0	0.4	2	09/06/17 15:08	09/01/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-E01-082117  
**Lab Code:** K1708964-012

**Service Request:** K1708964  
**Date Collected:** 08/21/17 13:20  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>12.1</b>	mg/Kg	4.1	0.8	2	09/06/17 15:10	09/01/17	
Lead	6010C	<b>324</b>	mg/Kg	2.1	0.4	2	09/06/17 15:10	09/01/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-E02-082117  
**Lab Code:** K1708964-013

**Service Request:** K1708964  
**Date Collected:** 08/21/17 13:42  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	5.4	mg/Kg	3.8	0.8	2	09/06/17 15:12	09/01/17	
Lead	6010C	76.6	mg/Kg	1.9	0.4	2	09/06/17 15:12	09/01/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-E03-082117  
**Lab Code:** K1708964-014

**Service Request:** K1708964  
**Date Collected:** 08/21/17 13:43  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>12.5</b>	mg/Kg	4.0	0.8	2	09/06/17 15:14	09/01/17	
Lead	6010C	<b>225</b>	mg/Kg	2.0	0.4	2	09/06/17 15:14	09/01/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-E04-082117  
**Lab Code:** K1708964-015

**Service Request:** K1708964  
**Date Collected:** 08/21/17 13:45  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>12.4</b>	mg/Kg	3.9	0.8	2	09/06/17 15:16	09/01/17	
Lead	6010C	<b>381</b>	mg/Kg	1.9	0.4	2	09/06/17 15:16	09/01/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-E05-082117  
**Lab Code:** K1708964-016

**Service Request:** K1708964  
**Date Collected:** 08/21/17 13:46  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>12.5</b>	mg/Kg	4.0	0.8	2	09/06/17 15:19	09/01/17	
Lead	6010C	<b>230</b>	mg/Kg	2.0	0.4	2	09/06/17 15:19	09/01/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-E06-082117  
**Lab Code:** K1708964-017

**Service Request:** K1708964  
**Date Collected:** 08/21/17 13:49  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6010C	12.0	mg/Kg	4.0	0.8	2	09/06/17 15:27	09/01/17	
Lead	6010C	201	mg/Kg	2.0	0.4	2	09/06/17 15:27	09/01/17	



ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-E07-082117  
**Lab Code:** K1708964-018

**Service Request:** K1708964  
**Date Collected:** 08/21/17 13:52  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>11.9</b>	mg/Kg	3.8	0.8	2	09/06/17 15:29	09/01/17	
Lead	6010C	<b>143</b>	mg/Kg	1.9	0.4	2	09/06/17 15:29	09/01/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-E08-082117  
**Lab Code:** K1708964-019

**Service Request:** K1708964  
**Date Collected:** 08/21/17 13:55  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>20.4</b>	mg/Kg	4.2	0.8	2	09/06/17 15:31	09/01/17	
Lead	6010C	<b>403</b>	mg/Kg	2.1	0.4	2	09/06/17 15:31	09/01/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-E09-082117  
**Lab Code:** K1708964-020

**Service Request:** K1708964  
**Date Collected:** 08/21/17 13:57  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>15.1</b>	mg/Kg	4.1	0.8	2	09/06/17 15:34	09/01/17	
Lead	6010C	<b>229</b>	mg/Kg	2.1	0.4	2	09/06/17 15:34	09/01/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** Method Blank  
**Lab Code:** KQ1712515-02

**Service Request:** K1708964  
**Date Collected:** NA  
**Date Received:** NA  
**Basis:** Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6010C	ND U	mg/Kg	4	0.8	2	09/06/17 14:17	09/01/17	
Lead	6010C	ND U	mg/Kg	2	0.4	2	09/06/17 14:17	09/01/17	

ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708964  
**Date Collected:** 08/21/17  
**Date Received:** 08/24/17  
**Date Analyzed:** 09/6/17  
**Date Extracted:** 09/1/17

**Duplicate Matrix Spike Summary  
Total Metals**

**Sample Name:** 258-1-D01-082117  
**Lab Code:** K1708964-001  
**Analysis Method:** 6010C  
**Prep Method:** EPA 3050B

**Units:** mg/Kg  
**Basis:** Dry

Analyte Name	Sample Result	Result	Matrix Spike KQ1712515-03		Result	Duplicate Matrix Spike KQ1712515-04		% Rec Limits	RPD	RPD Limit
			Spike Amount	% Rec		Spike Amount	% Rec			
Arsenic	4.1	98.8	98.7	96	100	98.7	98	75-125	2	30
Lead	33.5	129	98.7	96	130	98.7	98	75-125	<1	30

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708964  
**Date Analyzed:** 09/06/17

**Lab Control Sample Summary**  
**Total Metals**

**Units:**mg/Kg  
**Basis:**Dry

**Lab Control Sample**  
KQ1712515-01

<b>Analyte Name</b>	<b>Analytical Method</b>	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>% Rec Limits</b>
Arsenic	6010C	500	500	100	80-120
Lead	6010C	493	500	99	80-120



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ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

September 12, 2017

**Analytical Report for Service Request No: K1708967**

Dave Enos  
Teck American Incorporated  
501 North Riverpoint Blvd., Suite 300  
Spokane, WA 99202

**RE: August 2017 Sampling SAT Study / B0095010.0005.00001**

Dear Dave,

Enclosed are the results of the sample(s) submitted to our laboratory August 24, 2017  
For your reference, these analyses have been assigned our service request number **K1708967**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at [www.alsglobal.com](http://www.alsglobal.com). All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at [Jeff.Coronado@alsglobal.com](mailto:Jeff.Coronado@alsglobal.com).

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**

Jeff Coronado  
Metals Department  
Manager



---

ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

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## Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

### **Inorganic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

### **Metals Data Qualifiers**

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.  
  - i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Organic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Additional Petroleum Hydrocarbon Specific Qualifiers**

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

**ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso  
State Certifications, Accreditations, and Licenses**

<b>Agency</b>	<b>Web Site</b>	<b>Number</b>
Alaska DEH	<a href="http://dec.alaska.gov/eh/lab/cs/csapproval.htm">http://dec.alaska.gov/eh/lab/cs/csapproval.htm</a>	UST-040
Arizona DHS	<a href="http://www.azdhs.gov/lab/license/env.htm">http://www.azdhs.gov/lab/license/env.htm</a>	AZ0339
Arkansas - DEQ	<a href="http://www.adeq.state.ar.us/techsvs/labcert.htm">http://www.adeq.state.ar.us/techsvs/labcert.htm</a>	88-0637
California DHS (ELAP)	<a href="http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx">http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx</a>	2795
DOD ELAP	<a href="http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm">http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm</a>	L14-51
Florida DOH	<a href="http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm">http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm</a>	E87412
Hawaii DOH	<a href="http://health.hawaii.gov/">http://health.hawaii.gov/</a>	-
ISO 17025	<a href="http://www.pjllabs.com/">http://www.pjllabs.com/</a>	L16-57
Louisiana DEQ	<a href="http://www.deq.louisiana.gov/page/la-lab-accreditation">http://www.deq.louisiana.gov/page/la-lab-accreditation</a>	03016
Maine DHS	<a href="http://www.maine.gov/dhhs/">http://www.maine.gov/dhhs/</a>	WA01276
Minnesota DOH	<a href="http://www.health.state.mn.us/accreditation">http://www.health.state.mn.us/accreditation</a>	053-999-457
Nevada DEP	<a href="http://ndep.nv.gov/bsdw/labservice.htm">http://ndep.nv.gov/bsdw/labservice.htm</a>	WA01276
New Jersey DEP	<a href="http://www.nj.gov/dep/enforcement/oqa.html">http://www.nj.gov/dep/enforcement/oqa.html</a>	WA005
New York - DOH	<a href="https://www.wadsworth.org/regulatory/elap">https://www.wadsworth.org/regulatory/elap</a>	12060
North Carolina DEQ	<a href="https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification">https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification</a>	605
Oklahoma DEQ	<a href="http://www.deq.state.ok.us/CSDnew/labcert.htm">http://www.deq.state.ok.us/CSDnew/labcert.htm</a>	9801
Oregon – DEQ (NELAP)	<a href="http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx">http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx</a>	WA100010
South Carolina DHEC	<a href="http://www.scdhec.gov/environment/EnvironmentalLabCertification/">http://www.scdhec.gov/environment/EnvironmentalLabCertification/</a>	61002
Texas CEQ	<a href="http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html">http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html</a>	T104704427
Washington DOE	<a href="http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html">http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html</a>	C544
Wyoming (EPA Region 8)	<a href="https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water">https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water</a>	-
Kelso Laboratory Website	<a href="http://www.alsglobal.com">www.alsglobal.com</a>	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at [www.ALSGlobal.com](http://www.ALSGlobal.com) or at the accreditation bodies web site. Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.



## Case Narrative

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

**ALS ENVIRONMENTAL**

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/  
B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request No.:** K1708967  
**Date Received:** 08/24/17

**Case Narrative**


All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

**Sample Receipt**

Twelve soil samples were received for analysis at ALS Environmental on 08/24/17. The samples were received in good condition and consistent with the accompanying chain of custody form, except where noted on the cooler receipt and preservation form included in this report. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

**Total Metals**

No anomalies associated with the analysis of these samples were observed.

Approved by  \_\_\_\_\_



## Chain of Custody

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

Date 8/23/17  
 PAGE 8 OF 15  
 SR# 1708567

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001

Project Contact: Kady Young Company: Arcadis

Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488

City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961

Sampler's Signature: \_\_\_\_\_

Number of Containers	Analysis Requested					REMARKS
	lead/arsenic 3050B/6010					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					

Sample I.D.	Date	Time	LAB ID	Matrix
<u>258-1-E10-082117-D</u>	<u>8/21/17</u>	<u>1359</u>		<u>S</u>
				<u>S</u>
				<u>S</u>
				<u>S</u>
				<u>S</u>
				<u>S</u>
				<u>S</u>
				<u>S</u>
				<u>S</u>
				<u>S</u>

**TURNAROUND REQUIREMENTS**  
 \_\_\_ 24 hr \_\_\_ 48 hr \_\_\_ 5 day  
 Standard (10 days)  
 \_\_\_ Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 \_\_\_ I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 \_\_\_ III. Data Validation Report (includes raw data)  
 \_\_\_ IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
501 N Riverpoint Blvd, Suite 300 Spokane, WA 9924

**RELINQUISHED BY:**  
 Signature: Joe Lathan  
 Printed Name: Joe Lathan  
 Firm: Arcadis  
 Date/Time: 8/23/17 1300

**RECEIVED BY:**  
 Signature: SDewis  
 Printed Name: SDewis  
 Firm: ALS Kelso  
 Date/Time: 8/24/17 1030

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

<p><b>Project Name:</b> <u>Teck American - UCR SATES</u> <b>Project Number:</b> <u>B0095010.0005.00001</u></p> <p><b>Project Contact:</b> <u>Kady Young</u> <b>Company:</b> <u>Arcadis</u></p> <p><b>Company/Address:</b> <u>189 North Cedar Street</u> <b>Phone:</b> <u>307-203-3510</u> or <u>810-588-1488</u></p> <p><b>City, State, Zip:</b> <u>Buffalo, WY 82834</u> <b>FAX:</b> <u>307-684-5961</u></p> <p><b>Sampler's Signature:</b> _____</p>	Number of Containers	Analysis Requested
--	----------------------	--------------------

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	lead/arsenic 3050B/6010	REMARKS
<del>258-1-E01</del>	<del>08/21/17</del>	<del>8/21/17</del>	<del></del>	<del>S</del>	<del>1</del>	<del>X</del>	
E02				S	1	X	
E03				S	1	X	
E04				S	1	X	
E05				S	1	X	
E06				S	1	X	
E07				S	1	X	
E08				S	1	X	
E09				S	1	X	
E10				S	1	X	

**URNAROUND REQUIREMENTS**

24 hr     48 hr     5 day

Standard (10 days)

Provide FAX Preliminary Results

Requested Report Date: \_\_\_\_\_

---

**Invoice Information**

CO. # UCR-ALS-D34-17

Billed to: Cristy Kessel - Teck American

501 N Riverpoint Blvd, Suite 300 Spokane, WA 99201

**REPORT REQUIREMENTS**

I. Routine Report: Results, Method Blank, Surrogate, as required

II. Report Dup., MS, MSD as required

III. Data Validation Report (includes raw data)

IV. CLP Deliverable Report

V. EDD

**Comments/Special Instructions:**

Hold Remainder

**RELINQUISHED BY:**

Signature: [Signature]

Printed Name: Joe Lathan

Firm: Arcadis

Date/Time: 8/23/17 1300

**RECEIVED BY:**

Signature: [Signature]

Printed Name: SIXEIS

Firm: ALS-KELSO

Date/Time: 8/24/17 1030

**RELINQUISHED BY:**

Signature: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Firm: \_\_\_\_\_

Date/Time: \_\_\_\_\_

**RECEIVED BY:**

Signature: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Firm: \_\_\_\_\_

Date/Time: \_\_\_\_\_



ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

Date 8/23/17  
 PAGE 9 OF 15  
 SR# 17085167

**Project Name:** Teck American - UCR SATES **Project Number:** B0095010.0005.00001

**Project Contact:** Kady Young **Company:** Arcadis

**Company/Address:** 189 North Cedar Street **Phone:** 307-203-3510 or 810-588-1488

**City, State, Zip:** Buffalo, WY 82834 **FAX:** 307-684-5961

**Sampler's Signature:** \_\_\_\_\_

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	Analysis Requested					REMARKS
						lead/arsenic 3050B/6010					
258-1-F01-082117	8/21/17	1340		S	1	X					
F02		1324		S	1	X					
F03		1326		S	1	X					
F04		1328		S	1	X					
F05		1330		S	1	X					
F06		1406		S	1	X					
F07		1409		S	1	X					
F08		1411		S	1	X					
F09		1412		S	1	X					
F10		1413		S	1	X					

**TURNAROUND REQUIREMENTS**

24 hr \_\_\_\_\_ 48 hr \_\_\_\_\_ 5 day \_\_\_\_\_

Standard (10 days)

Provide FAX Preliminary Results \_\_\_\_\_

Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**

I. Routine Report: Results, Method Blank, Surrogate, as required \_\_\_\_\_

II. Report Dup., MS, MSD as required \_\_\_\_\_

III. Data Validation Report (includes raw data) \_\_\_\_\_

IV. CLP Deliverable Report \_\_\_\_\_

V. EDD \_\_\_\_\_

**Comments/Special Instructions:**

Hold Remainder

**Invoice Information**

P.O. # UCR-ALS-D34-17

Bill to: Cristy Kessel - Teck American

501 N Riverpoint Blvd, Suite 300 Spokane, WA 992

**RELINQUISHED BY:**

Signature: [Signature]

Printed Name: Joe Lathin

Firm: Arcadis

Date/Time: 8/23/17 1300

**RECEIVED BY:**

Signature: [Signature]

Printed Name: SEWIS

Firm: ALS-KELSO

Date/Time: 8/24/17 1030

**RELINQUISHED BY:**

Signature: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Firm: \_\_\_\_\_

Date/Time: \_\_\_\_\_

**RECEIVED BY:**

Signature: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Firm: \_\_\_\_\_

Date/Time: \_\_\_\_\_



PC000000

### Cooler Receipt and Preservation Form

Client Tell Americas Service Request KI708567  
 Received: Aug. 24, 17 Opened: 8/24 By: SD Unloaded: 8/24 By: SD

Samples were received via?  USPS  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-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
0.2	0.3	2.0	2.1	10.1	302	(NA)	810591105532		

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

Were samples received in good condition (temperature, unbroken)? *Indicate in the table below.*  NA  Y  N

If applicable, tissue samples were received:  Frozen  Partially Thawed  Thawed

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

Discrepancies, & Resolutions: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



# Total Solids

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1708967  
**Date Collected:** 08/21/17  
**Date Received:** 08/24/17  
**Units:** Percent  
**Basis:** As Received

Solids, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
258-1-E10-082117	K1708967-001	98.0	-	-	1	08/30/17 16:33	
258-1-E10-082117-D	K1708967-002	97.1	-	-	1	08/30/17 16:33	
258-1-F01-082117	K1708967-003	96.5	-	-	1	08/30/17 16:33	
258-1-F02-082117	K1708967-004	97.8	-	-	1	08/30/17 16:33	
258-1-F03-082117	K1708967-005	98.6	-	-	1	08/30/17 16:33	
258-1-F04-082117	K1708967-006	98.2	-	-	1	08/30/17 16:33	
258-1-F05-082117	K1708967-007	96.5	-	-	1	08/30/17 16:33	
258-1-F06-082117	K1708967-008	94.2	-	-	1	08/30/17 16:33	
258-1-F07-082117	K1708967-009	95.7	-	-	1	08/30/17 16:33	
258-1-F08-082117	K1708967-010	95.8	-	-	1	08/30/17 16:33	
258-1-F09-082117	K1708967-011	96.6	-	-	1	08/30/17 16:33	
258-1-F10-082117	K1708967-012	98.2	-	-	1	08/30/17 16:33	

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1708967  
**Date Collected:** 08/21/17  
**Date Received:** 08/24/17

**Units:** Percent  
**Basis:** As Received

Replicate Sample Summary

Inorganic Parameters

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
258-1-F08-082117	K1708967-010DUP	-	95.8	96.4	96.1	<1	20	08/30/17
Batch QC	K1708971-001DUP	-	96.3	95.8	96.1	<1	20	08/30/17

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



# Metals

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-E10-082117  
**Lab Code:** K1708967-001

**Service Request:** K1708967  
**Date Collected:** 08/21/17 13:59  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>15.7</b>	mg/Kg	4.0	0.8	2	09/06/17 15:40	09/01/17	
Lead	6010C	<b>194</b>	mg/Kg	2.0	0.4	2	09/06/17 15:40	09/01/17	

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-E10-082117-D  
**Lab Code:** K1708967-002

**Service Request:** K1708967  
**Date Collected:** 08/21/17 13:59  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>14.7</b>	mg/Kg	4.0	0.8	2	09/06/17 15:57	09/01/17	
Lead	6010C	<b>178</b>	mg/Kg	2.0	0.4	2	09/06/17 15:57	09/01/17	



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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-F01-082117  
**Lab Code:** K1708967-003

**Service Request:** K1708967  
**Date Collected:** 08/21/17 13:40  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>8.1</b>	mg/Kg	4.1	0.8	2	09/06/17 16:00	09/01/17	
Lead	6010C	<b>129</b>	mg/Kg	2.1	0.4	2	09/06/17 16:00	09/01/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-F02-082117  
**Lab Code:** K1708967-004

**Service Request:** K1708967  
**Date Collected:** 08/21/17 13:24  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>6.2</b>	mg/Kg	3.9	0.8	2	09/06/17 16:02	09/01/17	
Lead	6010C	<b>99.4</b>	mg/Kg	1.9	0.4	2	09/06/17 16:02	09/01/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-F03-082117  
**Lab Code:** K1708967-005

**Service Request:** K1708967  
**Date Collected:** 08/21/17 13:26  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>10.0</b>	mg/Kg	3.9	0.8	2	09/06/17 16:04	09/01/17	
Lead	6010C	<b>121</b>	mg/Kg	2.0	0.4	2	09/06/17 16:04	09/01/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-F04-082117  
**Lab Code:** K1708967-006

**Service Request:** K1708967  
**Date Collected:** 08/21/17 13:28  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6010C	13.5	mg/Kg	3.8	0.8	2	09/06/17 16:06	09/01/17	
Lead	6010C	217	mg/Kg	1.9	0.4	2	09/06/17 16:06	09/01/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-F05-082117  
**Lab Code:** K1708967-007

**Service Request:** K1708967  
**Date Collected:** 08/21/17 13:30  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>26.0</b>	mg/Kg	4.0	0.8	2	09/06/17 16:08	09/01/17	
Lead	6010C	<b>739</b>	mg/Kg	2.0	0.4	2	09/06/17 16:08	09/01/17	

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-F06-082117  
**Lab Code:** K1708967-008

**Service Request:** K1708967  
**Date Collected:** 08/21/17 14:06  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>47.2</b>	mg/Kg	4.1	0.8	2	09/06/17 16:10	09/01/17	
Lead	6010C	<b>530</b>	mg/Kg	2.1	0.4	2	09/06/17 16:10	09/01/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-F07-082117  
**Lab Code:** K1708967-009

**Service Request:** K1708967  
**Date Collected:** 08/21/17 14:09  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>22.1</b>	mg/Kg	4.1	0.8	2	09/06/17 16:13	09/01/17	
Lead	6010C	<b>228</b>	mg/Kg	2.0	0.4	2	09/06/17 16:13	09/01/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-F08-082117  
**Lab Code:** K1708967-010

**Service Request:** K1708967  
**Date Collected:** 08/21/17 14:11  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>22.4</b>	mg/Kg	4.1	0.8	2	09/06/17 16:15	09/01/17	
Lead	6010C	<b>346</b>	mg/Kg	2.0	0.4	2	09/06/17 16:15	09/01/17	



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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-F09-082117  
**Lab Code:** K1708967-011

**Service Request:** K1708967  
**Date Collected:** 08/21/17 14:12  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>16.2</b>	mg/Kg	4.0	0.8	2	09/06/17 16:26	09/01/17	
Lead	6010C	<b>195</b>	mg/Kg	2.0	0.4	2	09/06/17 16:26	09/01/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-F10-082117  
**Lab Code:** K1708967-012

**Service Request:** K1708967  
**Date Collected:** 08/21/17 14:13  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>11.4</b>	mg/Kg	3.9	0.8	2	09/06/17 16:28	09/01/17	
Lead	6010C	<b>153</b>	mg/Kg	2.0	0.4	2	09/06/17 16:28	09/01/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** Method Blank  
**Lab Code:** KQ1712516-02

**Service Request:** K1708967  
**Date Collected:** NA  
**Date Received:** NA  
**Basis:** Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6010C	ND U	mg/Kg	4	0.8	2	09/06/17 15:36	09/01/17	
Lead	6010C	ND U	mg/Kg	2	0.4	2	09/06/17 15:36	09/01/17	

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QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708967  
**Date Collected:** 08/21/17  
**Date Received:** 08/24/17  
**Date Analyzed:** 09/6/17  
**Date Extracted:** 09/1/17

**Duplicate Matrix Spike Summary  
Total Metals**

**Sample Name:** 258-1-E10-082117  
**Lab Code:** K1708967-001  
**Analysis Method:** 6010C  
**Prep Method:** EPA 3050B

**Units:** mg/Kg  
**Basis:** Dry

Analyte Name	Sample Result	Result	Matrix Spike KQ1712516-03		Duplicate Matrix Spike KQ1712516-04		% Rec Limits	RPD	RPD Limit	
			Spike Amount	% Rec	Result	Spike Amount				% Rec
Arsenic	15.7	109	100	93	106	94.5	95	75-125	3	30
Lead	194	280	100	85	278	94.5	88	75-125	<1	30

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.  
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QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708967  
**Date Analyzed:** 09/06/17

**Lab Control Sample Summary**  
**Total Metals**

**Units:**mg/Kg  
**Basis:**Dry

**Lab Control Sample**  
KQ1712516-01

<b>Analyte Name</b>	<b>Analytical Method</b>	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>% Rec Limits</b>
Arsenic	6010C	505	500	101	80-120
Lead	6010C	494	500	99	80-120



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ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

September 08, 2017

**Analytical Report for Service Request No: K1708971**

Dave Enos  
Teck American Incorporated  
501 North Riverpoint Blvd., Suite 300  
Spokane, WA 99202

**RE: August 2017 Sampling SAT Study / B0095010.0005.00001**

Dear Dave,

Enclosed are the results of the sample(s) submitted to our laboratory August 24, 2017  
For your reference, these analyses have been assigned our service request number **K1708971**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at [www.alsglobal.com](http://www.alsglobal.com). All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at [Jeff.Coronado@alsglobal.com](mailto:Jeff.Coronado@alsglobal.com).

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**

Jeff Coronado  
Metals Department  
Manager



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ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

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## Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.



### **Inorganic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

### **Metals Data Qualifiers**

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.  
  - i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Organic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.  
  - i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Additional Petroleum Hydrocarbon Specific Qualifiers**

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

**ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso  
State Certifications, Accreditations, and Licenses**

<b>Agency</b>	<b>Web Site</b>	<b>Number</b>
Alaska DEH	<a href="http://dec.alaska.gov/eh/lab/cs/csapproval.htm">http://dec.alaska.gov/eh/lab/cs/csapproval.htm</a>	UST-040
Arizona DHS	<a href="http://www.azdhs.gov/lab/license/env.htm">http://www.azdhs.gov/lab/license/env.htm</a>	AZ0339
Arkansas - DEQ	<a href="http://www.adeq.state.ar.us/techsvs/labcert.htm">http://www.adeq.state.ar.us/techsvs/labcert.htm</a>	88-0637
California DHS (ELAP)	<a href="http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx">http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx</a>	2795
DOD ELAP	<a href="http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm">http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm</a>	L14-51
Florida DOH	<a href="http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm">http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm</a>	E87412
Hawaii DOH	<a href="http://health.hawaii.gov/">http://health.hawaii.gov/</a>	-
ISO 17025	<a href="http://www.pjlabs.com/">http://www.pjlabs.com/</a>	L16-57
Louisiana DEQ	<a href="http://www.deq.louisiana.gov/page/la-lab-accreditation">http://www.deq.louisiana.gov/page/la-lab-accreditation</a>	03016
Maine DHS	<a href="http://www.maine.gov/dhhs/">http://www.maine.gov/dhhs/</a>	WA01276
Minnesota DOH	<a href="http://www.health.state.mn.us/accreditation">http://www.health.state.mn.us/accreditation</a>	053-999-457
Nevada DEP	<a href="http://ndep.nv.gov/bsdw/labservice.htm">http://ndep.nv.gov/bsdw/labservice.htm</a>	WA01276
New Jersey DEP	<a href="http://www.nj.gov/dep/enforcement/oqa.html">http://www.nj.gov/dep/enforcement/oqa.html</a>	WA005
New York - DOH	<a href="https://www.wadsworth.org/regulatory/elap">https://www.wadsworth.org/regulatory/elap</a>	12060
North Carolina DEQ	<a href="https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification">https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification</a>	605
Oklahoma DEQ	<a href="http://www.deq.state.ok.us/CSDnew/labcert.htm">http://www.deq.state.ok.us/CSDnew/labcert.htm</a>	9801
Oregon – DEQ (NELAP)	<a href="http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx">http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx</a>	WA100010
South Carolina DHEC	<a href="http://www.scdhec.gov/environment/EnvironmentalLabCertification/">http://www.scdhec.gov/environment/EnvironmentalLabCertification/</a>	61002
Texas CEQ	<a href="http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html">http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html</a>	T104704427
Washington DOE	<a href="http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html">http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html</a>	C544
Wyoming (EPA Region 8)	<a href="https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water">https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water</a>	-
Kelso Laboratory Website	<a href="http://www.alsglobal.com">www.alsglobal.com</a>	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at [www.ALSGlobal.com](http://www.ALSGlobal.com) or at the accreditation bodies web site.  
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.



## Case Narrative

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

**ALS ENVIRONMENTAL**

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/  
B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request No.:** K1708971  
**Date Received:** 08/24/17

**Case Narrative**

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

**Sample Receipt**

Twenty-soil samples were received for analysis at ALS Environmental on 08/24/17. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

**Total Metals**

No anomalies associated with the analysis of these samples were observed.

Approved by \_\_\_\_\_





## Chain of Custody

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

Date 8/23/17  
 PAGE 1 OF 15  
 SR# 1708971

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001  
 Project Contact: Kady Young Company: Arcadis  
 Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488  
 City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961  
 Sampler's Signature: \_\_\_\_\_

Number of Containers	Analysis Requested					REMARKS
	lead/arsenic 3050B/6010					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					

Sample I.D.	Date	Time	LAB ID	Matrix
441-1-A01-082217	8/22/17	1515		S
A02		1518		S
A03		1520		S
A04		1523		S
A05		1526		S
A06		1529		S
A07		1532		S
A08		1537		S
A09		1541		S
A10		1543		S

**TURNAROUND REQUIREMENTS**  
 24 hr  48 hr  5 day  
 Standard (10 days)  
 Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes raw data)  
 IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
501 N Riverpoint Blvd, Suite 300 Spokane, WA 99201

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Joe Lathan  
 Firm: ANA  
 Date/Time: 8/23/17 1700

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: SIDWICKS  
 Firm: ALS-KELSO  
 Date/Time: 8/24/17 1030

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**ALS Environmental-Kelso**

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

Date 8/23/17  
 PAGE 2 OF 15  
 SR# 10897

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001  
 Project Contact: Kadv Young Company: Arcadis  
 Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488  
 City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961  
 Sampler's Signature: \_\_\_\_\_

Number of Containers	Analysis Requested					REMARKS
	lead/arsenic 3050B/6010					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					

Sample I.D.	Date	Time	LAB ID	Matrix
441-1-A08-082217-D	8/22/17	1537		S
				S
				S
				S
				S
				S
				S
				S
				S
				S

**TURNAROUND REQUIREMENTS**  
 24 hr  48 hr  5 day  
 Standard (10 days)  
 Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes raw data)  
 IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99201

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Jaelath  
 Firm: ANA  
 Date/Time: 8/23/17 1300

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: SDCWIS  
 Firm: ALS-KELSO  
 Date/Time: 8/24/17 1030

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001  
 Project Contact: Kady Young Company: Arcadis  
 Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488  
 City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961  
 Sampler's Signature: \_\_\_\_\_

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	Analysis Requested					REMARKS
						lead/arsenic 3050B/6010					
441-1-801-082217	8/22/17	1546		S	1	X					
B02		1548		S	1	X					
B03		1551		S	1	X					
B04		1553		S	1	X					
B05		1556		S	1	X					
B06		1558		S	1	X					
B07		1600		S	1	X					
B08		1602		S	1	X					
B09		1604		S	1	X					
<del>B10</del>		<del>1606</del>		<del>S</del>	<del>1</del>	<del>X</del>					

**TURNAROUND REQUIREMENTS**  
 \_\_\_ 24 hr \_\_\_ 48 hr \_\_\_ 5 day  
 Standard (10 days)  
 \_\_\_ Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 \_\_\_ I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 \_\_\_ III. Data Validation Report (includes raw data)  
 \_\_\_ IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99208

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Joe Lathan  
 Firm: ANA  
 Date/Time: 8/23/17 1300

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: SDAWIS  
 Firm: ALS-KELSO  
 Date/Time: 8/24/17 1030

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_





PC0000410

### Cooler Receipt and Preservation Form

Client Tell American Service Request K17089771

Received: Aug 24, 17 Opened: 8/24 By: SD Unloaded: 8/24 By: SD

Samples were received via?  USPS  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 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	0.7	1.0	1.8	0.2	298	NA	801591165332		

Packing material:  Inserts  Baggies  Rubble Wrap  Gel Packs  Wet Ice  Dry Ice  Sleeves

Were custody papers properly filled out (ink, signed, etc.)? NA  Y  N

Were samples received in good condition (temperature, unbroken)? *Indicate in the table below.* NA  Y  N

If applicable, tissue samples were received: Frozen Partially Thawed Thawed

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

es, Discrepancies, & Resolutions: \_\_\_\_\_



# Total Solids

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1708971  
**Date Collected:** 08/22/17  
**Date Received:** 08/24/17  
**Units:** Percent  
**Basis:** As Received

**Solids, Total**

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
441-1-A01-082217	K1708971-001	96.3	-	-	1	08/30/17 16:33	
441-1-A02-082217	K1708971-002	88.3	-	-	1	08/30/17 16:33	
441-1-A03-082217	K1708971-003	87.6	-	-	1	08/30/17 16:33	
441-1-A04-082217	K1708971-004	89.8	-	-	1	08/30/17 16:33	
441-1-A05-082217	K1708971-005	90.3	-	-	1	08/30/17 16:33	
441-1-A06-082217	K1708971-006	89.0	-	-	1	08/30/17 16:33	
441-1-A07-082217	K1708971-007	91.5	-	-	1	08/30/17 16:33	
441-1-A08-082217	K1708971-008	89.0	-	-	1	08/30/17 16:33	
441-1-A09-082217	K1708971-009	93.1	-	-	1	08/30/17 16:33	
441-1-A10-082217	K1708971-010	88.5	-	-	1	08/30/17 16:33	
441-1-A08-082217-D	K1708971-011	85.6	-	-	1	08/30/17 16:33	
441-1-B01-082217	K1708971-012	61.8	-	-	1	08/30/17 16:33	
441-1-B02-082217	K1708971-013	95.5	-	-	1	08/30/17 16:33	
441-1-B03-082217	K1708971-014	84.7	-	-	1	08/30/17 16:33	
441-1-B04-082217	K1708971-015	89.6	-	-	1	08/30/17 16:33	
441-1-B05-082217	K1708971-016	92.2	-	-	1	08/30/17 16:33	
441-1-B06-082217	K1708971-017	92.5	-	-	1	08/30/17 16:33	
441-1-B07-082217	K1708971-018	93.6	-	-	1	08/30/17 16:33	
441-1-B08-082217	K1708971-019	94.7	-	-	1	08/30/17 16:33	
441-1-B09-082217	K1708971-020	95.0	-	-	1	08/30/17 16:33	

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:**K1708971  
**Date Collected:**08/22/17  
**Date Received:**08/24/17

**Units:**Percent  
**Basis:**As Received

Replicate Sample Summary

Inorganic Parameters

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
441-1-A01-082217	K1708971-001DUP	-	96.3	95.8	96.1	<1	20	08/30/17
441-1-A08-082217-D	K1708971-011DUP	-	85.6	86.9	86.3	2	20	08/30/17

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



# Metals

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Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-A01-082217  
**Lab Code:** K1708971-001

**Service Request:** K1708971  
**Date Collected:** 08/22/17 15:15  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>17.0</b>	mg/Kg	4.0	0.8	2	09/06/17 16:35	09/01/17	
Lead	6010C	<b>115</b>	mg/Kg	2.0	0.4	2	09/06/17 16:35	09/01/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-A02-082217  
**Lab Code:** K1708971-002

**Service Request:** K1708971  
**Date Collected:** 08/22/17 15:18  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>25.4</b>	mg/Kg	4.2	0.8	2	09/06/17 16:46	09/01/17	
Lead	6010C	<b>1310</b>	mg/Kg	2.1	0.4	2	09/06/17 16:46	09/01/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-A03-082217  
**Lab Code:** K1708971-003

**Service Request:** K1708971  
**Date Collected:** 08/22/17 15:20  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>10.7</b>	mg/Kg	4.3	0.9	2	09/06/17 16:55	09/01/17	
Lead	6010C	<b>1910</b>	mg/Kg	2.2	0.4	2	09/06/17 16:55	09/01/17	



ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-A04-082217  
**Lab Code:** K1708971-004

**Service Request:** K1708971  
**Date Collected:** 08/22/17 15:23  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>23.8</b>	mg/Kg	4.4	0.9	2	09/06/17 16:57	09/01/17	
Lead	6010C	<b>549</b>	mg/Kg	2.2	0.4	2	09/06/17 16:57	09/01/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-A05-082217  
**Lab Code:** K1708971-005

**Service Request:** K1708971  
**Date Collected:** 08/22/17 15:26  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>21.3</b>	mg/Kg	4.3	0.9	2	09/06/17 16:59	09/01/17	
Lead	6010C	<b>571</b>	mg/Kg	2.1	0.4	2	09/06/17 16:59	09/01/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-A06-082217  
**Lab Code:** K1708971-006

**Service Request:** K1708971  
**Date Collected:** 08/22/17 15:29  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>18.3</b>	mg/Kg	4.4	0.9	2	09/06/17 17:02	09/01/17	
Lead	6010C	<b>1130</b>	mg/Kg	2.2	0.4	2	09/06/17 17:02	09/01/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-A07-082217  
**Lab Code:** K1708971-007

**Service Request:** K1708971  
**Date Collected:** 08/22/17 15:32  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>17.6</b>	mg/Kg	4.1	0.8	2	09/06/17 17:04	09/01/17	
Lead	6010C	<b>96.8</b>	mg/Kg	2.0	0.4	2	09/06/17 17:04	09/01/17	

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-A08-082217  
**Lab Code:** K1708971-008

**Service Request:** K1708971  
**Date Collected:** 08/22/17 15:37  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>33.0</b>	mg/Kg	4.3	0.9	2	09/06/17 17:06	09/01/17	
Lead	6010C	<b>1280</b>	mg/Kg	2.2	0.4	2	09/06/17 17:06	09/01/17	

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-A09-082217  
**Lab Code:** K1708971-009

**Service Request:** K1708971  
**Date Collected:** 08/22/17 15:41  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>20.5</b>	mg/Kg	4.3	0.9	2	09/06/17 17:09	09/01/17	
Lead	6010C	<b>248</b>	mg/Kg	2.1	0.4	2	09/06/17 17:09	09/01/17	

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-A10-082217  
**Lab Code:** K1708971-010

**Service Request:** K1708971  
**Date Collected:** 08/22/17 15:43  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>36.7</b>	mg/Kg	4.3	0.9	2	09/06/17 17:11	09/01/17	
Lead	6010C	<b>554</b>	mg/Kg	2.2	0.4	2	09/06/17 17:11	09/01/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-A08-082217-D  
**Lab Code:** K1708971-011

**Service Request:** K1708971  
**Date Collected:** 08/22/17 15:37  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>28.5</b>	mg/Kg	4.6	0.9	2	09/06/17 17:13	09/01/17	
Lead	6010C	<b>1360</b>	mg/Kg	2.3	0.5	2	09/06/17 17:13	09/01/17	



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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-B01-082217  
**Lab Code:** K1708971-012

**Service Request:** K1708971  
**Date Collected:** 08/22/17 15:46  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>14.6</b>	mg/Kg	3.0	0.6	2	09/06/17 17:16	09/01/17	
Lead	6010C	<b>159</b>	mg/Kg	1.5	0.3	2	09/06/17 17:16	09/01/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-B02-082217  
**Lab Code:** K1708971-013

**Service Request:** K1708971  
**Date Collected:** 08/22/17 15:48  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>15.9</b>	mg/Kg	3.8	0.8	2	09/06/17 17:28	09/01/17	
Lead	6010C	<b>160</b>	mg/Kg	1.9	0.4	2	09/06/17 17:28	09/01/17	

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-B03-082217  
**Lab Code:** K1708971-014

**Service Request:** K1708971  
**Date Collected:** 08/22/17 15:51  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>8.1</b>	mg/Kg	4.6	0.9	2	09/06/17 17:30	09/01/17	
Lead	6010C	<b>544</b>	mg/Kg	2.3	0.5	2	09/06/17 17:30	09/01/17	

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-B04-082217  
**Lab Code:** K1708971-015

**Service Request:** K1708971  
**Date Collected:** 08/22/17 15:53  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>18.5</b>	mg/Kg	4.2	0.8	2	09/06/17 17:33	09/01/17	
Lead	6010C	<b>803</b>	mg/Kg	2.1	0.4	2	09/06/17 17:33	09/01/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-B05-082217  
**Lab Code:** K1708971-016

**Service Request:** K1708971  
**Date Collected:** 08/22/17 15:56  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>26.2</b>	mg/Kg	4.1	0.8	2	09/06/17 17:35	09/01/17	
Lead	6010C	<b>550</b>	mg/Kg	2.1	0.4	2	09/06/17 17:35	09/01/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-B06-082217  
**Lab Code:** K1708971-017

**Service Request:** K1708971  
**Date Collected:** 08/22/17 15:58  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>30.0</b>	mg/Kg	3.9	0.8	2	09/06/17 17:37	09/01/17	
Lead	6010C	<b>2150</b>	mg/Kg	2.0	0.4	2	09/06/17 17:37	09/01/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-B07-082217  
**Lab Code:** K1708971-018

**Service Request:** K1708971  
**Date Collected:** 08/22/17 16:00  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	22.7	mg/Kg	4.1	0.8	2	09/06/17 17:40	09/01/17	
Lead	6010C	222	mg/Kg	2.1	0.4	2	09/06/17 17:40	09/01/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-B08-082217  
**Lab Code:** K1708971-019

**Service Request:** K1708971  
**Date Collected:** 08/22/17 16:02  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>17.1</b>	mg/Kg	4.1	0.8	2	09/06/17 17:42	09/01/17	
Lead	6010C	<b>237</b>	mg/Kg	2.1	0.4	2	09/06/17 17:42	09/01/17	



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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-B09-082217  
**Lab Code:** K1708971-020

**Service Request:** K1708971  
**Date Collected:** 08/22/17 16:04  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	23.9	mg/Kg	4.2	0.8	2	09/06/17 17:44	09/01/17	
Lead	6010C	277	mg/Kg	2.1	0.4	2	09/06/17 17:44	09/01/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** Method Blank  
**Lab Code:** KQ1712517-02

**Service Request:** K1708971  
**Date Collected:** NA  
**Date Received:** NA  
**Basis:** Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6010C	ND U	mg/Kg	4	0.8	2	09/06/17 16:30	09/01/17	
Lead	6010C	ND U	mg/Kg	2	0.4	2	09/06/17 16:30	09/01/17	

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QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708971  
**Date Collected:** 08/22/17  
**Date Received:** 08/24/17  
**Date Analyzed:** 09/6/17  
**Date Extracted:** 09/1/17

**Duplicate Matrix Spike Summary  
Total Metals**

**Sample Name:** 441-1-A01-082217  
**Lab Code:** K1708971-001  
**Analysis Method:** 6010C  
**Prep Method:** EPA 3050B

**Units:** mg/Kg  
**Basis:** Dry

Analyte Name	Sample Result	Result	Matrix Spike KQ1712517-03		Result	Duplicate Matrix Spike KQ1712517-04		% Rec Limits	RPD	RPD Limit
			Spike Amount	% Rec		Spike Amount	% Rec			
Arsenic	17.0	113	103	94	115	103	95	75-125	2	30
Lead	115	202	103	85	199	103	82	75-125	2	30

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.

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QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708971

**Date Analyzed:** 09/06/17

**Lab Control Sample Summary**

**Total Metals**

**Units:**mg/Kg

**Basis:**Dry

**Lab Control Sample**

KQ1712517-01

<b>Analyte Name</b>	<b>Analytical Method</b>	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>% Rec Limits</b>
Arsenic	6010C	494	500	99	80-120
Lead	6010C	486	500	97	80-120



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ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

September 08, 2017

**Analytical Report for Service Request No: K1708973**

Dave Enos  
Teck American Incorporated  
501 North Riverpoint Blvd., Suite 300  
Spokane, WA 99202

**RE: August 2017 Sampling SAT Study / B0095010.0005.00001**

Dear Dave,

Enclosed are the results of the sample(s) submitted to our laboratory August 24, 2017  
For your reference, these analyses have been assigned our service request number **K1708973**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at [www.alsglobal.com](http://www.alsglobal.com). All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at [Jeff.Coronado@alsglobal.com](mailto:Jeff.Coronado@alsglobal.com).

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**

Jeff Coronado  
Metals Department  
Manager



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ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

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## Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

### **Inorganic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

### **Metals Data Qualifiers**

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.  
  - i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Organic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.  
  - i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Additional Petroleum Hydrocarbon Specific Qualifiers**

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.



**ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso  
State Certifications, Accreditations, and Licenses**

<b>Agency</b>	<b>Web Site</b>	<b>Number</b>
Alaska DEH	<a href="http://dec.alaska.gov/eh/lab/cs/csapproval.htm">http://dec.alaska.gov/eh/lab/cs/csapproval.htm</a>	UST-040
Arizona DHS	<a href="http://www.azdhs.gov/lab/license/env.htm">http://www.azdhs.gov/lab/license/env.htm</a>	AZ0339
Arkansas - DEQ	<a href="http://www.adeq.state.ar.us/techsvs/labcert.htm">http://www.adeq.state.ar.us/techsvs/labcert.htm</a>	88-0637
California DHS (ELAP)	<a href="http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx">http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx</a>	2795
DOD ELAP	<a href="http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm">http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm</a>	L14-51
Florida DOH	<a href="http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm">http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm</a>	E87412
Hawaii DOH	<a href="http://health.hawaii.gov/">http://health.hawaii.gov/</a>	-
ISO 17025	<a href="http://www.pjlabs.com/">http://www.pjlabs.com/</a>	L16-57
Louisiana DEQ	<a href="http://www.deq.louisiana.gov/page/la-lab-accreditation">http://www.deq.louisiana.gov/page/la-lab-accreditation</a>	03016
Maine DHS	<a href="http://www.maine.gov/dhhs/">http://www.maine.gov/dhhs/</a>	WA01276
Minnesota DOH	<a href="http://www.health.state.mn.us/accreditation">http://www.health.state.mn.us/accreditation</a>	053-999-457
Nevada DEP	<a href="http://ndep.nv.gov/bsdw/labservice.htm">http://ndep.nv.gov/bsdw/labservice.htm</a>	WA01276
New Jersey DEP	<a href="http://www.nj.gov/dep/enforcement/oqa.html">http://www.nj.gov/dep/enforcement/oqa.html</a>	WA005
New York - DOH	<a href="https://www.wadsworth.org/regulatory/elap">https://www.wadsworth.org/regulatory/elap</a>	12060
North Carolina DEQ	<a href="https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification">https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification</a>	605
Oklahoma DEQ	<a href="http://www.deq.state.ok.us/CSDnew/labcert.htm">http://www.deq.state.ok.us/CSDnew/labcert.htm</a>	9801
Oregon – DEQ (NELAP)	<a href="http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx">http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx</a>	WA100010
South Carolina DHEC	<a href="http://www.scdhec.gov/environment/EnvironmentalLabCertification/">http://www.scdhec.gov/environment/EnvironmentalLabCertification/</a>	61002
Texas CEQ	<a href="http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html">http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html</a>	T104704427
Washington DOE	<a href="http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html">http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html</a>	C544
Wyoming (EPA Region 8)	<a href="https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water">https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water</a>	-
Kelso Laboratory Website	<a href="http://www.alsglobal.com">www.alsglobal.com</a>	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at [www.ALSGlobal.com](http://www.ALSGlobal.com) or at the accreditation bodies web site.  
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.



## Case Narrative

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

**ALS ENVIRONMENTAL**

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/  
B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request No.:** K1708973  
**Date Received:** 08/24/17

**Case Narrative**

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

**Sample Receipt**

Twenty soil samples were received for analysis at ALS Environmental on 08/24/17. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

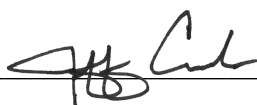
**Total Metals**

**Matrix Spike Recovery Exceptions:**

The matrix spike recovery of Lead for sample 258-3-A01-082117 was outside the project specified control criteria as a result of the heterogeneous character of the sample. The Relative Percent Difference (RPD) for the replicate analysis supported this. Since the unspiked samples contained high analyte concentrations relative to the amount spiked, the variability between replicates was sufficient to bias the percent recovery outside the control criteria. The associated QA/QC results (e.g. control sample, calibration standards, etc.) indicated the analysis was in control. No further corrective action was appropriate.

No other anomalies associated with the analysis of these samples were observed.

Approved by \_\_\_\_\_





## Chain of Custody

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ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

K1708973

Date 8/23/17  
 PAGE 1 OF 15  
 SR#

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001

Project Contact: Kady Young Company: Arcadis

Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488

City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961

Sampler's Signature: \_\_\_\_\_

Number of Containers	Analysis Requested					REMARKS
	lead/arsenic 3050B/6010					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					

Sample I.D.	Date	Time	LAB ID	Matrix
258-3-A01-082117	8/21/17	1658		S
A02		1701		S
A03		1703		S
A04		1705		S
A05		1706		S
A06		1708		S
A07		1710		S
A08		1712		S
A09		1714		S
A10		1715		S

**TURNAROUND REQUIREMENTS**  
 24 hr \_\_\_\_\_ 48 hr \_\_\_\_\_ 5 day \_\_\_\_\_  
 Standard (10 days)  
 Provide FAX Preliminary Results \_\_\_\_\_  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes raw data)  
 IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99201

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Joe Latham  
 Firm: ANA  
 Date/Time: 8/23/17 1300

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: Les Kennedy  
 Firm: ALS  
 Date/Time: 8/24/17 1020

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

*K1708973*

Date 8/23/17  
PAGE 2 OF 15  
SR#

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001  
 Project Contact: Kady Young Company: Arcadis  
 Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488  
 City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961  
 Sampler's Signature: \_\_\_\_\_

					Analysis Requested						
Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	lead/arsenic 3050B/6010					REMARKS
258-3-B01-082117	8/21/17	1720		S	1	X					
B02		1721		S	1	X					
B03		1723		S	1	X					
B04		1724		S	1	X					
B05		1726		S	1	X					
B06		1727		S	1	X					
B07		1728		S	1	X					
B08		1730		S	1	X					
B09		1731		S	1	X					
↓ B10 ↓	↓	1733		S	1	X					

**TURNAROUND REQUIREMENTS**  
 24 hr  48 hr  5 day  
 Standard (10 days)  
 Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes raw data)  
 IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99201

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Joe Lathan  
 Firm: ANA  
 Date/Time: 8/23/17 1300

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: Les Kennedy  
 Firm: ALS  
 Date/Time: 8/24/17 1020

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_



PC J.6

### Cooler Receipt and Preservation Form

Client Arcadis/Teek Service Request K17 08993

Received: 8/24/17 Opened: 8/24/17 By: U Unloaded: 8/24/17 By: U

- Samples were received via?  USPS  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  
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
-0.3	-0.2	0.5	0.7	+0.2	360		8105 9110 5532	
-0.1	0.0	2.1	2.2	+0.1	373		8745 6738 5531	

- 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
- Were samples received in good condition (temperature, unbroken)? *Indicate in the table below.* NA  Y  N  
If applicable, tissue samples were received:  Frozen  Partially Thawed  Thawed
- 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: \_\_\_\_\_



# Total Solids

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)



**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1708973  
**Date Collected:** 08/21/17  
**Date Received:** 08/24/17  
**Units:** Percent  
**Basis:** As Received

**Solids, Total**

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
258-3-A01-082117	K1708973-001	98.3	-	-	1	08/28/17 19:08	
258-3-A02-082117	K1708973-002	97.9	-	-	1	08/28/17 19:08	
258-3-A03-082117	K1708973-003	98.5	-	-	1	08/28/17 19:08	
258-3-A04-082117	K1708973-004	98.1	-	-	1	08/28/17 19:08	
258-3-A05-082117	K1708973-005	98.3	-	-	1	08/28/17 19:08	
258-3-A06-082117	K1708973-006	97.0	-	-	1	08/28/17 19:08	
258-3-A07-082117	K1708973-007	97.6	-	-	1	08/28/17 19:08	
258-3-A08-082117	K1708973-008	97.1	-	-	1	08/28/17 19:08	
258-3-A09-082117	K1708973-009	97.7	-	-	1	08/28/17 19:08	
258-3-A10-082117	K1708973-010	97.8	-	-	1	08/28/17 19:08	
258-3-B01-082117	K1708973-011	97.5	-	-	1	08/28/17 19:08	
258-3-B02-082117	K1708973-012	98.1	-	-	1	08/28/17 19:08	
258-3-B03-082117	K1708973-013	97.9	-	-	1	08/28/17 19:08	
258-3-B04-082117	K1708973-014	98.2	-	-	1	08/28/17 19:08	
258-3-B05-082117	K1708973-015	97.8	-	-	1	08/28/17 19:08	
258-3-B06-082117	K1708973-016	97.4	-	-	1	08/28/17 19:08	
258-3-B07-082117	K1708973-017	98.2	-	-	1	08/28/17 19:08	
258-3-B08-082117	K1708973-018	97.4	-	-	1	08/28/17 19:08	
258-3-B09-082117	K1708973-019	97.2	-	-	1	08/28/17 19:08	
258-3-B10-082117	K1708973-020	98.3	-	-	1	08/28/17 19:08	

ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1708973  
**Date Collected:** 08/21/17  
**Date Received:** 08/24/17

**Units:** Percent  
**Basis:** As Received

**Replicate Sample Summary**  
**Inorganic Parameters**

<b>Sample Name:</b>	<b>Lab Code:</b>	<b>MRL</b>	<b>Sample Result</b>	<b>Duplicate Result</b>	<b>Average</b>	<b>RPD</b>	<b>RPD Limit</b>	<b>Date Analyzed</b>
258-3-A01-082117	K1708973-001DUP	-	98.3	98.2	98.3	<1	20	08/28/17
258-3-B01-082117	K1708973-011DUP	-	97.5	97.9	97.7	<1	20	08/28/17

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



# Metals

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-A01-082117  
**Lab Code:** K1708973-001

**Service Request:** K1708973  
**Date Collected:** 08/21/17 16:58  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	17.1	mg/Kg	3.9	0.8	2	09/06/17 17:58	09/01/17	
Lead	6010C	157	mg/Kg	2.0	0.4	2	09/06/17 17:58	09/01/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-A02-082117  
**Lab Code:** K1708973-002

**Service Request:** K1708973  
**Date Collected:** 08/21/17 17:01  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>13.6</b>	mg/Kg	3.8	0.8	2	09/06/17 18:08	09/01/17	
Lead	6010C	<b>78.5</b>	mg/Kg	1.9	0.4	2	09/06/17 18:08	09/01/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-A03-082117  
**Lab Code:** K1708973-003

**Service Request:** K1708973  
**Date Collected:** 08/21/17 17:03  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>9.4</b>	mg/Kg	4.0	0.8	2	09/06/17 18:11	09/01/17	
Lead	6010C	<b>79.7</b>	mg/Kg	2.0	0.4	2	09/06/17 18:11	09/01/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-A04-082117  
**Lab Code:** K1708973-004

**Service Request:** K1708973  
**Date Collected:** 08/21/17 17:05  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>11.8</b>	mg/Kg	4.1	0.8	2	09/06/17 18:13	09/01/17	
Lead	6010C	<b>165</b>	mg/Kg	2.0	0.4	2	09/06/17 18:13	09/01/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-A05-082117  
**Lab Code:** K1708973-005

**Service Request:** K1708973  
**Date Collected:** 08/21/17 17:06  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>8.3</b>	mg/Kg	4.1	0.8	2	09/06/17 18:15	09/01/17	
Lead	6010C	<b>109</b>	mg/Kg	2.0	0.4	2	09/06/17 18:15	09/01/17	



ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-A06-082117  
**Lab Code:** K1708973-006

**Service Request:** K1708973  
**Date Collected:** 08/21/17 17:08  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>14.2</b>	mg/Kg	3.9	0.8	2	09/06/17 18:17	09/01/17	
Lead	6010C	<b>205</b>	mg/Kg	1.9	0.4	2	09/06/17 18:17	09/01/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-A07-082117  
**Lab Code:** K1708973-007

**Service Request:** K1708973  
**Date Collected:** 08/21/17 17:10  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>9.9</b>	mg/Kg	3.9	0.8	2	09/06/17 18:26	09/01/17	
Lead	6010C	<b>126</b>	mg/Kg	1.9	0.4	2	09/06/17 18:26	09/01/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-A08-082117  
**Lab Code:** K1708973-008

**Service Request:** K1708973  
**Date Collected:** 08/21/17 17:12  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>15.7</b>	mg/Kg	4.1	0.8	2	09/06/17 18:28	09/01/17	
Lead	6010C	<b>245</b>	mg/Kg	2.1	0.4	2	09/06/17 18:28	09/01/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-A09-082117  
**Lab Code:** K1708973-009

**Service Request:** K1708973  
**Date Collected:** 08/21/17 17:14  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>11.9</b>	mg/Kg	3.9	0.8	2	09/06/17 18:31	09/01/17	
Lead	6010C	<b>170</b>	mg/Kg	1.9	0.4	2	09/06/17 18:31	09/01/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-A10-082117  
**Lab Code:** K1708973-010

**Service Request:** K1708973  
**Date Collected:** 08/21/17 17:15  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>13.7</b>	mg/Kg	4.0	0.8	2	09/06/17 18:33	09/01/17	
Lead	6010C	<b>290</b>	mg/Kg	2.0	0.4	2	09/06/17 18:33	09/01/17	

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-B01-082117  
**Lab Code:** K1708973-011

**Service Request:** K1708973  
**Date Collected:** 08/21/17 17:20  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	14.6	mg/Kg	4.1	0.8	2	09/06/17 18:35	09/01/17	
Lead	6010C	145	mg/Kg	2.1	0.4	2	09/06/17 18:35	09/01/17	

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-B02-082117  
**Lab Code:** K1708973-012

**Service Request:** K1708973  
**Date Collected:** 08/21/17 17:21  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>8.5</b>	mg/Kg	4.0	0.8	2	09/06/17 18:37	09/01/17	
Lead	6010C	<b>61.9</b>	mg/Kg	2.0	0.4	2	09/06/17 18:37	09/01/17	

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-B03-082117  
**Lab Code:** K1708973-013

**Service Request:** K1708973  
**Date Collected:** 08/21/17 17:23  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>12.6</b>	mg/Kg	4.1	0.8	2	09/06/17 18:40	09/01/17	
Lead	6010C	<b>137</b>	mg/Kg	2.0	0.4	2	09/06/17 18:40	09/01/17	



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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-B04-082117  
**Lab Code:** K1708973-014

**Service Request:** K1708973  
**Date Collected:** 08/21/17 17:24  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>10.9</b>	mg/Kg	4.0	0.8	2	09/06/17 18:42	09/01/17	
Lead	6010C	<b>86.5</b>	mg/Kg	2.0	0.4	2	09/06/17 18:42	09/01/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-B05-082117  
**Lab Code:** K1708973-015

**Service Request:** K1708973  
**Date Collected:** 08/21/17 17:26  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>8.1</b>	mg/Kg	4.0	0.8	2	09/06/17 18:44	09/01/17	
Lead	6010C	<b>98.4</b>	mg/Kg	2.0	0.4	2	09/06/17 18:44	09/01/17	

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-B06-082117  
**Lab Code:** K1708973-016

**Service Request:** K1708973  
**Date Collected:** 08/21/17 17:27  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	21.1	mg/Kg	3.8	0.8	2	09/06/17 18:46	09/01/17	
Lead	6010C	371	mg/Kg	1.9	0.4	2	09/06/17 18:46	09/01/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-B07-082117  
**Lab Code:** K1708973-017

**Service Request:** K1708973  
**Date Collected:** 08/21/17 17:28  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>10.8</b>	mg/Kg	4.0	0.8	2	09/06/17 18:55	09/01/17	
Lead	6010C	<b>133</b>	mg/Kg	2.0	0.4	2	09/06/17 18:55	09/01/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-B08-082117  
**Lab Code:** K1708973-018

**Service Request:** K1708973  
**Date Collected:** 08/21/17 17:30  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>22.7</b>	mg/Kg	3.8	0.8	2	09/06/17 18:57	09/01/17	
Lead	6010C	<b>688</b>	mg/Kg	1.9	0.4	2	09/06/17 18:57	09/01/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-B09-082117  
**Lab Code:** K1708973-019

**Service Request:** K1708973  
**Date Collected:** 08/21/17 17:31  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>13.4</b>	mg/Kg	4.0	0.8	2	09/06/17 18:59	09/01/17	
Lead	6010C	<b>383</b>	mg/Kg	2.0	0.4	2	09/06/17 18:59	09/01/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-B10-082117  
**Lab Code:** K1708973-020

**Service Request:** K1708973  
**Date Collected:** 08/21/17 17:33  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	9.2	mg/Kg	4.0	0.8	2	09/06/17 19:02	09/01/17	
Lead	6010C	96.3	mg/Kg	2.0	0.4	2	09/06/17 19:02	09/01/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** Method Blank  
**Lab Code:** KQ1712540-02

**Service Request:** K1708973  
**Date Collected:** NA  
**Date Received:** NA  
**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	ND U	mg/Kg	4	0.8	2	09/06/17 17:47	09/01/17	
Lead	6010C	ND U	mg/Kg	2	0.4	2	09/06/17 17:47	09/01/17	



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QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708973  
**Date Collected:** 08/21/17  
**Date Received:** 08/24/17  
**Date Analyzed:** 09/6/17  
**Date Extracted:** 09/1/17

**Duplicate Matrix Spike Summary  
Total Metals**

**Sample Name:** 258-3-A01-082117  
**Lab Code:** K1708973-001  
**Analysis Method:** 6010C  
**Prep Method:** EPA 3050B

**Units:** mg/Kg  
**Basis:** Dry

Analyte Name	Sample Result	Result	Matrix Spike KQ1712540-03		Result	Duplicate Matrix Spike KQ1712540-04		% Rec Limits	RPD	RPD Limit
			Spike Amount	% Rec		Spike Amount	% Rec			
Arsenic	17.1	105	99.7	88	111	101	93	75-125	5	30
Lead	157	213	99.7	56 N	260	101	102	75-125	20	30

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708973  
**Date Analyzed:** 09/06/17

**Lab Control Sample Summary**  
**Total Metals**

**Units:**mg/Kg  
**Basis:**Dry

**Lab Control Sample**  
KQ1712540-01

<b>Analyte Name</b>	<b>Analytical Method</b>	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>% Rec Limits</b>
Arsenic	6010C	489	500	98	80-120
Lead	6010C	477	500	95	80-120



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ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

September 08, 2017

**Analytical Report for Service Request No: K1708974**

Dave Enos  
Teck American Incorporated  
501 North Riverpoint Blvd., Suite 300  
Spokane, WA 99202

**RE: August 2017 Sampling SAT Study / B0095010.0005.00001**

Dear Dave,

Enclosed are the results of the sample(s) submitted to our laboratory August 24, 2017  
For your reference, these analyses have been assigned our service request number **K1708974**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at [www.alsglobal.com](http://www.alsglobal.com). All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at [Jeff.Coronado@alsglobal.com](mailto:Jeff.Coronado@alsglobal.com).

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**

Jeff Coronado  
Metals Department  
Manager



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ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

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## Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

### **Inorganic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

### **Metals Data Qualifiers**

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.  
  - i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Organic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.  
  - i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Additional Petroleum Hydrocarbon Specific Qualifiers**

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

**ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso  
State Certifications, Accreditations, and Licenses**

<b>Agency</b>	<b>Web Site</b>	<b>Number</b>
Alaska DEH	<a href="http://dec.alaska.gov/eh/lab/cs/csapproval.htm">http://dec.alaska.gov/eh/lab/cs/csapproval.htm</a>	UST-040
Arizona DHS	<a href="http://www.azdhs.gov/lab/license/env.htm">http://www.azdhs.gov/lab/license/env.htm</a>	AZ0339
Arkansas - DEQ	<a href="http://www.adeq.state.ar.us/techsvs/labcert.htm">http://www.adeq.state.ar.us/techsvs/labcert.htm</a>	88-0637
California DHS (ELAP)	<a href="http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx">http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx</a>	2795
DOD ELAP	<a href="http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm">http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm</a>	L14-51
Florida DOH	<a href="http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm">http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm</a>	E87412
Hawaii DOH	<a href="http://health.hawaii.gov/">http://health.hawaii.gov/</a>	-
ISO 17025	<a href="http://www.pjllabs.com/">http://www.pjllabs.com/</a>	L16-57
Louisiana DEQ	<a href="http://www.deq.louisiana.gov/page/la-lab-accreditation">http://www.deq.louisiana.gov/page/la-lab-accreditation</a>	03016
Maine DHS	<a href="http://www.maine.gov/dhhs/">http://www.maine.gov/dhhs/</a>	WA01276
Minnesota DOH	<a href="http://www.health.state.mn.us/accreditation">http://www.health.state.mn.us/accreditation</a>	053-999-457
Nevada DEP	<a href="http://ndep.nv.gov/bsdw/labservice.htm">http://ndep.nv.gov/bsdw/labservice.htm</a>	WA01276
New Jersey DEP	<a href="http://www.nj.gov/dep/enforcement/oqa.html">http://www.nj.gov/dep/enforcement/oqa.html</a>	WA005
New York - DOH	<a href="https://www.wadsworth.org/regulatory/elap">https://www.wadsworth.org/regulatory/elap</a>	12060
North Carolina DEQ	<a href="https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification">https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification</a>	605
Oklahoma DEQ	<a href="http://www.deq.state.ok.us/CSDnew/labcert.htm">http://www.deq.state.ok.us/CSDnew/labcert.htm</a>	9801
Oregon – DEQ (NELAP)	<a href="http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx">http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx</a>	WA100010
South Carolina DHEC	<a href="http://www.scdhec.gov/environment/EnvironmentalLabCertification/">http://www.scdhec.gov/environment/EnvironmentalLabCertification/</a>	61002
Texas CEQ	<a href="http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html">http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html</a>	T104704427
Washington DOE	<a href="http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html">http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html</a>	C544
Wyoming (EPA Region 8)	<a href="https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water">https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water</a>	-
Kelso Laboratory Website	<a href="http://www.alsglobal.com">www.alsglobal.com</a>	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at [www.ALSGlobal.com](http://www.ALSGlobal.com) or at the accreditation bodies web site.  
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.



## Case Narrative

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
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## ALS ENVIRONMENTAL

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/  
B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request No.:** K1708974  
**Date Received:** 08/24/17

### Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

### Sample Receipt

Twenty soil samples were received for analysis at ALS Environmental on 08/24/17. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

### Total Metals

#### **Relative Percent Difference Exceptions:**

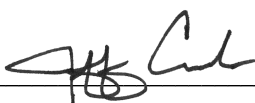
The Relative Percent Difference (RPD) for the replicate spike analysis of Lead in sample 258-G01-082217 was outside the project specified control limits. The variability in the results was attributed to the heterogeneous distribution of lead in the sample. Standard mixing techniques were used, but were not sufficient for complete homogenization of this sample.

#### **Matrix Spike Recovery Exceptions:**

The matrix spike recoveries of Lead for sample 258-G01-082217 were outside the project specified control criteria as a result of the heterogeneous character of the sample. The Relative Percent Difference (RPD) for the replicate analysis supported this. Since the unspiked sample contained high analyte concentrations relative to the amount spiked, the variability between replicates was sufficient to bias the percent recoveries outside the control criteria. The associated QA/QC results (e.g. control sample, calibration standards, etc.) indicated the analysis was in control. No further corrective action was appropriate.

No other anomalies associated with the analysis of these samples were observed.

Approved by \_\_\_\_\_





## Chain of Custody

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1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
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ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

*K1708974*

Date 8/23/17  
 PAGE 10 OF 15  
 SR#

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001

Project Contact: Kady Young Company: Arcadis

Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488

City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961

Sampler's Signature: \_\_\_\_\_

Number of Containers	Analysis Requested					REMARKS
	lead/arsenic 3050B/6010					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					

Sample I.D.	Date	Time	LAB ID	Matrix
258-3-G01	082217	8/22/17 1022		S
G02		1024		S
G03		1027		S
G04		1029		S
G05		1031		S
G06		1033		S
G07		1035		S
G08		1036		S
G09		1039		S
G10		1041		S

**TURNAROUND REQUIREMENTS**  
 \_\_\_ 24 hr \_\_\_ 48 hr \_\_\_ 5 day  
 Standard (10 days)  
 \_\_\_ Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 \_\_\_ III. Data Validation Report (includes raw data)  
 \_\_\_ IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99208

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Joe Lathan  
 Firm: ANA  
 Date/Time: 8/23/17 1300

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: Les Kennedy  
 Firm: ALS  
 Date/Time: 8/24/17 1020

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

K1708974

Date 8/23/17  
 PAGE 11 OF 15  
 SR#

**Project Name:** Teck American - UCR SATES **Project Number:** B0095010.0005.00001  
**Project Contact:** Kady Young **Company:** Arcadis  
**Company/Address:** 189 North Cedar Street **Phone:** 307-203-3510 or 810-588-1488  
**City, State, Zip:** Buffalo, WY 82834 **FAX:** 307-684-5961  
**Sampler's Signature:** \_\_\_\_\_

Number of Containers	Analysis Requested					REMARKS
	lead/arsenic 3050B/6010					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					

Sample I.D.	Date	Time	LAB ID	Matrix
258-3-H01-082217	8/22/17	1044		S
H02		1047		S
H03		1049		S
H04		1051		S
H05		1052		S
H06		1054		S
H07		1056		S
H08		1058		S
H09		1100		S
H10		1101		S

**TURNAROUND REQUIREMENTS**  
 \_\_\_ 24 hr \_\_\_ 48 hr \_\_\_ 5 day  
 Standard (10 days)  
 \_\_\_ Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes raw data)  
 IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99201

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Joe Lathan  
 Firm: ANA  
 Date/Time: 8/23/17 1300

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: Les Kennedy  
 Firm: ALS  
 Date/Time: 8/24/17 1020

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_



PC 8/24/17

### Cooler Receipt and Preservation Form

Client Arcadis/Teek Service Request K17 08974

Received: 8/24/17 Opened: 8/24/17 By: UA Unloaded: 8/24/17 By: UA

- 1. Samples were received via?  USPS  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
- 4. 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
-0.3	-0.2	0.5	0.7	+0.2	360		8105 9110 5532		
-0.1	0.0	2.1	2.2	+0.1	373		8745 6738 5531		

- 5. Packing material:  Inserts  Baggies  Bubble Wrap  Gel Packs  Wet Ice  Dry Ice  Sleeves
- 6. Were custody papers properly filled out (ink, signed, etc.)? NA  Y  N
- 7. Were samples received in good condition (temperature, unbroken)? *Indicate in the table below.* NA  Y  N  
If applicable, tissue samples were received:  Frozen  Partially Thawed  Thawed
- 8. Were all sample labels complete (i.e analysis, preservation, etc.)? NA  Y  N
- 9. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA  Y  N
- 10. Were appropriate bottles/containers and volumes received for the tests indicated? NA  Y  N
- 11. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below*  NA  Y  N
- 12. Were VOA vials received without headspace? *Indicate in the table below.*  NA  Y  N
- 13. 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: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



# Total Solids

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Phone (360)577-7222 Fax (360)636-1068  
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**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1708974  
**Date Collected:** 08/22/17  
**Date Received:** 08/24/17  
**Units:** Percent  
**Basis:** As Received

**Solids, Total**

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
258-3-G01-082217	K1708974-001	94.9	-	-	1	08/31/17 16:53	
258-3-G02-082217	K1708974-002	96.0	-	-	1	08/31/17 16:53	
258-3-G03-082217	K1708974-003	97.3	-	-	1	08/31/17 16:53	
258-3-G04-082217	K1708974-004	96.5	-	-	1	08/31/17 16:53	
258-3-G05-082217	K1708974-005	96.1	-	-	1	08/31/17 16:53	
258-3-G06-082217	K1708974-006	97.4	-	-	1	08/31/17 16:53	
258-3-G07-082217	K1708974-007	97.1	-	-	1	08/31/17 16:53	
258-3-G08-082217	K1708974-008	97.8	-	-	1	08/31/17 16:53	
258-3-G09-082217	K1708974-009	98.9	-	-	1	08/31/17 16:53	
258-3-G10-082217	K1708974-010	98.9	-	-	1	08/31/17 16:53	
258-3-H01-082217	K1708974-011	90.7	-	-	1	08/31/17 16:53	
258-3-H02-082217	K1708974-012	92.7	-	-	1	08/31/17 16:53	
258-3-H03-082217	K1708974-013	86.2	-	-	1	08/31/17 16:53	
258-3-H04-082217	K1708974-014	96.3	-	-	1	08/31/17 16:53	
258-3-H05-082217	K1708974-015	97.2	-	-	1	08/31/17 16:53	
258-3-H06-082217	K1708974-016	97.2	-	-	1	08/31/17 16:53	
258-3-H07-082217	K1708974-017	97.4	-	-	1	08/31/17 16:53	
258-3-H08-082217	K1708974-018	97.9	-	-	1	08/31/17 16:53	
258-3-H09-082217	K1708974-019	98.7	-	-	1	08/31/17 16:53	
258-3-H10-082217	K1708974-020	98.4	-	-	1	08/31/17 16:53	

ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1708974  
**Date Collected:** 08/22/17  
**Date Received:** 08/24/17

**Units:** Percent  
**Basis:** As Received

Replicate Sample Summary  
Inorganic Parameters

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
258-3-G02-082217	K1708974-002DUP	-	96.0	96.6	96.3	<1	20	08/31/17
258-3-H02-082217	K1708974-012DUP	-	92.7	93.0	92.9	<1	20	08/31/17

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.





# Metals

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1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-G01-082217  
**Lab Code:** K1708974-001

**Service Request:** K1708974  
**Date Collected:** 08/22/17 10:22  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>12.5</b>	mg/Kg	4.0	0.8	2	09/06/17 19:08	09/05/17	
Lead	6010C	<b>178</b>	mg/Kg	2.0	0.4	2	09/06/17 19:08	09/05/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-G02-082217  
**Lab Code:** K1708974-002

**Service Request:** K1708974  
**Date Collected:** 08/22/17 10:24  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>14.8</b>	mg/Kg	4.0	0.8	2	09/06/17 19:25	09/05/17	
Lead	6010C	<b>2350</b>	mg/Kg	2.0	0.4	2	09/06/17 19:25	09/05/17	

ALS Group USA, Corp.  
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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-G03-082217  
**Lab Code:** K1708974-003

**Service Request:** K1708974  
**Date Collected:** 08/22/17 10:27  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>11.5</b>	mg/Kg	3.9	0.8	2	09/06/17 19:27	09/05/17	
Lead	6010C	<b>91.9</b>	mg/Kg	2.0	0.4	2	09/06/17 19:27	09/05/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-G04-082217  
**Lab Code:** K1708974-004

**Service Request:** K1708974  
**Date Collected:** 08/22/17 10:29  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>11.2</b>	mg/Kg	3.8	0.8	2	09/06/17 19:30	09/05/17	
Lead	6010C	<b>90.3</b>	mg/Kg	1.9	0.4	2	09/06/17 19:30	09/05/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-G05-082217  
**Lab Code:** K1708974-005

**Service Request:** K1708974  
**Date Collected:** 08/22/17 10:31  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>18.6</b>	mg/Kg	4.1	0.8	2	09/06/17 19:32	09/05/17	
Lead	6010C	<b>170</b>	mg/Kg	2.0	0.4	2	09/06/17 19:32	09/05/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-G06-082217  
**Lab Code:** K1708974-006

**Service Request:** K1708974  
**Date Collected:** 08/22/17 10:33  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>11.4</b>	mg/Kg	4.1	0.8	2	09/06/17 19:34	09/05/17	
Lead	6010C	<b>109</b>	mg/Kg	2.0	0.4	2	09/06/17 19:34	09/05/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-G07-082217  
**Lab Code:** K1708974-007

**Service Request:** K1708974  
**Date Collected:** 08/22/17 10:35  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>14.7</b>	mg/Kg	4.1	0.8	2	09/06/17 19:36	09/05/17	
Lead	6010C	<b>249</b>	mg/Kg	2.0	0.4	2	09/06/17 19:36	09/05/17	



ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-G08-082217  
**Lab Code:** K1708974-008

**Service Request:** K1708974  
**Date Collected:** 08/22/17 10:36  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>20.2</b>	mg/Kg	4.0	0.8	2	09/06/17 19:38	09/05/17	
Lead	6010C	<b>154</b>	mg/Kg	2.0	0.4	2	09/06/17 19:38	09/05/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-G09-082217  
**Lab Code:** K1708974-009

**Service Request:** K1708974  
**Date Collected:** 08/22/17 10:39  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	7.9	mg/Kg	3.9	0.8	2	09/06/17 19:40	09/05/17	
Lead	6010C	27.5	mg/Kg	2.0	0.4	2	09/06/17 19:40	09/05/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-G10-082217  
**Lab Code:** K1708974-010

**Service Request:** K1708974  
**Date Collected:** 08/22/17 10:41  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>7.6</b>	mg/Kg	3.8	0.8	2	09/06/17 19:43	09/05/17	
Lead	6010C	<b>74.9</b>	mg/Kg	1.9	0.4	2	09/06/17 19:43	09/05/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-H01-082217  
**Lab Code:** K1708974-011

**Service Request:** K1708974  
**Date Collected:** 08/22/17 10:44  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>19.1</b>	mg/Kg	4.2	0.8	2	09/06/17 19:51	09/05/17	
Lead	6010C	<b>999</b>	mg/Kg	2.1	0.4	2	09/06/17 19:51	09/05/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-H02-082217  
**Lab Code:** K1708974-012

**Service Request:** K1708974  
**Date Collected:** 08/22/17 10:47  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	21.3	mg/Kg	4.3	0.9	2	09/06/17 19:53	09/05/17	
Lead	6010C	342	mg/Kg	2.1	0.4	2	09/06/17 19:53	09/05/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-H03-082217  
**Lab Code:** K1708974-013

**Service Request:** K1708974  
**Date Collected:** 08/22/17 10:49  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>8.0</b>	mg/Kg	4.4	0.9	2	09/06/17 19:56	09/05/17	
Lead	6010C	<b>198</b>	mg/Kg	2.2	0.4	2	09/06/17 19:56	09/05/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-H04-082217  
**Lab Code:** K1708974-014

**Service Request:** K1708974  
**Date Collected:** 08/22/17 10:51  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>12.1</b>	mg/Kg	4.1	0.8	2	09/06/17 19:58	09/05/17	
Lead	6010C	<b>169</b>	mg/Kg	2.0	0.4	2	09/06/17 19:58	09/05/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-H05-082217  
**Lab Code:** K1708974-015

**Service Request:** K1708974  
**Date Collected:** 08/22/17 10:52  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	11.5	mg/Kg	4.0	0.8	2	09/06/17 20:00	09/05/17	
Lead	6010C	155	mg/Kg	2.0	0.4	2	09/06/17 20:00	09/05/17	



ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-H06-082217  
**Lab Code:** K1708974-016

**Service Request:** K1708974  
**Date Collected:** 08/22/17 10:54  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>17.0</b>	mg/Kg	3.8	0.8	2	09/06/17 20:02	09/05/17	
Lead	6010C	<b>225</b>	mg/Kg	1.9	0.4	2	09/06/17 20:02	09/05/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-H07-082217  
**Lab Code:** K1708974-017

**Service Request:** K1708974  
**Date Collected:** 08/22/17 10:56  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>15.2</b>	mg/Kg	3.9	0.8	2	09/06/17 20:04	09/05/17	
Lead	6010C	<b>188</b>	mg/Kg	2.0	0.4	2	09/06/17 20:04	09/05/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-H08-082217  
**Lab Code:** K1708974-018

**Service Request:** K1708974  
**Date Collected:** 08/22/17 10:58  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>12.6</b>	mg/Kg	3.9	0.8	2	09/06/17 20:06	09/05/17	
Lead	6010C	<b>150</b>	mg/Kg	2.0	0.4	2	09/06/17 20:06	09/05/17	

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-H09-082217  
**Lab Code:** K1708974-019

**Service Request:** K1708974  
**Date Collected:** 08/22/17 11:00  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	7.6	mg/Kg	4.0	0.8	2	09/06/17 20:09	09/05/17	
Lead	6010C	85.4	mg/Kg	2.0	0.4	2	09/06/17 20:09	09/05/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-H10-082217  
**Lab Code:** K1708974-020

**Service Request:** K1708974  
**Date Collected:** 08/22/17 11:01  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	7.5	mg/Kg	3.9	0.8	2	09/06/17 20:11	09/05/17	
Lead	6010C	85.0	mg/Kg	2.0	0.4	2	09/06/17 20:11	09/05/17	

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** Method Blank  
**Lab Code:** KQ1712541-02

**Service Request:** K1708974  
**Date Collected:** NA  
**Date Received:** NA  
**Basis:** Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6010C	ND U	mg/Kg	4	0.8	2	09/06/17 19:04	09/05/17	
Lead	6010C	ND U	mg/Kg	2	0.4	2	09/06/17 19:04	09/05/17	

ALS Group USA, Corp.  
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QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708974  
**Date Collected:** 08/22/17  
**Date Received:** 08/24/17  
**Date Analyzed:** 09/6/17  
**Date Extracted:** 09/5/17

**Duplicate Matrix Spike Summary  
Total Metals**

**Sample Name:** 258-3-G01-082217  
**Lab Code:** K1708974-001  
**Analysis Method:** 6010C  
**Prep Method:** EPA 3050B

**Units:** mg/Kg  
**Basis:** Dry

Analyte Name	Sample Result	Result	Matrix Spike KQ1712541-03		Duplicate Matrix Spike KQ1712541-04		% Rec Limits	RPD	RPD Limit	
			Spike Amount	% Rec	Result	Spike Amount				% Rec
Arsenic	12.5	111	101	97	106	99.4	94	75-125	5	30
Lead	178	405	101	225 N	2020	99.4	1855 N	75-125	133 *	30

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708974  
**Date Analyzed:** 09/06/17

**Lab Control Sample Summary**  
**Total Metals**

**Units:**mg/Kg  
**Basis:**Dry

**Lab Control Sample**  
KQ1712541-01

<b>Analyte Name</b>	<b>Analytical Method</b>	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>% Rec Limits</b>
Arsenic	6010C	476	500	95	80-120
Lead	6010C	466	500	93	80-120





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ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

September 12, 2017

**Analytical Report for Service Request No: K1708975**

Dave Enos  
Teck American Incorporated  
501 North Riverpoint Blvd., Suite 300  
Spokane, WA 99202

**RE: August 2017 Sampling SAT Study / B0095010.0005.00001**

Dear Dave,

Enclosed are the results of the sample(s) submitted to our laboratory August 24, 2017  
For your reference, these analyses have been assigned our service request number **K1708975**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at [www.alsglobal.com](http://www.alsglobal.com). All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at [Jeff.Coronado@alsglobal.com](mailto:Jeff.Coronado@alsglobal.com).

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**

Jeff Coronado  
Metals Department  
Manager



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ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

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## Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

### **Inorganic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

### **Metals Data Qualifiers**

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.  
  - i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Organic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.  
  - i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Additional Petroleum Hydrocarbon Specific Qualifiers**

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

**ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso  
State Certifications, Accreditations, and Licenses**

<b>Agency</b>	<b>Web Site</b>	<b>Number</b>
Alaska DEH	<a href="http://dec.alaska.gov/eh/lab/cs/csapproval.htm">http://dec.alaska.gov/eh/lab/cs/csapproval.htm</a>	UST-040
Arizona DHS	<a href="http://www.azdhs.gov/lab/license/env.htm">http://www.azdhs.gov/lab/license/env.htm</a>	AZ0339
Arkansas - DEQ	<a href="http://www.adeq.state.ar.us/techsvs/labcert.htm">http://www.adeq.state.ar.us/techsvs/labcert.htm</a>	88-0637
California DHS (ELAP)	<a href="http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx">http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx</a>	2795
DOD ELAP	<a href="http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm">http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm</a>	L14-51
Florida DOH	<a href="http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm">http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm</a>	E87412
Hawaii DOH	<a href="http://health.hawaii.gov/">http://health.hawaii.gov/</a>	-
ISO 17025	<a href="http://www.pjllabs.com/">http://www.pjllabs.com/</a>	L16-57
Louisiana DEQ	<a href="http://www.deq.louisiana.gov/page/la-lab-accreditation">http://www.deq.louisiana.gov/page/la-lab-accreditation</a>	03016
Maine DHS	<a href="http://www.maine.gov/dhhs/">http://www.maine.gov/dhhs/</a>	WA01276
Minnesota DOH	<a href="http://www.health.state.mn.us/accreditation">http://www.health.state.mn.us/accreditation</a>	053-999-457
Nevada DEP	<a href="http://ndep.nv.gov/bsdw/labservice.htm">http://ndep.nv.gov/bsdw/labservice.htm</a>	WA01276
New Jersey DEP	<a href="http://www.nj.gov/dep/enforcement/oqa.html">http://www.nj.gov/dep/enforcement/oqa.html</a>	WA005
New York - DOH	<a href="https://www.wadsworth.org/regulatory/elap">https://www.wadsworth.org/regulatory/elap</a>	12060
North Carolina DEQ	<a href="https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification">https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification</a>	605
Oklahoma DEQ	<a href="http://www.deq.state.ok.us/CSDnew/labcert.htm">http://www.deq.state.ok.us/CSDnew/labcert.htm</a>	9801
Oregon – DEQ (NELAP)	<a href="http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx">http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx</a>	WA100010
South Carolina DHEC	<a href="http://www.scdhec.gov/environment/EnvironmentalLabCertification/">http://www.scdhec.gov/environment/EnvironmentalLabCertification/</a>	61002
Texas CEQ	<a href="http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html">http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html</a>	T104704427
Washington DOE	<a href="http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html">http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html</a>	C544
Wyoming (EPA Region 8)	<a href="https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water">https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water</a>	-
Kelso Laboratory Website	<a href="http://www.alsglobal.com">www.alsglobal.com</a>	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at [www.ALSGlobal.com](http://www.ALSGlobal.com) or at the accreditation bodies web site.  
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.



## Case Narrative

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

**ALS ENVIRONMENTAL**

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/  
B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request No.:** K1708975  
**Date Received:** 08/24/17

**Case Narrative**


All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

**Sample Receipt**

Twenty soil samples were received for analysis at ALS Environmental on 08/24/17. The samples were received in good condition and consistent with the accompanying chain of custody form, except where noted on the cooler receipt and preservation form included in this report. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

**Total Metals**

No anomalies associated with the analysis of these samples were observed.

Approved by  \_\_\_\_\_



# Chain of Custody

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Phone (360)577-7222 Fax (360)636-1068  
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**ALS Environmental-Kelso**

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

*K1708949*

Date 8/23/17  
 PAGE 13 OF 15  
 SR# \_\_\_\_\_

**Project Name:** Teck American - UCR SATES **Project Number:** B0095010.0005.00001  
**Project Contact:** Kady Young **Company:** Arcadis  
**Company/Address:** 189 North Cedar Street **Phone:** 307-203-3510 or 810-588-1488  
**City, State, Zip:** Buffalo, WY 82834 **FAX:** 307-684-5961  
**Sampler's Signature:** \_\_\_\_\_

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	Analysis Requested					REMARKS
						lead/arsenic 3050B/6010					
258-3-I01-082217	8/22/17	1120		S	1	X					
I02		1122		S	1	X					
I03		1124		S	1	X					
I04		1126		S	1	X					
I05		1128		S	1	X					
I06		1129		S	1	X					
I07		1131		S	1	X					
I08		1133		S	1	X					
I09		1135		S	1	X					
I10		1137		S	1	X					

**TURNAROUND REQUIREMENTS**  
 \_\_\_ 24 hr \_\_\_ 48 hr \_\_\_ 5 day  
 Standard (10 days)  
 \_\_\_ Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes raw data)  
 IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99204

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Joe Lathan  
 Firm: ANA  
 Date/Time: 8/23/17 1300

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: Les Kennedy  
 Firm: ALS  
 Date/Time: 8/24/17 1020

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

K1-108976

Date 8/23/17  
 PAGE 14 OF 15  
 SR#

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001  
 Project Contact: Kady Young Company: Arcadis  
 Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488  
 City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961  
 Sampler's Signature: \_\_\_\_\_

Number of Containers	Analysis Requested					REMARKS
	lead/arsenic 3050B/6010					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					

Sample I.D.	Date	Time	LAB ID	Matrix
258-3-101-082217	8/22/17	1141		S
102		1144		S
103		1146		S
104		1149		S
105		1150		S
106		1153		S
107		1156		S
108		1158		S
109		1200		S
110		1202		S

**TURNAROUND REQUIREMENTS**  
 24 hr  48 hr  5 day  
 Standard (10 days)  
 Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes raw data)  
 IV. CLP Deliverable Report  
 V. EDD

Comments/Special Instructions:  
 Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99208

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Joe LaFram  
 Firm: ANA  
 Date/Time: 8/23/17 1706

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: Les Kennedy  
 Firm: ALS  
 Date/Time: 8/24/17 1020

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_



PC

## Cooler Receipt and Preservation Form

Client Arcadis/Teet Service Request K17 08975Received: 8/24/17 Opened: 8/24/17 By: UA Unloaded: 8/24/17 By: UA

1. Samples were received via? USPS 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
- 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	0.5	0.7	+0.2	360		8105 9110 5532		
-0.1	0.0	2.1	2.2	+0.1	373		8745 6738 5531		

- 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
- Were samples received in good condition (temperature, unbroken)? Indicate in the table below. NA Y N
- If applicable, tissue samples were received: Frozen Partially Thawed Thawed
- 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

tes, Discrepancies, & Resolutions: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



# Total Solids

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1708975  
**Date Collected:** 08/22/17  
**Date Received:** 08/24/17  
**Units:** Percent  
**Basis:** As Received

**Solids, Total**

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
258-3-I01-082217	K1708975-001	93.8	-	-	1	08/31/17 16:53	
258-3-I02-082217	K1708975-002	94.3	-	-	1	08/31/17 16:53	
258-3-I03-082217	K1708975-003	92.4	-	-	1	08/31/17 16:53	
258-3-I04-082217	K1708975-004	96.5	-	-	1	08/31/17 16:53	
258-3-I05-082217	K1708975-005	97.5	-	-	1	08/31/17 16:53	
258-3-I06-082217	K1708975-006	98.5	-	-	1	08/31/17 16:53	
258-3-I07-082217	K1708975-007	94.0	-	-	1	08/31/17 16:53	
258-3-I08-082217	K1708975-008	97.4	-	-	1	08/31/17 16:53	
258-3-I09-082217	K1708975-009	95.2	-	-	1	08/31/17 16:53	
258-3-I10-082217	K1708975-010	95.3	-	-	1	08/31/17 16:53	
258-3-J01-082217	K1708975-011	94.6	-	-	1	08/31/17 16:53	
258-3-J02-082217	K1708975-012	95.1	-	-	1	08/31/17 16:53	
258-3-J03-082217	K1708975-013	94.8	-	-	1	08/31/17 16:53	
258-3-J04-082217	K1708975-014	95.3	-	-	1	08/31/17 16:53	
258-3-J05-082217	K1708975-015	96.9	-	-	1	08/31/17 16:53	
258-3-J06-082217	K1708975-016	97.6	-	-	1	08/31/17 16:53	
258-3-J07-082217	K1708975-017	96.8	-	-	1	08/31/17 16:53	
258-3-J08-082217	K1708975-018	97.5	-	-	1	08/31/17 16:53	
258-3-J09-082217	K1708975-019	96.1	-	-	1	08/31/17 16:53	
258-3-J10-082217	K1708975-020	96.6	-	-	1	08/31/17 16:53	

ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1708975  
**Date Collected:** 08/22/17  
**Date Received:** 08/24/17

**Units:** Percent  
**Basis:** As Received

Replicate Sample Summary  
Inorganic Parameters

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
258-3-I01-082217	K1708975-001DUP	-	93.8	94.8	94.3	1	20	08/31/17
258-3-J01-082217	K1708975-011DUP	-	94.6	94.6	94.6	<1	20	08/31/17

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



# Metals

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-I01-082217  
**Lab Code:** K1708975-001

**Service Request:** K1708975  
**Date Collected:** 08/22/17 11:20  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>15.2</b>	mg/Kg	4.1	0.8	2	09/07/17 10:25	09/05/17	
Lead	6010C	<b>532</b>	mg/Kg	2.0	0.4	2	09/07/17 10:25	09/05/17	



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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-I02-082217  
**Lab Code:** K1708975-002

**Service Request:** K1708975  
**Date Collected:** 08/22/17 11:22  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>12.1</b>	mg/Kg	4.2	0.8	2	09/07/17 10:36	09/05/17	
Lead	6010C	<b>223</b>	mg/Kg	2.1	0.4	2	09/07/17 10:36	09/05/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-I03-082217  
**Lab Code:** K1708975-003

**Service Request:** K1708975  
**Date Collected:** 08/22/17 11:24  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>22.9</b>	mg/Kg	4.2	0.8	2	09/07/17 10:38	09/05/17	
Lead	6010C	<b>598</b>	mg/Kg	2.1	0.4	2	09/07/17 10:38	09/05/17	

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-I04-082217  
**Lab Code:** K1708975-004

**Service Request:** K1708975  
**Date Collected:** 08/22/17 11:26  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>13.6</b>	mg/Kg	4.1	0.8	2	09/07/17 10:41	09/05/17	
Lead	6010C	<b>231</b>	mg/Kg	2.0	0.4	2	09/07/17 10:41	09/05/17	

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-I05-082217  
**Lab Code:** K1708975-005

**Service Request:** K1708975  
**Date Collected:** 08/22/17 11:28  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>9.9</b>	mg/Kg	4.1	0.8	2	09/07/17 10:49	09/05/17	
Lead	6010C	<b>124</b>	mg/Kg	2.1	0.4	2	09/07/17 10:49	09/05/17	

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-I06-082217  
**Lab Code:** K1708975-006

**Service Request:** K1708975  
**Date Collected:** 08/22/17 11:29  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	4.4	mg/Kg	3.9	0.8	2	09/07/17 10:51	09/05/17	
Lead	6010C	31.9	mg/Kg	2.0	0.4	2	09/07/17 10:51	09/05/17	

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-I07-082217  
**Lab Code:** K1708975-007

**Service Request:** K1708975  
**Date Collected:** 08/22/17 11:31  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>21.0</b>	mg/Kg	4.2	0.8	2	09/07/17 10:54	09/05/17	
Lead	6010C	<b>426</b>	mg/Kg	2.1	0.4	2	09/07/17 10:54	09/05/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-I08-082217  
**Lab Code:** K1708975-008

**Service Request:** K1708975  
**Date Collected:** 08/22/17 11:33  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	13.3	mg/Kg	3.9	0.8	2	09/07/17 10:56	09/05/17	
Lead	6010C	249	mg/Kg	2.0	0.4	2	09/07/17 10:56	09/05/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-I09-082217  
**Lab Code:** K1708975-009

**Service Request:** K1708975  
**Date Collected:** 08/22/17 11:35  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>13.3</b>	mg/Kg	4.2	0.8	2	09/07/17 10:58	09/05/17	
Lead	6010C	<b>516</b>	mg/Kg	2.1	0.4	2	09/07/17 10:58	09/05/17	



ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-I10-082217  
**Lab Code:** K1708975-010

**Service Request:** K1708975  
**Date Collected:** 08/22/17 11:37  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	20.8	mg/Kg	4.0	0.8	2	09/07/17 11:00	09/05/17	
Lead	6010C	412	mg/Kg	2.0	0.4	2	09/07/17 11:00	09/05/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-J01-082217  
**Lab Code:** K1708975-011

**Service Request:** K1708975  
**Date Collected:** 08/22/17 11:41  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>21.4</b>	mg/Kg	4.2	0.8	2	09/07/17 11:02	09/05/17	
Lead	6010C	<b>796</b>	mg/Kg	2.1	0.4	2	09/07/17 11:02	09/05/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-J02-082217  
**Lab Code:** K1708975-012

**Service Request:** K1708975  
**Date Collected:** 08/22/17 11:44  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>16.8</b>	mg/Kg	4.1	0.8	2	09/07/17 11:05	09/05/17	
Lead	6010C	<b>364</b>	mg/Kg	2.1	0.4	2	09/07/17 11:05	09/05/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-J03-082217  
**Lab Code:** K1708975-013

**Service Request:** K1708975  
**Date Collected:** 08/22/17 11:46  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>17.6</b>	mg/Kg	4.2	0.8	2	09/07/17 11:07	09/05/17	
Lead	6010C	<b>548</b>	mg/Kg	2.1	0.4	2	09/07/17 11:07	09/05/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-J04-082217  
**Lab Code:** K1708975-014

**Service Request:** K1708975  
**Date Collected:** 08/22/17 11:49  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	13.9	mg/Kg	4.0	0.8	2	09/07/17 11:09	09/05/17	
Lead	6010C	231	mg/Kg	2.0	0.4	2	09/07/17 11:09	09/05/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-J05-082217  
**Lab Code:** K1708975-015

**Service Request:** K1708975  
**Date Collected:** 08/22/17 11:50  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>12.4</b>	mg/Kg	4.0	0.8	2	09/07/17 11:18	09/05/17	
Lead	6010C	<b>179</b>	mg/Kg	2.0	0.4	2	09/07/17 11:18	09/05/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-J06-082217  
**Lab Code:** K1708975-016

**Service Request:** K1708975  
**Date Collected:** 08/22/17 11:53  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>12.7</b>	mg/Kg	4.1	0.8	2	09/07/17 11:20	09/05/17	
Lead	6010C	<b>211</b>	mg/Kg	2.0	0.4	2	09/07/17 11:20	09/05/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-J07-082217  
**Lab Code:** K1708975-017

**Service Request:** K1708975  
**Date Collected:** 08/22/17 11:56  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>13.9</b>	mg/Kg	3.9	0.8	2	09/07/17 11:22	09/05/17	
Lead	6010C	<b>237</b>	mg/Kg	1.9	0.4	2	09/07/17 11:22	09/05/17	



ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-J08-082217  
**Lab Code:** K1708975-018

**Service Request:** K1708975  
**Date Collected:** 08/22/17 11:58  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>14.7</b>	mg/Kg	4.1	0.8	2	09/07/17 11:24	09/05/17	
Lead	6010C	<b>192</b>	mg/Kg	2.0	0.4	2	09/07/17 11:24	09/05/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-J09-082217  
**Lab Code:** K1708975-019

**Service Request:** K1708975  
**Date Collected:** 08/22/17 12:00  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>13.6</b>	mg/Kg	4.1	0.8	2	09/07/17 11:26	09/05/17	
Lead	6010C	<b>297</b>	mg/Kg	2.1	0.4	2	09/07/17 11:26	09/05/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-J10-082217  
**Lab Code:** K1708975-020

**Service Request:** K1708975  
**Date Collected:** 08/22/17 12:02  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	9.3	mg/Kg	4.1	0.8	2	09/07/17 11:28	09/05/17	
Lead	6010C	142	mg/Kg	2.0	0.4	2	09/07/17 11:28	09/05/17	

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** Method Blank  
**Lab Code:** KQ1712551-02

**Service Request:** K1708975  
**Date Collected:** NA  
**Date Received:** NA  
**Basis:** Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6010C	ND U	mg/Kg	4	0.8	2	09/07/17 10:21	09/05/17	
Lead	6010C	ND U	mg/Kg	2	0.4	2	09/07/17 10:21	09/05/17	

ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708975  
**Date Collected:** 08/22/17  
**Date Received:** 08/24/17  
**Date Analyzed:** 09/7/17  
**Date Extracted:** 09/5/17

**Duplicate Matrix Spike Summary  
Total Metals**

**Sample Name:** 258-3-I01-082217  
**Lab Code:** K1708975-001  
**Analysis Method:** 6010C  
**Prep Method:** EPA 3050B

**Units:** mg/Kg  
**Basis:** Dry

Analyte Name	Sample Result	Result	Matrix Spike KQ1712551-03		Result	Duplicate Matrix Spike KQ1712551-04		% Rec Limits	RPD	RPD Limit
			Spike Amount	% Rec		Spike Amount	% Rec			
Arsenic	15.2	116	106	95	117	107	96	75-125	<1	30
Lead	532	633	106	96 #	623	107	85 #	75-125	2	30

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708975

**Date Analyzed:** 09/07/17

**Lab Control Sample Summary**  
**Total Metals**

**Units:**mg/Kg

**Basis:**Dry

**Lab Control Sample**  
KQ1712551-01

<b>Analyte Name</b>	<b>Analytical Method</b>	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>% Rec Limits</b>
Arsenic	6010C	481	500	96	80-120
Lead	6010C	474	500	95	80-120



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ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

September 12, 2017

**Analytical Report for Service Request No: K1708976**

Dave Enos  
Teck American Incorporated  
501 North Riverpoint Blvd., Suite 300  
Spokane, WA 99202

**RE: August 2017 Sampling SAT Study / B0095010.0005.00001**

Dear Dave,

Enclosed are the results of the sample(s) submitted to our laboratory August 25, 2017  
For your reference, these analyses have been assigned our service request number **K1708976**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at [www.alsglobal.com](http://www.alsglobal.com). All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at [Jeff.Coronado@alsglobal.com](mailto:Jeff.Coronado@alsglobal.com).

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**

Jeff Coronado  
Metals Department  
Manager



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ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

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## Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

### **Inorganic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

### **Metals Data Qualifiers**

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.  
  - i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Organic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.  
  - i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Additional Petroleum Hydrocarbon Specific Qualifiers**

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

**ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso  
State Certifications, Accreditations, and Licenses**

<b>Agency</b>	<b>Web Site</b>	<b>Number</b>
Alaska DEH	<a href="http://dec.alaska.gov/eh/lab/cs/csapproval.htm">http://dec.alaska.gov/eh/lab/cs/csapproval.htm</a>	UST-040
Arizona DHS	<a href="http://www.azdhs.gov/lab/license/env.htm">http://www.azdhs.gov/lab/license/env.htm</a>	AZ0339
Arkansas - DEQ	<a href="http://www.adeq.state.ar.us/techsvs/labcert.htm">http://www.adeq.state.ar.us/techsvs/labcert.htm</a>	88-0637
California DHS (ELAP)	<a href="http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx">http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx</a>	2795
DOD ELAP	<a href="http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm">http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm</a>	L14-51
Florida DOH	<a href="http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm">http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm</a>	E87412
Hawaii DOH	<a href="http://health.hawaii.gov/">http://health.hawaii.gov/</a>	-
ISO 17025	<a href="http://www.pjllabs.com/">http://www.pjllabs.com/</a>	L16-57
Louisiana DEQ	<a href="http://www.deq.louisiana.gov/page/la-lab-accreditation">http://www.deq.louisiana.gov/page/la-lab-accreditation</a>	03016
Maine DHS	<a href="http://www.maine.gov/dhhs/">http://www.maine.gov/dhhs/</a>	WA01276
Minnesota DOH	<a href="http://www.health.state.mn.us/accreditation">http://www.health.state.mn.us/accreditation</a>	053-999-457
Nevada DEP	<a href="http://ndep.nv.gov/bsdw/labservice.htm">http://ndep.nv.gov/bsdw/labservice.htm</a>	WA01276
New Jersey DEP	<a href="http://www.nj.gov/dep/enforcement/oqa.html">http://www.nj.gov/dep/enforcement/oqa.html</a>	WA005
New York - DOH	<a href="https://www.wadsworth.org/regulatory/elap">https://www.wadsworth.org/regulatory/elap</a>	12060
North Carolina DEQ	<a href="https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification">https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification</a>	605
Oklahoma DEQ	<a href="http://www.deq.state.ok.us/CSDnew/labcert.htm">http://www.deq.state.ok.us/CSDnew/labcert.htm</a>	9801
Oregon – DEQ (NELAP)	<a href="http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx">http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx</a>	WA100010
South Carolina DHEC	<a href="http://www.scdhec.gov/environment/EnvironmentalLabCertification/">http://www.scdhec.gov/environment/EnvironmentalLabCertification/</a>	61002
Texas CEQ	<a href="http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html">http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html</a>	T104704427
Washington DOE	<a href="http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html">http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html</a>	C544
Wyoming (EPA Region 8)	<a href="https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water">https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water</a>	-
Kelso Laboratory Website	<a href="http://www.alsglobal.com">www.alsglobal.com</a>	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at [www.ALSGlobal.com](http://www.ALSGlobal.com) or at the accreditation bodies web site.  
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.



## Case Narrative

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

**ALS ENVIRONMENTAL**

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/  
B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request No.:** K1708976  
**Date Received:** 08/24/17

**Case Narrative**

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

**Sample Receipt**

Thirteen soil samples were received for analysis at ALS Environmental on 08/24/17. The samples were received in good condition and consistent with the accompanying chain of custody form, except where noted on the cooler receipt and preservation form included in this report. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

**Total Metals**

No anomalies associated with the analysis of these samples were observed.

Approved by \_\_\_\_\_

A handwritten signature in black ink, appearing to be 'JH Cole', is written over a horizontal line.



# Chain of Custody

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

K1708970

Date 8/23/17  
 PAGE 4 OF 15  
 SR#

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001  
 Project Contact: Kady Young Company: Arcadis  
 Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488  
 City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961  
 Sampler's Signature: \_\_\_\_\_

Number of Containers	Analysis Requested					REMARKS
	lead/arsenic 3050B/6010					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					

Sample I.D.	Date	Time	LAB ID	Matrix
258-3-C01-082217	8/22/17	0856		S
C02		0858		S
C03		0900		S
C04		0901		S
C05		0903		S
C06		0906		S
C07		0908		S
C08		0910		S
C09		0912		S
C10		0913		S

**TURNAROUND REQUIREMENTS**  
 \_\_\_ 24 hr \_\_\_ 48 hr \_\_\_ 5 day  
 Standard (10 days)  
 \_\_\_ Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes raw data)  
 \_\_\_ IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99204

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Joe Lathan  
 Firm: ANA  
 Date/Time: 8/23/17

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: Les Kennedy  
 Firm: ALS  
 Date/Time: 8/24/17 1020

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

K1708970

Date 8/23/17  
 PAGE 3 OF 15  
 SR#

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001

Project Contact: Kady Young Company: Arcadis

Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488

City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961

Sampler's Signature: \_\_\_\_\_

Number of Containers	Analysis Requested					REMARKS
	lead/arsenic 3050B/6010					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					

Sample I.D.	Date	Time	LAB ID	Matrix
<u>258-3-B10-082117-D</u>	<u>8/21/17</u>	<u>1733</u>		S
				S
				S
				S
				S
				S
				S
				S
				S
				S

**TURNAROUND REQUIREMENTS**  
 24 hr  48 hr  5 day  
 Standard (10 days)  
 Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes raw data)  
 IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
501 N Riverpoint Blvd, Suite 300 Spokane, WA 9920

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Joe Latta  
 Firm: AAA  
 Date/Time: 8/23/17 1300

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: Les Kennedy  
 Firm: ALS  
 Date/Time: 8/24/17 1020

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_



ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

*K1708976*

Date 8/23/17  
 PAGE 12 OF 15  
 SR#

Project Name: <u>Teck American - UCR SATES</u> Project Number: <u>B0095010.0005.00001</u> Project Contact: <u>Kady Young</u> Company: <u>Arcadis</u> Company/Address: <u>189 North Cedar Street</u> Phone: <u>307-203-3510</u> or <u>810-588-1488</u> City, State, Zip: <u>Buffalo, WY 82834</u> FAX: <u>307-684-5961</u> Sampler's Signature: _____	<b>Analysis Requested</b>
--	---------------------------

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	lead/arsenic 3050B/6010					REMARKS
<u>258-3-H07-082217-D</u>	<u>8/22/17</u>	<u>1056</u>		S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					

**TURNAROUND REQUIREMENTS**  
 24 hr  48 hr  5 day  
 Standard (10 days)  
 Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes raw data)  
 IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99201

**RELINQUISHED BY:**  
 Signature: *Joe Lathan*  
 Printed Name: Joe Lathan  
 Firm: ANA  
 Date/Time: 8/23/17 1300

**RECEIVED BY:**  
 Signature: *Les Kennedy*  
 Printed Name: Les Kennedy  
 Firm: ALS  
 Date/Time: 8/24/17 1020

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

K1708976

Date 8/23/17  
 PAGE 15 OF 15  
 SR# \_\_\_\_\_

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001  
 Project Contact: Kady Young Company: Arcadis  
 Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488  
 City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961  
 Sampler's Signature: \_\_\_\_\_

					Analysis Requested						
Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	lead/arsenic 3050B/6010					REMARKS
<u>258-3-304-082217-D</u>	<u>8/22/17</u>	<u>1149</u>		S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					

**TURNAROUND REQUIREMENTS**  
 24 hr  48 hr  5 day  
 Standard (10 days)  
 Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes raw data)  
 IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99201

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Joe Lathan  
 Firm: AVA  
 Date/Time: 8/23/17 1300

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: Les Kennedy  
 Firm: ALS  
 Date/Time: 8/24/17 1020

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_



PC JCo

### Cooler Receipt and Preservation Form

Client Arcadis/Teet Service Request K17 08970

Received: 8/24/17 Opened: 8/24/17 By: UU Unloaded: 8/24/17 By: UU

- 1. Samples were received via?  USPS  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
- 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
-0.3	-0.2	0.5	0.7	+0.2	360		8105 9110 5532		
-0.1	0.0	2.1	2.2	+0.1	373		8745 6738 5531		

- 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
- Were samples received in good condition (temperature, unbroken)? *Indicate in the table below.*  NA  Y  N
- If applicable, tissue samples were received:  Frozen  Partially Thawed  Thawed
- 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
- 1. Were VOA vials received without headspace? *Indicate in the table below.*  NA  Y  N
- 2. 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: \_\_\_\_\_



# Total Solids

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1708976  
**Date Collected:** 08/21/17 - 08/22/17  
**Date Received:** 08/25/17  
**Units:** Percent  
**Basis:** As Received

**Solids, Total**

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
258-3-C01-082217	K1708976-001	97.9	-	-	1	08/31/17 16:53	
258-3-C02-082217	K1708976-002	98.1	-	-	1	08/31/17 16:53	
258-3-C03-082217	K1708976-003	98.0	-	-	1	08/31/17 16:53	
258-3-C04-082217	K1708976-004	97.5	-	-	1	08/31/17 16:53	
258-3-C05-082217	K1708976-005	97.3	-	-	1	08/31/17 16:53	
258-3-C06-082217	K1708976-006	97.8	-	-	1	08/31/17 16:53	
258-3-C07-082217	K1708976-007	98.1	-	-	1	08/31/17 16:53	
258-3-C08-082217	K1708976-008	98.2	-	-	1	08/31/17 16:53	
258-3-C09-082217	K1708976-009	98.5	-	-	1	08/31/17 16:53	
258-3-C10-082217	K1708976-010	97.9	-	-	1	08/31/17 16:53	
258-3-B10-082117-D	K1708976-011	98.3	-	-	1	08/31/17 16:53	
258-3-H07-082217-D	K1708976-012	97.5	-	-	1	08/31/17 16:53	
258-3-J04-082217-D	K1708976-013	95.9	-	-	1	08/31/17 16:53	

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1708976  
**Date Collected:** 08/21/17 - 08/22/17  
**Date Received:** 08/25/17

**Units:** Percent  
**Basis:** As Received

Replicate Sample Summary

Inorganic Parameters

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
258-3-C01-082217	K1708976-001DUP	-	97.9	97.8	97.9	<1	20	08/31/17
258-3-B10-082117-D	K1708976-011DUP	-	98.3	98.3	98.3	<1	20	08/31/17

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



# Metals

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-C01-082217  
**Lab Code:** K1708976-001

**Service Request:** K1708976  
**Date Collected:** 08/22/17 08:56  
**Date Received:** 08/25/17 10:20

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	8.1	mg/Kg	3.9	0.8	2	09/07/17 11:35	09/05/17	
Lead	6010C	23.9	mg/Kg	2.0	0.4	2	09/07/17 11:35	09/05/17	



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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-C02-082217  
**Lab Code:** K1708976-002

**Service Request:** K1708976  
**Date Collected:** 08/22/17 08:58  
**Date Received:** 08/25/17 10:20

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	5.6	mg/Kg	3.9	0.8	2	09/07/17 12:02	09/05/17	
Lead	6010C	24.4	mg/Kg	1.9	0.4	2	09/07/17 12:02	09/05/17	

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-C03-082217  
**Lab Code:** K1708976-003

**Service Request:** K1708976  
**Date Collected:** 08/22/17 09:00  
**Date Received:** 08/25/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>9.0</b>	mg/Kg	4.0	0.8	2	09/07/17 12:04	09/05/17	
Lead	6010C	<b>54.7</b>	mg/Kg	2.0	0.4	2	09/07/17 12:04	09/05/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-C04-082217  
**Lab Code:** K1708976-004

**Service Request:** K1708976  
**Date Collected:** 08/22/17 09:01  
**Date Received:** 08/25/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>17.3</b>	mg/Kg	4.0	0.8	2	09/07/17 12:06	09/05/17	
Lead	6010C	<b>217</b>	mg/Kg	2.0	0.4	2	09/07/17 12:06	09/05/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-C05-082217  
**Lab Code:** K1708976-005

**Service Request:** K1708976  
**Date Collected:** 08/22/17 09:03  
**Date Received:** 08/25/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>8.3</b>	mg/Kg	4.0	0.8	2	09/07/17 12:08	09/05/17	
Lead	6010C	<b>71.6</b>	mg/Kg	2.0	0.4	2	09/07/17 12:08	09/05/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-C06-082217  
**Lab Code:** K1708976-006

**Service Request:** K1708976  
**Date Collected:** 08/22/17 09:06  
**Date Received:** 08/25/17 10:20

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>10.3</b>	mg/Kg	3.9	0.8	2	09/07/17 12:11	09/05/17	
Lead	6010C	<b>91.3</b>	mg/Kg	1.9	0.4	2	09/07/17 12:11	09/05/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-C07-082217  
**Lab Code:** K1708976-007

**Service Request:** K1708976  
**Date Collected:** 08/22/17 09:08  
**Date Received:** 08/25/17 10:20

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>10.5</b>	mg/Kg	3.9	0.8	2	09/07/17 12:13	09/05/17	
Lead	6010C	<b>115</b>	mg/Kg	1.9	0.4	2	09/07/17 12:13	09/05/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-C08-082217  
**Lab Code:** K1708976-008

**Service Request:** K1708976  
**Date Collected:** 08/22/17 09:10  
**Date Received:** 08/25/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>8.9</b>	mg/Kg	4.0	0.8	2	09/07/17 12:15	09/05/17	
Lead	6010C	<b>108</b>	mg/Kg	2.0	0.4	2	09/07/17 12:15	09/05/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-C09-082217  
**Lab Code:** K1708976-009

**Service Request:** K1708976  
**Date Collected:** 08/22/17 09:12  
**Date Received:** 08/25/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	9.5	mg/Kg	4.0	0.8	2	09/07/17 12:24	09/05/17	
Lead	6010C	111	mg/Kg	2.0	0.4	2	09/07/17 12:24	09/05/17	



ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-C10-082217  
**Lab Code:** K1708976-010

**Service Request:** K1708976  
**Date Collected:** 08/22/17 09:13  
**Date Received:** 08/25/17 10:20

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>18.2</b>	mg/Kg	3.9	0.8	2	09/07/17 12:26	09/05/17	
Lead	6010C	<b>284</b>	mg/Kg	2.0	0.4	2	09/07/17 12:26	09/05/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-B10-082117-D  
**Lab Code:** K1708976-011

**Service Request:** K1708976  
**Date Collected:** 08/21/17 17:33  
**Date Received:** 08/25/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>8.1</b>	mg/Kg	3.9	0.8	2	09/07/17 12:28	09/05/17	
Lead	6010C	<b>51.2</b>	mg/Kg	2.0	0.4	2	09/07/17 12:28	09/05/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-H07-082217-D  
**Lab Code:** K1708976-012

**Service Request:** K1708976  
**Date Collected:** 08/22/17 10:56  
**Date Received:** 08/25/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>17.2</b>	mg/Kg	3.9	0.8	2	09/07/17 12:30	09/05/17	
Lead	6010C	<b>188</b>	mg/Kg	2.0	0.4	2	09/07/17 12:30	09/05/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-3-J04-082217-D  
**Lab Code:** K1708976-013

**Service Request:** K1708976  
**Date Collected:** 08/22/17 11:49  
**Date Received:** 08/25/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>13.0</b>	mg/Kg	4.1	0.8	2	09/07/17 12:32	09/05/17	
Lead	6010C	<b>213</b>	mg/Kg	2.0	0.4	2	09/07/17 12:32	09/05/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** Method Blank  
**Lab Code:** KQ1712552-02

**Service Request:** K1708976  
**Date Collected:** NA  
**Date Received:** NA  
**Basis:** Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6010C	ND U	mg/Kg	4	0.8	2	09/07/17 11:31	09/05/17	
Lead	6010C	ND U	mg/Kg	2	0.4	2	09/07/17 11:31	09/05/17	

ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708976  
**Date Collected:** 08/22/17  
**Date Received:** 08/25/17  
**Date Analyzed:** 09/7/17  
**Date Extracted:** 09/5/17

**Duplicate Matrix Spike Summary  
Total Metals**

**Sample Name:** 258-3-C01-082217  
**Lab Code:** K1708976-001  
**Analysis Method:** 6010C  
**Prep Method:** EPA 3050B

**Units:** mg/Kg  
**Basis:** Dry

Analyte Name	Sample Result	Result	Matrix Spike KQ1712552-03		Duplicate Matrix Spike KQ1712552-04		% Rec Limits	RPD	RPD Limit	
			Spike Amount	% Rec	Result	Spike Amount				% Rec
Arsenic	8.1	98.9	94.6	96	103	97.2	98	75-125	4	30
Lead	23.9	112	94.6	93	116	97.2	95	75-125	4	30

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708976

**Date Analyzed:** 09/07/17

**Lab Control Sample Summary**  
**Total Metals**

**Units:**mg/Kg

**Basis:**Dry

**Lab Control Sample**  
KQ1712552-01

<b>Analyte Name</b>	<b>Analytical Method</b>	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>% Rec Limits</b>
Arsenic	6010C	491	500	98	80-120
Lead	6010C	491	500	98	80-120



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ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

September 12, 2017

**Analytical Report for Service Request No: K1708977**

Dave Enos  
Teck American Incorporated  
501 North Riverpoint Blvd., Suite 300  
Spokane, WA 99202

**RE: August 2017 Sampling SAT Study / B0095010.0005.00001**

Dear Dave,

Enclosed are the results of the sample(s) submitted to our laboratory August 24, 2017  
For your reference, these analyses have been assigned our service request number **K1708977**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at [www.alsglobal.com](http://www.alsglobal.com). All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at [Jeff.Coronado@alsglobal.com](mailto:Jeff.Coronado@alsglobal.com).

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**

Jeff Coronado  
Metals Department  
Manager





---

ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

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## Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

### **Inorganic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

### **Metals Data Qualifiers**

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.  
  - i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Organic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.  
  - i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Additional Petroleum Hydrocarbon Specific Qualifiers**

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

**ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso  
State Certifications, Accreditations, and Licenses**

<b>Agency</b>	<b>Web Site</b>	<b>Number</b>
Alaska DEH	<a href="http://dec.alaska.gov/eh/lab/cs/csapproval.htm">http://dec.alaska.gov/eh/lab/cs/csapproval.htm</a>	UST-040
Arizona DHS	<a href="http://www.azdhs.gov/lab/license/env.htm">http://www.azdhs.gov/lab/license/env.htm</a>	AZ0339
Arkansas - DEQ	<a href="http://www.adeq.state.ar.us/techsvs/labcert.htm">http://www.adeq.state.ar.us/techsvs/labcert.htm</a>	88-0637
California DHS (ELAP)	<a href="http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx">http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx</a>	2795
DOD ELAP	<a href="http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm">http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm</a>	L14-51
Florida DOH	<a href="http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm">http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm</a>	E87412
Hawaii DOH	<a href="http://health.hawaii.gov/">http://health.hawaii.gov/</a>	-
ISO 17025	<a href="http://www.pjllabs.com/">http://www.pjllabs.com/</a>	L16-57
Louisiana DEQ	<a href="http://www.deq.louisiana.gov/page/la-lab-accreditation">http://www.deq.louisiana.gov/page/la-lab-accreditation</a>	03016
Maine DHS	<a href="http://www.maine.gov/dhhs/">http://www.maine.gov/dhhs/</a>	WA01276
Minnesota DOH	<a href="http://www.health.state.mn.us/accreditation">http://www.health.state.mn.us/accreditation</a>	053-999-457
Nevada DEP	<a href="http://ndep.nv.gov/bsdw/labservice.htm">http://ndep.nv.gov/bsdw/labservice.htm</a>	WA01276
New Jersey DEP	<a href="http://www.nj.gov/dep/enforcement/oqa.html">http://www.nj.gov/dep/enforcement/oqa.html</a>	WA005
New York - DOH	<a href="https://www.wadsworth.org/regulatory/elap">https://www.wadsworth.org/regulatory/elap</a>	12060
North Carolina DEQ	<a href="https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification">https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification</a>	605
Oklahoma DEQ	<a href="http://www.deq.state.ok.us/CSDnew/labcert.htm">http://www.deq.state.ok.us/CSDnew/labcert.htm</a>	9801
Oregon – DEQ (NELAP)	<a href="http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx">http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx</a>	WA100010
South Carolina DHEC	<a href="http://www.scdhec.gov/environment/EnvironmentalLabCertification/">http://www.scdhec.gov/environment/EnvironmentalLabCertification/</a>	61002
Texas CEQ	<a href="http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html">http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html</a>	T104704427
Washington DOE	<a href="http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html">http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html</a>	C544
Wyoming (EPA Region 8)	<a href="https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water">https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water</a>	-
Kelso Laboratory Website	<a href="http://www.alsglobal.com">www.alsglobal.com</a>	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at [www.ALSGlobal.com](http://www.ALSGlobal.com) or at the accreditation bodies web site.  
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.



## Case Narrative

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

**ALS ENVIRONMENTAL**

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/  
B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request No.:** K1708977  
**Date Received:** 08/24/17

**Case Narrative**

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

**Sample Receipt**

Twenty soil samples were received for analysis at ALS Environmental on 08/24/17. The samples were received in good condition and consistent with the accompanying chain of custody form, except where noted on the cooler receipt and preservation form included in this report. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

**Total Metals**

No anomalies associated with the analysis of these samples were observed.

Approved by \_\_\_\_\_





# Chain of Custody

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

*K1708977*

Date 8/23/17  
 PAGE 1 OF 15  
 SR#

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001  
 Project Contact: Kady Young Company: Arcadis  
 Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488  
 City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961  
 Sampler's Signature: \_\_\_\_\_

Number of Containers	Analysis Requested					REMARKS
	lead/arsenic 3050B/6010					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					

Sample I.D.	Date	Time	LAB ID	Matrix
258-1-A01-082117	8/21/17	1120		S
A02		1122		S
A03		1124		S
A04		1126		S
A05		1127		S
A06		1128		S
A07		1129		S
A08		1131		S
A09		1133		S
A10		1135		S

**TURNAROUND REQUIREMENTS**  
 \_\_\_ 24 hr \_\_\_ 48 hr \_\_\_ 5 day  
 Standard (10 days)  
 \_\_\_ Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 \_\_\_ I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 \_\_\_ III. Data Validation Report (includes raw data)  
 \_\_\_ IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99201

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Jac Lathan  
 Firm: Arcadis  
 Date/Time: 8/23/17 13:00

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: BRICKMAN  
 Firm: ALS  
 Date/Time: 8/24/17 1020

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_



ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

K1708977

Date 8/23/17  
 PAGE 2 OF 15  
 SR# \_\_\_\_\_

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001

Project Contact: Kady Young Company: Arcadis

Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488

City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961

Sampler's Signature: \_\_\_\_\_

Number of Containers	Analysis Requested					REMARKS
	Lead/arsenic 3050B/6010					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					

Sample I.D.	Date	Time	LAB ID	Matrix
258-1-B01-082117	8/21/17	1146		S
B02		1143		S
B03		1145		S
B04		1146		S
B05		1148		S
B06		1151		S
B07		1153		S
B08		1156		S
B09		1158		S
B10		1200		S

**TURNAROUND REQUIREMENTS**  
 \_\_\_ 24 hr \_\_\_ 48 hr \_\_\_ 5 day  
 Standard (10 days)  
 \_\_\_ Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes raw data)  
 IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99201

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Joe Lathan  
 Firm: Arcadis  
 Date/Time: 8/23/17 13:00

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: BRICKMAN  
 Firm: ALY  
 Date/Time: 8/24/17 1020

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_



PC leo

### Cooler Receipt and Preservation Form

Client Arcadis Service Request K17 08977  
Received: 8124117 Opened: 8124117 By: BR Unloaded: 8124117 By: BR

Samples were received via? USPS 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 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
2.4	2.4	2.1	2.1	0.0	381		874567385510		
0.1	0.1	4.1	4.1	0.0	323		874567385497		
0.4	-0.5	1.1	1.0	-0.1	371		874567385509		

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  
Were samples received in good condition (temperature, unbroken)? Indicate in the table below. NA Y N  
If applicable, tissue samples were received: Frozen Partially Thawed Thawed  
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

Discrepancies, & Resolutions: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



# Total Solids

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1708977  
**Date Collected:** 08/21/17  
**Date Received:** 08/24/17  
**Units:** Percent  
**Basis:** As Received

**Solids, Total**

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
258-1-A01-082117	K1708977-001	98.9	-	-	1	08/31/17 16:53	
258-1-A02-082117	K1708977-002	98.8	-	-	1	08/31/17 16:53	
258-1-A03-082117	K1708977-003	98.7	-	-	1	08/31/17 16:53	
258-1-A04-082117	K1708977-004	93.8	-	-	1	08/31/17 16:53	
258-1-A05-082117	K1708977-005	97.5	-	-	1	08/31/17 16:53	
258-1-A06-082117	K1708977-006	96.9	-	-	1	08/31/17 16:53	
258-1-A07-082117	K1708977-007	97.0	-	-	1	08/31/17 16:53	
258-1-A08-082117	K1708977-008	97.2	-	-	1	08/31/17 16:53	
258-1-A09-082117	K1708977-009	96.7	-	-	1	08/31/17 16:53	
258-1-A10-082117	K1708977-010	97.1	-	-	1	08/31/17 16:53	
258-1-B01-082117	K1708977-011	98.6	-	-	1	08/31/17 16:53	
258-1-B02-082117	K1708977-012	99.0	-	-	1	08/31/17 16:53	
258-1-B03-082117	K1708977-013	95.6	-	-	1	08/31/17 16:53	
258-1-B04-082117	K1708977-014	97.5	-	-	1	08/31/17 16:53	
258-1-B05-082117	K1708977-015	97.5	-	-	1	08/31/17 16:53	
258-1-B06-082117	K1708977-016	97.8	-	-	1	08/31/17 16:53	
258-1-B07-082117	K1708977-017	96.0	-	-	1	08/31/17 16:53	
258-1-B08-082117	K1708977-018	96.8	-	-	1	08/31/17 16:53	
258-1-B09-082117	K1708977-019	97.2	-	-	1	08/31/17 16:53	
258-1-B10-082117	K1708977-020	97.2	-	-	1	08/31/17 16:53	

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QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:**K1708977  
**Date Collected:**08/21/17  
**Date Received:**08/24/17

**Units:**Percent  
**Basis:**As Received

Replicate Sample Summary

Inorganic Parameters

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
258-1-A01-082117	K1708977-001DUP	-	98.9	98.8	98.9	<1	20	08/31/17
258-1-B01-082117	K1708977-011DUP	-	98.6	98.9	98.8	<1	20	08/31/17

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



# Metals

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-A01-082117  
**Lab Code:** K1708977-001

**Service Request:** K1708977  
**Date Collected:** 08/21/17 11:20  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>13.1</b>	mg/Kg	4.0	0.8	2	09/07/17 12:39	09/05/17	
Lead	6010C	<b>159</b>	mg/Kg	2.0	0.4	2	09/07/17 12:39	09/05/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-A02-082117  
**Lab Code:** K1708977-002

**Service Request:** K1708977  
**Date Collected:** 08/21/17 11:22  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>11.8</b>	mg/Kg	4.0	0.8	2	09/07/17 12:59	09/05/17	
Lead	6010C	<b>97.4</b>	mg/Kg	2.0	0.4	2	09/07/17 12:59	09/05/17	



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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-A03-082117  
**Lab Code:** K1708977-003

**Service Request:** K1708977  
**Date Collected:** 08/21/17 11:24  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>18.1</b>	mg/Kg	4.0	0.8	2	09/07/17 13:02	09/05/17	
Lead	6010C	<b>320</b>	mg/Kg	2.0	0.4	2	09/07/17 13:02	09/05/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-A04-082117  
**Lab Code:** K1708977-004

**Service Request:** K1708977  
**Date Collected:** 08/21/17 11:26  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>17.6</b>	mg/Kg	4.1	0.8	2	09/07/17 13:04	09/05/17	
Lead	6010C	<b>328</b>	mg/Kg	2.0	0.4	2	09/07/17 13:04	09/05/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-A05-082117  
**Lab Code:** K1708977-005

**Service Request:** K1708977  
**Date Collected:** 08/21/17 11:27  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>17.4</b>	mg/Kg	3.8	0.8	2	09/07/17 13:06	09/05/17	
Lead	6010C	<b>246</b>	mg/Kg	1.9	0.4	2	09/07/17 13:06	09/05/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-A06-082117  
**Lab Code:** K1708977-006

**Service Request:** K1708977  
**Date Collected:** 08/21/17 11:28  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>10.1</b>	mg/Kg	3.9	0.8	2	09/07/17 13:08	09/05/17	
Lead	6010C	<b>381</b>	mg/Kg	1.9	0.4	2	09/07/17 13:08	09/05/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-A07-082117  
**Lab Code:** K1708977-007

**Service Request:** K1708977  
**Date Collected:** 08/21/17 11:29  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>14.6</b>	mg/Kg	3.9	0.8	2	09/07/17 13:10	09/05/17	
Lead	6010C	<b>125</b>	mg/Kg	2.0	0.4	2	09/07/17 13:10	09/05/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-A08-082117  
**Lab Code:** K1708977-008

**Service Request:** K1708977  
**Date Collected:** 08/21/17 11:31  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>12.5</b>	mg/Kg	3.8	0.8	2	09/07/17 13:12	09/05/17	
Lead	6010C	<b>185</b>	mg/Kg	1.9	0.4	2	09/07/17 13:12	09/05/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-A09-082117  
**Lab Code:** K1708977-009

**Service Request:** K1708977  
**Date Collected:** 08/21/17 11:33  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	8.7	mg/Kg	4.0	0.8	2	09/07/17 13:15	09/05/17	
Lead	6010C	79.4	mg/Kg	2.0	0.4	2	09/07/17 13:15	09/05/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-A10-082117  
**Lab Code:** K1708977-010

**Service Request:** K1708977  
**Date Collected:** 08/21/17 11:35  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>21.3</b>	mg/Kg	4.0	0.8	2	09/07/17 13:23	09/05/17	
Lead	6010C	<b>306</b>	mg/Kg	2.0	0.4	2	09/07/17 13:23	09/05/17	



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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-B01-082117  
**Lab Code:** K1708977-011

**Service Request:** K1708977  
**Date Collected:** 08/21/17 11:40  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>10.6</b>	mg/Kg	3.9	0.8	2	09/07/17 13:25	09/05/17	
Lead	6010C	<b>79.4</b>	mg/Kg	2.0	0.4	2	09/07/17 13:25	09/05/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-B02-082117  
**Lab Code:** K1708977-012

**Service Request:** K1708977  
**Date Collected:** 08/21/17 11:43  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>10.5</b>	mg/Kg	3.8	0.8	2	09/07/17 13:28	09/05/17	
Lead	6010C	<b>61.1</b>	mg/Kg	1.9	0.4	2	09/07/17 13:28	09/05/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-B03-082117  
**Lab Code:** K1708977-013

**Service Request:** K1708977  
**Date Collected:** 08/21/17 11:45  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>8.9</b>	mg/Kg	3.9	0.8	2	09/07/17 13:30	09/05/17	
Lead	6010C	<b>195</b>	mg/Kg	1.9	0.4	2	09/07/17 13:30	09/05/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-B04-082117  
**Lab Code:** K1708977-014

**Service Request:** K1708977  
**Date Collected:** 08/21/17 11:46  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>12.4</b>	mg/Kg	3.8	0.8	2	09/07/17 13:32	09/05/17	
Lead	6010C	<b>101</b>	mg/Kg	1.9	0.4	2	09/07/17 13:32	09/05/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-B05-082117  
**Lab Code:** K1708977-015

**Service Request:** K1708977  
**Date Collected:** 08/21/17 11:48  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>11.0</b>	mg/Kg	3.9	0.8	2	09/07/17 13:34	09/05/17	
Lead	6010C	<b>368</b>	mg/Kg	2.0	0.4	2	09/07/17 13:34	09/05/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-B06-082117  
**Lab Code:** K1708977-016

**Service Request:** K1708977  
**Date Collected:** 08/21/17 11:51  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>10.4</b>	mg/Kg	4.0	0.8	2	09/07/17 13:36	09/05/17	
Lead	6010C	<b>112</b>	mg/Kg	2.0	0.4	2	09/07/17 13:36	09/05/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-B07-082117  
**Lab Code:** K1708977-017

**Service Request:** K1708977  
**Date Collected:** 08/21/17 11:53  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>11.4</b>	mg/Kg	3.9	0.8	2	09/07/17 13:38	09/05/17	
Lead	6010C	<b>308</b>	mg/Kg	2.0	0.4	2	09/07/17 13:38	09/05/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-B08-082117  
**Lab Code:** K1708977-018

**Service Request:** K1708977  
**Date Collected:** 08/21/17 11:56  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>17.2</b>	mg/Kg	4.0	0.8	2	09/07/17 13:41	09/05/17	
Lead	6010C	<b>178</b>	mg/Kg	2.0	0.4	2	09/07/17 13:41	09/05/17	



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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-B09-082117  
**Lab Code:** K1708977-019

**Service Request:** K1708977  
**Date Collected:** 08/21/17 11:58  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>12.6</b>	mg/Kg	4.0	0.8	2	09/07/17 13:43	09/05/17	
Lead	6010C	<b>179</b>	mg/Kg	2.0	0.4	2	09/07/17 13:43	09/05/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-B10-082117  
**Lab Code:** K1708977-020

**Service Request:** K1708977  
**Date Collected:** 08/21/17 12:00  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>11.4</b>	mg/Kg	4.0	0.8	2	09/07/17 13:51	09/05/17	
Lead	6010C	<b>120</b>	mg/Kg	2.0	0.4	2	09/07/17 13:51	09/05/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** Method Blank  
**Lab Code:** KQ1712554-02

**Service Request:** K1708977  
**Date Collected:** NA  
**Date Received:** NA  
**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	ND U	mg/Kg	4	0.8	2	09/07/17 12:35	09/05/17	
Lead	6010C	ND U	mg/Kg	2	0.4	2	09/07/17 12:35	09/05/17	

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QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708977  
**Date Collected:** 08/21/17  
**Date Received:** 08/24/17  
**Date Analyzed:** 09/7/17  
**Date Extracted:** 09/5/17

**Duplicate Matrix Spike Summary  
Total Metals**

**Sample Name:** 258-1-A01-082117  
**Lab Code:** K1708977-001  
**Analysis Method:** 6010C  
**Prep Method:** EPA 3050B

**Units:** mg/Kg  
**Basis:** Dry

Analyte Name	Sample Result	Result	Matrix Spike KQ1712554-03		Duplicate Matrix Spike KQ1712554-04		% Rec Limits	RPD	RPD Limit	
			Spike Amount	% Rec	Result	Spike Amount				% Rec
Arsenic	13.1	107	95.3	98	104	97.3	93	75-125	3	30
Lead	159	252	95.3	98	243	97.3	87	75-125	4	30

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708977  
**Date Analyzed:** 09/07/17

**Lab Control Sample Summary**  
**Total Metals**

**Units:**mg/Kg  
**Basis:**Dry

**Lab Control Sample**  
KQ1712554-01

<b>Analyte Name</b>	<b>Analytical Method</b>	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>% Rec Limits</b>
Arsenic	6010C	496	500	99	80-120
Lead	6010C	496	500	99	80-120



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ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

September 12, 2017

**Analytical Report for Service Request No: K1708979**

Dave Enos  
Teck American Incorporated  
501 North Riverpoint Blvd., Suite 300  
Spokane, WA 99202

**RE: August 2017 Sampling SAT Study / B0095010.0005.00001**

Dear Dave,

Enclosed are the results of the sample(s) submitted to our laboratory August 24, 2017  
For your reference, these analyses have been assigned our service request number **K1708979**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at [www.alsglobal.com](http://www.alsglobal.com). All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at [Jeff.Coronado@alsglobal.com](mailto:Jeff.Coronado@alsglobal.com).

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**

Jeff Coronado  
Metals Department  
Manager



---

ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

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## Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.



### **Inorganic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

### **Metals Data Qualifiers**

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.  
  - i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Organic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.  
  - i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Additional Petroleum Hydrocarbon Specific Qualifiers**

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

**ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso  
State Certifications, Accreditations, and Licenses**

<b>Agency</b>	<b>Web Site</b>	<b>Number</b>
Alaska DEH	<a href="http://dec.alaska.gov/eh/lab/cs/csapproval.htm">http://dec.alaska.gov/eh/lab/cs/csapproval.htm</a>	UST-040
Arizona DHS	<a href="http://www.azdhs.gov/lab/license/env.htm">http://www.azdhs.gov/lab/license/env.htm</a>	AZ0339
Arkansas - DEQ	<a href="http://www.adeq.state.ar.us/techsvs/labcert.htm">http://www.adeq.state.ar.us/techsvs/labcert.htm</a>	88-0637
California DHS (ELAP)	<a href="http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx">http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx</a>	2795
DOD ELAP	<a href="http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm">http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm</a>	L14-51
Florida DOH	<a href="http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm">http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm</a>	E87412
Hawaii DOH	<a href="http://health.hawaii.gov/">http://health.hawaii.gov/</a>	-
ISO 17025	<a href="http://www.pjllabs.com/">http://www.pjllabs.com/</a>	L16-57
Louisiana DEQ	<a href="http://www.deq.louisiana.gov/page/la-lab-accreditation">http://www.deq.louisiana.gov/page/la-lab-accreditation</a>	03016
Maine DHS	<a href="http://www.maine.gov/dhhs/">http://www.maine.gov/dhhs/</a>	WA01276
Minnesota DOH	<a href="http://www.health.state.mn.us/accreditation">http://www.health.state.mn.us/accreditation</a>	053-999-457
Nevada DEP	<a href="http://ndep.nv.gov/bsdw/labservice.htm">http://ndep.nv.gov/bsdw/labservice.htm</a>	WA01276
New Jersey DEP	<a href="http://www.nj.gov/dep/enforcement/oqa.html">http://www.nj.gov/dep/enforcement/oqa.html</a>	WA005
New York - DOH	<a href="https://www.wadsworth.org/regulatory/elap">https://www.wadsworth.org/regulatory/elap</a>	12060
North Carolina DEQ	<a href="https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification">https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification</a>	605
Oklahoma DEQ	<a href="http://www.deq.state.ok.us/CSDnew/labcert.htm">http://www.deq.state.ok.us/CSDnew/labcert.htm</a>	9801
Oregon – DEQ (NELAP)	<a href="http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx">http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx</a>	WA100010
South Carolina DHEC	<a href="http://www.scdhec.gov/environment/EnvironmentalLabCertification/">http://www.scdhec.gov/environment/EnvironmentalLabCertification/</a>	61002
Texas CEQ	<a href="http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html">http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html</a>	T104704427
Washington DOE	<a href="http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html">http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html</a>	C544
Wyoming (EPA Region 8)	<a href="https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water">https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water</a>	-
Kelso Laboratory Website	<a href="http://www.alsglobal.com">www.alsglobal.com</a>	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at [www.ALSGlobal.com](http://www.ALSGlobal.com) or at the accreditation bodies web site. Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.



## Case Narrative

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

**ALS ENVIRONMENTAL**

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/  
B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request No.:** K1708979  
**Date Received:** 08/24/17

**Case Narrative**

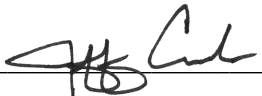
All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

**Sample Receipt**

Twenty soil samples were received for analysis at ALS Environmental on 08/24/17. The samples were received in good condition and consistent with the accompanying chain of custody form, except where noted on the cooler receipt and preservation form included in this report. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

**Total Metals**

No anomalies associated with the analysis of these samples were observed.

Approved by  \_\_\_\_\_



# Chain of Custody

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

*K1708929*

Date 8/23/17  
PAGE 10 OF 15  
SR#

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001  
Project Contact: Kady Young Company: Arcadis  
Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488  
City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961  
Sampler's Signature: \_\_\_\_\_

Number of Containers	Analysis Requested					REMARKS
	Lead/arsenic 3050B/6010					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					

Sample I.D.	Date	Time	LAB ID	Matrix
44 -1-G01-082217	8/22/17	1800		S
G02		1802		S
G03		1804		S
G04		1807		S
G05		1810		S
G06		1811		S
G07		1813		S
G08		1815		S
G09		1818		S
G10		1819		S

**TURNAROUND REQUIREMENTS**  
 24 hr  48 hr  5 day  
 Standard (10 days)  
 Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes raw data)  
 IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99201

**RELINQUISHED BY:**  
 Signature: *[Signature]*  
 Printed Name: Joe Latham  
 Firm: ANA  
 Date/Time: 8/23/17 1300

**RECEIVED BY:**  
 Signature: *[Signature]*  
 Printed Name: BRUCKMAN  
 Firm: ALS  
 Date/Time: 8/24/17 1020

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

K1708979

Date 8/23/17  
 PAGE 11 OF 15  
 SR#

**Project Name:** Teck American - UCR SATES **Project Number:** B0095010.0005.00001

**Project Contact:** Kady Young **Company:** Arcadis

**Company/Address:** 189 North Cedar Street **Phone:** 307-203-3510 or 810-588-1488

**City, State, Zip:** Buffalo, WY 82834 **FAX:** 307-684-5961

**Sampler's Signature:** \_\_\_\_\_

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	lead/arsenic 3050B/6010	Analysis Requested				REMARKS	
441-1-H01-082217	8/22/17	1829		S	1	X						
H02		1831		S	1	X						
H03		1832		S	1	X						
H04		1834		S	1	X						
H05		1836		S	1	X						
H06		1837		S	1	X						
H07		1838		S	1	X						
H08		1839		S	1	X						
H09		1840		S	1	X						
H10		1840		S	1	X						

**TURNAROUND REQUIREMENTS**

24 hr  48 hr  5 day

Standard (10 days)

Provide FAX Preliminary Results

**Requested Report Date:** \_\_\_\_\_

**REPORT REQUIREMENTS**

I. Routine Report: Results, Method Blank, Surrogate, as required

II. Report Dup., MS, MSD as required

III. Data Validation Report (includes raw data)

IV. CLP Deliverable Report

V. EDD

**Comments/Special Instructions:**

Hold Remainder

**Invoice Information**

P.O. # UCR-ALS-D34-17

Bill to: Cristy Kessel - Teck American

501 N Riverpoint Blvd, Suite 300 Spokane, WA 99205

**RELINQUISHED BY:**

Signature: [Signature]

Printed Name: Jac Lathan

Firm: ANA

Date/Time: 8/23/17 1300

**RECEIVED BY:**

Signature: [Signature]

Printed Name: BRICKMAN

Firm: ALS

Date/Time: 8/24/17 1020

**RELINQUISHED BY:**

Signature: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Firm: \_\_\_\_\_

Date/Time: \_\_\_\_\_

**RECEIVED BY:**

Signature: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Firm: \_\_\_\_\_

Date/Time: \_\_\_\_\_



PC Joo

### Cooler Receipt and Preservation Form

Client: Arcadis Service Request K17 08979  
 Received: 8/24/17 Opened: 8/24/17 By: BR Unloaded: 8/24/17 By: BR

Samples were received via?  USPS  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 front  
 If present, were custody seals intact?  Y  N If present, were they signed and dated?  Y  N

Raw Cocor Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID NA	Tracking Number NA	NA	Filed
2.4	2.4	2.1	2.1	0.0	381		874567385510		
0.1	0.1	4.1	4.1	0.0	323		874567385494		
0.4	-0.5	1.1	1.0	-0.1	371		874567385509		

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

Were samples received in good condition (temperature, unbroken)? *Indicate in the table below.*  NA  Y  N

If applicable, tissue samples were received:  Frozen  Partially Thawed  Thawed

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

**Discrepancies, & Resolutions:** \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_





# Total Solids

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1708979  
**Date Collected:** 08/22/17  
**Date Received:** 08/24/17  
**Units:** Percent  
**Basis:** As Received

**Solids, Total**

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
441-1-G01-082217	K1708979-001	95.0	-	-	1	08/31/17 16:53	
441-1-G02-082217	K1708979-002	93.8	-	-	1	08/31/17 16:53	
441-1-G03-082217	K1708979-003	90.2	-	-	1	08/31/17 16:53	
441-1-G04-082217	K1708979-004	91.7	-	-	1	08/31/17 16:53	
441-1-G05-082217	K1708979-005	92.6	-	-	1	08/31/17 16:53	
441-1-G06-082217	K1708979-006	91.8	-	-	1	08/31/17 16:53	
441-1-G07-082217	K1708979-007	92.3	-	-	1	08/31/17 16:53	
441-1-G08-082217	K1708979-008	93.1	-	-	1	08/31/17 16:53	
441-1-G09-082217	K1708979-009	91.9	-	-	1	08/31/17 16:53	
441-1-G10-082217	K1708979-010	96.4	-	-	1	08/31/17 16:53	
441-1-H01-082217	K1708979-011	93.5	-	-	1	08/31/17 16:53	
441-1-H02-082217	K1708979-012	92.2	-	-	1	08/31/17 16:53	
441-1-H03-082217	K1708979-013	94.2	-	-	1	08/31/17 16:53	
441-1-H04-082217	K1708979-014	92.7	-	-	1	08/31/17 16:53	
441-1-H05-082217	K1708979-015	92.5	-	-	1	08/31/17 16:53	
441-1-H06-082217	K1708979-016	90.7	-	-	1	08/31/17 16:53	
441-1-H07-082217	K1708979-017	93.0	-	-	1	08/31/17 16:53	
441-1-H08-082217	K1708979-018	93.6	-	-	1	08/31/17 16:53	
441-1-H09-082217	K1708979-019	93.2	-	-	1	08/31/17 16:53	
441-1-H10-082217	K1708979-020	93.4	-	-	1	08/31/17 16:53	

ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1708979  
**Date Collected:** 08/22/17  
**Date Received:** 08/24/17

**Units:** Percent  
**Basis:** As Received

Replicate Sample Summary  
Inorganic Parameters

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
441-1-G01-082217	K1708979-001DUP	-	95.0	95.4	95.2	<1	20	08/31/17
441-1-H01-082217	K1708979-011DUP	-	93.5	93.6	93.6	<1	20	08/31/17

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



# Metals

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
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ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-G01-082217  
**Lab Code:** K1708979-001

**Service Request:** K1708979  
**Date Collected:** 08/22/17 18:00  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>22.8</b>	mg/Kg	4.0	0.8	2	09/07/17 13:58	09/05/17	
Lead	6010C	<b>437</b>	mg/Kg	2.0	0.4	2	09/07/17 13:58	09/05/17	

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-G02-082217  
**Lab Code:** K1708979-002

**Service Request:** K1708979  
**Date Collected:** 08/22/17 18:02  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	28.2	mg/Kg	4.2	0.8	2	09/07/17 14:09	09/05/17	
Lead	6010C	453	mg/Kg	2.1	0.4	2	09/07/17 14:09	09/05/17	

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-G03-082217  
**Lab Code:** K1708979-003

**Service Request:** K1708979  
**Date Collected:** 08/22/17 18:04  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>28.6</b>	mg/Kg	4.2	0.8	2	09/07/17 14:12	09/05/17	
Lead	6010C	<b>272</b>	mg/Kg	2.1	0.4	2	09/07/17 14:12	09/05/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-G04-082217  
**Lab Code:** K1708979-004

**Service Request:** K1708979  
**Date Collected:** 08/22/17 18:07  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	33.7	mg/Kg	4.0	0.8	2	09/07/17 14:24	09/05/17	
Lead	6010C	417	mg/Kg	2.0	0.4	2	09/07/17 14:24	09/05/17	



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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-G05-082217  
**Lab Code:** K1708979-005

**Service Request:** K1708979  
**Date Collected:** 08/22/17 18:10  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>21.3</b>	mg/Kg	4.0	0.8	2	09/07/17 14:26	09/05/17	
Lead	6010C	<b>248</b>	mg/Kg	2.0	0.4	2	09/07/17 14:26	09/05/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-G06-082217  
**Lab Code:** K1708979-006

**Service Request:** K1708979  
**Date Collected:** 08/22/17 18:11  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>21.9</b>	mg/Kg	4.2	0.8	2	09/07/17 14:28	09/05/17	
Lead	6010C	<b>323</b>	mg/Kg	2.1	0.4	2	09/07/17 14:28	09/05/17	

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-G07-082217  
**Lab Code:** K1708979-007

**Service Request:** K1708979  
**Date Collected:** 08/22/17 18:13  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	26.7	mg/Kg	4.2	0.8	2	09/07/17 14:31	09/05/17	
Lead	6010C	225	mg/Kg	2.1	0.4	2	09/07/17 14:31	09/05/17	

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-G08-082217  
**Lab Code:** K1708979-008

**Service Request:** K1708979  
**Date Collected:** 08/22/17 18:15  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>19.5</b>	mg/Kg	4.1	0.8	2	09/07/17 14:33	09/05/17	
Lead	6010C	<b>151</b>	mg/Kg	2.0	0.4	2	09/07/17 14:33	09/05/17	

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-G09-082217  
**Lab Code:** K1708979-009

**Service Request:** K1708979  
**Date Collected:** 08/22/17 18:18  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>44.5</b>	mg/Kg	4.1	0.8	2	09/07/17 14:35	09/05/17	
Lead	6010C	<b>649</b>	mg/Kg	2.1	0.4	2	09/07/17 14:35	09/05/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-G10-082217  
**Lab Code:** K1708979-010

**Service Request:** K1708979  
**Date Collected:** 08/22/17 18:19  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	9.8	mg/Kg	4.0	0.8	2	09/07/17 14:38	09/05/17	
Lead	6010C	32.4	mg/Kg	2.0	0.4	2	09/07/17 14:38	09/05/17	

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-H01-082217  
**Lab Code:** K1708979-011

**Service Request:** K1708979  
**Date Collected:** 08/22/17 18:29  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	22.7	mg/Kg	4.2	0.8	2	09/07/17 14:40	09/05/17	
Lead	6010C	316	mg/Kg	2.1	0.4	2	09/07/17 14:40	09/05/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-H02-082217  
**Lab Code:** K1708979-012

**Service Request:** K1708979  
**Date Collected:** 08/22/17 18:31  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>29.8</b>	mg/Kg	4.2	0.8	2	09/07/17 14:42	09/05/17	
Lead	6010C	<b>541</b>	mg/Kg	2.1	0.4	2	09/07/17 14:42	09/05/17	



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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-H03-082217  
**Lab Code:** K1708979-013

**Service Request:** K1708979  
**Date Collected:** 08/22/17 18:32  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>23.8</b>	mg/Kg	4.0	0.8	2	09/07/17 14:45	09/05/17	
Lead	6010C	<b>346</b>	mg/Kg	2.0	0.4	2	09/07/17 14:45	09/05/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-H04-082217  
**Lab Code:** K1708979-014

**Service Request:** K1708979  
**Date Collected:** 08/22/17 18:34  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>21.7</b>	mg/Kg	4.1	0.8	2	09/07/17 14:54	09/05/17	
Lead	6010C	<b>178</b>	mg/Kg	2.1	0.4	2	09/07/17 14:54	09/05/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-H05-082217  
**Lab Code:** K1708979-015

**Service Request:** K1708979  
**Date Collected:** 08/22/17 18:36  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	13.2	mg/Kg	4.2	0.8	2	09/07/17 14:56	09/05/17	
Lead	6010C	77.4	mg/Kg	2.1	0.4	2	09/07/17 14:56	09/05/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-H06-082217  
**Lab Code:** K1708979-016

**Service Request:** K1708979  
**Date Collected:** 08/22/17 18:37  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	22.2	mg/Kg	4.3	0.9	2	09/07/17 14:58	09/05/17	
Lead	6010C	475	mg/Kg	2.1	0.4	2	09/07/17 14:58	09/05/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-H07-082217  
**Lab Code:** K1708979-017

**Service Request:** K1708979  
**Date Collected:** 08/22/17 18:38  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>22.5</b>	mg/Kg	4.1	0.8	2	09/07/17 15:01	09/05/17	
Lead	6010C	<b>165</b>	mg/Kg	2.0	0.4	2	09/07/17 15:01	09/05/17	

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-H08-082217  
**Lab Code:** K1708979-018

**Service Request:** K1708979  
**Date Collected:** 08/22/17 18:39  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	26.6	mg/Kg	4.0	0.8	2	09/07/17 15:03	09/05/17	
Lead	6010C	453	mg/Kg	2.0	0.4	2	09/07/17 15:03	09/05/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-H09-082217  
**Lab Code:** K1708979-019

**Service Request:** K1708979  
**Date Collected:** 08/22/17 18:40  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>38.0</b>	mg/Kg	4.2	0.8	2	09/07/17 15:05	09/05/17	
Lead	6010C	<b>690</b>	mg/Kg	2.1	0.4	2	09/07/17 15:05	09/05/17	

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-H10-082217  
**Lab Code:** K1708979-020

**Service Request:** K1708979  
**Date Collected:** 08/22/17 18:40  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>35.0</b>	mg/Kg	4.0	0.8	2	09/07/17 15:08	09/05/17	
Lead	6010C	<b>393</b>	mg/Kg	2.0	0.4	2	09/07/17 15:08	09/05/17	



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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** Method Blank  
**Lab Code:** KQ1712580-02

**Service Request:** K1708979  
**Date Collected:** NA  
**Date Received:** NA  
**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	ND U	mg/Kg	4	0.8	2	09/07/17 13:54	09/05/17	
Lead	6010C	ND U	mg/Kg	2	0.4	2	09/07/17 13:54	09/05/17	

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dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708979  
**Date Collected:** 08/22/17  
**Date Received:** 08/24/17  
**Date Analyzed:** 09/7/17  
**Date Extracted:** 09/5/17

**Duplicate Matrix Spike Summary  
Total Metals**

**Sample Name:** 441-1-G01-082217  
**Lab Code:** K1708979-001  
**Analysis Method:** 6010C  
**Prep Method:** EPA 3050B

**Units:** mg/Kg  
**Basis:** Dry

Analyte Name	Sample Result	Result	Matrix Spike KQ1712580-03		Duplicate Matrix Spike KQ1712580-04		% Rec Limits	RPD	RPD Limit	
			Spike Amount	% Rec	Result	Spike Amount				% Rec
Arsenic	22.8	122	102	97	121	103	95	75-125	<1	30
Lead	437	551	102	111 #	566	103	125 #	75-125	3	30

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708979

**Date Analyzed:** 09/07/17

**Lab Control Sample Summary**  
**Total Metals**

**Units:**mg/Kg

**Basis:**Dry

**Lab Control Sample**  
KQ1712580-01

<b>Analyte Name</b>	<b>Analytical Method</b>	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>% Rec Limits</b>
Arsenic	6010C	485	500	97	80-120
Lead	6010C	483	500	97	80-120



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ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

September 12, 2017

**Analytical Report for Service Request No: K1708980**

Dave Enos  
Teck American Incorporated  
501 North Riverpoint Blvd., Suite 300  
Spokane, WA 99202

**RE: August 2017 Sampling SAT Study / B0095010.0005.00001**

Dear Dave,

Enclosed are the results of the sample(s) submitted to our laboratory August 24, 2017  
For your reference, these analyses have been assigned our service request number **K1708980**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at [www.alsglobal.com](http://www.alsglobal.com). All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at [Jeff.Coronado@alsglobal.com](mailto:Jeff.Coronado@alsglobal.com).

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**

Jeff Coronado  
Metals Department  
Manager



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ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

## Table of Contents

Acronyms

Qualifiers

State Certifications, Accreditations, And Licenses

Case Narrative

Chain of Custody

Total Solids

Metals

## Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

### **Inorganic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

### **Metals Data Qualifiers**

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.  
  - i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Organic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.  
  - i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Additional Petroleum Hydrocarbon Specific Qualifiers**

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

**ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso  
State Certifications, Accreditations, and Licenses**

<b>Agency</b>	<b>Web Site</b>	<b>Number</b>
Alaska DEH	<a href="http://dec.alaska.gov/eh/lab/cs/csapproval.htm">http://dec.alaska.gov/eh/lab/cs/csapproval.htm</a>	UST-040
Arizona DHS	<a href="http://www.azdhs.gov/lab/license/env.htm">http://www.azdhs.gov/lab/license/env.htm</a>	AZ0339
Arkansas - DEQ	<a href="http://www.adeq.state.ar.us/techsvs/labcert.htm">http://www.adeq.state.ar.us/techsvs/labcert.htm</a>	88-0637
California DHS (ELAP)	<a href="http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx">http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx</a>	2795
DOD ELAP	<a href="http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm">http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm</a>	L14-51
Florida DOH	<a href="http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm">http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm</a>	E87412
Hawaii DOH	<a href="http://health.hawaii.gov/">http://health.hawaii.gov/</a>	-
ISO 17025	<a href="http://www.pjllabs.com/">http://www.pjllabs.com/</a>	L16-57
Louisiana DEQ	<a href="http://www.deq.louisiana.gov/page/la-lab-accreditation">http://www.deq.louisiana.gov/page/la-lab-accreditation</a>	03016
Maine DHS	<a href="http://www.maine.gov/dhhs/">http://www.maine.gov/dhhs/</a>	WA01276
Minnesota DOH	<a href="http://www.health.state.mn.us/accreditation">http://www.health.state.mn.us/accreditation</a>	053-999-457
Nevada DEP	<a href="http://ndep.nv.gov/bsdw/labservice.htm">http://ndep.nv.gov/bsdw/labservice.htm</a>	WA01276
New Jersey DEP	<a href="http://www.nj.gov/dep/enforcement/oqa.html">http://www.nj.gov/dep/enforcement/oqa.html</a>	WA005
New York - DOH	<a href="https://www.wadsworth.org/regulatory/elap">https://www.wadsworth.org/regulatory/elap</a>	12060
North Carolina DEQ	<a href="https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification">https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification</a>	605
Oklahoma DEQ	<a href="http://www.deq.state.ok.us/CSDnew/labcert.htm">http://www.deq.state.ok.us/CSDnew/labcert.htm</a>	9801
Oregon – DEQ (NELAP)	<a href="http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx">http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx</a>	WA100010
South Carolina DHEC	<a href="http://www.scdhec.gov/environment/EnvironmentalLabCertification/">http://www.scdhec.gov/environment/EnvironmentalLabCertification/</a>	61002
Texas CEQ	<a href="http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html">http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html</a>	T104704427
Washington DOE	<a href="http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html">http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html</a>	C544
Wyoming (EPA Region 8)	<a href="https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water">https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water</a>	-
Kelso Laboratory Website	<a href="http://www.alsglobal.com">www.alsglobal.com</a>	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at [www.ALSGlobal.com](http://www.ALSGlobal.com) or at the accreditation bodies web site. Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.





## Case Narrative

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

## ALS ENVIRONMENTAL

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/  
B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request No.:** K1708980  
**Date Received:** 08/24/17

### Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

### Sample Receipt

Twenty soil samples were received for analysis at ALS Environmental on 08/24/17. The samples were received in good condition and consistent with the accompanying chain of custody form, except where noted on the cooler receipt and preservation form included in this report. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

### Total Metals

#### **Matrix Spike Recovery Exceptions:**

The matrix spike recoveries of Lead for sample 441-1-I01-082217 were outside control criteria. However, the analyte concentration in this sample was significantly higher than the added spike concentration, preventing accurate evaluation of the spike recovery. Recovery in the Laboratory Control Sample (LCS) was acceptable, which indicates the analytical batch was in control. No further corrective action was appropriate.

No other anomalies associated with the analysis of these samples were observed.

Approved by \_\_\_\_\_





# Chain of Custody

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

K1708980

Date 8/23/17  
 PAGE 12 OF 15  
 SR#

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001  
 Project Contact: Kady Young Company: Arcadis  
 Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488  
 City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961  
 Sampler's Signature: \_\_\_\_\_

Number of Containers	Analysis Requested					REMARKS
	lead/arsenic 3050B/6010					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					

Sample I.D.	Date	Time	LAB ID	Matrix
441-1-I01-082217	8/22/17	1843		S
I02		1845		S
I03		1846		S
I04		1847		S
I05		1847		S
I06		1848		S
I07		1850		S
I08		1853		S
I09		1855		S
I10		1856		S

**TURNAROUND REQUIREMENTS**  
 24 hr \_\_\_\_\_ 48 hr \_\_\_\_\_ 5 day \_\_\_\_\_  
 Standard (10 days)  
 Provide FAX Preliminary Results \_\_\_\_\_  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required \_\_\_\_\_  
 II. Report Dup., MS, MSD as required \_\_\_\_\_  
 III. Data Validation Report (includes raw data) \_\_\_\_\_  
 IV. CLP Deliverable Report \_\_\_\_\_  
 V. EDD \_\_\_\_\_

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99201

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Jac Lathan  
 Firm: ANA  
 Date/Time: 8/23/17 1300

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: BRICKMAN  
 Firm: ALS  
 Date/Time: 8/24/17 1020

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_



PC Jlo

### Cooler Receipt and Preservation Form

Client Arcadis Service Request K17 08980  
Received: 8/24/17 Opened: 8/24/17 By: BR Unloaded: 8/24/17 By: BR

Samples were received via?  USPS  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 front  
If present, were custody seals intact?  Y  N If present, were they signed and dated?  Y  N

Raw Water Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID NA	Tracking Number NA	Filed
2.4	2.4	2.1	2.1	0.0	381		874567385510	
0.1	0.1	4.1	4.1	0.0	323		874567385494	
0.4	-0.5	1.1	1.0	-0.1	371		874567385509	

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

Were samples received in good condition (temperature, unbroken)? *Indicate in the table below.* NA  Y  N

If applicable, tissue samples were received: Frozen Partially Thawed Thawed

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

Discrepancies, & Resolutions: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

K1708980

Date 8/23/17  
PAGE 14 OF 15  
SR#

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001  
 Project Contact: Kady Young Company: Arcadis  
 Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488  
 City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961  
 Sampler's Signature: \_\_\_\_\_

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	Analysis Requested					REMARKS
						lead/arsenic 3050B/6010					
441-1-101-082217	8/22/17	1859		S	1	X					
J02		1900		S	1	X					
J03		1900		S	1	X					
J04		1903		S	1	X					
J05		1904		S	1	X					
J06		1905		S	1	X					
J07		1906		S	1	X					
J08		1907		S	1	X					
J09		1908		S	1	X					
J10		1910		S	1	X					

**TURNAROUND REQUIREMENTS**  
 24 hr \_\_\_\_\_ 48 hr \_\_\_\_\_ 5 day \_\_\_\_\_  
 Standard (10 days)  
 Provide FAX Preliminary Results \_\_\_\_\_  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required \_\_\_\_\_  
 II. Report Dup., MS, MSD as required \_\_\_\_\_  
 III. Data Validation Report (includes raw data) \_\_\_\_\_  
 IV. CLP Deliverable Report \_\_\_\_\_  
 V. EDD \_\_\_\_\_

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99201

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Joe Latta  
 Firm: ANA  
 Date/Time: 8/23/17 1300

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: B. Brucman  
 Firm: ALV  
 Date/Time: 8/24/17 1020

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_



# Total Solids

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1708980  
**Date Collected:** 08/22/17  
**Date Received:** 08/24/17  
**Units:** Percent  
**Basis:** As Received

**Solids, Total**

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
441-1-I01-082217	K1708980-001	94.2	-	-	1	08/31/17 16:53	
441-1-I02-082217	K1708980-002	95.5	-	-	1	08/31/17 16:53	
441-1-I03-082217	K1708980-003	95.4	-	-	1	08/31/17 16:53	
441-1-I04-082217	K1708980-004	94.4	-	-	1	08/31/17 16:53	
441-1-I05-082217	K1708980-005	92.5	-	-	1	08/31/17 16:53	
441-1-I06-082217	K1708980-006	92.2	-	-	1	08/31/17 16:53	
441-1-I07-082217	K1708980-007	91.7	-	-	1	08/31/17 16:53	
441-1-I08-082217	K1708980-008	91.6	-	-	1	08/31/17 16:53	
441-1-I09-082217	K1708980-009	92.6	-	-	1	08/31/17 16:53	
441-1-I10-082217	K1708980-010	93.5	-	-	1	08/31/17 16:53	
441-1-J01-082217	K1708980-011	96.9	-	-	1	08/31/17 16:53	
441-1-J02-082217	K1708980-012	94.4	-	-	1	08/31/17 16:53	
441-1-J03-082217	K1708980-013	94.0	-	-	1	08/31/17 16:53	
441-1-J04-082217	K1708980-014	94.4	-	-	1	08/31/17 16:53	
441-1-J05-082217	K1708980-015	93.3	-	-	1	08/31/17 16:53	
441-1-J06-082217	K1708980-016	93.2	-	-	1	08/31/17 16:53	
441-1-J07-082217	K1708980-017	92.8	-	-	1	08/31/17 16:53	
441-1-J08-082217	K1708980-018	94.9	-	-	1	08/31/17 16:53	
441-1-J09-082217	K1708980-019	94.6	-	-	1	08/31/17 16:53	
441-1-J10-082217	K1708980-020	91.2	-	-	1	08/31/17 16:53	



ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1708980  
**Date Collected:** 08/22/17  
**Date Received:** 08/24/17

**Units:** Percent  
**Basis:** As Received

**Replicate Sample Summary**  
**Inorganic Parameters**

<b>Sample Name:</b>	<b>Lab Code:</b>	<b>MRL</b>	<b>Sample Result</b>	<b>Duplicate Result</b>	<b>Average</b>	<b>RPD</b>	<b>RPD Limit</b>	<b>Date Analyzed</b>
441-1-I01-082217	K1708980-001DUP	-	94.2	94.3	94.3	<1	20	08/31/17
441-1-J01-082217	K1708980-011DUP	-	96.9	96.7	96.8	<1	20	08/31/17

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



# Metals

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-I01-082217  
**Lab Code:** K1708980-001

**Service Request:** K1708980  
**Date Collected:** 08/22/17 18:43  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	35.3	mg/Kg	3.9	0.8	2	09/07/17 15:14	09/06/17	
Lead	6010C	257	mg/Kg	2.0	0.4	2	09/07/17 15:14	09/06/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-I02-082217  
**Lab Code:** K1708980-002

**Service Request:** K1708980  
**Date Collected:** 08/22/17 18:45  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>32.6</b>	mg/Kg	4.0	0.8	2	09/07/17 15:35	09/06/17	
Lead	6010C	<b>174</b>	mg/Kg	2.0	0.4	2	09/07/17 15:35	09/06/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-I03-082217  
**Lab Code:** K1708980-003

**Service Request:** K1708980  
**Date Collected:** 08/22/17 18:46  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>33.6</b>	mg/Kg	4.1	0.8	2	09/07/17 15:38	09/06/17	
Lead	6010C	<b>550</b>	mg/Kg	2.0	0.4	2	09/07/17 15:38	09/06/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-I04-082217  
**Lab Code:** K1708980-004

**Service Request:** K1708980  
**Date Collected:** 08/22/17 18:47  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>21.9</b>	mg/Kg	3.9	0.8	2	09/07/17 15:40	09/06/17	
Lead	6010C	<b>207</b>	mg/Kg	2.0	0.4	2	09/07/17 15:40	09/06/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-I05-082217  
**Lab Code:** K1708980-005

**Service Request:** K1708980  
**Date Collected:** 08/22/17 18:47  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>19.3</b>	mg/Kg	4.2	0.8	2	09/07/17 15:42	09/06/17	
Lead	6010C	<b>347</b>	mg/Kg	2.1	0.4	2	09/07/17 15:42	09/06/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-I06-082217  
**Lab Code:** K1708980-006

**Service Request:** K1708980  
**Date Collected:** 08/22/17 18:48  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>35.1</b>	mg/Kg	4.2	0.8	2	09/07/17 15:45	09/06/17	
Lead	6010C	<b>591</b>	mg/Kg	2.1	0.4	2	09/07/17 15:45	09/06/17	



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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-I07-082217  
**Lab Code:** K1708980-007

**Service Request:** K1708980  
**Date Collected:** 08/22/17 18:50  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>33.5</b>	mg/Kg	4.1	0.8	2	09/07/17 15:47	09/06/17	
Lead	6010C	<b>569</b>	mg/Kg	2.1	0.4	2	09/07/17 15:47	09/06/17	

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-I08-082217  
**Lab Code:** K1708980-008

**Service Request:** K1708980  
**Date Collected:** 08/22/17 18:53  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	27.3	mg/Kg	4.2	0.8	2	09/07/17 15:56	09/06/17	
Lead	6010C	941	mg/Kg	2.1	0.4	2	09/07/17 15:56	09/06/17	

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-I09-082217  
**Lab Code:** K1708980-009

**Service Request:** K1708980  
**Date Collected:** 08/22/17 18:55  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>17.6</b>	mg/Kg	4.2	0.8	2	09/07/17 15:58	09/06/17	
Lead	6010C	<b>144</b>	mg/Kg	2.1	0.4	2	09/07/17 15:58	09/06/17	

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-I10-082217  
**Lab Code:** K1708980-010

**Service Request:** K1708980  
**Date Collected:** 08/22/17 18:56  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>25.9</b>	mg/Kg	4.0	0.8	2	09/07/17 16:01	09/06/17	
Lead	6010C	<b>248</b>	mg/Kg	2.0	0.4	2	09/07/17 16:01	09/06/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-J01-082217  
**Lab Code:** K1708980-011

**Service Request:** K1708980  
**Date Collected:** 08/22/17 18:59  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	24.4	mg/Kg	3.9	0.8	2	09/07/17 16:03	09/06/17	
Lead	6010C	351	mg/Kg	1.9	0.4	2	09/07/17 16:03	09/06/17	

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-J02-082217  
**Lab Code:** K1708980-012

**Service Request:** K1708980  
**Date Collected:** 08/22/17 19:00  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>18.9</b>	mg/Kg	4.0	0.8	2	09/07/17 16:05	09/06/17	
Lead	6010C	<b>143</b>	mg/Kg	2.0	0.4	2	09/07/17 16:05	09/06/17	

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-J03-082217  
**Lab Code:** K1708980-013

**Service Request:** K1708980  
**Date Collected:** 08/22/17 19:00  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>27.0</b>	mg/Kg	4.1	0.8	2	09/07/17 16:08	09/06/17	
Lead	6010C	<b>216</b>	mg/Kg	2.0	0.4	2	09/07/17 16:08	09/06/17	

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-J04-082217  
**Lab Code:** K1708980-014

**Service Request:** K1708980  
**Date Collected:** 08/22/17 19:03  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>41.0</b>	mg/Kg	4.0	0.8	2	09/07/17 16:10	09/06/17	
Lead	6010C	<b>533</b>	mg/Kg	2.0	0.4	2	09/07/17 16:10	09/06/17	



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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-J05-082217  
**Lab Code:** K1708980-015

**Service Request:** K1708980  
**Date Collected:** 08/22/17 19:04  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>22.8</b>	mg/Kg	4.0	0.8	2	09/07/17 16:12	09/06/17	
Lead	6010C	<b>245</b>	mg/Kg	2.0	0.4	2	09/07/17 16:12	09/06/17	

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-J06-082217  
**Lab Code:** K1708980-016

**Service Request:** K1708980  
**Date Collected:** 08/22/17 19:05  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>31.1</b>	mg/Kg	4.1	0.8	2	09/07/17 16:15	09/06/17	
Lead	6010C	<b>635</b>	mg/Kg	2.1	0.4	2	09/07/17 16:15	09/06/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-J07-082217  
**Lab Code:** K1708980-017

**Service Request:** K1708980  
**Date Collected:** 08/22/17 19:06  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>28.8</b>	mg/Kg	4.1	0.8	2	09/07/17 16:17	09/06/17	
Lead	6010C	<b>328</b>	mg/Kg	2.1	0.4	2	09/07/17 16:17	09/06/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-J08-082217  
**Lab Code:** K1708980-018

**Service Request:** K1708980  
**Date Collected:** 08/22/17 19:07  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>22.3</b>	mg/Kg	3.9	0.8	2	09/07/17 16:26	09/06/17	
Lead	6010C	<b>160</b>	mg/Kg	2.0	0.4	2	09/07/17 16:26	09/06/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-J09-082217  
**Lab Code:** K1708980-019

**Service Request:** K1708980  
**Date Collected:** 08/22/17 19:08  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>24.2</b>	mg/Kg	4.0	0.8	2	09/07/17 16:28	09/06/17	
Lead	6010C	<b>206</b>	mg/Kg	2.0	0.4	2	09/07/17 16:28	09/06/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-J10-082217  
**Lab Code:** K1708980-020

**Service Request:** K1708980  
**Date Collected:** 08/22/17 19:10  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>35.6</b>	mg/Kg	4.2	0.8	2	09/07/17 16:31	09/06/17	
Lead	6010C	<b>352</b>	mg/Kg	2.1	0.4	2	09/07/17 16:31	09/06/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** Method Blank  
**Lab Code:** KQ1712581-02

**Service Request:** K1708980  
**Date Collected:** NA  
**Date Received:** NA  
**Basis:** Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6010C	ND U	mg/Kg	4	0.8	2	09/07/17 15:10	09/06/17	
Lead	6010C	ND U	mg/Kg	2	0.4	2	09/07/17 15:10	09/06/17	

ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708980  
**Date Collected:** 08/22/17  
**Date Received:** 08/24/17  
**Date Analyzed:** 09/7/17  
**Date Extracted:** 09/6/17

**Duplicate Matrix Spike Summary  
Total Metals**

**Sample Name:** 441-1-I01-082217  
**Lab Code:** K1708980-001  
**Analysis Method:** 6010C  
**Prep Method:** EPA 3050B

**Units:** mg/Kg  
**Basis:** Dry

Analyte Name	Sample Result	Result	Matrix Spike KQ1712581-03		Result	Duplicate Matrix Spike KQ1712581-04		% Rec Limits	RPD	RPD Limit
			Spike Amount	% Rec		Spike Amount	% Rec			
Arsenic	35.3	130	101	94	133	104	94	75-125	3	30
Lead	257	305	101	47 N	310	104	51 N	75-125	2	30

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



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dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708980  
**Date Analyzed:** 09/07/17

**Lab Control Sample Summary**  
**Total Metals**

**Units:**mg/Kg  
**Basis:**Dry

**Lab Control Sample**  
KQ1712581-01

<b>Analyte Name</b>	<b>Analytical Method</b>	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>% Rec Limits</b>
Arsenic	6010C	497	500	99	80-120
Lead	6010C	494	500	99	80-120



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ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

September 12, 2017

**Analytical Report for Service Request No: K1708981**

Dave Enos  
Teck American Incorporated  
501 North Riverpoint Blvd., Suite 300  
Spokane, WA 99202

**RE: August 2017 Sampling SAT Study / B0095010.0005.00001**

Dear Dave,

Enclosed are the results of the sample(s) submitted to our laboratory August 24, 2017  
For your reference, these analyses have been assigned our service request number **K1708981**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at [www.alsglobal.com](http://www.alsglobal.com). All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at [Jeff.Coronado@alsglobal.com](mailto:Jeff.Coronado@alsglobal.com).

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**

Jeff Coronado  
Metals Department  
Manager



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ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

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## Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

### **Inorganic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

### **Metals Data Qualifiers**

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.  
  - i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Organic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Additional Petroleum Hydrocarbon Specific Qualifiers**

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

**ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso  
State Certifications, Accreditations, and Licenses**

<b>Agency</b>	<b>Web Site</b>	<b>Number</b>
Alaska DEH	<a href="http://dec.alaska.gov/eh/lab/cs/csapproval.htm">http://dec.alaska.gov/eh/lab/cs/csapproval.htm</a>	UST-040
Arizona DHS	<a href="http://www.azdhs.gov/lab/license/env.htm">http://www.azdhs.gov/lab/license/env.htm</a>	AZ0339
Arkansas - DEQ	<a href="http://www.adeq.state.ar.us/techsvs/labcert.htm">http://www.adeq.state.ar.us/techsvs/labcert.htm</a>	88-0637
California DHS (ELAP)	<a href="http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx">http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx</a>	2795
DOD ELAP	<a href="http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm">http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm</a>	L14-51
Florida DOH	<a href="http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm">http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm</a>	E87412
Hawaii DOH	<a href="http://health.hawaii.gov/">http://health.hawaii.gov/</a>	-
ISO 17025	<a href="http://www.pjllabs.com/">http://www.pjllabs.com/</a>	L16-57
Louisiana DEQ	<a href="http://www.deq.louisiana.gov/page/la-lab-accreditation">http://www.deq.louisiana.gov/page/la-lab-accreditation</a>	03016
Maine DHS	<a href="http://www.maine.gov/dhhs/">http://www.maine.gov/dhhs/</a>	WA01276
Minnesota DOH	<a href="http://www.health.state.mn.us/accreditation">http://www.health.state.mn.us/accreditation</a>	053-999-457
Nevada DEP	<a href="http://ndep.nv.gov/bsdw/labservice.htm">http://ndep.nv.gov/bsdw/labservice.htm</a>	WA01276
New Jersey DEP	<a href="http://www.nj.gov/dep/enforcement/oqa.html">http://www.nj.gov/dep/enforcement/oqa.html</a>	WA005
New York - DOH	<a href="https://www.wadsworth.org/regulatory/elap">https://www.wadsworth.org/regulatory/elap</a>	12060
North Carolina DEQ	<a href="https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification">https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification</a>	605
Oklahoma DEQ	<a href="http://www.deq.state.ok.us/CSDnew/labcert.htm">http://www.deq.state.ok.us/CSDnew/labcert.htm</a>	9801
Oregon – DEQ (NELAP)	<a href="http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx">http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx</a>	WA100010
South Carolina DHEC	<a href="http://www.scdhec.gov/environment/EnvironmentalLabCertification/">http://www.scdhec.gov/environment/EnvironmentalLabCertification/</a>	61002
Texas CEQ	<a href="http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html">http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html</a>	T104704427
Washington DOE	<a href="http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html">http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html</a>	C544
Wyoming (EPA Region 8)	<a href="https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water">https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water</a>	-
Kelso Laboratory Website	<a href="http://www.alsglobal.com">www.alsglobal.com</a>	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at [www.ALSGlobal.com](http://www.ALSGlobal.com) or at the accreditation bodies web site.  
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.



## Case Narrative

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

**ALS ENVIRONMENTAL**

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/  
B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request No.:** K1708981  
**Date Received:** 08/24/17

**Case Narrative**

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

**Sample Receipt**

Twenty soil samples were received for analysis at ALS Environmental on 08/24/17. The samples were received in good condition and consistent with the accompanying chain of custody form, except where noted on the cooler receipt and preservation form included in this report. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

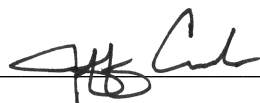
**Total Metals**

**Matrix Spike Recovery Exceptions:**

The matrix spike recoveries of Lead for sample 258-1-G01-082117 were outside control criteria. However, the analyte concentration in this sample was significantly higher than the added spike concentration, preventing accurate evaluation of the spike recoveries. Recovery in the Laboratory Control Sample (LCS) was acceptable, which indicates the analytical batch was in control. No further corrective action was appropriate.

No other anomalies associated with the analysis of these samples were observed.

Approved by \_\_\_\_\_







# Chain of Custody

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1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

K1-108981

Date 8/23/17  
PAGE 10 OF 15  
SR#

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001  
 Project Contact: Kady Young Company: Arcadis  
 Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488  
 City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961  
 Sampler's Signature: \_\_\_\_\_

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	Analysis Requested				REMARKS
						lead/arsenic 3050B/6010				
258-1-G01-082117	8/21/17	1503		S	1	X				
G02		1505		S	1	X				
G03		1506		S	1	X				
G04		1508		S	1	X				
G05		1510		S	1	X				
G06		1512		S	1	X				
G07		1514		S	1	X				
G08		1516		S	1	X				
G09		1518		S	1	X				
G10		1520		S	1	X				

**TURNAROUND REQUIREMENTS**  
 24 hr  48 hr  5 day  
 Standard (10 days)  
 Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes raw data)  
 IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Joe Latham  
 Firm: Arcadis  
 Date/Time: 8/23/17 1300

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: B. Brennan  
 Firm: ALV  
 Date/Time: 8/24/17 0200

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

*K1708981*

Date 8/23/17  
 PAGE 11 OF 15  
 SR#

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001  
 Project Contact: Kady Young Company: Arcadis  
 Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488  
 City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961  
 Sampler's Signature: \_\_\_\_\_

Number of Containers	Analysis Requested					REMARKS
	lead/arsenic 3050B/6010					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					

Sample I.D.	Date	Time	LAB ID	Matrix
258-1-H01-082117	8/21/17	1529		S
H02		1531		S
H03		1533		S
H04		1535		S
H05		1536		S
H06		1538		S
H07		1540		S
H08		1542		S
H09		1544		S
H10		1546		S

**TURNAROUND REQUIREMENTS**  
 24 hr \_\_\_\_\_ 48 hr \_\_\_\_\_ 5 day \_\_\_\_\_  
 Standard (10 days)  
 Provide FAX Preliminary Results \_\_\_\_\_  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required \_\_\_\_\_  
 II. Report Dup., MS, MSD as required \_\_\_\_\_  
 III. Data Validation Report (includes raw data) \_\_\_\_\_  
 IV. CLP Deliverable Report \_\_\_\_\_  
 V. EDD \_\_\_\_\_

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99201

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Joe Ledman  
 Firm: Arcadis  
 Date/Time: 8/23/17 1300

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: BRICKMAN  
 Firm: ALS  
 Date/Time: 8/24/17 1020

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_



PC J. Co

### Cooler Receipt and Preservation Form

08981

Client Arcadis Service Request K17  
Received: 8/24/17 Opened: 8/24/17 By: BR Unloaded: 8/24/17 By: BR

Samples were received via? USPS 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 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
2.4	2.4	2.1	2.1	0.0	381		874567385510		
0.1	0.1	4.1	4.1	0.0	323		874567385494		
0.4	-0.5	1.1	1.0	-0.1	371		874567385509		

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  
Were samples received in good condition (temperature, unbroken)? *Indicate in the table below.* NA Y N  
If applicable, tissue samples were received: Frozen Partially Thawed Thawed  
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		

Discrepancies, & Resolutions: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



# Total Solids

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1708981  
**Date Collected:** 08/21/17  
**Date Received:** 08/24/17

**Units:** Percent  
**Basis:** As Received

Solids, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
258-1-G01-082117	K1708981-001	96.4	-	-	1	08/31/17 16:53	
258-1-G02-082117	K1708981-002	97.0	-	-	1	08/31/17 16:53	
258-1-G03-082117	K1708981-003	98.4	-	-	1	08/31/17 16:53	
258-1-G04-082117	K1708981-004	97.4	-	-	1	08/31/17 16:53	
258-1-G05-082117	K1708981-005	97.1	-	-	1	08/31/17 16:53	
258-1-G06-082117	K1708981-006	96.3	-	-	1	08/31/17 16:53	
258-1-G07-082117	K1708981-007	98.2	-	-	1	08/31/17 16:53	
258-1-G08-082117	K1708981-008	95.2	-	-	1	08/31/17 16:53	
258-1-G09-082117	K1708981-009	97.4	-	-	1	08/31/17 16:53	
258-1-G10-082117	K1708981-010	97.9	-	-	1	08/31/17 16:53	
258-1-H01-082117	K1708981-011	96.0	-	-	1	08/31/17 16:53	
258-1-H02-082117	K1708981-012	95.9	-	-	1	08/31/17 16:53	
258-1-H03-082117	K1708981-013	97.6	-	-	1	08/31/17 16:53	
258-1-H04-082117	K1708981-014	97.2	-	-	1	08/31/17 16:53	
258-1-H05-082117	K1708981-015	96.3	-	-	1	08/31/17 16:53	
258-1-H06-082117	K1708981-016	96.2	-	-	1	08/31/17 16:53	
258-1-H07-082117	K1708981-017	97.1	-	-	1	08/31/17 16:53	
258-1-H08-082117	K1708981-018	97.2	-	-	1	08/31/17 16:53	
258-1-H09-082117	K1708981-019	96.3	-	-	1	08/31/17 16:53	
258-1-H10-082117	K1708981-020	98.5	-	-	1	08/31/17 16:53	

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1708981  
**Date Collected:** 08/21/17  
**Date Received:** 08/24/17

**Units:** Percent  
**Basis:** As Received

Replicate Sample Summary

Inorganic Parameters

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
258-1-G01-082117	K1708981-001DUP	-	96.4	96.6	96.5	<1	20	08/31/17
258-1-H01-082117	K1708981-011DUP	-	96.0	96.7	96.4	<1	20	08/31/17

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



# Metals

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1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
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ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-G01-082117  
**Lab Code:** K1708981-001

**Service Request:** K1708981  
**Date Collected:** 08/21/17 15:03  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>25.5</b>	mg/Kg	4.1	0.8	2	09/07/17 16:37	09/06/17	
Lead	6010C	<b>315</b>	mg/Kg	2.1	0.4	2	09/07/17 16:37	09/06/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-G02-082117  
**Lab Code:** K1708981-002

**Service Request:** K1708981  
**Date Collected:** 08/21/17 15:05  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>13.5</b>	mg/Kg	3.9	0.8	2	09/07/17 16:54	09/06/17	
Lead	6010C	<b>164</b>	mg/Kg	1.9	0.4	2	09/07/17 16:54	09/06/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-G03-082117  
**Lab Code:** K1708981-003

**Service Request:** K1708981  
**Date Collected:** 08/21/17 15:06  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>11.1</b>	mg/Kg	4.0	0.8	2	09/07/17 16:56	09/06/17	
Lead	6010C	<b>172</b>	mg/Kg	2.0	0.4	2	09/07/17 16:56	09/06/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-G04-082117  
**Lab Code:** K1708981-004

**Service Request:** K1708981  
**Date Collected:** 08/21/17 15:08  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>16.2</b>	mg/Kg	3.9	0.8	2	09/07/17 16:59	09/06/17	
Lead	6010C	<b>270</b>	mg/Kg	2.0	0.4	2	09/07/17 16:59	09/06/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-G05-082117  
**Lab Code:** K1708981-005

**Service Request:** K1708981  
**Date Collected:** 08/21/17 15:10  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>20.8</b>	mg/Kg	4.0	0.8	2	09/07/17 17:01	09/06/17	
Lead	6010C	<b>312</b>	mg/Kg	2.0	0.4	2	09/07/17 17:01	09/06/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-G06-082117  
**Lab Code:** K1708981-006

**Service Request:** K1708981  
**Date Collected:** 08/21/17 15:12  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	24.4	mg/Kg	4.1	0.8	2	09/07/17 17:03	09/06/17	
Lead	6010C	252	mg/Kg	2.1	0.4	2	09/07/17 17:03	09/06/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-G07-082117  
**Lab Code:** K1708981-007

**Service Request:** K1708981  
**Date Collected:** 08/21/17 15:14  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>10.0</b>	mg/Kg	3.9	0.8	2	09/07/17 17:05	09/06/17	
Lead	6010C	<b>94.7</b>	mg/Kg	2.0	0.4	2	09/07/17 17:05	09/06/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-G08-082117  
**Lab Code:** K1708981-008

**Service Request:** K1708981  
**Date Collected:** 08/21/17 15:16  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>20.3</b>	mg/Kg	3.9	0.8	2	09/07/17 17:07	09/06/17	
Lead	6010C	<b>294</b>	mg/Kg	1.9	0.4	2	09/07/17 17:07	09/06/17	



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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-G09-082117  
**Lab Code:** K1708981-009

**Service Request:** K1708981  
**Date Collected:** 08/21/17 15:18  
**Date Received:** 08/24/17 10:20  
**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>12.8</b>	mg/Kg	3.9	0.8	2	09/07/17 17:09	09/06/17	
Lead	6010C	<b>179</b>	mg/Kg	1.9	0.4	2	09/07/17 17:09	09/06/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-G10-082117  
**Lab Code:** K1708981-010

**Service Request:** K1708981  
**Date Collected:** 08/21/17 15:20  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>10.8</b>	mg/Kg	3.9	0.8	2	09/07/17 17:12	09/06/17	
Lead	6010C	<b>128</b>	mg/Kg	1.9	0.4	2	09/07/17 17:12	09/06/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-H01-082117  
**Lab Code:** K1708981-011

**Service Request:** K1708981  
**Date Collected:** 08/21/17 15:29  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>14.6</b>	mg/Kg	4.0	0.8	2	09/07/17 17:14	09/06/17	
Lead	6010C	<b>225</b>	mg/Kg	2.0	0.4	2	09/07/17 17:14	09/06/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-H02-082117  
**Lab Code:** K1708981-012

**Service Request:** K1708981  
**Date Collected:** 08/21/17 15:31  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>10.1</b>	mg/Kg	4.1	0.8	2	09/07/17 17:25	09/06/17	
Lead	6010C	<b>173</b>	mg/Kg	2.0	0.4	2	09/07/17 17:25	09/06/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-H03-082117  
**Lab Code:** K1708981-013

**Service Request:** K1708981  
**Date Collected:** 08/21/17 15:33  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>9.1</b>	mg/Kg	3.9	0.8	2	09/07/17 17:27	09/06/17	
Lead	6010C	<b>120</b>	mg/Kg	2.0	0.4	2	09/07/17 17:27	09/06/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-H04-082117  
**Lab Code:** K1708981-014

**Service Request:** K1708981  
**Date Collected:** 08/21/17 15:35  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>18.4</b>	mg/Kg	4.0	0.8	2	09/07/17 17:29	09/06/17	
Lead	6010C	<b>201</b>	mg/Kg	2.0	0.4	2	09/07/17 17:29	09/06/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-H05-082117  
**Lab Code:** K1708981-015

**Service Request:** K1708981  
**Date Collected:** 08/21/17 15:36  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>21.8</b>	mg/Kg	4.1	0.8	2	09/07/17 17:32	09/06/17	
Lead	6010C	<b>398</b>	mg/Kg	2.0	0.4	2	09/07/17 17:32	09/06/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-H06-082117  
**Lab Code:** K1708981-016

**Service Request:** K1708981  
**Date Collected:** 08/21/17 15:38  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>16.5</b>	mg/Kg	4.0	0.8	2	09/07/17 17:34	09/06/17	
Lead	6010C	<b>330</b>	mg/Kg	2.0	0.4	2	09/07/17 17:34	09/06/17	



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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-H07-082117  
**Lab Code:** K1708981-017

**Service Request:** K1708981  
**Date Collected:** 08/21/17 15:40  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>12.3</b>	mg/Kg	3.8	0.8	2	09/07/17 17:36	09/06/17	
Lead	6010C	<b>169</b>	mg/Kg	1.9	0.4	2	09/07/17 17:36	09/06/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-H08-082117  
**Lab Code:** K1708981-018

**Service Request:** K1708981  
**Date Collected:** 08/21/17 15:42  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>12.9</b>	mg/Kg	4.0	0.8	2	09/07/17 17:38	09/06/17	
Lead	6010C	<b>174</b>	mg/Kg	2.0	0.4	2	09/07/17 17:38	09/06/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-H09-082117  
**Lab Code:** K1708981-019

**Service Request:** K1708981  
**Date Collected:** 08/21/17 15:44  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>22.8</b>	mg/Kg	3.8	0.8	2	09/07/17 17:40	09/06/17	
Lead	6010C	<b>312</b>	mg/Kg	1.9	0.4	2	09/07/17 17:40	09/06/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-H10-082117  
**Lab Code:** K1708981-020

**Service Request:** K1708981  
**Date Collected:** 08/21/17 15:46  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>15.9</b>	mg/Kg	4.0	0.8	2	09/07/17 17:43	09/06/17	
Lead	6010C	<b>198</b>	mg/Kg	2.0	0.4	2	09/07/17 17:43	09/06/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** Method Blank  
**Lab Code:** KQ1712695-02

**Service Request:** K1708981  
**Date Collected:** NA  
**Date Received:** NA  
**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	ND U	mg/Kg	4	0.8	2	09/07/17 16:33	09/06/17	
Lead	6010C	ND U	mg/Kg	2	0.4	2	09/07/17 16:33	09/06/17	

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QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708981  
**Date Collected:** 08/21/17  
**Date Received:** 08/24/17  
**Date Analyzed:** 09/7/17  
**Date Extracted:** 09/6/17

**Duplicate Matrix Spike Summary  
Total Metals**

**Sample Name:** 258-1-G01-082117  
**Lab Code:** K1708981-001  
**Analysis Method:** 6010C  
**Prep Method:** EPA 3050B

**Units:** mg/Kg  
**Basis:** Dry

Analyte Name	Sample Result	Result	Matrix Spike KQ1712695-03		Result	Duplicate Matrix Spike KQ1712695-04		% Rec Limits	RPD	RPD Limit
			Spike Amount	% Rec		Spike Amount	% Rec			
Arsenic	25.5	126	103	98	127	103	99	75-125	<1	30
Lead	315	368	103	52 N	358	103	42 N	75-125	3	30

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708981  
**Date Analyzed:** 09/07/17

**Lab Control Sample Summary**  
**Total Metals**

**Units:**mg/Kg  
**Basis:**Dry

**Lab Control Sample**  
KQ1712695-01

<b>Analyte Name</b>	<b>Analytical Method</b>	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>% Rec Limits</b>
Arsenic	6010C	495	500	99	80-120
Lead	6010C	489	500	98	80-120



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ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

September 12, 2017

**Analytical Report for Service Request No: K1708982**

Dave Enos  
Teck American Incorporated  
501 North Riverpoint Blvd., Suite 300  
Spokane, WA 99202

**RE: August 2017 Sampling SAT Study / B0095010.0005.00001**

Dear Dave,

Enclosed are the results of the sample(s) submitted to our laboratory August 24, 2017  
For your reference, these analyses have been assigned our service request number **K1708982**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at [www.alsglobal.com](http://www.alsglobal.com). All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at [Jeff.Coronado@alsglobal.com](mailto:Jeff.Coronado@alsglobal.com).

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**

Jeff Coronado  
Metals Department  
Manager





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ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

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## Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

### **Inorganic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

### **Metals Data Qualifiers**

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.  
  - i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Organic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Additional Petroleum Hydrocarbon Specific Qualifiers**

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

**ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso  
State Certifications, Accreditations, and Licenses**

<b>Agency</b>	<b>Web Site</b>	<b>Number</b>
Alaska DEH	<a href="http://dec.alaska.gov/eh/lab/cs/csapproval.htm">http://dec.alaska.gov/eh/lab/cs/csapproval.htm</a>	UST-040
Arizona DHS	<a href="http://www.azdhs.gov/lab/license/env.htm">http://www.azdhs.gov/lab/license/env.htm</a>	AZ0339
Arkansas - DEQ	<a href="http://www.adeq.state.ar.us/techsvs/labcert.htm">http://www.adeq.state.ar.us/techsvs/labcert.htm</a>	88-0637
California DHS (ELAP)	<a href="http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx">http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx</a>	2795
DOD ELAP	<a href="http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm">http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm</a>	L14-51
Florida DOH	<a href="http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm">http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm</a>	E87412
Hawaii DOH	<a href="http://health.hawaii.gov/">http://health.hawaii.gov/</a>	-
ISO 17025	<a href="http://www.pjlabs.com/">http://www.pjlabs.com/</a>	L16-57
Louisiana DEQ	<a href="http://www.deq.louisiana.gov/page/la-lab-accreditation">http://www.deq.louisiana.gov/page/la-lab-accreditation</a>	03016
Maine DHS	<a href="http://www.maine.gov/dhhs/">http://www.maine.gov/dhhs/</a>	WA01276
Minnesota DOH	<a href="http://www.health.state.mn.us/accreditation">http://www.health.state.mn.us/accreditation</a>	053-999-457
Nevada DEP	<a href="http://ndep.nv.gov/bsdw/labservice.htm">http://ndep.nv.gov/bsdw/labservice.htm</a>	WA01276
New Jersey DEP	<a href="http://www.nj.gov/dep/enforcement/oqa.html">http://www.nj.gov/dep/enforcement/oqa.html</a>	WA005
New York - DOH	<a href="https://www.wadsworth.org/regulatory/elap">https://www.wadsworth.org/regulatory/elap</a>	12060
North Carolina DEQ	<a href="https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification">https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification</a>	605
Oklahoma DEQ	<a href="http://www.deq.state.ok.us/CSDnew/labcert.htm">http://www.deq.state.ok.us/CSDnew/labcert.htm</a>	9801
Oregon – DEQ (NELAP)	<a href="http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx">http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx</a>	WA100010
South Carolina DHEC	<a href="http://www.scdhec.gov/environment/EnvironmentalLabCertification/">http://www.scdhec.gov/environment/EnvironmentalLabCertification/</a>	61002
Texas CEQ	<a href="http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html">http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html</a>	T104704427
Washington DOE	<a href="http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html">http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html</a>	C544
Wyoming (EPA Region 8)	<a href="https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water">https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water</a>	-
Kelso Laboratory Website	<a href="http://www.alsglobal.com">www.alsglobal.com</a>	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at [www.ALSGlobal.com](http://www.ALSGlobal.com) or at the accreditation bodies web site. Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.



## Case Narrative

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

**ALS ENVIRONMENTAL**

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/  
B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request No.:** K1708982  
**Date Received:** 08/24/17

**Case Narrative**


All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

**Sample Receipt**

Eleven soil samples were received for analysis at ALS Environmental on 08/24/17. The samples were received in good condition and consistent with the accompanying chain of custody form, except where noted on the cooler receipt and preservation form included in this report. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

**Total Metals**

No anomalies associated with the analysis of these samples were observed.

Approved by  \_\_\_\_\_



## Chain of Custody

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

**Project Name:** Teck American - UCR SATES **Project Number:** B0095010.0005.00001

**Project Contact:** Kady Young **Company:** Arcadis

**Company/Address:** 189 North Cedar Street **Phone:** 307-203-3510 or 810-588-1488

**City, State, Zip:** Buffalo, WY 82834 **FAX:** 307-684-5961

**Sampler's Signature:** \_\_\_\_\_

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	Analysis Requested					REMARKS
						lead	arsenic	3050B	6010		
<del>441-1-B01-082217</del>	<del>8/22/17</del>	<del>1546</del>	<del></del>	<del>S</del>	<del>1</del>	<del>X</del>					
<del>B02</del>		<del>1548</del>	<del></del>	<del>S</del>	<del>1</del>	<del>X</del>					
<del>B03</del>		<del>1551</del>	<del></del>	<del>S</del>	<del>1</del>	<del>X</del>					
<del>B04</del>		<del>1553</del>	<del></del>	<del>S</del>	<del>1</del>	<del>X</del>					
<del>B05</del>		<del>1556</del>	<del></del>	<del>S</del>	<del>1</del>	<del>X</del>					
<del>B06</del>		<del>1558</del>	<del></del>	<del>S</del>	<del>1</del>	<del>X</del>					
<del>B07</del>		<del>1600</del>	<del></del>	<del>S</del>	<del>1</del>	<del>X</del>					
<del>B08</del>		<del>1602</del>	<del></del>	<del>S</del>	<del>1</del>	<del>X</del>					
<del>B01</del>		<del>1604</del>	<del></del>	<del>S</del>	<del>1</del>	<del>X</del>					
<del>B10</del>		<del>1606</del>	<del></del>	<del>S</del>	<del>1</del>	<del>X</del>					

**URNAROUND REQUIREMENTS**

24 hr  48 hr  5 day

Standard (10 days)

Provide FAX Preliminary Results

Requested Report Date: \_\_\_\_\_

**Invoice Information**

CO. # UCR-ALS-D34-17

Billed to: Cristy Kessel - Teck American

501 N Riverpoint Blvd, Suite 300 Spokane, WA 99201

**REPORT REQUIREMENTS**

I. Routine Report: Results, Method Blank, Surrogate, as required

II. Report Dup., MS, MSD as required

III. Data Validation Report (includes raw data)

IV. CLP Deliverable Report

V. EDD

**Comments/Special Instructions:**

Hold Remainder

**RELINQUISHED BY:**

Signature: [Signature]

Printed Name: Joe Lathan

Firm: ANA

Date/Time: 8/23/17 1300

**RECEIVED BY:**

Signature: [Signature]

Printed Name: Stevens

Firm: ALS-Kelso

Date/Time: 8/24/17 1030

**RELINQUISHED BY:**

Signature: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Firm: \_\_\_\_\_

Date/Time: \_\_\_\_\_

**RECEIVED BY:**

Signature: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Firm: \_\_\_\_\_

Date/Time: \_\_\_\_\_



ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

Date 8/23/17  
 PAGE 4 OF 15  
 SR# 1708982

Project Name: <u>Teck American - UCR SATES</u> Project Number: <u>B0095010.0005.00001</u> Project Contact: <u>Kady Young</u> Company: <u>Arcadis</u> Company/Address: <u>189 North Cedar Street</u> Phone: <u>307-203-3510 or 810-588-1488</u> City, State, Zip: <u>Buffalo, WY 82834</u> FAX: <u>307-684-5961</u> Sampler's Signature: _____	Number of Containers	Analysis Requested				
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Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	lead/arsenic 3050B/6010				REMARKS
441-1-C01-082217	8/22/17	1627		S	1	X				
↓ C02 ↓	↓ ↓	1628		S	1	X				
↓ C03 ↓	↓ ↓	1629		S	1	X				
↓ C04 ↓	↓ ↓	1632		S	1	X				
↓ C05 ↓	↓ ↓	1633		S	1	X				
↓ C06 ↓	↓ ↓	1634		S	1	X				
↓ C07 ↓	↓ ↓	1636		S	1	X				
↓ C08 ↓	↓ ↓	1639		S	1	X				
↓ C09 ↓	↓ ↓	1640		S	1	X				
↓ C10 ↓	↓ ↓	1642		S	1	X				

<b>TURNAROUND REQUIREMENTS</b> 24 hr _____ 48 hr _____ 5 day _____ <input checked="" type="checkbox"/> Standard (10 days) Provide FAX Preliminary Results _____ Requested Report Date: _____	<b>REPORT REQUIREMENTS</b> I. Routine Report: Results, Method Blank, Surrogate, as required <input checked="" type="checkbox"/> II. Report Dup., MS, MSD as required III. Data Validation Report (includes raw data) IV. CLP Deliverable Report <input checked="" type="checkbox"/> V. EDD	<b>Comments/Special Instructions:</b> Hold Remainder
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<b>RELINQUISHED BY:</b> Signature: <u>[Signature]</u> Printed Name: <u>Joe Lathan</u> Firm: <u>ANA</u> Date/Time: <u>8/23/17 1300</u>	<b>RECEIVED BY:</b> Signature: <u>[Signature]</u> Printed Name: <u>SDCWIS</u> Firm: <u>ALS/Kelso</u> Date/Time: <u>8/24/17 1030</u>	<b>RELINQUISHED BY:</b> Signature: _____ Printed Name: _____ Firm: _____ Date/Time: _____	<b>RECEIVED BY:</b> Signature: _____ Printed Name: _____ Firm: _____ Date/Time: _____
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PC Colorado

### Cooler Receipt and Preservation Form

Client Tell American Service Request K1708982  
 Received: Aug 24, 17 Opened: 8/24 By: SA Unloaded: 8/24 By: SA

Samples were received via?  USPS  Fed Ex  UPS  DHE  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 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	0.7	1.0	1.8	0.2	298	NA	801591165332		

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  
 Were samples received in good condition (temperature, unbroken)? *Indicate in the table below.* NA  Y  N  
 If applicable, tissue samples were received: **Frozen Partially Thawed Thawed**  
 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

es, Discrepancies, & Resolutions: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



# Total Solids

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1708982  
**Date Collected:** 08/22/17  
**Date Received:** 08/24/17

**Units:** Percent  
**Basis:** As Received

**Solids, Total**

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
441-1-B10-082217	K1708982-001	93.2	-	-	1	08/30/17 16:33	
441-1-C01-082217	K1708982-002	90.3	-	-	1	08/30/17 16:33	
441-1-C02-082217	K1708982-003	92.3	-	-	1	08/30/17 16:33	
441-1-C03-082217	K1708982-004	93.0	-	-	1	08/30/17 16:33	
441-1-C04-082217	K1708982-005	93.8	-	-	1	08/30/17 16:33	
441-1-C05-082217	K1708982-006	94.8	-	-	1	08/30/17 16:33	
441-1-C06-082217	K1708982-007	97.1	-	-	1	08/30/17 16:33	
441-1-C07-082217	K1708982-008	92.4	-	-	1	08/30/17 16:33	
441-1-C08-082217	K1708982-009	96.5	-	-	1	08/30/17 16:33	
441-1-C09-082217	K1708982-010	97.3	-	-	1	08/30/17 16:33	
441-1-C10-082217	K1708982-011	95.1	-	-	1	08/30/17 16:33	

ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1708982  
**Date Collected:** 08/22/17  
**Date Received:** 08/24/17

**Units:** Percent  
**Basis:** As Received

Replicate Sample Summary  
Inorganic Parameters

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
441-1-B10-082217	K1708982-001DUP	-	93.2	93.3	93.3	<1	20	08/30/17
441-1-C10-082217	K1708982-011DUP	-	95.1	94.8	95.0	<1	20	08/30/17

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



# Metals

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-B10-082217  
**Lab Code:** K1708982-001

**Service Request:** K1708982  
**Date Collected:** 08/22/17 16:06  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>36.0</b>	mg/Kg	4.1	0.8	2	09/07/17 17:55	09/06/17	
Lead	6010C	<b>932</b>	mg/Kg	2.1	0.4	2	09/07/17 17:55	09/06/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-C01-082217  
**Lab Code:** K1708982-002

**Service Request:** K1708982  
**Date Collected:** 08/22/17 16:27  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>23.1</b>	mg/Kg	4.3	0.9	2	09/07/17 18:07	09/06/17	
Lead	6010C	<b>239</b>	mg/Kg	2.2	0.4	2	09/07/17 18:07	09/06/17	



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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-C02-082217  
**Lab Code:** K1708982-003

**Service Request:** K1708982  
**Date Collected:** 08/22/17 16:28  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>17.1</b>	mg/Kg	4.2	0.8	2	09/07/17 18:09	09/06/17	
Lead	6010C	<b>747</b>	mg/Kg	2.1	0.4	2	09/07/17 18:09	09/06/17	

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-C03-082217  
**Lab Code:** K1708982-004

**Service Request:** K1708982  
**Date Collected:** 08/22/17 16:29  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>19.1</b>	mg/Kg	4.1	0.8	2	09/07/17 18:12	09/06/17	
Lead	6010C	<b>61.6</b>	mg/Kg	2.1	0.4	2	09/07/17 18:12	09/06/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-C04-082217  
**Lab Code:** K1708982-005

**Service Request:** K1708982  
**Date Collected:** 08/22/17 16:32  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	23.2	mg/Kg	4.2	0.8	2	09/07/17 18:14	09/06/17	
Lead	6010C	115	mg/Kg	2.1	0.4	2	09/07/17 18:14	09/06/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-C05-082217  
**Lab Code:** K1708982-006

**Service Request:** K1708982  
**Date Collected:** 08/22/17 16:33  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	24.1	mg/Kg	4.1	0.8	2	09/07/17 18:23	09/06/17	
Lead	6010C	367	mg/Kg	2.0	0.4	2	09/07/17 18:23	09/06/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-C06-082217  
**Lab Code:** K1708982-007

**Service Request:** K1708982  
**Date Collected:** 08/22/17 16:34  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>25.2</b>	mg/Kg	4.0	0.8	2	09/07/17 18:25	09/06/17	
Lead	6010C	<b>60.8</b>	mg/Kg	2.0	0.4	2	09/07/17 18:25	09/06/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-C07-082217  
**Lab Code:** K1708982-008

**Service Request:** K1708982  
**Date Collected:** 08/22/17 16:36  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>21.5</b>	mg/Kg	4.0	0.8	2	09/07/17 18:27	09/06/17	
Lead	6010C	<b>376</b>	mg/Kg	2.0	0.4	2	09/07/17 18:27	09/06/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-C08-082217  
**Lab Code:** K1708982-009

**Service Request:** K1708982  
**Date Collected:** 08/22/17 16:39  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>14.1</b>	mg/Kg	4.0	0.8	2	09/07/17 18:30	09/06/17	
Lead	6010C	<b>21.7</b>	mg/Kg	2.0	0.4	2	09/07/17 18:30	09/06/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-C09-082217  
**Lab Code:** K1708982-010

**Service Request:** K1708982  
**Date Collected:** 08/22/17 16:40  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	22.3	mg/Kg	4.0	0.8	2	09/07/17 18:32	09/06/17	
Lead	6010C	231	mg/Kg	2.0	0.4	2	09/07/17 18:32	09/06/17	



ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-C10-082217  
**Lab Code:** K1708982-011

**Service Request:** K1708982  
**Date Collected:** 08/22/17 16:42  
**Date Received:** 08/24/17 10:30

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>76.6</b>	mg/Kg	4.1	0.8	2	09/07/17 18:34	09/06/17	
Lead	6010C	<b>1770</b>	mg/Kg	2.1	0.4	2	09/07/17 18:34	09/06/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** Method Blank  
**Lab Code:** KQ1712696-02

**Service Request:** K1708982  
**Date Collected:** NA  
**Date Received:** NA  
**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	ND U	mg/Kg	4	0.8	2	09/07/17 17:45	09/06/17	
Lead	6010C	ND U	mg/Kg	2	0.4	2	09/07/17 17:45	09/06/17	

ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708982  
**Date Collected:** 08/22/17  
**Date Received:** 08/24/17  
**Date Analyzed:** 09/7/17  
**Date Extracted:** 09/6/17

**Duplicate Matrix Spike Summary  
Total Metals**

**Sample Name:** 441-1-B10-082217  
**Lab Code:** K1708982-001  
**Analysis Method:** 6010C  
**Prep Method:** EPA 3050B

**Units:** mg/Kg  
**Basis:** Dry

Analyte Name	Sample Result	Result	Matrix Spike KQ1712696-03		Duplicate Matrix Spike KQ1712696-04		% Rec Limits	RPD	RPD Limit	
			Spike Amount	% Rec	Result	Spike Amount				% Rec
Arsenic	36.0	137	105	96	133	106	91	75-125	3	30
Lead	932	956	105	23 #	846	106	-81 #	75-125	12	30

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708982

**Date Analyzed:** 09/07/17

**Lab Control Sample Summary**  
**Total Metals**

**Units:**mg/Kg

**Basis:**Dry

**Lab Control Sample**  
KQ1712696-01

<b>Analyte Name</b>	<b>Analytical Method</b>	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>% Rec Limits</b>
Arsenic	6010C	477	495	96	80-120
Lead	6010C	479	495	97	80-120



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ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

September 12, 2017

**Analytical Report for Service Request No: K1708983**

Dave Enos  
Teck American Incorporated  
501 North Riverpoint Blvd., Suite 300  
Spokane, WA 99202

**RE: August 2017 Sampling SAT Study / B0095010.0005.00001**

Dear Dave,

Enclosed are the results of the sample(s) submitted to our laboratory August 24, 2017  
For your reference, these analyses have been assigned our service request number **K1708983**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at [www.alsglobal.com](http://www.alsglobal.com). All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at [Jeff.Coronado@alsglobal.com](mailto:Jeff.Coronado@alsglobal.com).

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**

Jeff Coronado  
Metals Department  
Manager



---

ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

## Table of Contents

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## Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

### **Inorganic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

### **Metals Data Qualifiers**

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.  
  - i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Organic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.  
  - i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Additional Petroleum Hydrocarbon Specific Qualifiers**

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.



**ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso  
State Certifications, Accreditations, and Licenses**

<b>Agency</b>	<b>Web Site</b>	<b>Number</b>
Alaska DEH	<a href="http://dec.alaska.gov/eh/lab/cs/csapproval.htm">http://dec.alaska.gov/eh/lab/cs/csapproval.htm</a>	UST-040
Arizona DHS	<a href="http://www.azdhs.gov/lab/license/env.htm">http://www.azdhs.gov/lab/license/env.htm</a>	AZ0339
Arkansas - DEQ	<a href="http://www.adeq.state.ar.us/techsvs/labcert.htm">http://www.adeq.state.ar.us/techsvs/labcert.htm</a>	88-0637
California DHS (ELAP)	<a href="http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx">http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx</a>	2795
DOD ELAP	<a href="http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm">http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm</a>	L14-51
Florida DOH	<a href="http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm">http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm</a>	E87412
Hawaii DOH	<a href="http://health.hawaii.gov/">http://health.hawaii.gov/</a>	-
ISO 17025	<a href="http://www.pjllabs.com/">http://www.pjllabs.com/</a>	L16-57
Louisiana DEQ	<a href="http://www.deq.louisiana.gov/page/la-lab-accreditation">http://www.deq.louisiana.gov/page/la-lab-accreditation</a>	03016
Maine DHS	<a href="http://www.maine.gov/dhhs/">http://www.maine.gov/dhhs/</a>	WA01276
Minnesota DOH	<a href="http://www.health.state.mn.us/accreditation">http://www.health.state.mn.us/accreditation</a>	053-999-457
Nevada DEP	<a href="http://ndep.nv.gov/bsdw/labservice.htm">http://ndep.nv.gov/bsdw/labservice.htm</a>	WA01276
New Jersey DEP	<a href="http://www.nj.gov/dep/enforcement/oqa.html">http://www.nj.gov/dep/enforcement/oqa.html</a>	WA005
New York - DOH	<a href="https://www.wadsworth.org/regulatory/elap">https://www.wadsworth.org/regulatory/elap</a>	12060
North Carolina DEQ	<a href="https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification">https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification</a>	605
Oklahoma DEQ	<a href="http://www.deq.state.ok.us/CSDnew/labcert.htm">http://www.deq.state.ok.us/CSDnew/labcert.htm</a>	9801
Oregon – DEQ (NELAP)	<a href="http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx">http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx</a>	WA100010
South Carolina DHEC	<a href="http://www.scdhec.gov/environment/EnvironmentalLabCertification/">http://www.scdhec.gov/environment/EnvironmentalLabCertification/</a>	61002
Texas CEQ	<a href="http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html">http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html</a>	T104704427
Washington DOE	<a href="http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html">http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html</a>	C544
Wyoming (EPA Region 8)	<a href="https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water">https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water</a>	-
Kelso Laboratory Website	<a href="http://www.alsglobal.com">www.alsglobal.com</a>	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at [www.ALSGlobal.com](http://www.ALSGlobal.com) or at the accreditation bodies web site.  
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.



## Case Narrative

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

**ALS ENVIRONMENTAL**

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/  
B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request No.:** K1708983  
**Date Received:** 08/24/17

**Case Narrative**

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

**Sample Receipt**

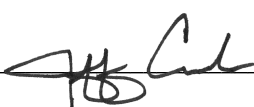
Twenty soil samples were received for analysis at ALS Environmental on 08/24/17. The samples were received in good condition and consistent with the accompanying chain of custody form, except where noted on the cooler receipt and preservation form included in this report. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

**Total Metals**

**Matrix Spike Recovery Exceptions:**

The matrix spike recoveries of Lead for sample 258-1-I01-082117 were outside control criteria. However, the analyte concentration in this sample was significantly higher than the added spike concentration, preventing accurate evaluation of the spike recoveries. Recovery in the Laboratory Control Sample (LCS) was acceptable, which indicates the analytical batch was in control. No further corrective action was appropriate.

No other anomalies associated with the analysis of these samples were observed.

Approved by  \_\_\_\_\_



## Chain of Custody

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

**ALS Environmental-Kelso**

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

*K1-708983*

Date 8/23/17  
 PAGE 12 OF 15  
 SR#

**Project Name:** Teck American - UCR SATES **Project Number:** B0095010.0005.00001  
**Project Contact:** Kady Young **Company:** Arcadis  
**Company/Address:** 189 North Cedar Street **Phone:** 307-203-3510 or 810-588-1488  
**City, State, Zip:** Buffalo, WY 82834 **FAX:** 307-684-5961  
**Sampler's Signature:** \_\_\_\_\_

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	Analysis Requested					REMARKS
						lead/arsenic 3050B/6010					
258-1-101-082117	8/21/17	1604		S	1	X					
I02		1605		S	1	X					
I03		1607		S	1	X					
I04		1609		S	1	X					
I05		1610		S	1	X					
I06		1612		S	1	X					
I07		1614		S	1	X					
I08		1616		S	1	X					
I09		1618		S	1	X					
I10		1620		S	1	X					

**TURNAROUND REQUIREMENTS**  
 \_\_\_ 24 hr \_\_\_ 48 hr \_\_\_ 5 day  
 Standard (10 days)  
 \_\_\_ Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes raw data)  
 IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99201

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Jac Latham  
 Firm: Arcadis  
 Date/Time: 8/23/17 1300

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: B Brice  
 Firm: ALS  
 Date/Time: 8/24/17 1020

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

K1708983

Date 8/23/17  
 PAGE 14 OF 15  
 SR#

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001  
 Project Contact: Kady Young Company: Arcadis  
 Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488  
 City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961  
 Sampler's Signature: \_\_\_\_\_

Number of Containers	Analysis Requested					REMARKS
	lead/arsenic 3050B/6010					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					

Sample I.D.	Date	Time	LAB ID	Matrix
258-1-J01-082117	8/21/17	1627		S
J02		1629		S
J03		1631		S
J04		1633		S
J05		1634		S
J06		1636		S
J07		1638		S
J08		1640		S
J09		1642		S
J10		1644		S

**TURNAROUND REQUIREMENTS**  
 \_\_\_ 24 hr \_\_\_ 48 hr \_\_\_ 5 day  
 Standard (10 days)  
 \_\_\_ Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 \_\_\_ I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 \_\_\_ III. Data Validation Report (includes raw data)  
 \_\_\_ IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
501 N Riverpoint Blvd, Suite 300 Spokane, WA 99204

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Jac Lathan  
 Firm: Arcadis  
 Date/Time: 8/23/17 1300

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: BRICKMAN  
 Firm: ALS  
 Date/Time: 8/24/17 1020

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_



PC 16

### Cooler Receipt and Preservation Form

Client Arcadis Service Request K17 08983  
 Received: 8124117 Opened: 8124117 By: BR Unloaded: 8124117 By: BR

Samples were received via?  USPS  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 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	NA	Filled
2.4	2.4	2.1	2.1	0.0	381		874567385510			
0.1	0.1	4.1	4.1	0.0	323		874567385497			
0.4	-0.5	1.1	1.0	-0.1	371		874567385509			

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

Were samples received in good condition (temperature, unbroken)? *Indicate in the table below.*  NA  Y  N

If applicable, tissue samples were received:  Frozen  Partially Thawed  Thawed

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

Discrepancies, & Resolutions: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



# Total Solids

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)



**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1708983  
**Date Collected:** 08/21/17  
**Date Received:** 08/24/17  
**Units:** Percent  
**Basis:** As Received

**Solids, Total**

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
258-1-I01-082117	K1708983-001	98.3	-	-	1	08/31/17 16:53	
258-1-I02-082117	K1708983-002	96.6	-	-	1	08/31/17 16:53	
258-1-I03-082117	K1708983-003	96.9	-	-	1	08/31/17 16:53	
258-1-I04-082117	K1708983-004	96.4	-	-	1	08/31/17 16:53	
258-1-I05-082117	K1708983-005	98.0	-	-	1	08/31/17 16:53	
258-1-I06-082117	K1708983-006	97.1	-	-	1	08/31/17 16:53	
258-1-I07-082117	K1708983-007	97.1	-	-	1	08/31/17 16:53	
258-1-I08-082117	K1708983-008	97.9	-	-	1	08/31/17 16:53	
258-1-I09-082117	K1708983-009	97.9	-	-	1	08/31/17 16:53	
258-1-I10-082117	K1708983-010	98.1	-	-	1	08/31/17 16:53	
258-1-J01-082117	K1708983-011	95.7	-	-	1	08/31/17 16:53	
258-1-J02-082117	K1708983-012	96.3	-	-	1	08/31/17 16:53	
258-1-J03-082117	K1708983-013	97.9	-	-	1	08/31/17 16:53	
258-1-J04-082117	K1708983-014	96.5	-	-	1	08/31/17 16:53	
258-1-J05-082117	K1708983-015	96.3	-	-	1	08/31/17 16:53	
258-1-J06-082117	K1708983-016	96.5	-	-	1	08/31/17 16:53	
258-1-J07-082117	K1708983-017	98.2	-	-	1	08/31/17 16:53	
258-1-J08-082117	K1708983-018	97.7	-	-	1	08/31/17 16:53	
258-1-J09-082117	K1708983-019	98.1	-	-	1	08/31/17 16:53	
258-1-J10-082117	K1708983-020	98.5	-	-	1	08/31/17 16:53	

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QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1708983  
**Date Collected:** 08/21/17  
**Date Received:** 08/24/17

**Units:** Percent  
**Basis:** As Received

Replicate Sample Summary

Inorganic Parameters

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
258-1-I01-082117	K1708983-001DUP	-	98.3	98.3	98.3	<1	20	08/31/17
258-1-J01-082117	K1708983-011DUP	-	95.7	96.1	95.9	<1	20	08/31/17

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



# Metals

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-I01-082117  
**Lab Code:** K1708983-001

**Service Request:** K1708983  
**Date Collected:** 08/21/17 16:04  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>21.7</b>	mg/Kg	3.9	0.8	2	09/07/17 18:41	09/06/17	
Lead	6010C	<b>284</b>	mg/Kg	1.9	0.4	2	09/07/17 18:41	09/06/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-I02-082117  
**Lab Code:** K1708983-002

**Service Request:** K1708983  
**Date Collected:** 08/21/17 16:05  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>17.7</b>	mg/Kg	4.1	0.8	2	09/07/17 18:58	09/06/17	
Lead	6010C	<b>333</b>	mg/Kg	2.0	0.4	2	09/07/17 18:58	09/06/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-I03-082117  
**Lab Code:** K1708983-003

**Service Request:** K1708983  
**Date Collected:** 08/21/17 16:07  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>16.3</b>	mg/Kg	4.0	0.8	2	09/07/17 19:01	09/06/17	
Lead	6010C	<b>434</b>	mg/Kg	2.0	0.4	2	09/07/17 19:01	09/06/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-I04-082117  
**Lab Code:** K1708983-004

**Service Request:** K1708983  
**Date Collected:** 08/21/17 16:09  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>19.7</b>	mg/Kg	4.1	0.8	2	09/07/17 19:03	09/06/17	
Lead	6010C	<b>315</b>	mg/Kg	2.1	0.4	2	09/07/17 19:03	09/06/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-I05-082117  
**Lab Code:** K1708983-005

**Service Request:** K1708983  
**Date Collected:** 08/21/17 16:10  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	9.2	mg/Kg	3.9	0.8	2	09/07/17 19:05	09/06/17	
Lead	6010C	95.5	mg/Kg	1.9	0.4	2	09/07/17 19:05	09/06/17	



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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-I06-082117  
**Lab Code:** K1708983-006

**Service Request:** K1708983  
**Date Collected:** 08/21/17 16:12  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>10.4</b>	mg/Kg	3.7	0.7	2	09/07/17 19:07	09/06/17	
Lead	6010C	<b>82.7</b>	mg/Kg	1.9	0.4	2	09/07/17 19:07	09/06/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-I07-082117  
**Lab Code:** K1708983-007

**Service Request:** K1708983  
**Date Collected:** 08/21/17 16:14  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>13.6</b>	mg/Kg	4.0	0.8	2	09/07/17 19:09	09/06/17	
Lead	6010C	<b>185</b>	mg/Kg	2.0	0.4	2	09/07/17 19:09	09/06/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-I08-082117  
**Lab Code:** K1708983-008

**Service Request:** K1708983  
**Date Collected:** 08/21/17 16:16  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>12.0</b>	mg/Kg	3.8	0.8	2	09/07/17 19:12	09/06/17	
Lead	6010C	<b>153</b>	mg/Kg	1.9	0.4	2	09/07/17 19:12	09/06/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-I09-082117  
**Lab Code:** K1708983-009

**Service Request:** K1708983  
**Date Collected:** 08/21/17 16:18  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>15.9</b>	mg/Kg	3.9	0.8	2	09/07/17 19:20	09/06/17	
Lead	6010C	<b>248</b>	mg/Kg	1.9	0.4	2	09/07/17 19:20	09/06/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-I10-082117  
**Lab Code:** K1708983-010

**Service Request:** K1708983  
**Date Collected:** 08/21/17 16:20  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>20.3</b>	mg/Kg	4.0	0.8	2	09/07/17 19:22	09/06/17	
Lead	6010C	<b>385</b>	mg/Kg	2.0	0.4	2	09/07/17 19:22	09/06/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-J01-082117  
**Lab Code:** K1708983-011

**Service Request:** K1708983  
**Date Collected:** 08/21/17 16:27  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>12.8</b>	mg/Kg	3.8	0.8	2	09/07/17 19:25	09/06/17	
Lead	6010C	<b>210</b>	mg/Kg	1.9	0.4	2	09/07/17 19:25	09/06/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-J02-082117  
**Lab Code:** K1708983-012

**Service Request:** K1708983  
**Date Collected:** 08/21/17 16:29  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>16.4</b>	mg/Kg	4.1	0.8	2	09/07/17 19:27	09/06/17	
Lead	6010C	<b>237</b>	mg/Kg	2.0	0.4	2	09/07/17 19:27	09/06/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-J03-082117  
**Lab Code:** K1708983-013

**Service Request:** K1708983  
**Date Collected:** 08/21/17 16:31  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>13.4</b>	mg/Kg	4.0	0.8	2	09/07/17 19:29	09/06/17	
Lead	6010C	<b>199</b>	mg/Kg	2.0	0.4	2	09/07/17 19:29	09/06/17	



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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-J04-082117  
**Lab Code:** K1708983-014

**Service Request:** K1708983  
**Date Collected:** 08/21/17 16:33  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>19.3</b>	mg/Kg	4.0	0.8	2	09/07/17 19:31	09/06/17	
Lead	6010C	<b>407</b>	mg/Kg	2.0	0.4	2	09/07/17 19:31	09/06/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-J05-082117  
**Lab Code:** K1708983-015

**Service Request:** K1708983  
**Date Collected:** 08/21/17 16:34  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>13.6</b>	mg/Kg	4.0	0.8	2	09/07/17 19:33	09/06/17	
Lead	6010C	<b>210</b>	mg/Kg	2.0	0.4	2	09/07/17 19:33	09/06/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-J06-082117  
**Lab Code:** K1708983-016

**Service Request:** K1708983  
**Date Collected:** 08/21/17 16:36  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>13.8</b>	mg/Kg	4.0	0.8	2	09/07/17 19:35	09/06/17	
Lead	6010C	<b>211</b>	mg/Kg	2.0	0.4	2	09/07/17 19:35	09/06/17	

ALS Group USA, Corp.  
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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-J07-082117  
**Lab Code:** K1708983-017

**Service Request:** K1708983  
**Date Collected:** 08/21/17 16:38  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>12.7</b>	mg/Kg	3.7	0.7	2	09/07/17 19:38	09/06/17	
Lead	6010C	<b>184</b>	mg/Kg	1.9	0.4	2	09/07/17 19:38	09/06/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-J08-082117  
**Lab Code:** K1708983-018

**Service Request:** K1708983  
**Date Collected:** 08/21/17 16:40  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	11.7	mg/Kg	4.0	0.8	2	09/07/17 19:40	09/06/17	
Lead	6010C	141	mg/Kg	2.0	0.4	2	09/07/17 19:40	09/06/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-J09-082117  
**Lab Code:** K1708983-019

**Service Request:** K1708983  
**Date Collected:** 08/21/17 16:42  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>14.5</b>	mg/Kg	3.8	0.8	2	09/07/17 19:48	09/06/17	
Lead	6010C	<b>163</b>	mg/Kg	1.9	0.4	2	09/07/17 19:48	09/06/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-J10-082117  
**Lab Code:** K1708983-020

**Service Request:** K1708983  
**Date Collected:** 08/21/17 16:44  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>20.7</b>	mg/Kg	3.8	0.8	2	09/07/17 19:51	09/06/17	
Lead	6010C	<b>266</b>	mg/Kg	1.9	0.4	2	09/07/17 19:51	09/06/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** Method Blank  
**Lab Code:** KQ1712725-02

**Service Request:** K1708983  
**Date Collected:** NA  
**Date Received:** NA  
**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	ND U	mg/Kg	4	0.8	2	09/07/17 18:37	09/06/17	
Lead	6010C	ND U	mg/Kg	2	0.4	2	09/07/17 18:37	09/06/17	



ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708983  
**Date Collected:** 08/21/17  
**Date Received:** 08/24/17  
**Date Analyzed:** 09/7/17  
**Date Extracted:** 09/6/17

**Duplicate Matrix Spike Summary  
Total Metals**

**Sample Name:** 258-1-I01-082117  
**Lab Code:** K1708983-001  
**Analysis Method:** 6010C  
**Prep Method:** EPA 3050B

**Units:** mg/Kg  
**Basis:** Dry

Analyte Name	Sample Result	Result	Matrix Spike KQ1712725-03		Result	Duplicate Matrix Spike KQ1712725-04		% Rec Limits	RPD	RPD Limit
			Spike Amount	% Rec		Spike Amount	% Rec			
Arsenic	21.7	109	95.9	91	115	101	93	75-125	5	30
Lead	284	322	95.9	39 N	320	101	36 N	75-125	<1	30

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708983  
**Date Analyzed:** 09/07/17

**Lab Control Sample Summary**  
**Total Metals**

**Units:**mg/Kg  
**Basis:**Dry

**Lab Control Sample**  
KQ1712725-01

<b>Analyte Name</b>	<b>Analytical Method</b>	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>% Rec Limits</b>
Arsenic	6010C	477	500	95	80-120
Lead	6010C	476	500	95	80-120



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ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

September 12, 2017

**Analytical Report for Service Request No: K1708984**

Dave Enos  
Teck American Incorporated  
501 North Riverpoint Blvd., Suite 300  
Spokane, WA 99202

**RE: August 2017 Sampling SAT Study / B0095010.0005.00001**

Dear Dave,

Enclosed are the results of the sample(s) submitted to our laboratory August 24, 2017  
For your reference, these analyses have been assigned our service request number **K1708984**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at [www.alsglobal.com](http://www.alsglobal.com). All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at [Jeff.Coronado@alsglobal.com](mailto:Jeff.Coronado@alsglobal.com).

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**

Jeff Coronado  
Metals Department  
Manager



---

ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

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Total Solids  
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## Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

### **Inorganic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

### **Metals Data Qualifiers**

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.  
  - i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Organic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.  
  - i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Additional Petroleum Hydrocarbon Specific Qualifiers**

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

**ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso  
State Certifications, Accreditations, and Licenses**

<b>Agency</b>	<b>Web Site</b>	<b>Number</b>
Alaska DEH	<a href="http://dec.alaska.gov/eh/lab/cs/csapproval.htm">http://dec.alaska.gov/eh/lab/cs/csapproval.htm</a>	UST-040
Arizona DHS	<a href="http://www.azdhs.gov/lab/license/env.htm">http://www.azdhs.gov/lab/license/env.htm</a>	AZ0339
Arkansas - DEQ	<a href="http://www.adeq.state.ar.us/techsvs/labcert.htm">http://www.adeq.state.ar.us/techsvs/labcert.htm</a>	88-0637
California DHS (ELAP)	<a href="http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx">http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx</a>	2795
DOD ELAP	<a href="http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm">http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm</a>	L14-51
Florida DOH	<a href="http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm">http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm</a>	E87412
Hawaii DOH	<a href="http://health.hawaii.gov/">http://health.hawaii.gov/</a>	-
ISO 17025	<a href="http://www.pjllabs.com/">http://www.pjllabs.com/</a>	L16-57
Louisiana DEQ	<a href="http://www.deq.louisiana.gov/page/la-lab-accreditation">http://www.deq.louisiana.gov/page/la-lab-accreditation</a>	03016
Maine DHS	<a href="http://www.maine.gov/dhhs/">http://www.maine.gov/dhhs/</a>	WA01276
Minnesota DOH	<a href="http://www.health.state.mn.us/accreditation">http://www.health.state.mn.us/accreditation</a>	053-999-457
Nevada DEP	<a href="http://ndep.nv.gov/bsdw/labservice.htm">http://ndep.nv.gov/bsdw/labservice.htm</a>	WA01276
New Jersey DEP	<a href="http://www.nj.gov/dep/enforcement/oqa.html">http://www.nj.gov/dep/enforcement/oqa.html</a>	WA005
New York - DOH	<a href="https://www.wadsworth.org/regulatory/elap">https://www.wadsworth.org/regulatory/elap</a>	12060
North Carolina DEQ	<a href="https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification">https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification</a>	605
Oklahoma DEQ	<a href="http://www.deq.state.ok.us/CSDnew/labcert.htm">http://www.deq.state.ok.us/CSDnew/labcert.htm</a>	9801
Oregon – DEQ (NELAP)	<a href="http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx">http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx</a>	WA100010
South Carolina DHEC	<a href="http://www.scdhec.gov/environment/EnvironmentalLabCertification/">http://www.scdhec.gov/environment/EnvironmentalLabCertification/</a>	61002
Texas CEQ	<a href="http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html">http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html</a>	T104704427
Washington DOE	<a href="http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html">http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html</a>	C544
Wyoming (EPA Region 8)	<a href="https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water">https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water</a>	-
Kelso Laboratory Website	<a href="http://www.alsglobal.com">www.alsglobal.com</a>	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at [www.ALSGlobal.com](http://www.ALSGlobal.com) or at the accreditation bodies web site.  
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.



## Case Narrative

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)



**ALS ENVIRONMENTAL**

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/  
B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request No.:** K1708984  
**Date Received:** 08/24/17

**Case Narrative**

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

**Sample Receipt**

Fifteen soil samples were received for analysis at ALS Environmental on 08/24/17. The samples were received in good condition and consistent with the accompanying chain of custody form, except where noted on the cooler receipt and preservation form included in this report. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

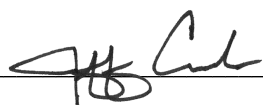
**Total Metals**

**Matrix Spike Recovery Exceptions:**

The matrix spike recovery of Lead for sample 258-1-C01-082117 was outside control criteria. Recovery in the Laboratory Control Sample (LCS) was acceptable, which indicated the analytical batch was in control. No further corrective action was appropriate.

No other anomalies associated with the analysis of these samples were observed.

Approved by \_\_\_\_\_





# Chain of Custody

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

*K1-08984*

Date 8/23/17  
 PAGE 3 OF 15  
 SR# \_\_\_\_\_

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001  
 Project Contact: Kady Young Company: Arcadis  
 Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488  
 City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961  
 Sampler's Signature: \_\_\_\_\_

Number of Containers	Analysis Requested					REMARKS
	lead/arsenic 3050B/6010					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					

Sample I.D.	Date	Time	LAB ID	Matrix
258-1-C01-082117	8/21/17	1227		S
C02		1230		S
C03		1232		S
C04		1234		S
C05		1236		S
C06		1238		S
C07		1239		S
C08		1241		S
C09		1243		S
C10		1244		S

**TURNAROUND REQUIREMENTS**  
 \_\_\_ 24 hr \_\_\_ 48 hr \_\_\_ 5 day  
 Standard (10 days)  
 \_\_\_ Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 \_\_\_ I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 \_\_\_ III. Data Validation Report (includes raw data)  
 \_\_\_ IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99204

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Joe Lathan  
 Firm: Arcadis  
 Date/Time: 8/23/17 1300

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: BRICKMAN  
 Firm: ALS  
 Date/Time: 8/24/17 1020

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

K1708984

Date 8/23/17  
 PAGE 4 OF 15  
 SR#

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001  
 Project Contact: Kady Young Company: Arcadis  
 Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488  
 City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961  
 Sampler's Signature: \_\_\_\_\_

Number of Containers	Analysis Requested					REMARKS
	lead/arsenic 3050B/6010					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					

Sample I.D.	Date	Time	LAB ID	Matrix
258-1-CO2-082117-D	8/21/17	1230		S
				S
				S
				S
				S
				S
				S
				S
				S
				S

**TURNAROUND REQUIREMENTS**  
 \_\_\_ 24 hr \_\_\_ 48 hr \_\_\_ 5 day  
 Standard (10 days)  
 \_\_\_ Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

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 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99201

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Joe Lathan  
 Firm: Arcadis  
 Date/Time: 8/23/17 1300

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: BRICKMAN  
 Firm: ALS  
 Date/Time: 8/24/17 1020

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

K1708984

Date 8/23/17  
 PAGE 15 OF 15  
 SR# \_\_\_\_\_

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001

Project Contact: Kady Young Company: Arcadis

Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488

City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961

Sampler's Signature: \_\_\_\_\_

Number of Containers	Analysis Requested					REMARKS
	lead/arsenic 3050B/6010					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					

Sample I.D.	Date	Time	LAB ID	Matrix
258-1-101-082117	8/21/17	1627		S
				S
				S
				S
				S
				S
				S
				S
				S
				S

**TURNAROUND REQUIREMENTS**  
 \_\_\_ 24 hr \_\_\_ 48 hr \_\_\_ 5 day  
 Standard (10 days)  
 \_\_\_ Provide FAX Preliminary Results  
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\_\_\_ IV. CLP Deliverable Report  
 V. EDD

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Joe Luth  
 Firm: Arcadis  
 Date/Time: 8/23/17 1300

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: BIRNBAUM  
 Firm: ALS  
 Date/Time: 8/24/17 1020

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

K1708984

Date 8/23/17  
 PAGE 15 OF 15  
 SR# \_\_\_\_\_

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001  
 Project Contact: Kady Young Company: Arcadis  
 Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488  
 City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961  
 Sampler's Signature: \_\_\_\_\_

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	Analysis Requested					REMARKS
						lead/arsenic 3050B/6010					
258-1-101-082117D	8/21/17	1627		S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					
				S	1	X					

**TURNAROUND REQUIREMENTS**  
 24 hr  48 hr  5 day  
 Standard (10 days)  
 Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
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 II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes raw data)  
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**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99201

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Joe Luth  
 Firm: Arcadis  
 Date/Time: 8/23/17 1300

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: BIRNBAUM  
 Firm: ALS  
 Date/Time: 8/24/17 1020

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**ALS Environmental-Kelso**

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

*K1708984*

Date 8/23/17  
 PAGE 13 OF 15  
 SR#

**Project Name:** Teck American - UCR SATES **Project Number:** B0095010.0005.00001  
**Project Contact:** Kady Young **Company:** Arcadis  
**Company/Address:** 189 North Cedar Street **Phone:** 307-203-3510 or 810-588-1488  
**City, State, Zip:** Buffalo, WY 82834 **FAX:** 307-684-5961  
**Sampler's Signature:** \_\_\_\_\_

Number of Containers	Analysis Requested					REMARKS
	lead/arsenic 3050B/6010					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					

Sample I.D.	Date	Time	LAB ID	Matrix
258-1-107-082117	8/21/17	1614		S
				S
				S
				S
				S
				S
				S
				S
				S
				S

**TURNAROUND REQUIREMENTS**  
 \_\_\_ 24 hr \_\_\_ 48 hr \_\_\_ 5 day  
 Standard (10 days)  
 \_\_\_ Provide FAX Preliminary Results  
**Requested Report Date:** \_\_\_\_\_

**REPORT REQUIREMENTS**  
 \_\_\_ I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 \_\_\_ III. Data Validation Report (includes raw data)  
 \_\_\_ IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
501 N Riverpoint Blvd, Suite 300 Spokane, WA 99204

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Joe Luffin  
 Firm: Arcadis  
 Date/Time: 8/23/17 1300

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: B. BRICKMAN  
 Firm: ALV  
 Date/Time: 8/24/17 1030

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**ALS Environmental-Kelso**

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

*K1708984*

Date 8/23/17  
 PAGE 13 OF 15  
 SR#

**Project Name:** Teck American - UCR SATES **Project Number:** B0095010.0005.00001  
**Project Contact:** Kady Young **Company:** Arcadis  
**Company/Address:** 189 North Cedar Street **Phone:** 307-203-3510 or 810-588-1488  
**City, State, Zip:** Buffalo, WY 82834 **FAX:** 307-684-5961  
**Sampler's Signature:** \_\_\_\_\_

Number of Containers	Analysis Requested					REMARKS
	lead/arsenic 3050B/6010					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					

Sample I.D.	Date	Time	LAB ID	Matrix
258-1-107-082117	8/21/17	1614		S
				S
				S
				S
				S
				S
				S
				S
				S
				S

**TURNAROUND REQUIREMENTS**  
 \_\_\_ 24 hr \_\_\_ 48 hr \_\_\_ 5 day  
 Standard (10 days)  
 \_\_\_ Provide FAX Preliminary Results  
**Requested Report Date:** \_\_\_\_\_

**REPORT REQUIREMENTS**  
 \_\_\_ I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
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**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
501 N Riverpoint Blvd, Suite 300 Spokane, WA 99204

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Joe Luffin  
 Firm: Arcadis  
 Date/Time: 8/23/17 1300

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: B BRICKMAN  
 Firm: ALV  
 Date/Time: 8/24/17 1030

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_



ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

K1708984

Date 8/23/17  
 PAGE 13 OF 15  
 SR#

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001  
 Project Contact: Kady Young Company: Arcadis  
 Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488  
 City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961  
 Sampler's Signature: \_\_\_\_\_

Number of Containers	Analysis Requested					REMARKS
	lead/arsenic 3050B/6010					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					

Sample I.D.	Date	Time	LAB ID	Matrix
441-1-I04-082217-D	8/22/17	1847		S
				S
				S
				S
				S
				S
				S
				S
				S
				S

**TURNAROUND REQUIREMENTS**  
 \_\_\_ 24 hr \_\_\_ 48 hr \_\_\_ 5 day  
 Standard (10 days)  
 \_\_\_ Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 \_\_\_ I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 \_\_\_ III. Data Validation Report (includes raw data)  
 \_\_\_ IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99201

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Joe Lathan  
 Firm: ANA  
 Date/Time: 8/23/17 1200

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: BRICKMAN  
 Firm: ALS  
 Date/Time: 8/24/17 1020

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

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K1708984

Date 8/23/17  
 PAGE 15 OF 15  
 SR#

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001  
 Project Contact: Kady Young Company: Arcadis  
 Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488  
 City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961  
 Sampler's Signature: \_\_\_\_\_

Number of Containers	Analysis Requested					REMARKS
	lead/arsenic 3050B/6010					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					

Sample I.D.	Date	Time	LAB ID	Matrix
441-1-307-082217-D	8/22/17	1906		S
				S
				S
				S
				S
				S
				S
				S
				S
				S

**TURNAROUND REQUIREMENTS**  
 24 hr  48 hr  5 day  
 Standard (10 days)  
 Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes raw data)  
 IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99201

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: Joe Lathin  
 Firm: ANA  
 Date/Time: 8/23/17 1300

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: BIRCKMAN  
 Firm: ALS  
 Date/Time: 8/24/17 1020

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_



PC JK

### Cooler Receipt and Preservation Form

Client Arcadis Service Request K17 08984  
 Received: 8124117 Opened: 8124117 By: BR Unloaded: 8124117 By: BR

Samples were received via? USPS 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 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
2.4	2.4	2.1	2.1	0.0	381		874567385510		
0.1	0.1	4.1	4.1	0.0	323		874567385494		
-0.4	-0.5	1.1	1.0	-0.1	371		874567385509		

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  
 Were samples received in good condition (temperature, unbroken)? Indicate in the table below. NA Y N  
 If applicable, tissue samples were received: Frozen Partially Thawed Thawed  
 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

s, Discrepancies, & Resolutions:

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# Total Solids

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1708984  
**Date Collected:** 08/21/17 - 08/22/17  
**Date Received:** 08/24/17  
**Units:** Percent  
**Basis:** As Received

**Solids, Total**

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
258-1-C01-082117	K1708984-001	<b>99.2</b>	-	-	1	08/31/17 16:53	
258-1-C02-082117	K1708984-002	<b>98.9</b>	-	-	1	08/31/17 16:53	
258-1-C03-082117	K1708984-003	<b>98.9</b>	-	-	1	08/31/17 16:53	
258-1-C04-082117	K1708984-004	<b>98.8</b>	-	-	1	08/31/17 16:53	
258-1-C05-082117	K1708984-005	<b>97.1</b>	-	-	1	08/31/17 16:53	
258-1-C06-082117	K1708984-006	<b>95.5</b>	-	-	1	08/31/17 16:53	
258-1-C07-082117	K1708984-007	<b>96.3</b>	-	-	1	08/31/17 16:53	
258-1-C08-082117	K1708984-008	<b>96.1</b>	-	-	1	08/31/17 16:53	
258-1-C09-082117	K1708984-009	<b>97.2</b>	-	-	1	08/31/17 16:53	
258-1-C10-082117	K1708984-010	<b>97.2</b>	-	-	1	08/31/17 16:53	
258-1-C02-082117-D	K1708984-011	<b>98.6</b>	-	-	1	08/31/17 16:53	
258-1-J01-082117-D	K1708984-012	<b>95.1</b>	-	-	1	08/31/17 16:53	
258-1-I07-082117-D	K1708984-013	<b>96.7</b>	-	-	1	08/31/17 16:53	
441-1-I04-082217-D	K1708984-014	<b>94.7</b>	-	-	1	08/31/17 16:53	
441-1-J07-082217-D	K1708984-015	<b>92.3</b>	-	-	1	08/31/17 16:53	

**ALS Group USA, Corp.**  
**dba ALS Environmental**

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1708984  
**Date Collected:** 08/21/17  
**Date Received:** 08/24/17

**Units:** Percent  
**Basis:** As Received

**Replicate Sample Summary**  
**Inorganic Parameters**

<b>Sample Name:</b>	<b>Lab Code:</b>	<b>MRL</b>	<b>Sample Result</b>	<b>Duplicate Result</b>	<b>Average</b>	<b>RPD</b>	<b>RPD Limit</b>	<b>Date Analyzed</b>
258-1-C01-082117	K1708984-001DUP	-	99.2	99.3	99.3	<1	20	08/31/17
258-1-C02-082117-D	K1708984-011DUP	-	98.6	98.8	98.7	<1	20	08/31/17

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



# Metals

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-C01-082117  
**Lab Code:** K1708984-001

**Service Request:** K1708984  
**Date Collected:** 08/21/17 12:27  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>10.3</b>	mg/Kg	3.9	0.8	2	09/07/17 19:57	09/06/17	
Lead	6010C	<b>122</b>	mg/Kg	2.0	0.4	2	09/07/17 19:57	09/06/17	



ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-C02-082117  
**Lab Code:** K1708984-002

**Service Request:** K1708984  
**Date Collected:** 08/21/17 12:30  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>10.4</b>	mg/Kg	3.9	0.8	2	09/07/17 20:08	09/06/17	
Lead	6010C	<b>149</b>	mg/Kg	1.9	0.4	2	09/07/17 20:08	09/06/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-C03-082117  
**Lab Code:** K1708984-003

**Service Request:** K1708984  
**Date Collected:** 08/21/17 12:32  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>7.9</b>	mg/Kg	3.9	0.8	2	09/07/17 20:16	09/06/17	
Lead	6010C	<b>98.8</b>	mg/Kg	1.9	0.4	2	09/07/17 20:16	09/06/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-C04-082117  
**Lab Code:** K1708984-004

**Service Request:** K1708984  
**Date Collected:** 08/21/17 12:34  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>9.6</b>	mg/Kg	3.7	0.7	2	09/07/17 20:19	09/06/17	
Lead	6010C	<b>129</b>	mg/Kg	1.9	0.4	2	09/07/17 20:19	09/06/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-C05-082117  
**Lab Code:** K1708984-005

**Service Request:** K1708984  
**Date Collected:** 08/21/17 12:36  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>7.0</b>	mg/Kg	4.1	0.8	2	09/07/17 20:21	09/06/17	
Lead	6010C	<b>214</b>	mg/Kg	2.0	0.4	2	09/07/17 20:21	09/06/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-C06-082117  
**Lab Code:** K1708984-006

**Service Request:** K1708984  
**Date Collected:** 08/21/17 12:38  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>23.3</b>	mg/Kg	4.2	0.8	2	09/07/17 20:23	09/06/17	
Lead	6010C	<b>216</b>	mg/Kg	2.1	0.4	2	09/07/17 20:23	09/06/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-C07-082117  
**Lab Code:** K1708984-007

**Service Request:** K1708984  
**Date Collected:** 08/21/17 12:39  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>14.2</b>	mg/Kg	4.1	0.8	2	09/07/17 20:25	09/06/17	
Lead	6010C	<b>210</b>	mg/Kg	2.0	0.4	2	09/07/17 20:25	09/06/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-C08-082117  
**Lab Code:** K1708984-008

**Service Request:** K1708984  
**Date Collected:** 08/21/17 12:41  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>12.8</b>	mg/Kg	4.1	0.8	2	09/07/17 20:27	09/06/17	
Lead	6010C	<b>161</b>	mg/Kg	2.1	0.4	2	09/07/17 20:27	09/06/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-C09-082117  
**Lab Code:** K1708984-009

**Service Request:** K1708984  
**Date Collected:** 08/21/17 12:43  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>15.1</b>	mg/Kg	4.0	0.8	2	09/07/17 20:30	09/06/17	
Lead	6010C	<b>211</b>	mg/Kg	2.0	0.4	2	09/07/17 20:30	09/06/17	



ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-C10-082117  
**Lab Code:** K1708984-010

**Service Request:** K1708984  
**Date Collected:** 08/21/17 12:44  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>15.0</b>	mg/Kg	4.0	0.8	2	09/07/17 20:32	09/06/17	
Lead	6010C	<b>204</b>	mg/Kg	2.0	0.4	2	09/07/17 20:32	09/06/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-C02-082117-D  
**Lab Code:** K1708984-011

**Service Request:** K1708984  
**Date Collected:** 08/21/17 12:30  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	9.7	mg/Kg	4.0	0.8	2	09/07/17 20:34	09/06/17	
Lead	6010C	151	mg/Kg	2.0	0.4	2	09/07/17 20:34	09/06/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-J01-082117-D  
**Lab Code:** K1708984-012

**Service Request:** K1708984  
**Date Collected:** 08/21/17 16:27  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	13.7	mg/Kg	3.9	0.8	2	09/07/17 20:36	09/06/17	
Lead	6010C	231	mg/Kg	1.9	0.4	2	09/07/17 20:36	09/06/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 258-1-I07-082117-D  
**Lab Code:** K1708984-013

**Service Request:** K1708984  
**Date Collected:** 08/21/17 16:14  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>12.8</b>	mg/Kg	4.0	0.8	2	09/07/17 20:45	09/06/17	
Lead	6010C	<b>190</b>	mg/Kg	2.0	0.4	2	09/07/17 20:45	09/06/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-I04-082217-D  
**Lab Code:** K1708984-014

**Service Request:** K1708984  
**Date Collected:** 08/22/17 18:47  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>20.3</b>	mg/Kg	4.1	0.8	2	09/07/17 20:47	09/06/17	
Lead	6010C	<b>156</b>	mg/Kg	2.1	0.4	2	09/07/17 20:47	09/06/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-J07-082217-D  
**Lab Code:** K1708984-015

**Service Request:** K1708984  
**Date Collected:** 08/22/17 19:06  
**Date Received:** 08/24/17 10:20

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	21.6	mg/Kg	4.2	0.8	2	09/07/17 20:49	09/06/17	
Lead	6010C	217	mg/Kg	2.1	0.4	2	09/07/17 20:49	09/06/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** Method Blank  
**Lab Code:** KQ1712726-02

**Service Request:** K1708984  
**Date Collected:** NA  
**Date Received:** NA  
**Basis:** Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6010C	ND U	mg/Kg	4	0.8	2	09/07/17 19:53	09/06/17	
Lead	6010C	ND U	mg/Kg	2	0.4	2	09/07/17 19:53	09/06/17	

ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708984  
**Date Collected:** 08/21/17  
**Date Received:** 08/24/17  
**Date Analyzed:** 09/7/17  
**Date Extracted:** 09/6/17

**Duplicate Matrix Spike Summary  
Total Metals**

**Sample Name:** 258-1-C01-082117  
**Lab Code:** K1708984-001  
**Analysis Method:** 6010C  
**Prep Method:** EPA 3050B

**Units:** mg/Kg  
**Basis:** Dry

Analyte Name	Sample Result	Result	Matrix Spike KQ1712726-03		Result	Duplicate Matrix Spike KQ1712726-04		% Rec Limits	RPD	RPD Limit
			Spike Amount	% Rec		Spike Amount	% Rec			
Arsenic	10.3	100	94.3	95	105	99.8	95	75-125	5	30
Lead	122	171	94.3	52 N	174	99.8	52 N	75-125	2	30

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1708984  
**Date Analyzed:** 09/07/17

**Lab Control Sample Summary**  
**Total Metals**

**Units:**mg/Kg  
**Basis:**Dry

**Lab Control Sample**  
KQ1712726-01

<b>Analyte Name</b>	<b>Analytical Method</b>	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>% Rec Limits</b>
Arsenic	6010C	487	500	97	80-120
Lead	6010C	480	500	96	80-120



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ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

September 12, 2017

**Analytical Report for Service Request No: K1709014**

Dave Enos  
Teck American Incorporated  
501 North Riverpoint Blvd., Suite 300  
Spokane, WA 99202

**RE: August 2017 Sampling SAT Study / B0095010.0005.00001**

Dear Dave,

Enclosed are the results of the sample(s) submitted to our laboratory August 25, 2017  
For your reference, these analyses have been assigned our service request number **K1709014**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at [www.alsglobal.com](http://www.alsglobal.com). All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at [Jeff.Coronado@alsglobal.com](mailto:Jeff.Coronado@alsglobal.com).

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**

Jeff Coronado  
Metals Department  
Manager



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ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

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## Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

### **Inorganic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

### **Metals Data Qualifiers**

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.  
  - i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Organic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.  
  - i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Additional Petroleum Hydrocarbon Specific Qualifiers**

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

**ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso  
State Certifications, Accreditations, and Licenses**

<b>Agency</b>	<b>Web Site</b>	<b>Number</b>
Alaska DEH	<a href="http://dec.alaska.gov/eh/lab/cs/csapproval.htm">http://dec.alaska.gov/eh/lab/cs/csapproval.htm</a>	UST-040
Arizona DHS	<a href="http://www.azdhs.gov/lab/license/env.htm">http://www.azdhs.gov/lab/license/env.htm</a>	AZ0339
Arkansas - DEQ	<a href="http://www.adeq.state.ar.us/techsvs/labcert.htm">http://www.adeq.state.ar.us/techsvs/labcert.htm</a>	88-0637
California DHS (ELAP)	<a href="http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx">http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx</a>	2795
DOD ELAP	<a href="http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm">http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm</a>	L14-51
Florida DOH	<a href="http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm">http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm</a>	E87412
Hawaii DOH	<a href="http://health.hawaii.gov/">http://health.hawaii.gov/</a>	-
ISO 17025	<a href="http://www.pjlabs.com/">http://www.pjlabs.com/</a>	L16-57
Louisiana DEQ	<a href="http://www.deq.louisiana.gov/page/la-lab-accreditation">http://www.deq.louisiana.gov/page/la-lab-accreditation</a>	03016
Maine DHS	<a href="http://www.maine.gov/dhhs/">http://www.maine.gov/dhhs/</a>	WA01276
Minnesota DOH	<a href="http://www.health.state.mn.us/accreditation">http://www.health.state.mn.us/accreditation</a>	053-999-457
Nevada DEP	<a href="http://ndep.nv.gov/bsdw/labservice.htm">http://ndep.nv.gov/bsdw/labservice.htm</a>	WA01276
New Jersey DEP	<a href="http://www.nj.gov/dep/enforcement/oqa.html">http://www.nj.gov/dep/enforcement/oqa.html</a>	WA005
New York - DOH	<a href="https://www.wadsworth.org/regulatory/elap">https://www.wadsworth.org/regulatory/elap</a>	12060
North Carolina DEQ	<a href="https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification">https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification</a>	605
Oklahoma DEQ	<a href="http://www.deq.state.ok.us/CSDnew/labcert.htm">http://www.deq.state.ok.us/CSDnew/labcert.htm</a>	9801
Oregon – DEQ (NELAP)	<a href="http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx">http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx</a>	WA100010
South Carolina DHEC	<a href="http://www.scdhec.gov/environment/EnvironmentalLabCertification/">http://www.scdhec.gov/environment/EnvironmentalLabCertification/</a>	61002
Texas CEQ	<a href="http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html">http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html</a>	T104704427
Washington DOE	<a href="http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html">http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html</a>	C544
Wyoming (EPA Region 8)	<a href="https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water">https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water</a>	-
Kelso Laboratory Website	<a href="http://www.alsglobal.com">www.alsglobal.com</a>	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at [www.ALSGlobal.com](http://www.ALSGlobal.com) or at the accreditation bodies web site.  
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.



## Case Narrative

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

**ALS ENVIRONMENTAL**

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/  
B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request No.:** K1709014  
**Date Received:** 08/25/17

**Case Narrative**

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

**Sample Receipt**

Twenty soil samples were received for analysis at ALS Environmental on 08/25/17. The samples were received in good condition and consistent with the accompanying chain of custody form, except where noted on the cooler receipt and preservation form included in this report. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

**Total Metals**

**Matrix Spike Recovery Exceptions:**

The matrix spike recoveries of Lead for sample 441-1-D01-082217 were outside control criteria. However, the analyte concentration in this sample was significantly higher than the added spike concentration, preventing accurate evaluation of the spike recoveries. Recovery in the Laboratory Control Sample (LCS) was acceptable, which indicates the analytical batch was in control. No further corrective action was appropriate.

No other anomalies associated with the analysis of these samples were observed.

Approved by  \_\_\_\_\_





## Chain of Custody

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

*KIT09014*

Date 8/23/17  
 PAGE 5 OF 15  
 SR#

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001

Project Contact: Kady Young Company: Arcadis

Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488

City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961

Sampler's Signature: \_\_\_\_\_

Number of Containers	Analysis Requested					REMARKS
	lead/arsenic 3050B/6010					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					

Sample I.D.	Date	Time	LAB ID	Matrix
441-1-D01-082217	8/22/17	1645		S
D02		1646		S
D03		1649		S
D04		1650		S
D05		1652		S
D06		1654		S
D07		1656		S
D08		1659		S
D09		1700		S
D10		1701		S

**TURNAROUND REQUIREMENTS**  
 \_\_\_ 24 hr \_\_\_ 48 hr \_\_\_ 5 day  
 Standard (10 days)  
 \_\_\_ Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes raw data)  
 IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99201

**RELINQUISHED BY:**  
 Signature: *Joe Latha*  
 Printed Name: Joe Latha  
 Firm: ANA  
 Date/Time: 8/23/17 1300

**RECEIVED BY:**  
 Signature: *Stewie*  
 Printed Name: Stewie  
 Firm: ALS Kelso  
 Date/Time: 8/25/17 0920

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

*K1709014*

Date 8/23/17  
PAGE 7 OF 15  
SR#

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001

Project Contact: Kady Young Company: Arcadis

Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488

City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961

Sampler's Signature: \_\_\_\_\_

Number of Containers	Analysis Requested					REMARKS
	Lead/arsenic 3050B/6010					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					

Sample I.D.	Date	Time	LAB ID	Matrix
441-1-E01-082217	8/22/17	1705		S
E02		1706		S
E03		1708		S
E04		1710		S
E05		1712		S
E06		1714		S
E07		1721		S
E08		1718		S
E09		1723		S
E10		1726		S

**TURNAROUND REQUIREMENTS**  
 24 hr  48 hr  5 day  
 Standard (10 days)  
 Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes raw data)  
 IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
501 N Riverpoint Blvd, Suite 300 Spokane, WA 99201

**RELINQUISHED BY:**  
 Signature: *[Signature]*  
 Printed Name: Joe Lathan  
 Firm: ANA  
 Date/Time: 8/23/17 1300

**RECEIVED BY:**  
 Signature: *[Signature]*  
 Printed Name: SIDWIS  
 Firm: ALS-KELSO  
 Date/Time: 8/25/17 0920

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_



PC 168

### Cooler Receipt and Preservation Form

Client Teck American Service Request K17 09014  
Received: Aug 25, 17 Opened: 8/25 By: SD Unloaded: 8/25 By: SD

Samples were received via? USPS (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 - 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
4.7	4.7	3.0	3.0	2.0	374	<u>(NA)</u>	874567385512		

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  
Were samples received in good condition (temperature, unbroken)? Indicate in the table below. NA (Y) N  
If applicable, tissue samples were received: Frozen Partially Thawed Thawed  
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

Discrepancies, & Resolutions:  
\_\_\_\_\_  
\_\_\_\_\_



# Total Solids

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1709014  
**Date Collected:** 08/22/17  
**Date Received:** 08/25/17  
**Units:** Percent  
**Basis:** As Received

**Solids, Total**

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
441-1-D01-082217	K1709014-001	93.1	-	-	1	08/31/17 16:53	
441-1-D02-082217	K1709014-002	97.1	-	-	1	08/31/17 16:53	
441-1-D03-082217	K1709014-003	94.4	-	-	1	08/31/17 16:53	
441-1-D04-082217	K1709014-004	95.1	-	-	1	08/31/17 16:53	
441-1-D05-082217	K1709014-005	94.2	-	-	1	08/31/17 16:53	
441-1-D06-082217	K1709014-006	95.1	-	-	1	08/31/17 16:53	
441-1-D07-082217	K1709014-007	91.0	-	-	1	08/31/17 16:53	
441-1-D08-082217	K1709014-008	92.5	-	-	1	08/31/17 16:53	
441-1-D09-082217	K1709014-009	94.2	-	-	1	08/31/17 16:53	
441-1-D10-082217	K1709014-010	96.8	-	-	1	08/31/17 16:53	
441-1-E01-082217	K1709014-011	97.0	-	-	1	08/31/17 16:53	
441-1-E02-082217	K1709014-012	95.4	-	-	1	08/31/17 16:53	
441-1-E03-082217	K1709014-013	95.0	-	-	1	08/31/17 16:53	
441-1-E04-082217	K1709014-014	94.1	-	-	1	08/31/17 16:53	
441-1-E05-082217	K1709014-015	92.3	-	-	1	08/31/17 16:53	
441-1-E06-082217	K1709014-016	91.9	-	-	1	08/31/17 16:53	
441-1-E07-082217	K1709014-017	92.9	-	-	1	08/31/17 16:53	
441-1-E08-082217	K1709014-018	90.5	-	-	1	08/31/17 16:53	
441-1-E09-082217	K1709014-019	95.2	-	-	1	08/31/17 16:53	
441-1-E10-082217	K1709014-020	96.1	-	-	1	08/31/17 16:53	

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1709014  
**Date Collected:** 08/22/17  
**Date Received:** 08/25/17

**Units:** Percent  
**Basis:** As Received

Replicate Sample Summary

Inorganic Parameters

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
441-1-D01-082217	K1709014-001DUP	-	93.1	94.0	93.6	<1	20	08/31/17
441-1-E01-082217	K1709014-011DUP	-	97.0	97.0	97.0	<1	20	08/31/17

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



# Metals

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)



ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-D01-082217  
**Lab Code:** K1709014-001

**Service Request:** K1709014  
**Date Collected:** 08/22/17 16:45  
**Date Received:** 08/25/17 09:20

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>17.8</b>	mg/Kg	4.2	0.8	2	09/07/17 20:56	09/06/17	
Lead	6010C	<b>199</b>	mg/Kg	2.1	0.4	2	09/07/17 20:56	09/06/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-D02-082217  
**Lab Code:** K1709014-002

**Service Request:** K1709014  
**Date Collected:** 08/22/17 16:46  
**Date Received:** 08/25/17 09:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>15.2</b>	mg/Kg	4.0	0.8	2	09/07/17 21:14	09/06/17	
Lead	6010C	<b>151</b>	mg/Kg	2.0	0.4	2	09/07/17 21:14	09/06/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-D03-082217  
**Lab Code:** K1709014-003

**Service Request:** K1709014  
**Date Collected:** 08/22/17 16:49  
**Date Received:** 08/25/17 09:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>15.0</b>	mg/Kg	4.2	0.8	2	09/07/17 21:16	09/06/17	
Lead	6010C	<b>171</b>	mg/Kg	2.1	0.4	2	09/07/17 21:16	09/06/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-D04-082217  
**Lab Code:** K1709014-004

**Service Request:** K1709014  
**Date Collected:** 08/22/17 16:50  
**Date Received:** 08/25/17 09:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>25.3</b>	mg/Kg	4.1	0.8	2	09/07/17 21:18	09/06/17	
Lead	6010C	<b>267</b>	mg/Kg	2.1	0.4	2	09/07/17 21:18	09/06/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-D05-082217  
**Lab Code:** K1709014-005

**Service Request:** K1709014  
**Date Collected:** 08/22/17 16:52  
**Date Received:** 08/25/17 09:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>23.3</b>	mg/Kg	4.1	0.8	2	09/07/17 21:21	09/06/17	
Lead	6010C	<b>140</b>	mg/Kg	2.1	0.4	2	09/07/17 21:21	09/06/17	

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-D06-082217  
**Lab Code:** K1709014-006

**Service Request:** K1709014  
**Date Collected:** 08/22/17 16:54  
**Date Received:** 08/25/17 09:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>47.3</b>	mg/Kg	4.1	0.8	2	09/07/17 21:23	09/06/17	
Lead	6010C	<b>596</b>	mg/Kg	2.0	0.4	2	09/07/17 21:23	09/06/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-D07-082217  
**Lab Code:** K1709014-007

**Service Request:** K1709014  
**Date Collected:** 08/22/17 16:56  
**Date Received:** 08/25/17 09:20

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>34.1</b>	mg/Kg	4.1	0.8	2	09/07/17 21:26	09/06/17	
Lead	6010C	<b>562</b>	mg/Kg	2.1	0.4	2	09/07/17 21:26	09/06/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-D08-082217  
**Lab Code:** K1709014-008

**Service Request:** K1709014  
**Date Collected:** 08/22/17 16:59  
**Date Received:** 08/25/17 09:20

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>40.9</b>	mg/Kg	4.1	0.8	2	09/07/17 21:28	09/06/17	
Lead	6010C	<b>339</b>	mg/Kg	2.1	0.4	2	09/07/17 21:28	09/06/17	



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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-D09-082217  
**Lab Code:** K1709014-009

**Service Request:** K1709014  
**Date Collected:** 08/22/17 17:00  
**Date Received:** 08/25/17 09:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>52.6</b>	mg/Kg	4.0	0.8	2	09/07/17 21:30	09/06/17	
Lead	6010C	<b>1150</b>	mg/Kg	2.0	0.4	2	09/07/17 21:30	09/06/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-D10-082217  
**Lab Code:** K1709014-010

**Service Request:** K1709014  
**Date Collected:** 08/22/17 17:01  
**Date Received:** 08/25/17 09:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>46.0</b>	mg/Kg	4.0	0.8	2	09/07/17 21:33	09/06/17	
Lead	6010C	<b>361</b>	mg/Kg	2.0	0.4	2	09/07/17 21:33	09/06/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-E01-082217  
**Lab Code:** K1709014-011

**Service Request:** K1709014  
**Date Collected:** 08/22/17 17:05  
**Date Received:** 08/25/17 09:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>18.5</b>	mg/Kg	3.9	0.8	2	09/07/17 21:35	09/06/17	
Lead	6010C	<b>195</b>	mg/Kg	2.0	0.4	2	09/07/17 21:35	09/06/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-E02-082217  
**Lab Code:** K1709014-012

**Service Request:** K1709014  
**Date Collected:** 08/22/17 17:06  
**Date Received:** 08/25/17 09:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>17.1</b>	mg/Kg	3.9	0.8	2	09/07/17 21:44	09/06/17	
Lead	6010C	<b>203</b>	mg/Kg	2.0	0.4	2	09/07/17 21:44	09/06/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-E03-082217  
**Lab Code:** K1709014-013

**Service Request:** K1709014  
**Date Collected:** 08/22/17 17:08  
**Date Received:** 08/25/17 09:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>44.0</b>	mg/Kg	4.0	0.8	2	09/07/17 21:46	09/06/17	
Lead	6010C	<b>893</b>	mg/Kg	2.0	0.4	2	09/07/17 21:46	09/06/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-E04-082217  
**Lab Code:** K1709014-014

**Service Request:** K1709014  
**Date Collected:** 08/22/17 17:10  
**Date Received:** 08/25/17 09:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>25.2</b>	mg/Kg	4.1	0.8	2	09/07/17 21:48	09/06/17	
Lead	6010C	<b>368</b>	mg/Kg	2.1	0.4	2	09/07/17 21:48	09/06/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-E05-082217  
**Lab Code:** K1709014-015

**Service Request:** K1709014  
**Date Collected:** 08/22/17 17:12  
**Date Received:** 08/25/17 09:20

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>46.3</b>	mg/Kg	4.0	0.8	2	09/07/17 21:51	09/06/17	
Lead	6010C	<b>608</b>	mg/Kg	2.0	0.4	2	09/07/17 21:51	09/06/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-E06-082217  
**Lab Code:** K1709014-016

**Service Request:** K1709014  
**Date Collected:** 08/22/17 17:14  
**Date Received:** 08/25/17 09:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>42.1</b>	mg/Kg	4.3	0.9	2	09/07/17 21:53	09/06/17	
Lead	6010C	<b>809</b>	mg/Kg	2.2	0.4	2	09/07/17 21:53	09/06/17	



ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-E07-082217  
**Lab Code:** K1709014-017

**Service Request:** K1709014  
**Date Collected:** 08/22/17 17:21  
**Date Received:** 08/25/17 09:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>42.8</b>	mg/Kg	4.2	0.8	2	09/07/17 21:55	09/06/17	
Lead	6010C	<b>831</b>	mg/Kg	2.1	0.4	2	09/07/17 21:55	09/06/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-E08-082217  
**Lab Code:** K1709014-018

**Service Request:** K1709014  
**Date Collected:** 08/22/17 17:18  
**Date Received:** 08/25/17 09:20

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>32.5</b>	mg/Kg	4.3	0.9	2	09/07/17 21:58	09/06/17	
Lead	6010C	<b>594</b>	mg/Kg	2.2	0.4	2	09/07/17 21:58	09/06/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-E09-082217  
**Lab Code:** K1709014-019

**Service Request:** K1709014  
**Date Collected:** 08/22/17 17:23  
**Date Received:** 08/25/17 09:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>40.6</b>	mg/Kg	4.0	0.8	2	09/07/17 22:00	09/06/17	
Lead	6010C	<b>434</b>	mg/Kg	2.0	0.4	2	09/07/17 22:00	09/06/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-E10-082217  
**Lab Code:** K1709014-020

**Service Request:** K1709014  
**Date Collected:** 08/22/17 17:26  
**Date Received:** 08/25/17 09:20

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>31.3</b>	mg/Kg	4.0	0.8	2	09/07/17 22:02	09/06/17	
Lead	6010C	<b>306</b>	mg/Kg	2.0	0.4	2	09/07/17 22:02	09/06/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** Method Blank  
**Lab Code:** KQ1712727-02

**Service Request:** K1709014  
**Date Collected:** NA  
**Date Received:** NA  
**Basis:** Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6010C	ND U	mg/Kg	4	0.8	2	09/07/17 20:52	09/06/17	
Lead	6010C	ND U	mg/Kg	2	0.4	2	09/07/17 20:52	09/06/17	

ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1709014  
**Date Collected:** 08/22/17  
**Date Received:** 08/25/17  
**Date Analyzed:** 09/7/17  
**Date Extracted:** 09/6/17

**Duplicate Matrix Spike Summary  
Total Metals**

**Sample Name:** 441-1-D01-082217  
**Lab Code:** K1709014-001  
**Analysis Method:** 6010C  
**Prep Method:** EPA 3050B

**Units:** mg/Kg  
**Basis:** Dry

Analyte Name	Sample Result	Result	Matrix Spike KQ1712727-03		Duplicate Matrix Spike KQ1712727-04		% Rec Limits	RPD	RPD Limit	
			Spike Amount	% Rec	Result	Spike Amount				% Rec
Arsenic	17.8	118	103	97	117	106	93	75-125	<1	30
Lead	199	238	103	38 N	232	106	31 N	75-125	3	30

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1709014  
**Date Analyzed:** 09/07/17

**Lab Control Sample Summary**  
**Total Metals**

**Units:**mg/Kg  
**Basis:**Dry

**Lab Control Sample**  
KQ1712727-01

<b>Analyte Name</b>	<b>Analytical Method</b>	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>% Rec Limits</b>
Arsenic	6010C	491	500	98	80-120
Lead	6010C	488	500	98	80-120



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ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

September 13, 2017

**Analytical Report for Service Request No: K1709015**

Dave Enos  
Teck American Incorporated  
501 North Riverpoint Blvd., Suite 300  
Spokane, WA 99202

**RE: August 2017 Sampling SAT Study / B0095010.0005.00001**

Dear Dave,

Enclosed are the results of the sample(s) submitted to our laboratory August 25, 2017  
For your reference, these analyses have been assigned our service request number **K1709015**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at [www.alsglobal.com](http://www.alsglobal.com). All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at [Jeff.Coronado@alsglobal.com](mailto:Jeff.Coronado@alsglobal.com).

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**

Jeff Coronado  
Metals Department  
Manager





---

ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

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## Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

### **Inorganic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

### **Metals Data Qualifiers**

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.  
  - i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Organic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Additional Petroleum Hydrocarbon Specific Qualifiers**

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

**ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso  
State Certifications, Accreditations, and Licenses**

<b>Agency</b>	<b>Web Site</b>	<b>Number</b>
Alaska DEH	<a href="http://dec.alaska.gov/eh/lab/cs/csapproval.htm">http://dec.alaska.gov/eh/lab/cs/csapproval.htm</a>	UST-040
Arizona DHS	<a href="http://www.azdhs.gov/lab/license/env.htm">http://www.azdhs.gov/lab/license/env.htm</a>	AZ0339
Arkansas - DEQ	<a href="http://www.adeq.state.ar.us/techsvs/labcert.htm">http://www.adeq.state.ar.us/techsvs/labcert.htm</a>	88-0637
California DHS (ELAP)	<a href="http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx">http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx</a>	2795
DOD ELAP	<a href="http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm">http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm</a>	L14-51
Florida DOH	<a href="http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm">http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm</a>	E87412
Hawaii DOH	<a href="http://health.hawaii.gov/">http://health.hawaii.gov/</a>	-
ISO 17025	<a href="http://www.pjllabs.com/">http://www.pjllabs.com/</a>	L16-57
Louisiana DEQ	<a href="http://www.deq.louisiana.gov/page/la-lab-accreditation">http://www.deq.louisiana.gov/page/la-lab-accreditation</a>	03016
Maine DHS	<a href="http://www.maine.gov/dhhs/">http://www.maine.gov/dhhs/</a>	WA01276
Minnesota DOH	<a href="http://www.health.state.mn.us/accreditation">http://www.health.state.mn.us/accreditation</a>	053-999-457
Nevada DEP	<a href="http://ndep.nv.gov/bsdw/labservice.htm">http://ndep.nv.gov/bsdw/labservice.htm</a>	WA01276
New Jersey DEP	<a href="http://www.nj.gov/dep/enforcement/oqa.html">http://www.nj.gov/dep/enforcement/oqa.html</a>	WA005
New York - DOH	<a href="https://www.wadsworth.org/regulatory/elap">https://www.wadsworth.org/regulatory/elap</a>	12060
North Carolina DEQ	<a href="https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification">https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification</a>	605
Oklahoma DEQ	<a href="http://www.deq.state.ok.us/CSDnew/labcert.htm">http://www.deq.state.ok.us/CSDnew/labcert.htm</a>	9801
Oregon – DEQ (NELAP)	<a href="http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx">http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx</a>	WA100010
South Carolina DHEC	<a href="http://www.scdhec.gov/environment/EnvironmentalLabCertification/">http://www.scdhec.gov/environment/EnvironmentalLabCertification/</a>	61002
Texas CEQ	<a href="http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html">http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html</a>	T104704427
Washington DOE	<a href="http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html">http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html</a>	C544
Wyoming (EPA Region 8)	<a href="https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water">https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water</a>	-
Kelso Laboratory Website	<a href="http://www.alsglobal.com">www.alsglobal.com</a>	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at [www.ALSGlobal.com](http://www.ALSGlobal.com) or at the accreditation bodies web site.  
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.



## Case Narrative

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

**ALS ENVIRONMENTAL**

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/  
B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request No.:** K1709015  
**Date Received:** 08/25/17

**Case Narrative**

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

**Sample Receipt**

Twelve soil samples were received for analysis at ALS Environmental on 08/25/17. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

**Total Metals**

No anomalies associated with the analysis of these samples were observed.

Approved by  \_\_\_\_\_



## Chain of Custody

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

*KITOPACIS*

Date 8/23/17  
 PAGE 8 OF 15  
 SR#

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001

Project Contact: Kady Young Company: Arcadis

Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488

City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961

Sampler's Signature: \_\_\_\_\_

Number of Containers	Analysis Requested					REMARKS
	Lead/Arsenic 3050B/6010					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					

Sample I.D.	Date	Time	LAB ID	Matrix
441-1-F01-082217	8/22/17	1731		S
F02		1733		S
F03		1735		S
F04		1737		S
F05		1739		S
F06		1742		S
F07		1744		S
F08		1746		S
F09		1748		S
F10		1750		S

**TURNAROUND REQUIREMENTS**  
 \_\_\_ 24 hr \_\_\_ 48 hr \_\_\_ 5 day  
 Standard (10 days)  
 \_\_\_ Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes raw data)  
 IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 9920

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Joe Lathan  
 Firm: AVA  
 Date/Time: 8/23/17 1300

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: SIDAWIS  
 Firm: ALS-KELSO  
 Date/Time: 8/25/17 0920

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_



ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

*41709015*

Date 8/23/17  
 PAGE 9 OF 15  
 SR#

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001  
 Project Contact: Kady Young Company: Arcadis  
 Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488  
 City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961  
 Sampler's Signature: \_\_\_\_\_

Number of Containers	Analysis Requested					REMARKS
	lead/arsenic 3050B/6010					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					

Sample I.D.	Date	Time	LAB ID	Matrix
441-1-F06-082217-D	8/22/17	1742		S
				S
				S
				S
				S
				S
				S
				S
				S
				S

**TURNAROUND REQUIREMENTS**  
 24 hr  48 hr  5 day  
 Standard (10 days)  
 Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes raw data)  
 IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99205

**RELINQUISHED BY:**  
 Signature: [Signature]  
 Printed Name: Joe Lathan  
 Firm: AVA  
 Date/Time: 8/23/17 1300

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: SIDWIS  
 Firm: ALS KELSO  
 Date/Time: 8/25/17 0920

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

K1709016

Date 8/23/17  
 PAGE 6 OF 15  
 SR#

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001  
 Project Contact: Kady Young Company: Arcadis  
 Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488  
 City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961  
 Sampler's Signature: \_\_\_\_\_

Number of Containers	Analysis Requested					REMARKS
	lead/arsenic 3050B/6010					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					
1	X					

Sample I.D.	Date	Time	LAB ID	Matrix
441-1-D10-082217-D	8/22/17	1701		S
				S
				S
				S
				S
				S
				S
				S
				S
				S

**TURNAROUND REQUIREMENTS**  
 24 hr  48 hr  5 day  
 Standard (10 days)  
 Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes raw data)  
 IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

**RELINQUISHED BY:**  
 Signature: Joe Lathan  
 Printed Name: Joe Lathan  
 Firm: ANA  
 Date/Time: 8/23/17 1300

**RECEIVED BY:**  
 Signature: Stavis  
 Printed Name: Stavis  
 Firm: ALS-KELSO  
 Date/Time: 8/25/17 0920

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_



PC flc

### Cooler Receipt and Preservation Form

Client TekL America Service Request K17 04015  
Received: Aug 25, 17 Opened: 8/25 By: SD Unloaded: 8/25 By: SD

Samples were received via? USPS 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 - 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
4.7	4.7	3.0	3.0	2.0	374	<u>NA</u>	814561305512		

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  
Were samples received in good condition (temperature, unbroken)? Indicate in the table below. NA Y N  
If applicable, tissue samples were received: Frozen Partially Thawed Thawed  
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

, Discrepancies, & Resolutions:  
\_\_\_\_\_  
\_\_\_\_\_



# Total Solids

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1709015  
**Date Collected:** 08/22/17  
**Date Received:** 08/25/17  
**Units:** Percent  
**Basis:** As Received

**Solids, Total**

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
441-1-F01-082217	K1709015-001	<b>94.9</b>	-	-	1	08/31/17 16:53	
441-1-F02-082217	K1709015-002	<b>93.6</b>	-	-	1	08/31/17 16:53	
441-1-F03-082217	K1709015-003	<b>94.6</b>	-	-	1	08/31/17 16:53	
441-1-F04-082217	K1709015-004	<b>92.4</b>	-	-	1	08/31/17 16:53	
441-1-F05-082217	K1709015-005	<b>90.7</b>	-	-	1	08/31/17 16:53	
441-1-F06-082217	K1709015-006	<b>93.9</b>	-	-	1	08/31/17 16:53	
441-1-F07-082217	K1709015-007	<b>94.1</b>	-	-	1	08/31/17 16:53	
441-1-F08-082217	K1709015-008	<b>90.9</b>	-	-	1	08/31/17 16:53	
441-1-F09-082217	K1709015-009	<b>92.5</b>	-	-	1	08/31/17 16:53	
441-1-F10-082217	K1709015-010	<b>94.5</b>	-	-	1	08/31/17 16:53	
441-1-F06-082217-D	K1709015-011	<b>93.0</b>	-	-	1	08/31/17 16:53	
441-1-D10-082217-D	K1709015-012	<b>96.2</b>	-	-	1	08/31/17 16:53	

ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1709015  
**Date Collected:** 08/22/17  
**Date Received:** 08/25/17

**Units:** Percent  
**Basis:** As Received

**Replicate Sample Summary**  
**Inorganic Parameters**

<b>Sample Name:</b>	<b>Lab Code:</b>	<b>MRL</b>	<b>Sample Result</b>	<b>Duplicate Result</b>	<b>Average</b>	<b>RPD</b>	<b>RPD Limit</b>	<b>Date Analyzed</b>
441-1-F01-082217	K1709015-001DUP	-	94.9	95.3	95.1	<1	20	08/31/17
441-1-F06-082217-D	K1709015-011DUP	-	93.0	93.6	93.3	<1	20	08/31/17

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



# Metals

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-F01-082217  
**Lab Code:** K1709015-001

**Service Request:** K1709015  
**Date Collected:** 08/22/17 17:31  
**Date Received:** 08/25/17 09:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>16.3</b>	mg/Kg	4.0	0.8	2	09/08/17 13:01	09/06/17	
Lead	6010C	<b>204</b>	mg/Kg	2.0	0.4	2	09/08/17 13:01	09/06/17	



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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-F02-082217  
**Lab Code:** K1709015-002

**Service Request:** K1709015  
**Date Collected:** 08/22/17 17:33  
**Date Received:** 08/25/17 09:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	24.1	mg/Kg	4.1	0.8	2	09/08/17 13:36	09/06/17	
Lead	6010C	255	mg/Kg	2.0	0.4	2	09/08/17 13:36	09/06/17	

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-F03-082217  
**Lab Code:** K1709015-003

**Service Request:** K1709015  
**Date Collected:** 08/22/17 17:35  
**Date Received:** 08/25/17 09:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>29.2</b>	mg/Kg	4.1	0.8	2	09/08/17 13:38	09/06/17	
Lead	6010C	<b>434</b>	mg/Kg	2.0	0.4	2	09/08/17 13:38	09/06/17	

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-F04-082217  
**Lab Code:** K1709015-004

**Service Request:** K1709015  
**Date Collected:** 08/22/17 17:37  
**Date Received:** 08/25/17 09:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>37.6</b>	mg/Kg	4.2	0.8	2	09/08/17 13:41	09/06/17	
Lead	6010C	<b>556</b>	mg/Kg	2.1	0.4	2	09/08/17 13:41	09/06/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-F05-082217  
**Lab Code:** K1709015-005

**Service Request:** K1709015  
**Date Collected:** 08/22/17 17:39  
**Date Received:** 08/25/17 09:20

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	28.1	mg/Kg	4.2	0.8	2	09/08/17 13:43	09/06/17	
Lead	6010C	325	mg/Kg	2.1	0.4	2	09/08/17 13:43	09/06/17	

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-F06-082217  
**Lab Code:** K1709015-006

**Service Request:** K1709015  
**Date Collected:** 08/22/17 17:42  
**Date Received:** 08/25/17 09:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>35.9</b>	mg/Kg	4.1	0.8	2	09/08/17 13:46	09/06/17	
Lead	6010C	<b>269</b>	mg/Kg	2.0	0.4	2	09/08/17 13:46	09/06/17	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-F07-082217  
**Lab Code:** K1709015-007

**Service Request:** K1709015  
**Date Collected:** 08/22/17 17:44  
**Date Received:** 08/25/17 09:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>16.3</b>	mg/Kg	4.0	0.8	2	09/08/17 13:48	09/06/17	
Lead	6010C	<b>123</b>	mg/Kg	2.0	0.4	2	09/08/17 13:48	09/06/17	

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-F08-082217  
**Lab Code:** K1709015-008

**Service Request:** K1709015  
**Date Collected:** 08/22/17 17:46  
**Date Received:** 08/25/17 09:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>15.8</b>	mg/Kg	4.3	0.9	2	09/08/17 13:51	09/06/17	
Lead	6010C	<b>78.2</b>	mg/Kg	2.1	0.4	2	09/08/17 13:51	09/06/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-F09-082217  
**Lab Code:** K1709015-009

**Service Request:** K1709015  
**Date Collected:** 08/22/17 17:48  
**Date Received:** 08/25/17 09:20

**Basis:** Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6010C	38.7	mg/Kg	4.1	0.8	2	09/08/17 13:54	09/06/17	
Lead	6010C	1060	mg/Kg	2.1	0.4	2	09/08/17 13:54	09/06/17	



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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-F10-082217  
**Lab Code:** K1709015-010

**Service Request:** K1709015  
**Date Collected:** 08/22/17 17:50  
**Date Received:** 08/25/17 09:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>41.1</b>	mg/Kg	4.1	0.8	2	09/08/17 13:56	09/06/17	
Lead	6010C	<b>613</b>	mg/Kg	2.1	0.4	2	09/08/17 13:56	09/06/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-F06-082217-D  
**Lab Code:** K1709015-011

**Service Request:** K1709015  
**Date Collected:** 08/22/17 17:42  
**Date Received:** 08/25/17 09:20

**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>34.1</b>	mg/Kg	4.0	0.8	2	09/08/17 13:59	09/06/17	
Lead	6010C	<b>280</b>	mg/Kg	2.0	0.4	2	09/08/17 13:59	09/06/17	

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** 441-1-D10-082217-D  
**Lab Code:** K1709015-012

**Service Request:** K1709015  
**Date Collected:** 08/22/17 17:01  
**Date Received:** 08/25/17 09:20

**Basis:** Dry

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	<b>37.2</b>	mg/Kg	4.0	0.8	2	09/08/17 14:20	09/06/17	
Lead	6010C	<b>343</b>	mg/Kg	2.0	0.4	2	09/08/17 14:20	09/06/17	

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dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil  
**Sample Name:** Method Blank  
**Lab Code:** KQ1712728-02

**Service Request:** K1709015  
**Date Collected:** NA  
**Date Received:** NA  
**Basis:** Dry

Total Metals

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Arsenic	6010C	ND U	mg/Kg	4	0.8	2	09/08/17 12:56	09/06/17	
Lead	6010C	ND U	mg/Kg	2	0.4	2	09/08/17 12:56	09/06/17	

ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1709015  
**Date Collected:** 08/22/17  
**Date Received:** 08/25/17  
**Date Analyzed:** 09/8/17  
**Date Extracted:** 09/6/17

**Duplicate Matrix Spike Summary  
Total Metals**

**Sample Name:** 441-1-F01-082217  
**Lab Code:** K1709015-001  
**Analysis Method:** 6010C  
**Prep Method:** EPA 3050B

**Units:** mg/Kg  
**Basis:** Dry

Analyte Name	Sample Result	Result	Matrix Spike KQ1712728-03		Duplicate Matrix Spike KQ1712728-04		% Rec Limits	RPD	RPD Limit	
			Spike Amount	% Rec	Result	Spike Amount				% Rec
Arsenic	16.3	115	102	96	114	99.4	98	75-125	<1	30
Lead	204	306	102	100	306	99.4	103	75-125	<1	30

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001  
**Sample Matrix:** Soil

**Service Request:** K1709015  
**Date Analyzed:** 09/08/17

**Lab Control Sample Summary**  
**Total Metals**

**Units:**mg/Kg  
**Basis:**Dry

**Lab Control Sample**  
KQ1712728-01

<b>Analyte Name</b>	<b>Analytical Method</b>	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>% Rec Limits</b>
Arsenic	6010C	503	500	101	80-120
Lead	6010C	496	500	99	80-120

## **APPENDIX G-2**

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### PHASE IA PART 2 LABORATORY ANALYTICAL REPORTS



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ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

January 05, 2018

**Analytical Report for Service Request No: K1711288**

Dave Enos  
Teck American Incorporated  
501 North Riverpoint Blvd., Suite 300  
Spokane, WA 99202

**RE: August 2017 Sampling SAT Study / B0095010.0005.00002**

Dear Dave,

Enclosed are the results of the sample(s) submitted to our laboratory October 18, 2017  
For your reference, these analyses have been assigned our service request number **K1711288**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at [www.alsglobal.com](http://www.alsglobal.com). All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3376. You may also contact me via email at [Mark.Harris@alsglobal.com](mailto:Mark.Harris@alsglobal.com).

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**

Mark Harris  
Project Manager





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ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

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## Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

### **Inorganic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

### **Metals Data Qualifiers**

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.  
  - i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Organic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Additional Petroleum Hydrocarbon Specific Qualifiers**

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

**ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso  
State Certifications, Accreditations, and Licenses**

<b>Agency</b>	<b>Web Site</b>	<b>Number</b>
Alaska DEH	<a href="http://dec.alaska.gov/eh/lab/cs/csapproval.htm">http://dec.alaska.gov/eh/lab/cs/csapproval.htm</a>	UST-040
Arizona DHS	<a href="http://www.azdhs.gov/lab/license/env.htm">http://www.azdhs.gov/lab/license/env.htm</a>	AZ0339
Arkansas - DEQ	<a href="http://www.adeq.state.ar.us/techsvs/labcert.htm">http://www.adeq.state.ar.us/techsvs/labcert.htm</a>	88-0637
California DHS (ELAP)	<a href="http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx">http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx</a>	2795
Florida DOH	<a href="http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm">http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm</a>	E87412
Hawaii DOH	<a href="http://health.hawaii.gov/">http://health.hawaii.gov/</a>	-
Louisiana DEQ	<a href="http://www.deq.louisiana.gov/page/la-lab-accreditation">http://www.deq.louisiana.gov/page/la-lab-accreditation</a>	03016
Maine DHS	<a href="http://www.maine.gov/dhhs/">http://www.maine.gov/dhhs/</a>	WA01276
Minnesota DOH	<a href="http://www.health.state.mn.us/accreditation">http://www.health.state.mn.us/accreditation</a>	053-999-457
Nevada DEP	<a href="http://ndep.nv.gov/bsdw/labservice.htm">http://ndep.nv.gov/bsdw/labservice.htm</a>	WA01276
New Jersey DEP	<a href="http://www.nj.gov/dep/enforcement/oqa.html">http://www.nj.gov/dep/enforcement/oqa.html</a>	WA005
New York - DOH	<a href="https://www.wadsworth.org/regulatory/elap">https://www.wadsworth.org/regulatory/elap</a>	12060
North Carolina DEQ	<a href="https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification">https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification</a>	605
Oklahoma DEQ	<a href="http://www.deq.state.ok.us/CSDnew/labcert.htm">http://www.deq.state.ok.us/CSDnew/labcert.htm</a>	9801
Oregon – DEQ (NELAP)	<a href="http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx">http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx</a>	WA100010
South Carolina DHEC	<a href="http://www.scdhec.gov/environment/EnvironmentalLabCertification/">http://www.scdhec.gov/environment/EnvironmentalLabCertification/</a>	61002
Texas CEQ	<a href="http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html">http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html</a>	T104704427
Washington DOE	<a href="http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html">http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html</a>	C544
Wyoming (EPA Region 8)	<a href="https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water">https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water</a>	-
Kelso Laboratory Website	<a href="http://www.alsglobal.com">www.alsglobal.com</a>	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at [www.ALSGlobal.com](http://www.ALSGlobal.com) or at the accreditation bodies web site.  
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.



## Case Narrative

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study  
**Sample Matrix:** Soil

**Service Request:** K1711288  
**Date Received:** 10/12/2017

### CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), Matrix/Duplicate Matrix Spike (MS/DMS), Laboratory Control Sample (LCS), and Laboratory/Duplicate Laboratory Control Sample (LCS/DLCS).

#### Sample Receipt:

Nineteen soil samples were received for analysis at ALS Environmental on 10/12/2017. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

#### Metals:

No significant anomalies were noted with this analysis.

#### General Chemistry:

Total Sulfide by PSEP:

Samples IC-401-1A-101017, IC-401-1B-101017, IC-401-1C-101117, IC-401-1C-101117-D, IC-401-1D-101117 and IC-401-2B-101117 were analyzed past holding time due to laboratory error. The analysis was performed as soon as possible after receipt by the laboratory. The data was flagged to indicate the holding time violation.

Sample IC-441-1B-101617 was received and initially analyzed within holding time, but was reanalyzed past holding time due to MB result being over the MRL. The data was flagged to indicate the holding time violation.

Approved by \_\_\_\_\_



Date \_\_\_\_\_

12/01/2017



# Chain of Custody

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

K1711288

Project Name: <u>Teck American - UCR SATES</u> Project Number: <u>B0095010.0005.00002</u> Project Contact: <u>Kadv Young</u> Company: <u>Arcadis</u> Company/Address: <u>189 North Cedar Street</u> Phone: <u>307-203-3510</u> or <u>307-949-0330</u> City, State, Zip: <u>Buffalo, WY 82834</u> FAX: <u>307-684-5961</u> Sampler's Signature: <u>[Signature]</u>					Analytes Requested																
						Number of Containers	USEPA 6010/USEPA 6010B	SM 2510B	USEPA 300.0	SM 4500-S2D	Bremner and Mulvaney 1982, Nelson and Sommers 1982	USEPA 9060A	ASTM D422	NRMRL QMP L18735 Athena	Duplicate Analytical List	Triplicate Analytical List					
Sample I.D.	Date	Time	LAB ID	Matrix														REMARKS			
IC-401-1A-101017	10-10-17	1058	1	S	2	X	X	X	X	X	X	X	X	X				Sample weight = 10.457g			
IC-401-1B-101017	10-10-17	1155	2	S	2	X	X	X	X	X	X	X	X	X				Sample weight = 13.511g			
				S																	
				S														COMPOSITE			
				S														SAMPLE CONTAINERS			
				S														PRIOR TO ANALYSIS			
				S																	
				S																	
				S																	
TURNAROUND REQUIREMENTS <input type="checkbox"/> 24 hr <input type="checkbox"/> 48 hr <input type="checkbox"/> 5 day <input checked="" type="checkbox"/> Standard (10 days) <input type="checkbox"/> Provide FAX Preliminary Results Requested Report Date: _____					REPORT REQUIREMENTS <input type="checkbox"/> I. Routine Report: Results, Method Blank, Surrogate, as required <input checked="" type="checkbox"/> II. Report Dup., MS, MSD as required <input type="checkbox"/> III. Data Validation Report (includes raw data) <input type="checkbox"/> IV. CLP Deliverable Report <input checked="" type="checkbox"/> V. EDD					Comments/Special Instructions: Hold Remainder  Duplicate Analysis List - Mehlich III Extractable Lead and Phosphorous (USEPA 6010), Electrical Conductivity (SM 2510B), Chloride/Sulfate (USEPA 300. Sulfide (SM 4500-52D), Total Carbon and Nitrogen (Gremner and Mulvaney/Nelson and Sommers), Total Organic Carbon (USEPA 9060A)  Triplicate Analysis List - Total TAL Metals/SPLP TAL Metals (USEPA 6010), Bioaccessible Arsenic and Lead at pH 1.5 and pH 2.5 (USEPA 6010B)											
Invoice Information P.O. # <u>UCR-ALS-D34-17</u> Bill to: <u>Cristy Kessel - Teck American</u> 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99201										RELINQUISHED BY: Signature: <u>[Signature]</u> Printed Name: <u>Ryan W Brauchla</u> Firm: <u>Arcadis</u> Date/Time: <u>10-11-17 1000</u>			RECEIVED BY: Signature: <u>[Signature]</u> Printed Name: <u>K Morrow</u> Firm: <u>ALS</u> Date/Time: <u>10/12/17 0930</u>			RELINQUISHED BY: Signature: _____ Printed Name: _____ Firm: _____ Date/Time: _____			RECEIVED BY: Signature: _____ Printed Name: _____ Firm: _____ Date/Time: _____		



K1711288

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00002  
 Project Contact: Kady Young Company: Arcadis  
 Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 307-949-0330  
 City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961  
 Sampler's Signature: Ryan W Bravchla

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	Analysis Requested										REMARKS
						USEPA 6010/USEPA 6010B	SM 2510B	USEPA 300.0	SM 4500-S2D	Bremner and Mulvaney 1982, Nelson and Sommers 1982	USEPA 9060A	ASTM D422	NRML QMP L18735 Athena	Duplicate Analytical List	Triplicate Analytical List	
IC-401-1C-101117	10-11-17	1023	3	S	2	X	X	X	X	X	X	X			Sample weight: 11,403g	
IC-401-1C-101117-D	10-11-17	1235	4	S	2								X		Sample weight: 12,555g	
IC-401-1D-101117	10-11-17	1400	5	S	1	X	X	X	X	X	X	X			Sample weight: 5,453g	
IC-401-2B-101117	10-11-17	1538	6	S	1	X	X	X	X	X	X	X			Sample weight: 7,637g	
				S												
				S											Composite 2 bucket	
				S											samples at the	
				S											lab, prior to any	
				S											analysis	

**TURNAROUND REQUIREMENTS**  
 \_\_\_ 24 hr \_\_\_ 48 hr \_\_\_ 5 day  
 Standard (10 days)  
 \_\_\_ Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 \_\_\_ III. Data Validation Report (includes raw data)  
 \_\_\_ IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder  
 Duplicate Analysis List - Mehlich III Extractable Lead and Phosphorous (USEPA 6010), Electrical Conductivity (SM 2510B), Chloride/Sulfate (USEPA 300.0 Sulfide (SM 4500-S2D), Total Carbon and Nitrogen (Gremner and Mulvaney/Nelson and Sommers), Total Organic Carbon (USEPA 9060A)  
 Triplicate Analysis List - Total TAL Metals/SPLP TAL Metals (USEPA 6010), Bioaccessible Arsenic and Lead at pH 1.5 and pH 2.5 (USEPA 6010B)

**RELINQUISHED BY:**  
 Signature: Ryan W Bravchla  
 Printed Name: Ryan W Bravchla  
 Firm: Arcadis  
 Date/Time: 10-12-17 1100

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: KASH WARRICK  
 Firm: \_\_\_\_\_  
 Date/Time: 10/13/17 0930

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

K1711288

Date 10-12-2017

PAGE 1 OF 1

SR#

Project Name: <u>Teck American - UCR SATES</u> Project Number: <u>B0095010.0005.00002</u>					Analysis Requested										REMARKS
Project Contact: <u>Kady Young</u> Company: <u>Arcadis</u>					Number of Containers	USEPA 6010/USEPA 6010B	SM 2510B	USEPA 300.0	SM 4500-S2D	Bremner and Mulvaney 1982, Nelson and Sommers 1982	USEPA 9060A	ASTM D422	NRMRL QMP L18735 Athena	Duplicate Analytical List	
Sample I.D.	Date	Time	LAB ID	Matrix											
IC1-401-2A-101217	10-12-17	0920	7	S	1	X	X	X	X	X	X	X			Sample weight: 6,900g
IC2-401-2A-101217	10-12-17	1015	8	S	1									X	Sample weight: 6,870g
IC3-401-2A-101217	10-12-17	1055	9	S	1									X	Sample weight: 7,213g
IC-401-2C-101217	10-12-17	1250	10	S	1	X	X	X	X	X	X	X			Sample weight: 7,683g
IC-401-2D-101217	10-12-17	1400	11	S	1	X	X	X	X	X	X	X			Sample weight: 7,205g
				S											
				S											Composite samples prior to analysis
				S											
				S											
				S											

**TURNAROUND REQUIREMENTS**  
 \_\_\_ 24 hr \_\_\_ 48 hr \_\_\_ 5 day  
 Standard (10 days)  
 \_\_\_ Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99201

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes raw data)  
 IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

Duplicate Analysis List - Mehlich III Extractable Lead and Phosphorous (USEPA 6010), Electrical Conductivity (SM 2510B), Chloride/Sulfate (USEPA 300. Sulfide (SM 4500-S2D), Total Carbon and Nitrogen (Gremner and Mulvaney/Nelson and Sommers), Total Organic Carbon (USEPA 9060A)

Triplicate Analysis List - Total TAL Metals/SPLP TAL Metals (USEPA 6010), Bioaccessible Arsenic and Lead at pH 1.5 and pH 2.5 (USEPA 6010B)

**RELINQUISHED BY:**  
 Signature: Ryan Brauchle  
 Printed Name: Ryan Brauchle  
 Firm: Arcadis  
 Date/Time: 10-13-2017 1000

**RECEIVED BY:**  
 Signature: Rockelle Benz  
 Printed Name: Rockelle Benz  
 Firm: AES-Kelso, WA  
 Date/Time: 10/14/17 10:00am

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

K1711288

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00002  
Project Contact: Kady Young Company: Arcadis  
Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 307-949-0330  
City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961  
Sampler's Signature: Ryan W. Branch

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	Analysis Requested										REMARKS
						USEPA 6010/USEPA 6010B	SM 2510B	USEPA 300.0	SM 4500-S2D	Bremner and Mulvaney 1982, Nelson and Sommers 1982	USEPA 9060A	ASTM D422	NEMRL QMP L18735 Athens	Duplicate Analytical List	Triplicate Analytical List	
IC-258-3A-101717	10-17-17	0940	12	S	1	X	X	X	X	X	X	X			Sample weight: 9,577g	
IC-258-3B-101717	10-17-17	0915	13	S	1	X	X	X	X	X	X	X			Sample weight: 8,284g	
IC-258-3C-101717	10-17-17	0950	14	S	1	X	X	X	X	X	X	X			Sample weight: 5,463g	
IC-258-3D-101717	10-17-17	1020	15	S	1	X	X	X	X	X	X	X			Sample weight: 7,074g	
IC-441-1A-101617	10-16-17	0915	16	S	1	X	X	X	X	X	X	X			Sample weight: 7,130g	
IC-441-1B-101617	10-16-17	1015	17	S	1	X	X	X	X	X	X	X			Sample weight: 7,531g	
IC-441-1C-101617	10-16-17	1125	18	S	1	X	X	X	X	X	X	X			Sample weight: 5,110g	
IC-441-1D-101617	10-16-17	1250	19	S	1	X	X	X	X	X	X	X			Sample weight: 5,773g	
				S												
				S												

**TURNAROUND REQUIREMENTS**  
 24 hr  48 hr  5 day  
 Standard (10 days)  
 Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes raw data)  
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 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder  
 Duplicate Analysis List - Mehlich III Extractable Lead and Phosphorous (USEPA 6010), Electrical Conductivity (SM 2510B), Chloride/Sulfate (USEPA 300.0 Sulfide (SM 4500-52D), Total Carbon and Nitrogen (Gremner and Mulvaney/Nelson and Sommers), Total Organic Carbon (USEPA 9060A)  
 Triplicate Analysis List - Total TAL Metals/SPLP TAL Metals (USEPA 6010), Bioaccessible Arsenic and Lead at pH 1.5 and pH 2.5 (USEPA 6010B)

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristv Kessel - Teck American  
501 N Riverpoint Blvd, Suite 300 Spokane, WA 99201

**RELINQUISHED BY:**  
 Signature: Ryan W. Branch  
 Printed Name: Ryan W. Branch  
 Firm: Arcadis  
 Date/Time: 10-17-2017/1600

**RECEIVED BY:**  
 Signature: K MORRISON  
 Printed Name: K MORRISON  
 Firm: ALS  
 Date/Time: 10/18/17 0940

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_



PC MH

### Cooler Receipt and Preservation Form

Client Teck America Service Request K17 11288  
 Received: 10/12/17 Opened: 10/12/17 By: KM Unloaded: 10/12/17 By: PL

- Samples were received via? USPS 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? \_\_\_\_\_  
 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	-	1.8	-	0	360		7880 4591 3001		

- Packing material: Inserts Buggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves Plastic
- Were custody papers properly filled out (ink, signed, etc.)? NA Y N
- Were samples received in good condition (temperature, unbroken)? Indicate in the table below. NA Y N  
 If applicable, tissue samples were received: Frozen Partially Thawed Thawed
- 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: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



PC MET

### Cooler Receipt and Preservation Form

Client Arcadis Service Request K17 11288  
 Received: 10/13/17 Opened: 10/13/17 By: KW Unloaded: 10/13/17 By: K

- Samples were received via? USPS 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 F+B  
 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
-0.2	0.0	4.2	4.9	+0.2	351		8082 71610341		
-0.5	-0.6	2.3	2.2	-0.1	352		" " 0330		
-0.1	-	2.3	1.4	0	391		" " 0341		
-0.3	-0.1	0.8	0.7	+0.2	378		" " 7262		

- Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves Larger P. Bags
- Were custody papers properly filled out (ink, signed, etc.)? NA Y N
- Were samples received in good condition (temperature, unbroken)? Indicate in the table below. NA Y N  
 If applicable, tissue samples were received: Frozen Partially Thawed Thawed
- 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: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



### Cooler Receipt and Preservation Form

Client ARCADIS Service Request K17 11288  
 Received: 10/14/17 Opened: 10/14/17 By: RB Unloaded: 10/14/17 By: RB

1. Samples were received via? USPS 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? \_\_\_\_\_  
 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
0.2	0.3	5.5	5.6	+0.1	346		8092 0775 4329		
0.8				+0.2	351		7880 7560 9433		
-0.1	-0.3	6.8	6.5	-0.2	387		7880 7560 9411		
-0.1	-0.2	6.6	6.5	-0.1	328		7880 7560 9422		
-0.3	-0.3	4.2	4.2	0.0	364		7880 7560 9444		

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. Were samples received in good condition (temperature, unbroken)? Indicate in the table below. NA Y N  
 If applicable, tissue samples were received: Frozen Partially Thawed Thawed
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: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



### Cooler Receipt and Preservation Form

Client Teck America Service Request K17 11288  
 Received: 10/18/17 Opened: 10/18/17 By: [Signature] Unloaded: 10/18/17 By: [Signature]

- Samples were received via? USPS 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? \_\_\_\_\_  
 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	-0.5	5.2	5.3	+0.1	302	7 of 8	788116454905		
0.0	-0.1	3.9	3.8	-0.1	329	8 of 8 Coolers	788116454916		
0.0	-0.1	5.5	5.4	-0.1	375	2 of 8 Coolers	" " 4857		
0.6	0.5	5.7	5.6	-0.1	365	6 of 8 Coolers	" " 4890		
4.7	-	5.8	-	0	390	1 of 8 Coolers	" " 4846		

- 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
- Were samples received in good condition (temperature, unbroken)? Indicate in the table below. NA Y N  
 If applicable, tissue samples were received: Frozen Partially Thawed Thawed
- 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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### Cooler Receipt and Preservation Form

Client Teck America Service Request K17 11288  
 Received: 10/18/17 Opened: 10/18/17 By: [Signature] Unloaded: 10/18/17 By: [Signature]

- Samples were received via?  USPS  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? \_\_\_\_\_  
 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
0.8	-	4.6	-	0	325	4 of 8 Coolers	7881 1645 4879		
0.4	0.5	2.6	2.7	+0.1	342	3 of 8 Coolers	" " 4868		
0.2	0.0	5.9	5.7	-0.2	387	5 of 8 Coolers	" " 4880		

- 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
- Were samples received in good condition (temperature, unbroken)? *Indicate in the table below.* NA  Y N  
 If applicable, tissue samples were received:  Frozen  Partially Thawed  Thawed
- 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: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_





# Total Solids

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1711288  
**Date Collected:** 10/10/17 - 10/17/17  
**Date Received:** 10/12/17 - 10/18/17

**Units:** Percent  
**Basis:** As Received

**Solids, Total**

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
IC-401-1A-101017	K1711288-001	95.6	-	-	1	11/03/17 14:28	
IC-401-1B-101017	K1711288-002	94.5	-	-	1	11/03/17 14:28	
IC-401-1C-101117	K1711288-003	94.5	-	-	1	11/03/17 14:28	
IC-401-1C-101117-D	K1711288-004	94.7	-	-	1	11/03/17 14:28	
IC-401-1D-101117	K1711288-005	92.5	-	-	1	11/03/17 14:28	
IC-401-2B-101117	K1711288-006	93.4	-	-	1	11/03/17 14:28	
IC1-401-2A-101217	K1711288-007	93.6	-	-	1	11/03/17 14:28	
IC2-401-2A-101217	K1711288-008	94.1	-	-	1	11/03/17 14:28	
IC3-401-2A-101217	K1711288-009	93.7	-	-	1	11/03/17 14:28	
IC-401-2C-101217	K1711288-010	94.6	-	-	1	11/03/17 14:28	
IC-401-2D-101217	K1711288-011	90.5	-	-	1	11/03/17 14:28	
IC-258-3A-101717	K1711288-012	95.3	-	-	1	11/03/17 14:28	
IC-258-3B-101717	K1711288-013	95.0	-	-	1	11/03/17 14:28	
IC-258-3C-101717	K1711288-014	91.6	-	-	1	11/03/17 14:28	
IC-258-3D-101717	K1711288-015	94.9	-	-	1	11/03/17 14:28	
IC-441-1A-101617	K1711288-016	89.2	-	-	1	11/03/17 14:28	
IC-441-1B-101617	K1711288-017	93.9	-	-	1	11/03/17 14:28	
IC-441-1C-101617	K1711288-018	91.6	-	-	1	11/03/17 14:28	
IC-441-1D-101617	K1711288-019	87.9	-	-	1	11/03/17 14:28	

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dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1711288  
**Date Collected:** 10/10/17 - 10/12/17  
**Date Received:** 10/12/17 - 10/14/17

**Units:** Percent  
**Basis:** As Received

Replicate Sample Summary  
Inorganic Parameters

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
IC-401-1A-101017	K1711288-001DUP	-	95.6	95.6	95.6	<1	20	11/03/17
IC-401-2D-101217	K1711288-011DUP	-	90.5	91.7	91.1	1	20	11/03/17

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1711288  
**Date Collected:** 10/10/17 - 10/17/17  
**Date Received:** 10/12/17 - 10/18/17  
**Units:** Percent  
**Basis:** Air Dried

**Solids, Total**

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
IC-401-1A-101017	K1711288-001	97.8	-	1	11/17/17 17:16	
IC-401-1B-101017	K1711288-002	97.3	-	1	11/17/17 17:16	
IC-401-1C-101117	K1711288-003	97.2	-	1	11/17/17 17:16	
IC-401-1C-101117-D	K1711288-004	97.6	-	1	11/17/17 17:16	
IC-401-1D-101117	K1711288-005	94.8	-	1	11/17/17 17:16	
IC-401-2B-101117	K1711288-006	96.0	-	1	11/17/17 17:16	
IC1-401-2A-101217	K1711288-007	95.7	-	1	11/17/17 17:16	
IC2-401-2A-101217	K1711288-008	95.9	-	1	11/17/17 17:16	
IC3-401-2A-101217	K1711288-009	96.7	-	1	11/17/17 17:16	
IC-401-2C-101217	K1711288-010	96.1	-	1	11/17/17 17:16	
IC-401-2D-101217	K1711288-011	94.1	-	1	11/17/17 17:16	
IC-258-3A-101717	K1711288-012	98.3	-	1	11/17/17 17:16	
IC-258-3B-101717	K1711288-013	98.5	-	1	11/17/17 17:16	
IC-258-3C-101717	K1711288-014	95.5	-	1	11/17/17 17:16	
IC-258-3D-101717	K1711288-015	98.3	-	1	11/17/17 17:16	
IC-441-1A-101617	K1711288-016	95.4	-	1	11/17/17 17:16	
IC-441-1B-101617	K1711288-017	95.1	-	1	11/17/17 17:16	
IC-441-1C-101617	K1711288-018	95.8	-	1	11/17/17 17:16	
IC-441-1D-101617	K1711288-019	93.7	-	1	11/17/17 17:16	

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QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1711288  
**Date Collected:** 10/10/17 - 10/12/17  
**Date Received:** 10/12/17 - 10/14/17

**Units:** Percent  
**Basis:** Air Dried

**Replicate Sample Summary**  
**Inorganic Parameters**

<b>Sample Name:</b>	<b>Lab Code:</b>	<b>MRL</b>	<b>Sample Result</b>	<b>Duplicate Result</b>	<b>Average</b>	<b>RPD</b>	<b>RPD Limit</b>	<b>Date Analyzed</b>
IC-401-1A-101017	K1711288-001DUP	-	97.8	97.7	97.8	<1	10	11/17/17
IC-401-2D-101217	K1711288-011DUP	-	94.1	94.5	94.3	<1	10	11/17/17

Results flagged with an asterisk (\*) indicate values outside control criteria.

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Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



# General Chemistry

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil  
**Analysis Method:** 9060  
**Prep Method:** Method

**Service Request:** K1711288  
**Date Collected:** 10/10/17 - 10/17/17  
**Date Received:** 10/12/17 - 10/18/17

**Units:** Percent  
**Basis:** Dry, per Method

**Carbon, Total Organic (TOC)**

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
IC-401-1A-101017	K1711288-001	<b>5.97</b>	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC-401-1B-101017	K1711288-002	<b>4.56</b>	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC-401-1C-101117	K1711288-003	<b>4.73</b>	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC-401-1C-101117-D	K1711288-004	<b>5.00</b>	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC-401-1D-101117	K1711288-005	<b>6.09</b>	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC-401-2B-101117	K1711288-006	<b>5.73</b>	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC1-401-2A-101217	K1711288-007	<b>5.93</b>	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC2-401-2A-101217	K1711288-008	<b>4.24</b>	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC3-401-2A-101217	K1711288-009	<b>7.74</b>	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC-401-2C-101217	K1711288-010	<b>5.57</b>	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC-401-2D-101217	K1711288-011	<b>8.48</b>	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC-258-3A-101717	K1711288-012	<b>3.55</b>	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC-258-3B-101717	K1711288-013	<b>3.55</b>	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC-258-3C-101717	K1711288-014	<b>6.55</b>	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC-258-3D-101717	K1711288-015	<b>3.33</b>	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC-441-1A-101617	K1711288-016	<b>6.24</b>	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC-441-1B-101617	K1711288-017	<b>6.82</b>	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC-441-1C-101617	K1711288-018	<b>7.00</b>	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC-441-1D-101617	K1711288-019	<b>7.91</b>	0.10	0.02	1	11/07/17 13:07	11/7/17	
Method Blank	K1711288-MB1	ND U	0.10	0.02	1	11/07/17 13:07	11/7/17	

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QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil

**Service Request:** K1711288  
**Date Collected:** 10/10/17  
**Date Received:** 10/12/17  
**Date Analyzed:** 11/07/17

**Replicate Sample Summary**  
**General Chemistry Parameters**

**Sample Name:** IC-401-1A-101017  
**Lab Code:** K1711288-001

**Units:** Percent  
**Basis:** Dry, per Method

<u>Analyte Name</u>	<u>Analysis Method</u>	<u>MRL</u>	<u>MDL</u>	<u>Sample Result</u>	<u>Duplicate Sample K1711288-001DUP Result</u>	<u>Average</u>	<u>RPD</u>	<u>RPD Limit</u>
Carbon, Total Organic (TOC)	9060	0.10	0.02	5.97	5.98	5.98	<1	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



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QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil

**Service Request:** K1711288  
**Date Collected:** 10/10/17  
**Date Received:** 10/12/17  
**Date Analyzed:** 11/7/17  
**Date Extracted:** 11/7/17

**Duplicate Matrix Spike Summary  
Carbon, Total Organic (TOC)**

**Sample Name:** IC-401-1A-101017  
**Lab Code:** K1711288-001  
**Analysis Method:** 9060  
**Prep Method:** Method

**Units:** Percent  
**Basis:** Dry, per Method

Analyte Name	Sample Result	Matrix Spike K1711288-001MS			Duplicate Matrix Spike K1711288-001DMS			% Rec Limits	RPD	RPD Limit
		Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
Carbon, Total Organic (TOC)	5.97	12.0	6.00	100	11.9	5.95	100	70-122	<1	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil

**Service Request:** K1711288  
**Date Analyzed:** 11/07/17  
**Date Extracted:** 11/07/17

**Lab Control Sample Summary**  
**Carbon, Total Organic (TOC)**

**Analysis Method:** 9060  
**Prep Method:** Method

**Units:** Percent  
**Basis:** Dry, per Method  
**Analysis Lot:** 569162

<b>Sample Name</b>	<b>Lab Code</b>	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>% Rec Limits</b>
Lab Control Sample	K1711288-LCS1	0.600	0.60	100	72-122

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil  
**Analysis Method:** PSEP Sulfide  
**Prep Method:** Method

**Service Request:** K1711288  
**Date Collected:** 10/10/17 - 10/17/17  
**Date Received:** 10/12/17 - 10/18/17  
**Units:** mg/Kg  
**Basis:** Dry

Sulfide, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
IC-401-1A-101017	K1711288-001	ND U	1.7	0.6	1	10/20/17 02:12	10/19/17	**
IC-401-1B-101017	K1711288-002	ND U	1.7	0.6	1	10/20/17 02:12	10/19/17	**
IC-401-1C-101117	K1711288-003	<b>0.5 J</b>	1.6	0.5	1	10/20/17 02:12	10/19/17	**
IC-401-1C-101117-D	K1711288-004	<b>0.8 J</b>	1.7	0.6	1	10/20/17 02:12	10/19/17	**
IC-401-1D-101117	K1711288-005	<b>0.6 J</b>	1.9	0.6	1	10/20/17 02:12	10/19/17	**
IC-401-2B-101117	K1711288-006	<b>0.5 J</b>	1.7	0.5	1	10/20/17 02:12	10/19/17	**
IC1-401-2A-101217	K1711288-007	ND U	1.7	0.6	1	10/20/17 02:12	10/19/17	
IC2-401-2A-101217	K1711288-008	ND U	1.7	0.6	1	10/20/17 02:12	10/19/17	
IC3-401-2A-101217	K1711288-009	ND U	1.5	0.5	1	10/20/17 02:12	10/19/17	
IC-401-2C-101217	K1711288-010	<b>0.5 J</b>	1.5	0.5	1	10/20/17 02:12	10/19/17	
IC-401-2D-101217	K1711288-011	ND U	1.9	0.6	1	10/20/17 02:12	10/19/17	
IC-258-3A-101717	K1711288-012	ND U	1.4	0.5	1	10/24/17 01:05	10/23/17	
IC-258-3B-101717	K1711288-013	ND U	1.5	0.5	1	10/24/17 01:05	10/23/17	
IC-258-3C-101717	K1711288-014	ND U	1.5	0.5	1	10/24/17 01:05	10/23/17	
IC-258-3D-101717	K1711288-015	ND U	1.5	0.5	1	10/24/17 01:05	10/23/17	
IC-441-1A-101617	K1711288-016	ND U	1.5	0.5	1	10/24/17 01:05	10/23/17	
IC-441-1B-101617	K1711288-017	ND U	2.1	0.7	1	11/10/17 20:56	11/10/17	**
IC-441-1C-101617	K1711288-018	ND U	1.5	0.5	1	10/24/17 01:05	10/23/17	
IC-441-1D-101617	K1711288-019	ND U	1.5	0.5	1	10/24/17 01:05	10/23/17	
Method Blank	K1711288-MB1	ND U	1.0	0.3	1	10/20/17 02:12	10/19/17	
Method Blank	K1711288-MB2	<b>1.2</b>	1.0	0.3	1	10/24/17 01:05	10/23/17	
Method Blank	K1711288-MB3	ND U	1.0	0.3	1	11/10/17 20:56	11/10/17	

ALS Group USA, Corp.

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QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil

**Service Request:** K1711288  
**Date Collected:** 10/12/17  
**Date Received:** 10/14/17  
**Date Analyzed:** 10/20/17

**Triplicate Sample Summary**  
**General Chemistry Parameters**

**Sample Name:** IC1-401-2A-101217  
**Lab Code:** K1711288-007  
**Analysis Method:** PSEP Sulfide  
**Prep Method:** Method

**Units:** mg/Kg  
**Basis:** Dry

Analyte Name	MRL	MDL	Sample Result	Duplicate K1711288-007DUP Result	Triplicate K1711288-007TRP Result	Average	RSD	RSD Limit
Sulfide, Total	1.7	0.6	ND	ND	ND	NC	NC	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil

**Service Request:** K1711288  
**Date Collected:** 10/17/17  
**Date Received:** 10/18/17  
**Date Analyzed:** 10/24/17

**Triplicate Sample Summary**  
**General Chemistry Parameters**

**Sample Name:** IC-258-3A-101717 **Units:** mg/Kg  
**Lab Code:** K1711288-012 **Basis:** Dry  
**Analysis Method:** PSEP Sulfide  
**Prep Method:** Method

Analyte Name	MRL	MDL	Sample Result	Duplicate K1711288-012DUP Result	Triplicate K1711288-012TRP Result	Average	RSD	RSD Limit
Sulfide, Total	1.4	0.5	ND	ND	ND	NC	NC	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.

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QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil

**Service Request:** K1711288  
**Date Collected:** NA  
**Date Received:** NA  
**Date Analyzed:** 11/10/17

**Triplicate Sample Summary**  
**General Chemistry Parameters**

**Sample Name:** Batch QC **Units:** mg/Kg  
**Lab Code:** K1712207-001 **Basis:** Dry  
**Analysis Method:** PSEP Sulfide  
**Prep Method:** Method

Analyte Name	MRL	MDL	Sample Result	Duplicate K1712207-001DUP Result	Triplicate K1712207-001TRP Result	Average	RSD	RSD Limit
Sulfide, Total	420	130	830	890	890	872	4	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil

**Service Request:** K1711288  
**Date Collected:** 10/12/17  
**Date Received:** 10/14/17  
**Date Analyzed:** 10/20/17  
**Date Extracted:** 10/19/17

**Duplicate Matrix Spike Summary  
Sulfide, Total**

**Sample Name:** IC1-401-2A-101217  
**Lab Code:** K1711288-007  
**Analysis Method:** PSEP Sulfide  
**Prep Method:** Method

**Units:** mg/Kg  
**Basis:** Dry

Analyte Name	Sample Result	Result	Matrix Spike K1711288-007MS		Duplicate Matrix Spike K1711288-007DMS		% Rec Limits	RPD	RPD Limit	
			Spike Amount	% Rec	Result	Spike Amount				% Rec
Sulfide, Total	ND U	480	610	78	490	620	80	28-175	3	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil

**Service Request:** K1711288  
**Date Collected:** 10/17/17  
**Date Received:** 10/18/17  
**Date Analyzed:** 10/24/17  
**Date Extracted:** 10/23/17

**Duplicate Matrix Spike Summary  
Sulfide, Total**

**Sample Name:** IC-258-3A-101717  
**Lab Code:** K1711288-012  
**Analysis Method:** PSEP Sulfide  
**Prep Method:** Method

**Units:** mg/Kg  
**Basis:** Dry

Analyte Name	Sample Result	Result	Matrix Spike K1711288-012MS		Duplicate Matrix Spike K1711288-012DMS		% Rec Limits	RPD	RPD Limit	
			Spike Amount	% Rec	Result	Spike Amount				% Rec
Sulfide, Total	ND U	460	500	92	470	510	93	28-175	2	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



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QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil

**Service Request:** K1711288  
**Date Collected:** N/A  
**Date Received:** N/A  
**Date Analyzed:** 11/10/17  
**Date Extracted:** 11/10/17

**Duplicate Matrix Spike Summary**  
**Sulfide, Total**

**Sample Name:** Batch QC  
**Lab Code:** K1712207-001  
**Analysis Method:** PSEP Sulfide  
**Prep Method:** Method

**Units:** mg/Kg  
**Basis:** Dry

Analyte Name	Sample Result	Result	Matrix Spike K1712207-001MS		Duplicate Matrix Spike K1712207-001DMS		% Rec Limits	RPD	RPD Limit	
			Spike Amount	% Rec	Result	Spike Amount				% Rec
Sulfide, Total	830	2040	1190	101	1910	1190	90	28-175	6	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil

**Service Request:** K1711288  
**Date Analyzed:** 10/20/17  
**Date Extracted:** 10/19/17

**Lab Control Sample Summary**  
**Sulfide, Total**

**Analysis Method:** PSEP Sulfide  
**Prep Method:** Method

**Units:** mg/Kg  
**Basis:** Dry  
**Analysis Lot:** 566694

<b>Sample Name</b>	<b>Lab Code</b>	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>% Rec Limits</b>
Lab Control Sample	K1711288-LCS1	346	360	97	39-166

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QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil

**Service Request:** K1711288  
**Date Analyzed:** 10/24/17  
**Date Extracted:** 10/23/17

**Lab Control Sample Summary**  
**Sulfide, Total**

**Analysis Method:** PSEP Sulfide  
**Prep Method:** Method

**Units:** mg/Kg  
**Basis:** Dry  
**Analysis Lot:** 567112

<b>Sample Name</b>	<b>Lab Code</b>	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>% Rec Limits</b>
Lab Control Sample	K1711288-LCS2	349	360	98	39-166

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QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil

**Service Request:** K1711288  
**Date Analyzed:** 11/10/17  
**Date Extracted:** 11/10/17

**Lab Control Sample Summary**  
**Sulfide, Total**

**Analysis Method:** PSEP Sulfide  
**Prep Method:** Method

**Units:** mg/Kg  
**Basis:** Dry  
**Analysis Lot:** 569680

<b>Sample Name</b>	<b>Lab Code</b>	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>% Rec Limits</b>
Lab Control Sample	K1711288-LCS3	279	330	85	39-166



# Metals

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil  
**Sample Name:** IC-401-1A-101017  
**Lab Code:** K1711288-001

**Service Request:** K1711288  
**Date Collected:** 10/10/17 10:58  
**Date Received:** 10/12/17 09:30

**Basis:** NA

SPLP Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	6010C	20.0	mg/L	0.010	0.003	1	11/27/17 16:09	11/21/17	
Antimony	6010C	0.045	mg/L	0.020	0.006	1	11/27/17 16:09	11/21/17	
Arsenic	6010C	0.101	mg/L	0.010	0.004	1	11/27/17 16:09	11/21/17	
Barium	6010C	0.17 J	mg/L	0.20	0.10	1	11/27/17 16:09	11/21/17	
Beryllium	6010C	ND U	mg/L	0.010	0.0002	1	11/27/17 16:09	11/21/17	
Cadmium	6010C	0.004 J	mg/L	0.010	0.0002	1	11/27/17 16:09	11/21/17	
Calcium	6010C	3.4	mg/L	2.0	0.008	1	11/27/17 16:09	11/21/17	
Chromium	6010C	0.004 J	mg/L	0.010	0.002	1	11/27/17 16:09	11/21/17	
Cobalt	6010C	0.003 J	mg/L	0.010	0.0005	1	11/27/17 16:09	11/21/17	
Copper	6010C	0.023	mg/L	0.010	0.002	1	11/27/17 16:09	11/21/17	
Iron	6010C	9.97	mg/L	0.020	0.006	1	11/27/17 16:09	11/21/17	
Lead	6010C	0.371	mg/L	0.010	0.003	1	11/27/17 16:09	11/21/17	
Magnesium	6010C	1.29	mg/L	0.50	0.002	1	11/27/17 16:09	11/21/17	
Manganese	6010C	0.539	mg/L	0.010	0.0005	1	11/27/17 16:09	11/21/17	
Nickel	6010C	0.005 J	mg/L	0.010	0.0007	1	11/27/17 16:09	11/21/17	
Potassium	6010C	2.25	mg/L	0.20	0.04	1	11/27/17 16:09	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 16:09	11/21/17	
Silver	6010C	0.004 J	mg/L	0.020	0.0008	1	11/27/17 16:09	11/21/17	
Sodium	6010C	1.9 J	mg/L	2.0	0.03	1	11/27/17 16:09	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 16:09	11/21/17	
Vanadium	6010C	0.013	mg/L	0.010	0.0008	1	11/27/17 16:09	11/21/17	
Zinc	6010C	0.380	mg/L	0.0040	0.0200	1	11/27/17 16:09	11/21/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil  
**Sample Name:** IC-401-1B-101017  
**Lab Code:** K1711288-002

**Service Request:** K1711288  
**Date Collected:** 10/10/17 11:55  
**Date Received:** 10/12/17 09:30

**Basis:** NA

SPLP Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	6010C	16.2	mg/L	0.010	0.003	1	11/27/17 16:25	11/21/17	
Antimony	6010C	0.038	mg/L	0.020	0.006	1	11/27/17 16:25	11/21/17	
Arsenic	6010C	0.085	mg/L	0.010	0.004	1	11/27/17 16:25	11/21/17	
Barium	6010C	0.15 J	mg/L	0.20	0.10	1	11/27/17 16:25	11/21/17	
Beryllium	6010C	ND U	mg/L	0.010	0.0002	1	11/27/17 16:25	11/21/17	
Cadmium	6010C	0.004 J	mg/L	0.010	0.0002	1	11/27/17 16:25	11/21/17	
Calcium	6010C	3.0	mg/L	2.0	0.008	1	11/27/17 16:25	11/21/17	
Chromium	6010C	0.004 J	mg/L	0.010	0.002	1	11/27/17 16:25	11/21/17	
Cobalt	6010C	0.003 J	mg/L	0.010	0.0005	1	11/27/17 16:25	11/21/17	
Copper	6010C	0.019	mg/L	0.010	0.002	1	11/27/17 16:25	11/21/17	
Iron	6010C	7.82	mg/L	0.020	0.006	1	11/27/17 16:25	11/21/17	
Lead	6010C	0.256	mg/L	0.010	0.003	1	11/27/17 16:25	11/21/17	
Magnesium	6010C	0.97	mg/L	0.50	0.002	1	11/27/17 16:25	11/21/17	
Manganese	6010C	0.580	mg/L	0.010	0.0005	1	11/27/17 16:25	11/21/17	
Nickel	6010C	0.004 J	mg/L	0.010	0.0007	1	11/27/17 16:25	11/21/17	
Potassium	6010C	1.75	mg/L	0.20	0.04	1	11/27/17 16:25	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 16:25	11/21/17	
Silver	6010C	ND U	mg/L	0.020	0.0008	1	11/27/17 16:25	11/21/17	
Sodium	6010C	1.8 J	mg/L	2.0	0.03	1	11/27/17 16:25	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 16:25	11/21/17	
Vanadium	6010C	0.010 J	mg/L	0.010	0.0008	1	11/27/17 16:25	11/21/17	
Zinc	6010C	0.338	mg/L	0.0040	0.0200	1	11/27/17 16:25	11/21/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil  
**Sample Name:** IC-401-1C-101117  
**Lab Code:** K1711288-003

**Service Request:** K1711288  
**Date Collected:** 10/11/17 10:23  
**Date Received:** 10/13/17 09:30

**Basis:** NA

SPLP Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	6010C	17.3	mg/L	0.010	0.003	1	11/27/17 16:28	11/21/17	
Antimony	6010C	0.038	mg/L	0.020	0.006	1	11/27/17 16:28	11/21/17	
Arsenic	6010C	0.099	mg/L	0.010	0.004	1	11/27/17 16:28	11/21/17	
Barium	6010C	0.16 J	mg/L	0.20	0.10	1	11/27/17 16:28	11/21/17	
Beryllium	6010C	0.0003 J	mg/L	0.010	0.0002	1	11/27/17 16:28	11/21/17	
Cadmium	6010C	0.004 J	mg/L	0.010	0.0002	1	11/27/17 16:28	11/21/17	
Calcium	6010C	3.2	mg/L	2.0	0.008	1	11/27/17 16:28	11/21/17	
Chromium	6010C	0.004 J	mg/L	0.010	0.002	1	11/27/17 16:28	11/21/17	
Cobalt	6010C	0.003 J	mg/L	0.010	0.0005	1	11/27/17 16:28	11/21/17	
Copper	6010C	0.021	mg/L	0.010	0.002	1	11/27/17 16:28	11/21/17	
Iron	6010C	8.74	mg/L	0.020	0.006	1	11/27/17 16:28	11/21/17	
Lead	6010C	0.371	mg/L	0.010	0.003	1	11/27/17 16:28	11/21/17	
Magnesium	6010C	1.09	mg/L	0.50	0.002	1	11/27/17 16:28	11/21/17	
Manganese	6010C	0.537	mg/L	0.010	0.0005	1	11/27/17 16:28	11/21/17	
Nickel	6010C	0.004 J	mg/L	0.010	0.0007	1	11/27/17 16:28	11/21/17	
Potassium	6010C	2.06	mg/L	0.20	0.04	1	11/27/17 16:28	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 16:28	11/21/17	
Silver	6010C	0.0008 J	mg/L	0.020	0.0008	1	11/27/17 16:28	11/21/17	
Sodium	6010C	1.8 J	mg/L	2.0	0.03	1	11/27/17 16:28	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 16:28	11/21/17	
Vanadium	6010C	0.011	mg/L	0.010	0.0008	1	11/27/17 16:28	11/21/17	
Zinc	6010C	0.369	mg/L	0.0040	0.0200	1	11/27/17 16:28	11/21/17	



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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil  
**Sample Name:** IC-401-1C-101117-D  
**Lab Code:** K1711288-004

**Service Request:** K1711288  
**Date Collected:** 10/11/17 12:35  
**Date Received:** 10/13/17 09:30

**Basis:** NA

SPLP Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	6010C	16.8	mg/L	0.010	0.003	1	11/27/17 16:44	11/21/17	
Antimony	6010C	0.042	mg/L	0.020	0.006	1	11/27/17 16:44	11/21/17	
Arsenic	6010C	0.094	mg/L	0.010	0.004	1	11/27/17 16:44	11/21/17	
Barium	6010C	0.17 J	mg/L	0.20	0.10	1	11/27/17 16:44	11/21/17	
Beryllium	6010C	0.0002 J	mg/L	0.010	0.0002	1	11/27/17 16:44	11/21/17	
Cadmium	6010C	0.004 J	mg/L	0.010	0.0002	1	11/27/17 16:44	11/21/17	
Calcium	6010C	3.2	mg/L	2.0	0.008	1	11/27/17 16:44	11/21/17	
Chromium	6010C	0.004 J	mg/L	0.010	0.002	1	11/27/17 16:44	11/21/17	
Cobalt	6010C	0.003 J	mg/L	0.010	0.0005	1	11/27/17 16:44	11/21/17	
Copper	6010C	0.020	mg/L	0.010	0.002	1	11/27/17 16:44	11/21/17	
Iron	6010C	8.81	mg/L	0.020	0.006	1	11/27/17 16:44	11/21/17	
Lead	6010C	0.361	mg/L	0.010	0.003	1	11/27/17 16:44	11/21/17	
Magnesium	6010C	1.13	mg/L	0.50	0.002	1	11/27/17 16:44	11/21/17	
Manganese	6010C	0.528	mg/L	0.010	0.0005	1	11/27/17 16:44	11/21/17	
Nickel	6010C	0.005 J	mg/L	0.010	0.0007	1	11/27/17 16:44	11/21/17	
Potassium	6010C	2.22	mg/L	0.20	0.04	1	11/27/17 16:44	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 16:44	11/21/17	
Silver	6010C	0.001 J	mg/L	0.020	0.0008	1	11/27/17 16:44	11/21/17	
Sodium	6010C	1.8 J	mg/L	2.0	0.03	1	11/27/17 16:44	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 16:44	11/21/17	
Vanadium	6010C	0.012	mg/L	0.010	0.0008	1	11/27/17 16:44	11/21/17	
Zinc	6010C	0.370	mg/L	0.0040	0.0200	1	11/27/17 16:44	11/21/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil  
**Sample Name:** IC-401-1D-101117  
**Lab Code:** K1711288-005

**Service Request:** K1711288  
**Date Collected:** 10/11/17 14:00  
**Date Received:** 10/13/17 09:30

**Basis:** NA

SPLP Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	6010C	11.7	mg/L	0.010	0.003	1	11/27/17 16:46	11/21/17	
Antimony	6010C	0.041	mg/L	0.020	0.006	1	11/27/17 16:46	11/21/17	
Arsenic	6010C	0.101	mg/L	0.010	0.004	1	11/27/17 16:46	11/21/17	
Barium	6010C	0.15 J	mg/L	0.20	0.10	1	11/27/17 16:46	11/21/17	
Beryllium	6010C	ND U	mg/L	0.010	0.0002	1	11/27/17 16:46	11/21/17	
Cadmium	6010C	0.003 J	mg/L	0.010	0.0002	1	11/27/17 16:46	11/21/17	
Calcium	6010C	3.4	mg/L	2.0	0.008	1	11/27/17 16:46	11/21/17	
Chromium	6010C	0.002 J	mg/L	0.010	0.002	1	11/27/17 16:46	11/21/17	
Cobalt	6010C	0.001 J	mg/L	0.010	0.0005	1	11/27/17 16:46	11/21/17	
Copper	6010C	0.021	mg/L	0.010	0.002	1	11/27/17 16:46	11/21/17	
Iron	6010C	6.56	mg/L	0.020	0.006	1	11/27/17 16:46	11/21/17	
Lead	6010C	0.300	mg/L	0.010	0.003	1	11/27/17 16:46	11/21/17	
Magnesium	6010C	0.98	mg/L	0.50	0.002	1	11/27/17 16:46	11/21/17	
Manganese	6010C	0.343	mg/L	0.010	0.0005	1	11/27/17 16:46	11/21/17	
Nickel	6010C	0.003 J	mg/L	0.010	0.0007	1	11/27/17 16:46	11/21/17	
Potassium	6010C	3.25	mg/L	0.20	0.04	1	11/27/17 16:46	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 16:46	11/21/17	
Silver	6010C	0.001 J	mg/L	0.020	0.0008	1	11/27/17 16:46	11/21/17	
Sodium	6010C	1.9 J	mg/L	2.0	0.03	1	11/27/17 16:46	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 16:46	11/21/17	
Vanadium	6010C	0.009 J	mg/L	0.010	0.0008	1	11/27/17 16:46	11/21/17	
Zinc	6010C	0.339	mg/L	0.0040	0.0200	1	11/27/17 16:46	11/21/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil  
**Sample Name:** IC-401-2B-101117  
**Lab Code:** K1711288-006

**Service Request:** K1711288  
**Date Collected:** 10/11/17 15:38  
**Date Received:** 10/13/17 09:30

**Basis:** NA

SPLP Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	6010C	15.1	mg/L	0.010	0.003	1	11/27/17 16:49	11/21/17	
Antimony	6010C	0.035	mg/L	0.020	0.006	1	11/27/17 16:49	11/21/17	
Arsenic	6010C	0.085	mg/L	0.010	0.004	1	11/27/17 16:49	11/21/17	
Barium	6010C	0.16 J	mg/L	0.20	0.10	1	11/27/17 16:49	11/21/17	
Beryllium	6010C	0.0002 J	mg/L	0.010	0.0002	1	11/27/17 16:49	11/21/17	
Cadmium	6010C	0.005 J	mg/L	0.010	0.0002	1	11/27/17 16:49	11/21/17	
Calcium	6010C	3.5	mg/L	2.0	0.008	1	11/27/17 16:49	11/21/17	
Chromium	6010C	0.003 J	mg/L	0.010	0.002	1	11/27/17 16:49	11/21/17	
Cobalt	6010C	0.002 J	mg/L	0.010	0.0005	1	11/27/17 16:49	11/21/17	
Copper	6010C	0.020	mg/L	0.010	0.002	1	11/27/17 16:49	11/21/17	
Iron	6010C	6.92	mg/L	0.020	0.006	1	11/27/17 16:49	11/21/17	
Lead	6010C	0.264	mg/L	0.010	0.003	1	11/27/17 16:49	11/21/17	
Magnesium	6010C	0.98	mg/L	0.50	0.002	1	11/27/17 16:49	11/21/17	
Manganese	6010C	0.571	mg/L	0.010	0.0005	1	11/27/17 16:49	11/21/17	
Nickel	6010C	0.003 J	mg/L	0.010	0.0007	1	11/27/17 16:49	11/21/17	
Potassium	6010C	2.46	mg/L	0.20	0.04	1	11/27/17 16:49	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 16:49	11/21/17	
Silver	6010C	0.0008 J	mg/L	0.020	0.0008	1	11/27/17 16:49	11/21/17	
Sodium	6010C	1.9 J	mg/L	2.0	0.03	1	11/27/17 16:49	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 16:49	11/21/17	
Vanadium	6010C	0.008 J	mg/L	0.010	0.0008	1	11/27/17 16:49	11/21/17	
Zinc	6010C	0.383	mg/L	0.0040	0.0200	1	11/27/17 16:49	11/21/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil  
**Sample Name:** IC1-401-2A-101217  
**Lab Code:** K1711288-007

**Service Request:** K1711288  
**Date Collected:** 10/12/17 09:20  
**Date Received:** 10/14/17 09:30

**Basis:** NA

SPLP Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	6010C	15.1	mg/L	0.010	0.003	1	11/27/17 16:51	11/21/17	
Antimony	6010C	0.066	mg/L	0.020	0.006	1	11/27/17 16:51	11/21/17	
Arsenic	6010C	0.148	mg/L	0.010	0.004	1	11/27/17 16:51	11/21/17	
Barium	6010C	0.15 J	mg/L	0.20	0.10	1	11/27/17 16:51	11/21/17	
Beryllium	6010C	ND U	mg/L	0.010	0.0002	1	11/27/17 16:51	11/21/17	
Cadmium	6010C	0.006 J	mg/L	0.010	0.0002	1	11/27/17 16:51	11/21/17	
Calcium	6010C	3.1	mg/L	2.0	0.008	1	11/27/17 16:51	11/21/17	
Chromium	6010C	0.004 J	mg/L	0.010	0.002	1	11/27/17 16:51	11/21/17	
Cobalt	6010C	0.003 J	mg/L	0.010	0.0005	1	11/27/17 16:51	11/21/17	
Copper	6010C	0.027	mg/L	0.010	0.002	1	11/27/17 16:51	11/21/17	
Iron	6010C	7.82	mg/L	0.020	0.006	1	11/27/17 16:51	11/21/17	
Lead	6010C	0.439	mg/L	0.010	0.003	1	11/27/17 16:51	11/21/17	
Magnesium	6010C	1.08	mg/L	0.50	0.002	1	11/27/17 16:51	11/21/17	
Manganese	6010C	0.596	mg/L	0.010	0.0005	1	11/27/17 16:51	11/21/17	
Nickel	6010C	0.004 J	mg/L	0.010	0.0007	1	11/27/17 16:51	11/21/17	
Potassium	6010C	2.73	mg/L	0.20	0.04	1	11/27/17 16:51	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 16:51	11/21/17	
Silver	6010C	0.002 J	mg/L	0.020	0.0008	1	11/27/17 16:51	11/21/17	
Sodium	6010C	2.0 J	mg/L	2.0	0.03	1	11/27/17 16:51	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 16:51	11/21/17	
Vanadium	6010C	0.010	mg/L	0.010	0.0008	1	11/27/17 16:51	11/21/17	
Zinc	6010C	0.446	mg/L	0.0040	0.0200	1	11/27/17 16:51	11/21/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil  
**Sample Name:** IC2-401-2A-101217  
**Lab Code:** K1711288-008

**Service Request:** K1711288  
**Date Collected:** 10/12/17 10:15  
**Date Received:** 10/14/17 09:30

**Basis:** NA

SPLP Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	6010C	15.2	mg/L	0.010	0.003	1	11/27/17 16:54	11/21/17	
Antimony	6010C	0.052	mg/L	0.020	0.006	1	11/27/17 16:54	11/21/17	
Arsenic	6010C	0.148	mg/L	0.010	0.004	1	11/27/17 16:54	11/21/17	
Barium	6010C	0.16 J	mg/L	0.20	0.10	1	11/27/17 16:54	11/21/17	
Beryllium	6010C	0.0002 J	mg/L	0.010	0.0002	1	11/27/17 16:54	11/21/17	
Cadmium	6010C	0.006 J	mg/L	0.010	0.0002	1	11/27/17 16:54	11/21/17	
Calcium	6010C	3.2	mg/L	2.0	0.008	1	11/27/17 16:54	11/21/17	
Chromium	6010C	0.003 J	mg/L	0.010	0.002	1	11/27/17 16:54	11/21/17	
Cobalt	6010C	0.003 J	mg/L	0.010	0.0005	1	11/27/17 16:54	11/21/17	
Copper	6010C	0.025	mg/L	0.010	0.002	1	11/27/17 16:54	11/21/17	
Iron	6010C	7.83	mg/L	0.020	0.006	1	11/27/17 16:54	11/21/17	
Lead	6010C	0.400	mg/L	0.010	0.003	1	11/27/17 16:54	11/21/17	
Magnesium	6010C	1.04	mg/L	0.50	0.002	1	11/27/17 16:54	11/21/17	
Manganese	6010C	0.686	mg/L	0.010	0.0005	1	11/27/17 16:54	11/21/17	
Nickel	6010C	0.004 J	mg/L	0.010	0.0007	1	11/27/17 16:54	11/21/17	
Potassium	6010C	2.59	mg/L	0.20	0.04	1	11/27/17 16:54	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 16:54	11/21/17	
Silver	6010C	0.001 J	mg/L	0.020	0.0008	1	11/27/17 16:54	11/21/17	
Sodium	6010C	1.9 J	mg/L	2.0	0.03	1	11/27/17 16:54	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 16:54	11/21/17	
Vanadium	6010C	0.010	mg/L	0.010	0.0008	1	11/27/17 16:54	11/21/17	
Zinc	6010C	0.419	mg/L	0.0040	0.0200	1	11/27/17 16:54	11/21/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil  
**Sample Name:** IC3-401-2A-101217  
**Lab Code:** K1711288-009

**Service Request:** K1711288  
**Date Collected:** 10/12/17 10:55  
**Date Received:** 10/14/17 09:30

**Basis:** NA

SPLP Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	6010C	16.3	mg/L	0.010	0.003	1	11/27/17 16:56	11/21/17	
Antimony	6010C	0.065	mg/L	0.020	0.006	1	11/27/17 16:56	11/21/17	
Arsenic	6010C	0.154	mg/L	0.010	0.004	1	11/27/17 16:56	11/21/17	
Barium	6010C	0.15 J	mg/L	0.20	0.10	1	11/27/17 16:56	11/21/17	
Beryllium	6010C	0.0003 J	mg/L	0.010	0.0002	1	11/27/17 16:56	11/21/17	
Cadmium	6010C	0.007 J	mg/L	0.010	0.0002	1	11/27/17 16:56	11/21/17	
Calcium	6010C	3.3	mg/L	2.0	0.008	1	11/27/17 16:56	11/21/17	
Chromium	6010C	0.003 J	mg/L	0.010	0.002	1	11/27/17 16:56	11/21/17	
Cobalt	6010C	0.003 J	mg/L	0.010	0.0005	1	11/27/17 16:56	11/21/17	
Copper	6010C	0.027	mg/L	0.010	0.002	1	11/27/17 16:56	11/21/17	
Iron	6010C	8.37	mg/L	0.020	0.006	1	11/27/17 16:56	11/21/17	
Lead	6010C	0.431	mg/L	0.010	0.003	1	11/27/17 16:56	11/21/17	
Magnesium	6010C	1.10	mg/L	0.50	0.002	1	11/27/17 16:56	11/21/17	
Manganese	6010C	0.672	mg/L	0.010	0.0005	1	11/27/17 16:56	11/21/17	
Nickel	6010C	0.004 J	mg/L	0.010	0.0007	1	11/27/17 16:56	11/21/17	
Potassium	6010C	2.60	mg/L	0.20	0.04	1	11/27/17 16:56	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 16:56	11/21/17	
Silver	6010C	0.001 J	mg/L	0.020	0.0008	1	11/27/17 16:56	11/21/17	
Sodium	6010C	1.9 J	mg/L	2.0	0.03	1	11/27/17 16:56	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 16:56	11/21/17	
Vanadium	6010C	0.011	mg/L	0.010	0.0008	1	11/27/17 16:56	11/21/17	
Zinc	6010C	0.482	mg/L	0.0040	0.0200	1	11/27/17 16:56	11/21/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil  
**Sample Name:** IC-401-2C-101217  
**Lab Code:** K1711288-010

**Service Request:** K1711288  
**Date Collected:** 10/12/17 12:50  
**Date Received:** 10/14/17 09:30

**Basis:** NA

SPLP Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	6010C	15.9	mg/L	0.010	0.003	1	11/27/17 16:58	11/21/17	
Antimony	6010C	0.041	mg/L	0.020	0.006	1	11/27/17 16:58	11/21/17	
Arsenic	6010C	0.110	mg/L	0.010	0.004	1	11/27/17 16:58	11/21/17	
Barium	6010C	0.16 J	mg/L	0.20	0.10	1	11/27/17 16:58	11/21/17	
Beryllium	6010C	0.0002 J	mg/L	0.010	0.0002	1	11/27/17 16:58	11/21/17	
Cadmium	6010C	0.005 J	mg/L	0.010	0.0002	1	11/27/17 16:58	11/21/17	
Calcium	6010C	3.2	mg/L	2.0	0.008	1	11/27/17 16:58	11/21/17	
Chromium	6010C	0.003 J	mg/L	0.010	0.002	1	11/27/17 16:58	11/21/17	
Cobalt	6010C	0.002 J	mg/L	0.010	0.0005	1	11/27/17 16:58	11/21/17	
Copper	6010C	0.023	mg/L	0.010	0.002	1	11/27/17 16:58	11/21/17	
Iron	6010C	8.14	mg/L	0.020	0.006	1	11/27/17 16:58	11/21/17	
Lead	6010C	0.346	mg/L	0.010	0.003	1	11/27/17 16:58	11/21/17	
Magnesium	6010C	1.00	mg/L	0.50	0.002	1	11/27/17 16:58	11/21/17	
Manganese	6010C	0.558	mg/L	0.010	0.0005	1	11/27/17 16:58	11/21/17	
Nickel	6010C	0.004 J	mg/L	0.010	0.0007	1	11/27/17 16:58	11/21/17	
Potassium	6010C	2.08	mg/L	0.20	0.04	1	11/27/17 16:58	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 16:58	11/21/17	
Silver	6010C	0.001 J	mg/L	0.020	0.0008	1	11/27/17 16:58	11/21/17	
Sodium	6010C	1.9 J	mg/L	2.0	0.03	1	11/27/17 16:58	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 16:58	11/21/17	
Vanadium	6010C	0.010 J	mg/L	0.010	0.0008	1	11/27/17 16:58	11/21/17	
Zinc	6010C	0.404	mg/L	0.0040	0.0200	1	11/27/17 16:58	11/21/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil  
**Sample Name:** IC-401-2D-101217  
**Lab Code:** K1711288-011

**Service Request:** K1711288  
**Date Collected:** 10/12/17 14:00  
**Date Received:** 10/14/17 09:30

**Basis:** NA

SPLP Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	6010C	16.8	mg/L	0.010	0.003	1	11/27/17 17:01	11/21/17	
Antimony	6010C	0.038	mg/L	0.020	0.006	1	11/27/17 17:01	11/21/17	
Arsenic	6010C	0.122	mg/L	0.010	0.004	1	11/27/17 17:01	11/21/17	
Barium	6010C	0.15 J	mg/L	0.20	0.10	1	11/27/17 17:01	11/21/17	
Beryllium	6010C	ND U	mg/L	0.010	0.0002	1	11/27/17 17:01	11/21/17	
Cadmium	6010C	0.006 J	mg/L	0.010	0.0002	1	11/27/17 17:01	11/21/17	
Calcium	6010C	3.7	mg/L	2.0	0.008	1	11/27/17 17:01	11/21/17	
Chromium	6010C	0.004 J	mg/L	0.010	0.002	1	11/27/17 17:01	11/21/17	
Cobalt	6010C	0.002 J	mg/L	0.010	0.0005	1	11/27/17 17:01	11/21/17	
Copper	6010C	0.025	mg/L	0.010	0.002	1	11/27/17 17:01	11/21/17	
Iron	6010C	8.08	mg/L	0.020	0.006	1	11/27/17 17:01	11/21/17	
Lead	6010C	0.370	mg/L	0.010	0.003	1	11/27/17 17:01	11/21/17	
Magnesium	6010C	1.06	mg/L	0.50	0.002	1	11/27/17 17:01	11/21/17	
Manganese	6010C	0.549	mg/L	0.010	0.0005	1	11/27/17 17:01	11/21/17	
Nickel	6010C	0.004 J	mg/L	0.010	0.0007	1	11/27/17 17:01	11/21/17	
Potassium	6010C	4.14	mg/L	0.20	0.04	1	11/27/17 17:01	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 17:01	11/21/17	
Silver	6010C	0.001 J	mg/L	0.020	0.0008	1	11/27/17 17:01	11/21/17	
Sodium	6010C	1.8 J	mg/L	2.0	0.03	1	11/27/17 17:01	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 17:01	11/21/17	
Vanadium	6010C	0.011	mg/L	0.010	0.0008	1	11/27/17 17:01	11/21/17	
Zinc	6010C	0.448	mg/L	0.0040	0.0200	1	11/27/17 17:01	11/21/17	



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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil  
**Sample Name:** IC-258-3A-101717  
**Lab Code:** K1711288-012

**Service Request:** K1711288  
**Date Collected:** 10/17/17 08:40  
**Date Received:** 10/18/17 09:30

**Basis:** NA

SPLP Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	6010C	22.0	mg/L	0.010	0.003	1	11/27/17 17:03	11/21/17	
Antimony	6010C	0.014 J	mg/L	0.020	0.006	1	11/27/17 17:03	11/21/17	
Arsenic	6010C	0.032	mg/L	0.010	0.004	1	11/27/17 17:03	11/21/17	
Barium	6010C	0.20 J	mg/L	0.20	0.10	1	11/27/17 17:03	11/21/17	
Beryllium	6010C	0.0004 J	mg/L	0.010	0.0002	1	11/27/17 17:03	11/21/17	
Cadmium	6010C	0.002 J	mg/L	0.010	0.0002	1	11/27/17 17:03	11/21/17	
Calcium	6010C	4.3	mg/L	2.0	0.008	1	11/27/17 17:03	11/21/17	
Chromium	6010C	0.003 J	mg/L	0.010	0.002	1	11/27/17 17:03	11/21/17	
Cobalt	6010C	0.003 J	mg/L	0.010	0.0005	1	11/27/17 17:03	11/21/17	
Copper	6010C	0.015	mg/L	0.010	0.002	1	11/27/17 17:03	11/21/17	
Iron	6010C	9.10	mg/L	0.020	0.006	1	11/27/17 17:03	11/21/17	
Lead	6010C	0.149	mg/L	0.010	0.003	1	11/27/17 17:03	11/21/17	
Magnesium	6010C	1.08	mg/L	0.50	0.002	1	11/27/17 17:03	11/21/17	
Manganese	6010C	0.607	mg/L	0.010	0.0005	1	11/27/17 17:03	11/21/17	
Nickel	6010C	0.003 J	mg/L	0.010	0.0007	1	11/27/17 17:03	11/21/17	
Potassium	6010C	1.86	mg/L	0.20	0.04	1	11/27/17 17:03	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 17:03	11/21/17	
Silver	6010C	0.0009 J	mg/L	0.020	0.0008	1	11/27/17 17:03	11/21/17	
Sodium	6010C	1.7 J	mg/L	2.0	0.03	1	11/27/17 17:03	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 17:03	11/21/17	
Vanadium	6010C	0.010	mg/L	0.010	0.0008	1	11/27/17 17:03	11/21/17	
Zinc	6010C	0.233	mg/L	0.0040	0.0200	1	11/27/17 17:03	11/21/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil  
**Sample Name:** IC-258-3B-101717  
**Lab Code:** K1711288-013

**Service Request:** K1711288  
**Date Collected:** 10/17/17 09:15  
**Date Received:** 10/18/17 09:30

**Basis:** NA

SPLP Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	6010C	17.6	mg/L	0.010	0.003	1	11/27/17 17:14	11/21/17	
Antimony	6010C	0.015 J	mg/L	0.020	0.006	1	11/27/17 17:14	11/21/17	
Arsenic	6010C	0.048	mg/L	0.010	0.004	1	11/27/17 17:14	11/21/17	
Barium	6010C	0.18 J	mg/L	0.20	0.10	1	11/27/17 17:14	11/21/17	
Beryllium	6010C	0.0002 J	mg/L	0.010	0.0002	1	11/27/17 17:14	11/21/17	
Cadmium	6010C	0.003 J	mg/L	0.010	0.0002	1	11/27/17 17:14	11/21/17	
Calcium	6010C	3.9	mg/L	2.0	0.008	1	11/27/17 17:14	11/21/17	
Chromium	6010C	0.003 J	mg/L	0.010	0.002	1	11/27/17 17:14	11/21/17	
Cobalt	6010C	0.003 J	mg/L	0.010	0.0005	1	11/27/17 17:14	11/21/17	
Copper	6010C	0.016	mg/L	0.010	0.002	1	11/27/17 17:14	11/21/17	
Iron	6010C	7.96	mg/L	0.020	0.006	1	11/27/17 17:14	11/21/17	
Lead	6010C	0.194	mg/L	0.010	0.003	1	11/27/17 17:14	11/21/17	
Magnesium	6010C	1.10	mg/L	0.50	0.002	1	11/27/17 17:14	11/21/17	
Manganese	6010C	0.587	mg/L	0.010	0.0005	1	11/27/17 17:14	11/21/17	
Nickel	6010C	0.003 J	mg/L	0.010	0.0007	1	11/27/17 17:14	11/21/17	
Potassium	6010C	2.02	mg/L	0.20	0.04	1	11/27/17 17:14	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 17:14	11/21/17	
Silver	6010C	ND U	mg/L	0.020	0.0008	1	11/27/17 17:14	11/21/17	
Sodium	6010C	1.7 J	mg/L	2.0	0.03	1	11/27/17 17:14	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 17:14	11/21/17	
Vanadium	6010C	0.009 J	mg/L	0.010	0.0008	1	11/27/17 17:14	11/21/17	
Zinc	6010C	0.292	mg/L	0.0040	0.0200	1	11/27/17 17:14	11/21/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil  
**Sample Name:** IC-258-3C-101717  
**Lab Code:** K1711288-014

**Service Request:** K1711288  
**Date Collected:** 10/17/17 09:50  
**Date Received:** 10/18/17 09:30

**Basis:** NA

SPLP Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	6010C	14.1	mg/L	0.010	0.003	1	11/27/17 17:16	11/21/17	
Antimony	6010C	0.018 J	mg/L	0.020	0.006	1	11/27/17 17:16	11/21/17	
Arsenic	6010C	0.041	mg/L	0.010	0.004	1	11/27/17 17:16	11/21/17	
Barium	6010C	0.19 J	mg/L	0.20	0.10	1	11/27/17 17:16	11/21/17	
Beryllium	6010C	ND U	mg/L	0.010	0.0002	1	11/27/17 17:16	11/21/17	
Cadmium	6010C	0.004 J	mg/L	0.010	0.0002	1	11/27/17 17:16	11/21/17	
Calcium	6010C	4.2	mg/L	2.0	0.008	1	11/27/17 17:16	11/21/17	
Chromium	6010C	0.003 J	mg/L	0.010	0.002	1	11/27/17 17:16	11/21/17	
Cobalt	6010C	0.002 J	mg/L	0.010	0.0005	1	11/27/17 17:16	11/21/17	
Copper	6010C	0.016	mg/L	0.010	0.002	1	11/27/17 17:16	11/21/17	
Iron	6010C	6.36	mg/L	0.020	0.006	1	11/27/17 17:16	11/21/17	
Lead	6010C	0.224	mg/L	0.010	0.003	1	11/27/17 17:16	11/21/17	
Magnesium	6010C	1.02	mg/L	0.50	0.002	1	11/27/17 17:16	11/21/17	
Manganese	6010C	0.442	mg/L	0.010	0.0005	1	11/27/17 17:16	11/21/17	
Nickel	6010C	0.002 J	mg/L	0.010	0.0007	1	11/27/17 17:16	11/21/17	
Potassium	6010C	2.54	mg/L	0.20	0.04	1	11/27/17 17:16	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 17:16	11/21/17	
Silver	6010C	0.0009 J	mg/L	0.020	0.0008	1	11/27/17 17:16	11/21/17	
Sodium	6010C	2.0 J	mg/L	2.0	0.03	1	11/27/17 17:16	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 17:16	11/21/17	
Vanadium	6010C	0.007 J	mg/L	0.010	0.0008	1	11/27/17 17:16	11/21/17	
Zinc	6010C	0.292	mg/L	0.0040	0.0200	1	11/27/17 17:16	11/21/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil  
**Sample Name:** IC-258-3D-101717  
**Lab Code:** K1711288-015

**Service Request:** K1711288  
**Date Collected:** 10/17/17 10:20  
**Date Received:** 10/18/17 09:30

**Basis:** NA

SPLP Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	6010C	13.4	mg/L	0.010	0.003	1	11/27/17 17:18	11/21/17	
Antimony	6010C	0.017 J	mg/L	0.020	0.006	1	11/27/17 17:18	11/21/17	
Arsenic	6010C	0.058	mg/L	0.010	0.004	1	11/27/17 17:18	11/21/17	
Barium	6010C	0.15 J	mg/L	0.20	0.10	1	11/27/17 17:18	11/21/17	
Beryllium	6010C	ND U	mg/L	0.010	0.0002	1	11/27/17 17:18	11/21/17	
Cadmium	6010C	0.003 J	mg/L	0.010	0.0002	1	11/27/17 17:18	11/21/17	
Calcium	6010C	4.1	mg/L	2.0	0.008	1	11/27/17 17:18	11/21/17	
Chromium	6010C	0.003 J	mg/L	0.010	0.002	1	11/27/17 17:18	11/21/17	
Cobalt	6010C	0.002 J	mg/L	0.010	0.0005	1	11/27/17 17:18	11/21/17	
Copper	6010C	0.016	mg/L	0.010	0.002	1	11/27/17 17:18	11/21/17	
Iron	6010C	6.66	mg/L	0.020	0.006	1	11/27/17 17:18	11/21/17	
Lead	6010C	0.208	mg/L	0.010	0.003	1	11/27/17 17:18	11/21/17	
Magnesium	6010C	1.04	mg/L	0.50	0.002	1	11/27/17 17:18	11/21/17	
Manganese	6010C	0.497	mg/L	0.010	0.0005	1	11/27/17 17:18	11/21/17	
Nickel	6010C	0.002 J	mg/L	0.010	0.0007	1	11/27/17 17:18	11/21/17	
Potassium	6010C	1.94	mg/L	0.20	0.04	1	11/27/17 17:18	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 17:18	11/21/17	
Silver	6010C	ND U	mg/L	0.020	0.0008	1	11/27/17 17:18	11/21/17	
Sodium	6010C	1.7 J	mg/L	2.0	0.03	1	11/27/17 17:18	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 17:18	11/21/17	
Vanadium	6010C	0.008 J	mg/L	0.010	0.0008	1	11/27/17 17:18	11/21/17	
Zinc	6010C	0.276	mg/L	0.0040	0.0200	1	11/27/17 17:18	11/21/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil  
**Sample Name:** IC-441-1A-101617  
**Lab Code:** K1711288-016

**Service Request:** K1711288  
**Date Collected:** 10/16/17 09:15  
**Date Received:** 10/18/17 09:30

**Basis:** NA

SPLP Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	6010C	18.3	mg/L	0.010	0.003	1	11/27/17 17:21	11/21/17	
Antimony	6010C	0.008 J	mg/L	0.020	0.006	1	11/27/17 17:21	11/21/17	
Arsenic	6010C	0.033	mg/L	0.010	0.004	1	11/27/17 17:21	11/21/17	
Barium	6010C	0.28	mg/L	0.20	0.10	1	11/27/17 17:21	11/21/17	
Beryllium	6010C	0.0004 J	mg/L	0.010	0.0002	1	11/27/17 17:21	11/21/17	
Cadmium	6010C	0.004 J	mg/L	0.010	0.0002	1	11/27/17 17:21	11/21/17	
Calcium	6010C	7.5	mg/L	2.0	0.008	1	11/27/17 17:21	11/21/17	
Chromium	6010C	0.009 J	mg/L	0.010	0.002	1	11/27/17 17:21	11/21/17	
Cobalt	6010C	0.006 J	mg/L	0.010	0.0005	1	11/27/17 17:21	11/21/17	
Copper	6010C	0.024	mg/L	0.010	0.002	1	11/27/17 17:21	11/21/17	
Iron	6010C	11.5	mg/L	0.020	0.006	1	11/27/17 17:21	11/21/17	
Lead	6010C	0.245	mg/L	0.010	0.003	1	11/27/17 17:21	11/21/17	
Magnesium	6010C	2.48	mg/L	0.50	0.002	1	11/27/17 17:21	11/21/17	
Manganese	6010C	0.856	mg/L	0.010	0.0005	1	11/27/17 17:21	11/21/17	
Nickel	6010C	0.011	mg/L	0.010	0.0007	1	11/27/17 17:21	11/21/17	
Potassium	6010C	6.25	mg/L	0.20	0.04	1	11/27/17 17:21	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 17:21	11/21/17	
Silver	6010C	0.001 J	mg/L	0.020	0.0008	1	11/27/17 17:21	11/21/17	
Sodium	6010C	1.8 J	mg/L	2.0	0.03	1	11/27/17 17:21	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 17:21	11/21/17	
Vanadium	6010C	0.017	mg/L	0.010	0.0008	1	11/27/17 17:21	11/21/17	
Zinc	6010C	0.329	mg/L	0.0040	0.0200	1	11/27/17 17:21	11/21/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil  
**Sample Name:** IC-441-1B-101617  
**Lab Code:** K1711288-017

**Service Request:** K1711288  
**Date Collected:** 10/16/17 10:15  
**Date Received:** 10/18/17 09:30

**Basis:** NA

SPLP Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	6010C	13.2	mg/L	0.010	0.003	1	11/27/17 17:23	11/21/17	
Antimony	6010C	0.020 J	mg/L	0.020	0.006	1	11/27/17 17:23	11/21/17	
Arsenic	6010C	0.050	mg/L	0.010	0.004	1	11/27/17 17:23	11/21/17	
Barium	6010C	0.22	mg/L	0.20	0.10	1	11/27/17 17:23	11/21/17	
Beryllium	6010C	0.0002 J	mg/L	0.010	0.0002	1	11/27/17 17:23	11/21/17	
Cadmium	6010C	0.006 J	mg/L	0.010	0.0002	1	11/27/17 17:23	11/21/17	
Calcium	6010C	7.3	mg/L	2.0	0.008	1	11/27/17 17:23	11/21/17	
Chromium	6010C	0.006 J	mg/L	0.010	0.002	1	11/27/17 17:23	11/21/17	
Cobalt	6010C	0.004 J	mg/L	0.010	0.0005	1	11/27/17 17:23	11/21/17	
Copper	6010C	0.029	mg/L	0.010	0.002	1	11/27/17 17:23	11/21/17	
Iron	6010C	8.02	mg/L	0.020	0.006	1	11/27/17 17:23	11/21/17	
Lead	6010C	0.348	mg/L	0.010	0.003	1	11/27/17 17:23	11/21/17	
Magnesium	6010C	1.67	mg/L	0.50	0.002	1	11/27/17 17:23	11/21/17	
Manganese	6010C	0.686	mg/L	0.010	0.0005	1	11/27/17 17:23	11/21/17	
Nickel	6010C	0.006 J	mg/L	0.010	0.0007	1	11/27/17 17:23	11/21/17	
Potassium	6010C	4.96	mg/L	0.20	0.04	1	11/27/17 17:23	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 17:23	11/21/17	
Silver	6010C	0.002 J	mg/L	0.020	0.0008	1	11/27/17 17:23	11/21/17	
Sodium	6010C	1.9 J	mg/L	2.0	0.03	1	11/27/17 17:23	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 17:23	11/21/17	
Vanadium	6010C	0.012	mg/L	0.010	0.0008	1	11/27/17 17:23	11/21/17	
Zinc	6010C	0.511	mg/L	0.0040	0.0200	1	11/27/17 17:23	11/21/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil  
**Sample Name:** IC-441-1C-101617  
**Lab Code:** K1711288-018

**Service Request:** K1711288  
**Date Collected:** 10/16/17 11:25  
**Date Received:** 10/18/17 09:30

**Basis:** NA

SPLP Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	6010C	13.9	mg/L	0.010	0.003	1	11/27/17 17:26	11/21/17	
Antimony	6010C	0.014 J	mg/L	0.020	0.006	1	11/27/17 17:26	11/21/17	
Arsenic	6010C	0.044	mg/L	0.010	0.004	1	11/27/17 17:26	11/21/17	
Barium	6010C	0.23	mg/L	0.20	0.10	1	11/27/17 17:26	11/21/17	
Beryllium	6010C	0.0003 J	mg/L	0.010	0.0002	1	11/27/17 17:26	11/21/17	
Cadmium	6010C	0.007 J	mg/L	0.010	0.0002	1	11/27/17 17:26	11/21/17	
Calcium	6010C	9.2	mg/L	2.0	0.008	1	11/27/17 17:26	11/21/17	
Chromium	6010C	0.005 J	mg/L	0.010	0.002	1	11/27/17 17:26	11/21/17	
Cobalt	6010C	0.004 J	mg/L	0.010	0.0005	1	11/27/17 17:26	11/21/17	
Copper	6010C	0.025	mg/L	0.010	0.002	1	11/27/17 17:26	11/21/17	
Iron	6010C	8.20	mg/L	0.020	0.006	1	11/27/17 17:26	11/21/17	
Lead	6010C	0.382	mg/L	0.010	0.003	1	11/27/17 17:26	11/21/17	
Magnesium	6010C	2.03	mg/L	0.50	0.002	1	11/27/17 17:26	11/21/17	
Manganese	6010C	0.583	mg/L	0.010	0.0005	1	11/27/17 17:26	11/21/17	
Nickel	6010C	0.007 J	mg/L	0.010	0.0007	1	11/27/17 17:26	11/21/17	
Potassium	6010C	7.18	mg/L	0.20	0.04	1	11/27/17 17:26	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 17:26	11/21/17	
Silver	6010C	0.0009 J	mg/L	0.020	0.0008	1	11/27/17 17:26	11/21/17	
Sodium	6010C	1.8 J	mg/L	2.0	0.03	1	11/27/17 17:26	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 17:26	11/21/17	
Vanadium	6010C	0.012	mg/L	0.010	0.0008	1	11/27/17 17:26	11/21/17	
Zinc	6010C	0.583	mg/L	0.0040	0.0200	1	11/27/17 17:26	11/21/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil  
**Sample Name:** IC-441-1D-101617  
**Lab Code:** K1711288-019

**Service Request:** K1711288  
**Date Collected:** 10/16/17 12:50  
**Date Received:** 10/18/17 09:30

**Basis:** NA

SPLP Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	6010C	10.7	mg/L	0.010	0.003	1	11/27/17 17:28	11/21/17	
Antimony	6010C	0.011 J	mg/L	0.020	0.006	1	11/27/17 17:28	11/21/17	
Arsenic	6010C	0.035	mg/L	0.010	0.004	1	11/27/17 17:28	11/21/17	
Barium	6010C	0.20 J	mg/L	0.20	0.10	1	11/27/17 17:28	11/21/17	
Beryllium	6010C	ND U	mg/L	0.010	0.0002	1	11/27/17 17:28	11/21/17	
Cadmium	6010C	0.004 J	mg/L	0.010	0.0002	1	11/27/17 17:28	11/21/17	
Calcium	6010C	6.6	mg/L	2.0	0.008	1	11/27/17 17:28	11/21/17	
Chromium	6010C	0.004 J	mg/L	0.010	0.002	1	11/27/17 17:28	11/21/17	
Cobalt	6010C	0.003 J	mg/L	0.010	0.0005	1	11/27/17 17:28	11/21/17	
Copper	6010C	0.021	mg/L	0.010	0.002	1	11/27/17 17:28	11/21/17	
Iron	6010C	6.36	mg/L	0.020	0.006	1	11/27/17 17:28	11/21/17	
Lead	6010C	0.235	mg/L	0.010	0.003	1	11/27/17 17:28	11/21/17	
Magnesium	6010C	1.54	mg/L	0.50	0.002	1	11/27/17 17:28	11/21/17	
Manganese	6010C	0.471	mg/L	0.010	0.0005	1	11/27/17 17:28	11/21/17	
Nickel	6010C	0.004 J	mg/L	0.010	0.0007	1	11/27/17 17:28	11/21/17	
Potassium	6010C	5.69	mg/L	0.20	0.04	1	11/27/17 17:28	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 17:28	11/21/17	
Silver	6010C	0.001 J	mg/L	0.020	0.0008	1	11/27/17 17:28	11/21/17	
Sodium	6010C	1.7 J	mg/L	2.0	0.03	1	11/27/17 17:28	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 17:28	11/21/17	
Vanadium	6010C	0.009 J	mg/L	0.010	0.0008	1	11/27/17 17:28	11/21/17	
Zinc	6010C	0.314	mg/L	0.0040	0.0200	1	11/27/17 17:28	11/21/17	



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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil  
**Sample Name:** Method Blank  
**Lab Code:** KQ1717330-02

**Service Request:** K1711288  
**Date Collected:** NA  
**Date Received:** NA  
**Basis:** NA

SPLP Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	6010C	<b>0.065</b>	mg/L	0.010	0.003	1	11/27/17 16:04	11/21/17	
Antimony	6010C	ND U	mg/L	0.020	0.006	1	11/27/17 16:04	11/21/17	
Arsenic	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 16:04	11/21/17	
Barium	6010C	ND U	mg/L	0.20	0.10	1	11/27/17 16:04	11/21/17	
Beryllium	6010C	ND U	mg/L	0.010	0.0002	1	11/27/17 16:04	11/21/17	
Cadmium	6010C	ND U	mg/L	0.010	0.0002	1	11/27/17 16:04	11/21/17	
Calcium	6010C	<b>1.8 J</b>	mg/L	2.0	0.008	1	11/27/17 16:04	11/21/17	
Chromium	6010C	ND U	mg/L	0.010	0.002	1	11/27/17 16:04	11/21/17	
Cobalt	6010C	ND U	mg/L	0.010	0.0005	1	11/27/17 16:04	11/21/17	
Copper	6010C	ND U	mg/L	0.010	0.002	1	11/27/17 16:04	11/21/17	
Iron	6010C	<b>0.009 J</b>	mg/L	0.020	0.006	1	11/27/17 16:04	11/21/17	
Lead	6010C	ND U	mg/L	0.010	0.003	1	11/27/17 16:04	11/21/17	
Magnesium	6010C	<b>0.20 J</b>	mg/L	0.50	0.002	1	11/27/17 16:04	11/21/17	
Manganese	6010C	ND U	mg/L	0.010	0.0005	1	11/27/17 16:04	11/21/17	
Nickel	6010C	ND U	mg/L	0.010	0.0007	1	11/27/17 16:04	11/21/17	
Potassium	6010C	<b>0.08 J</b>	mg/L	0.20	0.04	1	11/27/17 16:04	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 16:04	11/21/17	
Silver	6010C	ND U	mg/L	0.020	0.0008	1	11/27/17 16:04	11/21/17	
Sodium	6010C	<b>1.2 J</b>	mg/L	2.0	0.03	1	11/27/17 16:04	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 16:04	11/21/17	
Vanadium	6010C	ND U	mg/L	0.010	0.0008	1	11/27/17 16:04	11/21/17	
Zinc	6010C	ND U	mg/L	0.0040	0.0200	1	11/27/17 16:04	11/21/17	

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil

**Service Request:** K1711288  
**Date Collected:** 10/10/17  
**Date Received:** 10/12/17  
**Date Analyzed:** 11/27/17

Replicate Sample Summary

SPLP Metals

**Sample Name:** IC-401-1A-101017  
**Lab Code:** K1711288-001

**Units:** mg/L  
**Basis:** NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample KQ1717330-03		Average	RPD	RPD Limit
					Result	Result			
Aluminum	6010C	0.010	0.003	20.0	20.1	20.1	<1	20	
Antimony	6010C	0.020	0.006	0.045	0.044	0.045	2	20	
Arsenic	6010C	0.010	0.004	0.101	0.105	0.103	4	20	
Barium	6010C	0.20	0.10	0.17 J	0.18 J	0.18	6	20	
Beryllium	6010C	0.010	0.0002	0.0002 J	0.0003 J	NC	NC	20	
Cadmium	6010C	0.010	0.0002	0.004 J	0.004 J	0.004	<1	20	
Calcium	6010C	2.0	0.008	3.4	3.4	3.4	<1	20	
Chromium	6010C	0.010	0.002	0.004 J	0.004 J	0.004	<1	20	
Cobalt	6010C	0.010	0.0005	0.003 J	0.003 J	0.003	<1	20	
Copper	6010C	0.010	0.002	0.023	0.024	0.024	4	20	
Iron	6010C	0.020	0.006	9.97	10.2	10.1	2	20	
Lead	6010C	0.010	0.003	0.371	0.381	0.376	3	20	
Magnesium	6010C	0.50	0.002	1.29	1.32	1.31	2	20	
Manganese	6010C	0.010	0.0005	0.539	0.541	0.540	<1	20	
Nickel	6010C	0.010	0.0007	0.005 J	0.005 J	0.005	<1	20	
Potassium	6010C	0.20	0.04	2.25	2.27	2.26	<1	20	
Selenium	6010C	0.020	0.004	ND U	ND U	ND	-	20	
Silver	6010C	0.020	0.0008	0.004 J	0.001 J	0.003	120 #	20	
Sodium	6010C	2.0	0.03	1.9 J	2.0 J	2.0	5	20	
Thallium	6010C	0.010	0.004	ND U	ND U	ND	-	20	
Vanadium	6010C	0.010	0.0008	0.013	0.013	0.013	<1	20	
Zinc	6010C	0.0040	0.0200	0.380	0.391	0.386	3	20	

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil

**Service Request:** K1711288  
**Date Collected:** 10/10/17  
**Date Received:** 10/12/17  
**Date Analyzed:** 11/27/17  
**Date Extracted:** 11/21/17

**Matrix Spike Summary**  
**SPLP Metals**

**Sample Name:** IC-401-1A-101017  
**Lab Code:** K1711288-001  
**Analysis Method:** 6010C  
**Prep Method:** EPA 3010A

**Units:** mg/L  
**Basis:** NA

**Matrix Spike**  
KQ1717330-04

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Aluminum	20.0	20.5	2.00	25 #	75-125
Antimony	0.045	0.431	0.500	77	75-125
Arsenic	0.101	1.09	1.00	99	75-125
Barium	0.17 J	1.17	1.00	100	75-125
Beryllium	ND U	0.049	0.050	97	75-125
Cadmium	0.004 J	0.052	0.050	96	75-125
Calcium	3.4	13.2	10.0	98	75-125
Chromium	0.004 J	0.203	0.200	99	75-125
Cobalt	0.003 J	0.492	0.500	98	75-125
Copper	0.023	0.269	0.250	98	75-125
Iron	9.97	10.6	1.00	64 #	75-125
Lead	0.371	0.838	0.500	93	75-125
Magnesium	1.29	11.0	10.0	97	75-125
Manganese	0.539	1.01	0.500	95	75-125
Nickel	0.005 J	0.488	0.500	96	75-125
Potassium	2.25	12.2	10.0	99	75-125
Selenium	ND U	0.861	1.00	86	75-125
Silver	0.004 J	0.049	0.050	90	75-125
Sodium	1.9 J	11.9	10.0	99	75-125
Thallium	ND U	0.186	0.200	93	75-125
Vanadium	0.013	0.519	0.500	101	75-125
Zinc	0.380	0.856	0.500	95	75-125

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil

**Service Request:** K1711288

**Date Analyzed:** 11/27/17

**Lab Control Sample Summary**  
**SPLP Metals**

**Units:**mg/L

**Basis:**NA

**Lab Control Sample**  
KQ1717330-01

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Aluminum	6010C	5.41	5.00	108	80-120
Antimony	6010C	2.03	2.00	102	80-120
Arsenic	6010C	2.58	2.50	103	80-120
Barium	6010C	5.20	5.00	104	80-120
Beryllium	6010C	0.126	0.125	101	80-120
Cadmium	6010C	1.25	1.25	100	80-120
Calcium	6010C	14.9	12.5	119	80-120
Chromium	6010C	0.510	0.500	102	80-120
Cobalt	6010C	1.25	1.25	100	80-120
Copper	6010C	0.631	0.625	101	80-120
Iron	6010C	2.60	2.50	104	80-120
Lead	6010C	2.47	2.50	99	80-120
Magnesium	6010C	13.0	12.5	104	80-120
Manganese	6010C	1.25	1.25	100	80-120
Nickel	6010C	1.24	1.25	99	80-120
Potassium	6010C	13.1	12.5	105	80-120
Selenium	6010C	2.24	2.50	90	80-120
Silver	6010C	0.613	0.625	98	80-120
Sodium	6010C	14.2	12.5	114	80-120
Thallium	6010C	2.41	2.50	97	80-120
Vanadium	6010C	1.30	1.25	104	80-120
Zinc	6010C	1.28	1.25	102	80-120



December 1, 2017  
HWA Project No. 2013-040-23 Task 500

**Arcadis U.S., Inc.**  
1100 Olive Way, Suite 800  
Seattle, Washington 98101

Attention: Ms. Rebecca Andresen, P.G.

Subject: **Materials Laboratory Report**  
**Hydraulic Conductivity and Unit Weight Testing**  
**Teck American – UCR SATES**  
**Client Project No. B0095010.0005.00002**  
**Revision No. 1**

Dear Ms. Andresen;

As requested, HWA GeoSciences Inc. (HWA) performed laboratory testing for the subject project. This report is Revision No. 1 which supersedes the original report dated November 28, 2017. Herein we present the results of our laboratory analyses, which are summarized on the attached Tables. The laboratory testing program was performed in general accordance with your instructions and appropriate ASTM Standards as outlined below.

**SAMPLE INFORMATION:** A total of 48 samples were delivered to our laboratory on October 18, 2017 by Arcadis personnel. The samples were contained in 2.8-inch diameter Shelby tubes and were designated with the sample number, sampling location, and the time of sampling. Each sample was classified for engineering purposes using visual-manual methods. The sample descriptions are included in the attached Tables.

**PERMEABILITY OF GRANULAR SOILS (CONSTANT HEAD METHOD):** The coefficient of permeability (also commonly referred to as hydraulic conductivity) of the samples was measured in general accordance with method ASTM D2434. The samples were left intact in their respective Shelby tubes and the tubes were cut to be flush with the top and bottom of the samples. After creating a water-tight seal between the sample tube and the permeameter equipment, each sample was saturated and testing was conducted using a flow gradient of about 0.3. The test results are summarized in Table 1.

**Table 1 Summary of Constant Head Permeability Testing Results**

Sample Number	Sample Description	Moisture Content (%)	Dry Density (Pcf)	Hydraulic Conductivity (cm/sec)	Hydraulic Conductivity (in/hour)
D-401-1A-100417-0-6	Brown, silty SAND with organics (SM)	16.2	69.9	$6.9 \times 10^{-3}$	9.8
D-401-1B-100417-0-6	Brown, silty SAND with organics (SM)	22.1	56.1	$1.1 \times 10^{-2}$	15.0
D-401-1C-100417-0-6	Dark brown, silty SAND with organics (SM)	17.9	85.6	$4.2 \times 10^{-3}$	5.9
D-401-1D-100417-0-6	Brown, silty SAND with organics (SM)	19.7	69.7	$7.3 \times 10^{-3}$	10.4
D-401-2A-100517-0-6	Brown, silty SAND with organics (SM)	16.5	59.9	$1.3 \times 10^{-2}$	18.6
D-401-2B-100517-0-6	Brown, silty SAND with organics (SM)	18.0	62.8	$4.6 \times 10^{-3}$	6.5
D-401-2C-100517-0-6	Brown, silty SAND with organics (SM)	8.1	79.4	$3.1 \times 10^{-3}$	4.4
D-401-2D-100517-0-6	Brown, silty SAND with organics (SM)	20.1	52.9	$1.2 \times 10^{-2}$	16.5
D-441-1A-100617-0-6	Brown, silty SAND with organics (SM)	27.0	34.7	$9.4 \times 10^{-2}$	132.9
D-441-1B-100617-0-6	Dark brown, silty SAND with organics (SM)	8.6	68.4	$4.1 \times 10^{-3}$	5.9
D-441-1C-100617-0-6	Dark brown, silty SAND with organics (SM)	16.5	68.1	$1.3 \times 10^{-3}$	1.9
D-441-1D-100617-0-6	Dark brown, silty SAND with organics (SM)	7.5	62.8	$4.9 \times 10^{-3}$	6.9
D-258-3A-100717-0-6	Dark brown, silty SAND with organics (SM)	21.5	51.6	$1.4 \times 10^{-2}$	20.2
D-258-3B-100717-0-6	Dark brown, silty SAND with organics (SM)	5.4	80.9	$1.0 \times 10^{-3}$	1.4
D-258-3C-100717-0-6	Dark brown, silty SAND with organics (SM)	9.4	71.4	$4.7 \times 10^{-3}$	6.6
D-258-3D-100717-0-6	Dark brown, silty SAND with organics (SM)	5.4	79.7	$2.1 \times 10^{-3}$	3.0

**UNIT WEIGHT OF SOIL:** The wet and dry density of soil for selected samples was measured in general accordance with ASTM D7263 Method B. Each sample was weighed and measurements were taken of sample lengths and diameters using calipers. The moisture content of each sample was then determined and used to calculate the dry density of the soil samples. The results are presented in Table 2.

**Table 2 Summary of Unit Weight of Soil Testing Results**

<b>Sample Number</b>	<b>Sample Description</b>	<b>Moisture Content (%)</b>	<b>Wet Density (Pcf)</b>	<b>Dry Density (Pcf)</b>
D-401-1A-100417-0-3	Brown, silty SAND with organics (SM)	8.3	37.0	34.1
D-401-1A-100417-6-9	Olive brown, silty SAND with organics (SM)	3.4	82.6	79.9
D-401-1B-100417-0-3	Brown, silty SAND with organics (SM)	11.6	29.3	26.3
D-401-1B-100417-6-9	Olive brown, silty SAND with organics (SM)	4.3	92.9	89.0
D-401-1C-100417-0-3	Brown, silty SAND with organics (SM)	8.9	70.1	64.4
D-401-1C-100417-6-9	Brown, silty SAND with organics (SM)	3.5	94.1	90.9
D-401-1D-100417-0-3	Brown, silty SAND with organics (SM)	4.3	63.1	60.5
D-401-1D-100417-6-9	Grayish brown, silty SAND with organics (SM)	4.3	92.6	88.9
D-401-2A-100517-0-3	Grayish brown, silty SAND with organics (SM)	5.2	63.7	60.5
D-401-2A-100517-6-9	Brown, silty SAND with organics (SM)	4.1	89.6	86.1
D-401-2B-100517-0-3	Grayish brown, silty SAND with organics (SM)	6.5	48.7	45.8
D-401-2B-100517-6-9	Brown, silty SAND with organics (SM)	4.2	94.5	90.7
D-401-2C-100517-0-3	Brown, silty SAND with organics (SM)	4.0	82.6	79.4
D-401-2C-100517-6-9	Brown, silty SAND with gravel and organics (SM)	3.7	101.3	97.6
D-401-2D-100517-0-3	Brown, silty SAND with organics (SM)	19.1	44.2	37.1
D-401-2D-100517-6-9	Brown, silty SAND with gravel and organics (SM)	8.0	87.2	80.8
D-441-1A-100617-0-3	Dark brown, silty SAND with organics (SM)	34.7	28.4	21.1
D-441-1A-100617-6-9	Dark brown, silty SAND with gravel and organics (SM)	6.5	81.8	76.8
D-441-1B-100617-0-3	Olive brown, silty SAND with organics (SM)	7.5	62.7	58.3
D-441-1B-100617-6-9	Olive brown, silty SAND with gravel and organics (SM)	4.2	84.9	81.5
D-441-1C-100617-0-3	Dark brown, silty SAND with organics (SM)	6.8	59.2	55.5
D-441-1C-100617-6-9	Olive brown, silty SAND with gravel and organics (SM)	6.1	81.6	76.9
D-441-1D-100617-0-3	Olive brown, silty SAND with organics (SM)	8.0	58.7	54.4
D-441-1D-100617-6-9	Olive brown, silty SAND with organics (SM)	6.7	70.6	66.2
D-258-3A-100717-0-3	Brown, silty SAND with organics (SM)	9.3	48.0	43.9
D-258-3A-100717-6-9	Olive brown, silty SAND with organics (SM)	4.6	84.2	80.5
D-258-3B-100717-0-3	Dark brown, silty SAND with organics (SM)	7.5	74.0	68.8
D-258-3B-100717-6-9	Olive brown, silty SAND with organics (SM)	3.8	88.4	85.1

**Table 2 (Continued)**

Sample Number	Sample Description	Moisture Content (%)	Wet Density (Pcf)	Dry Density (Pcf)
D-258-3C-100717-0-3	Brown, silty SAND with organics (SM)	6.1	50.3	47.4
D-258-3C-100717-6-9	Olive brown, silty SAND with organics (SM)	3.5	81.2	78.5
D-258-3D-100717-0-3	Dark brown, silty SAND with organics (SM)	8.4	60.2	55.5
D-258-3D-100717-6-9	Dark brown, silty SAND with organics (SM)	4.5	78.7	75.4



**CLOSURE:** Experience has shown that laboratory test values for aggregate and other natural materials vary with each representative sample. As such, HWA has no knowledge as to the extent and quantity of material the tested sample may represent. HWA also makes no warranty as to how representative either the sample tested or the test results obtained are to actual field conditions. It is a well-established fact that sampling methods present varying degrees of disturbance or variance that affect sample representativeness.

No copy should be made of this report except in its entirety.

We appreciate the opportunity to provide laboratory testing services on this project. Should you have any questions or comments, or if we may be of further service, please call.

Sincerely,

HWA GEOSCIENCES INC.

Daniel Walton  
Materials Laboratory Supervisor

Steven E. Greene, L.G., L.E.G.  
Vice President





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ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

January 31, 2018

**Analytical Report for Service Request No: K1711288**

Dave Enos  
Teck American Incorporated  
501 North Riverpoint Blvd., Suite 300  
Spokane, WA 99202

**RE: August 2017 Sampling SAT Study / B0095010.0005.00002**

Dear Dave,

Enclosed are the results of the sample(s) submitted to our laboratory October 18, 2017  
For your reference, these analyses have been assigned our service request number **K1711288**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at [www.alsglobal.com](http://www.alsglobal.com). All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3376. You may also contact me via email at [Mark.Harris@alsglobal.com](mailto:Mark.Harris@alsglobal.com).

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**

Mark Harris  
Project Manager



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ALS Environmental  
ALS Group USA, Corp  
1317 South 13th Avenue  
Kelso, WA 98626  
T : +1 360 577 7222  
F : +1 360 636 1068  
[www.alsglobal.com](http://www.alsglobal.com)

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## Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

### **Inorganic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

### **Metals Data Qualifiers**

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.  
  - i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Organic Data Qualifiers**

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Additional Petroleum Hydrocarbon Specific Qualifiers**

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

**ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso  
State Certifications, Accreditations, and Licenses**

<b>Agency</b>	<b>Web Site</b>	<b>Number</b>
Alaska DEH	<a href="http://dec.alaska.gov/eh/lab/cs/csapproval.htm">http://dec.alaska.gov/eh/lab/cs/csapproval.htm</a>	UST-040
Arizona DHS	<a href="http://www.azdhs.gov/lab/license/env.htm">http://www.azdhs.gov/lab/license/env.htm</a>	AZ0339
Arkansas - DEQ	<a href="http://www.adeq.state.ar.us/techsvs/labcert.htm">http://www.adeq.state.ar.us/techsvs/labcert.htm</a>	88-0637
California DHS (ELAP)	<a href="http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx">http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx</a>	2795
Florida DOH	<a href="http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm">http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm</a>	E87412
Hawaii DOH	<a href="http://health.hawaii.gov/">http://health.hawaii.gov/</a>	-
Louisiana DEQ	<a href="http://www.deq.louisiana.gov/page/la-lab-accreditation">http://www.deq.louisiana.gov/page/la-lab-accreditation</a>	03016
Maine DHS	<a href="http://www.maine.gov/dhhs/">http://www.maine.gov/dhhs/</a>	WA01276
Minnesota DOH	<a href="http://www.health.state.mn.us/accreditation">http://www.health.state.mn.us/accreditation</a>	053-999-457
Nevada DEP	<a href="http://ndep.nv.gov/bsdw/labservice.htm">http://ndep.nv.gov/bsdw/labservice.htm</a>	WA01276
New Jersey DEP	<a href="http://www.nj.gov/dep/enforcement/oqa.html">http://www.nj.gov/dep/enforcement/oqa.html</a>	WA005
New York - DOH	<a href="https://www.wadsworth.org/regulatory/elap">https://www.wadsworth.org/regulatory/elap</a>	12060
North Carolina DEQ	<a href="https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification">https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification</a>	605
Oklahoma DEQ	<a href="http://www.deq.state.ok.us/CSDnew/labcert.htm">http://www.deq.state.ok.us/CSDnew/labcert.htm</a>	9801
Oregon – DEQ (NELAP)	<a href="http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx">http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx</a>	WA100010
South Carolina DHEC	<a href="http://www.scdhec.gov/environment/EnvironmentalLabCertification/">http://www.scdhec.gov/environment/EnvironmentalLabCertification/</a>	61002
Texas CEQ	<a href="http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html">http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html</a>	T104704427
Washington DOE	<a href="http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html">http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html</a>	C544
Wyoming (EPA Region 8)	<a href="https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water">https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water</a>	-
Kelso Laboratory Website	<a href="http://www.alsglobal.com">www.alsglobal.com</a>	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at [www.ALSGlobal.com](http://www.ALSGlobal.com) or at the accreditation bodies web site.  
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.



## Case Narrative

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study  
**Sample Matrix:** Soil

**Service Request:** K1711288  
**Date Received:** 10/12/2017

### CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), Matrix/Duplicate Matrix Spike (MS/DMS), Laboratory Control Sample (LCS), and Laboratory/Duplicate Laboratory Control Sample (LCS/DLCS).

#### General Notes - Sample Preparation:

Sample aliquots for sulfide and Total Organic Carbon (TOC) were removed prior to starting the Incremental Sampling Method (ISM). The samples were then prepared using the ISM as prescribed in the Quality Assurance Project Plan (QAPP). SPLP Metals extractions were performed using 100g of air dried and sieved sample and were performed on the 2 mm fraction. A total solids determination was performed on the air dried material to allow reporting of analytical results on the oven dried basis (105 C).

#### Sample Receipt:

Nineteen soil samples were received for analysis at ALS Environmental on 10/12/2017. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

#### Metals:

No significant anomalies were noted with this analysis.

#### General Chemistry:

Total Sulfide by PSEP:

Samples IC-401-1A-101017, IC-401-1B-101017, IC-401-1C-101117, IC-401-1C-101117-D, IC-401-1D-101117 and IC-401-2B-101117 were analyzed past holding time due to laboratory error. The analysis was performed as soon as possible after receipt by the laboratory. The data was flagged to indicate the holding time violation.

Sample IC-441-1B-101617 was received and initially analyzed within holding time, but was reanalyzed past holding time due to MB result being over the MRL. The data was flagged to indicate the holding time violation.

Approved by



Date

12/01/2017



# Chain of Custody

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)



K1711288

Project Name: <u>Teck American - UCR SATES</u> Project Number: <u>B0095010.0005.00002</u> Project Contact: <u>Kadv Young</u> Company: <u>Arcadis</u> Company/Address: <u>189 North Cedar Street</u> Phone: <u>307-203-3510</u> or <u>307-949-0330</u> City, State, Zip: <u>Buffalo, WY 82834</u> FAX: <u>307-684-5961</u> Sampler's Signature: <u>[Signature]</u>					Analytes Requested																			
Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	USEPA 6010/USEPA 6010B	SM 2510B	USEPA 300.0	SM 4500-S2D	Bremner and Mulvaney 1982, Nelson and Sommers 1982	USEPA 9060A	ASTM D422	NRMRL QMP L18735 Athena	Duplicate Analytical List	Triplicate Analytical List	REMARKS								
IC-401-1A-101017	10-10-17	1058	1	S	2	X	X	X	X	X	X	X	X			Sample weight = 10.457g								
IC-401-1B-101017	10-10-17	1155	2	S	2	X	X	X	X	X	X	X	X			Sample weight = 13.511g								
				S																				
				S												COMPOSITE								
				S												SAMPLE CONTAINERS								
				S												PRIOR TO ANALYSIS								
				S																				
				S																				
				S																				
TURNAROUND REQUIREMENTS <input type="checkbox"/> 24 hr <input type="checkbox"/> 48 hr <input type="checkbox"/> 5 day <input checked="" type="checkbox"/> Standard (10 days) <input type="checkbox"/> Provide FAX Preliminary Results Requested Report Date: _____					REPORT REQUIREMENTS <input type="checkbox"/> I. Routine Report: Results, Method Blank, Surrogate, as required <input checked="" type="checkbox"/> II. Report Dup., MS, MSD as required <input type="checkbox"/> III. Data Validation Report (includes raw data) <input type="checkbox"/> IV. CLP Deliverable Report <input checked="" type="checkbox"/> V. EDD					Comments/Special Instructions: Hold Remainder  Duplicate Analysis List - Mehlich III Extractable Lead and Phosphorous (USEPA 6010), Electrical Conductivity (SM 2510B), Chloride/Sulfate (USEPA 300. Sulfide (SM 4500-52D), Total Carbon and Nitrogen (Gremner and Mulvaney/Nelson and Sommers), Total Organic Carbon (USEPA 9060A)  Triplicate Analysis List - Total TAL Metals/SPLP TAL Metals (USEPA 6010), Bioaccessible Arsenic and Lead at pH 1.5 and pH 2.5 (USEPA 6010B)														
Invoice Information P.O. # <u>UCR-ALS-D34-17</u> Bill to: <u>Cristy Kessel - Teck American</u> 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99201					RELINQUISHED BY: Signature: <u>[Signature]</u> Printed Name: <u>Ryan W Brauchla</u> Firm: <u>Arcadis</u> Date/Time: <u>10-11-17 1000</u>					RECEIVED BY: Signature: <u>[Signature]</u> Printed Name: <u>K Morrow</u> Firm: <u>ALS</u> Date/Time: <u>10/12/17 0930</u>					RELINQUISHED BY: Signature: _____ Printed Name: _____ Firm: _____ Date/Time: _____					RECEIVED BY: Signature: _____ Printed Name: _____ Firm: _____ Date/Time: _____				

K1711288

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00002  
 Project Contact: Kady Young Company: Arcadis  
 Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 307-949-0330  
 City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961  
 Sampler's Signature: Ryan W Bravchla

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	Analysis Requested										REMARKS
						USEPA 6010/USEPA 6010B	SM 2510B	USEPA 300.0	SM 4500-S2D	Bremner and Mulvaney 1982, Nelson and Sommers 1982	USEPA 9060A	ASTM D422	NRMRL QMP L18735 Athena	Duplicate Analytical List	Triplicate Analytical List	
IC-401-1C-101117	10-11-17	1023	3	S	2	X	X	X	X	X	X	X			Sample weight: 11,403g	
IC-401-1C-101117-D	10-11-17	1235	4	S	2								X		Sample weight: 12,555g	
IC-401-1D-101117	10-11-17	1400	5	S	1	X	X	X	X	X	X	X			Sample weight: 5,453g	
IC-401-2B-101117	10-11-17	1538	6	S	1	X	X	X	X	X	X	X			Sample weight: 7,637g	
				S												
				S											Composite 2 bucket	
				S											samples at the	
				S											lab, prior to any	
				S											analysis	
				S												

**TURNAROUND REQUIREMENTS**  
 \_\_\_ 24 hr \_\_\_ 48 hr \_\_\_ 5 day  
 Standard (10 days)  
 \_\_\_ Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99201

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes raw data)  
 IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder  
 Duplicate Analysis List - Mehlich III Extractable Lead and Phosphorous (USEPA 6010), Electrical Conductivity (SM 2510B), Chloride/Sulfate (USEPA 300.0 Sulfide (SM 4500-52D), Total Carbon and Nitrogen (Gremner and Mulvaney/Nelson and Sommers), Total Organic Carbon (USEPA 9060A)  
 Triplicate Analysis List - Total TAL Metals/SPLP TAL Metals (USEPA 6010), Bioaccessible Arsenic and Lead at pH 1.5 and pH 2.5 (USEPA 6010B)

**RELINQUISHED BY:**  
 Signature: Ryan W Bravchla  
 Printed Name: Ryan W Bravchla  
 Firm: Arcadis  
 Date/Time: 10-12-17 1100

**RECEIVED BY:**  
 Signature: [Signature]  
 Printed Name: KASH WARRICK  
 Firm: \_\_\_\_\_  
 Date/Time: 10/13/17 0930

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

K1711288

Date 10-12-2017

PAGE 1 OF 1

SR#

Project Name: <u>Teck American - UCR SATES</u> Project Number: <u>B0095010.0005.00002</u>					Number of Containers	Analysis Requested										REMARKS
Project Contact: <u>Kady Young</u> Company: <u>Arcadis</u>						USEPA 6010/USEPA 6010B	SM 2510B	USEPA 300.0	SM 4500-S2D	Bremner and Mulvaney 1982, Nelson and Sommers 1982	USEPA 9060A	ASTM D422	NRMRL QMP L18735 Athena	Duplicate Analytical List	Triplicate Analytical List	
Sample I.D.	Date	Time	LAB ID	Matrix												
IC1-401-2A-101217	10-12-17	0920	7	S	1	X	X	X	X	X	X	X			Sample weight: 6,900g	
IC2-401-2A-101217	10-12-17	1015	8	S	1								X		Sample weight: 6,870g	
IC3-401-2A-101217	10-12-17	1055	9	S	1								X		Sample weight: 7,213g	
IC-401-2C-101217	10-12-17	1250	10	S	1	X	X	X	X	X	X	X			Sample weight: 7,683g	
IC-401-2D-101217	10-12-17	1400	11	S	1	X	X	X	X	X	X	X			Sample weight: 7,205g	
				S												
				S											Composite samples prior to analysis	
				S												
				S												

**TURNAROUND REQUIREMENTS**  
 \_\_\_ 24 hr \_\_\_ 48 hr \_\_\_ 5 day  
 Standard (10 days)  
 \_\_\_ Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristy Kessel - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99201

**REPORT REQUIREMENTS**  
 I. Routine Report: Results, Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes raw data)  
 IV. CLP Deliverable Report  
 V. EDD

**Comments/Special Instructions:**  
 Hold Remainder

Duplicate Analysis List - Mehlich III Extractable Lead and Phosphorous (USEPA 6010), Electrical Conductivity (SM 2510B), Chloride/Sulfate (USEPA 300. Sulfide (SM 4500-S2D), Total Carbon and Nitrogen (Gremner and Mulvaney/Nelson and Sommers), Total Organic Carbon (USEPA 9060A)

Triplicate Analysis List - Total TAL Metals/SPLP TAL Metals (USEPA 6010), Bioaccessible Arsenic and Lead at pH 1.5 and pH 2.5 (USEPA 6010B)

**RELINQUISHED BY:**  
 Signature: Ryan Brauchle  
 Printed Name: Ryan Brauchle  
 Firm: Arcadis  
 Date/Time: 10-13-2017 1000

**RECEIVED BY:**  
 Signature: Rockelle Benz  
 Printed Name: Rockelle Benz  
 Firm: AES-Kelso, WA  
 Date/Time: 10/14/17 10:00am

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

K1711288

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00002  
Project Contact: Kady Young Company: Arcadis  
Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 307-949-0330  
City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961  
Sampler's Signature: Ryan W. Branch

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	Analysis Requested										REMARKS
						USEPA 6010/USEPA 6010B	SM 2510B	USEPA 300.0	SM 4500-S2D	Bremner and Mulvaney 1982, Nelson and Sommers 1982	USEPA 9060A	ASTM D422	NEMRL QMP L18735 Athens	Duplicate Analytical List	Triplicate Analytical List	
IC-258-3A-101717	10-17-17	0940	12	S	1	X	X	X	X	X	X	X			Sample weight: 9,577g	
IC-258-3B-101717	10-17-17	0915	13	S	1	X	X	X	X	X	X	X			Sample weight: 8,284g	
IC-258-3C-101717	10-17-17	0950	14	S	1	X	X	X	X	X	X	X			Sample weight: 5,463g	
IC-258-3D-101717	10-17-17	1020	15	S	1	X	X	X	X	X	X	X			Sample weight: 7,074g	
IC-441-1A-101617	10-16-17	0915	16	S	1	X	X	X	X	X	X	X			Sample weight: 7,130g	
IC-441-1B-101617	10-16-17	1015	17	S	1	X	X	X	X	X	X	X			Sample weight: 7,531g	
IC-441-1C-101617	10-16-17	1125	18	S	1	X	X	X	X	X	X	X			Sample weight: 5,110g	
IC-441-1D-101617	10-16-17	1250	19	S	1	X	X	X	X	X	X	X			Sample weight: 5,773g	
				S												
				S												

**TURNAROUND REQUIREMENTS**  
 24 hr  48 hr  5 day  
 Standard (10 days)  
 Provide FAX Preliminary Results  
 Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**  
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 Duplicate Analysis List - Mehlich III Extractable Lead and Phosphorous (USEPA 6010), Electrical Conductivity (SM 2510B), Chloride/Sulfate (USEPA 300.0 Sulfide (SM 4500-52D), Total Carbon and Nitrogen (Gremner and Mulvaney/Nelson and Sommers), Total Organic Carbon (USEPA 9060A)  
 Triplicate Analysis List - Total TAL Metals/SPLP TAL Metals (USEPA 6010), Bioaccessible Arsenic and Lead at pH 1.5 and pH 2.5 (USEPA 6010B)

**Invoice Information**  
 P.O. # UCR-ALS-D34-17  
 Bill to: Cristv Kessel - Teck American  
 501 N Riverpoint Blvd, Suite 300 Spokane, WA 99201

**RELINQUISHED BY:**  
 Signature: Ryan W. Branch  
 Printed Name: Ryan W. Branch  
 Firm: Arcadis  
 Date/Time: 10-17-2017/1600

**RECEIVED BY:**  
 Signature: K MORRISON  
 Printed Name: K MORRISON  
 Firm: ALS  
 Date/Time: 10/18/17 0940

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_



PC MH

### Cooler Receipt and Preservation Form

Client Teck America Service Request K17 11288  
 Received: 10/12/17 Opened: 10/12/17 By: KM Unloaded: 10/12/17 By: PL

- Samples were received via? USPS 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? \_\_\_\_\_  
 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	-	1.8	-	0	360		7880 4591 3001		

- Packing material: Inserts Buggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves Plastic
- Were custody papers properly filled out (ink, signed, etc.)? NA Y N
- Were samples received in good condition (temperature, unbroken)? Indicate in the table below. NA Y N  
 If applicable, tissue samples were received: Frozen Partially Thawed Thawed
- 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: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



### Cooler Receipt and Preservation Form

Client Arcadis Service Request K17 11288  
 Received: 10/13/17 Opened: 10/13/17 By: km Unloaded: 10/13/17 By: km

- Samples were received via? USPS 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 F+B  
 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
-0.2	0.0	4.2	4.9	+0.2	351		8082 71610341		
-0.5	-0.6	2.3	2.2	-0.1	352		" " 0330		
-0.1	-	2.3	1.4	0	391		" " 0341		
-0.3	-0.1	0.8	0.7	+0.2	378		" " 7262		

- Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves Larger P. Bags
- Were custody papers properly filled out (ink, signed, etc.)? NA Y N
- Were samples received in good condition (temperature, unbroken)? *Indicate in the table below.* NA Y N  
 If applicable, tissue samples were received: Frozen Partially Thawed Thawed
- 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: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



### Cooler Receipt and Preservation Form

Client ARCADIS Service Request K17 11288  
 Received: 10/14/17 Opened: 10/14/17 By: RB Unloaded: 10/14/17 By: RB

1. Samples were received via? USPS 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? \_\_\_\_\_  
 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
0.2	0.3	5.5	5.6	+0.1	346		8092 0775 4329		
0.8				+0.2	351		7880 7560 9433		
-0.1	-0.3	6.8	6.5	-0.2	387		7880 7560 9411		
-0.1	-0.2	6.6	6.5	-0.1	328		7880 7560 9422		
-0.3	-0.3	4.2	4.2	0.0	364		7880 7560 9444		

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. Were samples received in good condition (temperature, unbroken)? Indicate in the table below. NA Y N  
 If applicable, tissue samples were received: Frozen Partially Thawed Thawed
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: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



### Cooler Receipt and Preservation Form

Client Teck America Service Request K17 11288  
 Received: 10/18/17 Opened: 10/18/17 By: [Signature] Unloaded: 10/18/17 By: [Signature]

- Samples were received via?  USPS  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? \_\_\_\_\_  
 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	-0.5	5.2	5.3	+0.1	302	7 of 8	788116454905		
0.0	-0.1	3.9	3.8	-0.1	329	8 of 8 Coolers	788116454916		
0.0	-0.1	5.5	5.4	-0.1	375	2 of 8 Coolers	" " 4857		
0.6	0.5	5.7	5.6	-0.1	365	6 of 8 Coolers	" " 4890		
4.7	-	5.8	-	0	390	1 of 8 Coolers	" " 4846		

- 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
- Were samples received in good condition (temperature, unbroken)? *Indicate in the table below.* NA  Y N  
 If applicable, tissue samples were received: Frozen  Partially Thawed  Thawed
- 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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### Cooler Receipt and Preservation Form

Client Teck America Service Request K17 11288  
 Received: 10/18/17 Opened: 10/18/17 By: [Signature] Unloaded: 10/18/17 By: [Signature]

- Samples were received via?  Fed Ex  USPS  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? \_\_\_\_\_  
 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
0.8	-	4.6	-	0	325	4 of 8 Coolers	7881 1645 4879		
0.4	0.5	2.6	2.7	+0.1	342	3 of 8 Coolers	" " 4868		
0.2	0.0	5.9	5.7	-0.2	387	5 of 8 Coolers	" " 4880		

- Packing material:  Baggies  Inserts  Bubble Wrap  Gel Packs  Wet Ice  Dry Ice  Sleeves \_\_\_\_\_
- Were custody papers properly filled out (ink, signed, etc.)? NA  Y N
- Were samples received in good condition (temperature, unbroken)? *Indicate in the table below.* NA  Y N  
 If applicable, tissue samples were received:  Frozen  Partially Thawed  Thawed
- 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: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



# Total Solids

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1711288  
**Date Collected:** 10/10/17 - 10/17/17  
**Date Received:** 10/12/17 - 10/18/17

**Units:** Percent  
**Basis:** As Received

**Solids, Total**

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
IC-401-1A-101017	K1711288-001	<b>95.6</b>	-	-	1	11/03/17 14:28	
IC-401-1B-101017	K1711288-002	<b>94.5</b>	-	-	1	11/03/17 14:28	
IC-401-1C-101117	K1711288-003	<b>94.5</b>	-	-	1	11/03/17 14:28	
IC-401-1C-101117-D	K1711288-004	<b>94.7</b>	-	-	1	11/03/17 14:28	
IC-401-1D-101117	K1711288-005	<b>92.5</b>	-	-	1	11/03/17 14:28	
IC-401-2B-101117	K1711288-006	<b>93.4</b>	-	-	1	11/03/17 14:28	
IC1-401-2A-101217	K1711288-007	<b>93.6</b>	-	-	1	11/03/17 14:28	
IC2-401-2A-101217	K1711288-008	<b>94.1</b>	-	-	1	11/03/17 14:28	
IC3-401-2A-101217	K1711288-009	<b>93.7</b>	-	-	1	11/03/17 14:28	
IC-401-2C-101217	K1711288-010	<b>94.6</b>	-	-	1	11/03/17 14:28	
IC-401-2D-101217	K1711288-011	<b>90.5</b>	-	-	1	11/03/17 14:28	
IC-258-3A-101717	K1711288-012	<b>95.3</b>	-	-	1	11/03/17 14:28	
IC-258-3B-101717	K1711288-013	<b>95.0</b>	-	-	1	11/03/17 14:28	
IC-258-3C-101717	K1711288-014	<b>91.6</b>	-	-	1	11/03/17 14:28	
IC-258-3D-101717	K1711288-015	<b>94.9</b>	-	-	1	11/03/17 14:28	
IC-441-1A-101617	K1711288-016	<b>89.2</b>	-	-	1	11/03/17 14:28	
IC-441-1B-101617	K1711288-017	<b>93.9</b>	-	-	1	11/03/17 14:28	
IC-441-1C-101617	K1711288-018	<b>91.6</b>	-	-	1	11/03/17 14:28	
IC-441-1D-101617	K1711288-019	<b>87.9</b>	-	-	1	11/03/17 14:28	

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QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1711288  
**Date Collected:** 10/10/17 - 10/12/17  
**Date Received:** 10/12/17 - 10/14/17

**Units:** Percent  
**Basis:** As Received

Replicate Sample Summary  
Inorganic Parameters

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
IC-401-1A-101017	K1711288-001DUP	-	95.6	95.6	95.6	<1	20	11/03/17
IC-401-2D-101217	K1711288-011DUP	-	90.5	91.7	91.1	1	20	11/03/17

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1711288  
**Date Collected:** 10/10/17 - 10/17/17  
**Date Received:** 10/12/17 - 10/18/17  
**Units:** Percent  
**Basis:** Air Dried

**Solids, Total**

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
IC-401-1A-101017	K1711288-001	97.8	-	1	11/17/17 17:16	
IC-401-1B-101017	K1711288-002	97.3	-	1	11/17/17 17:16	
IC-401-1C-101117	K1711288-003	97.2	-	1	11/17/17 17:16	
IC-401-1C-101117-D	K1711288-004	97.6	-	1	11/17/17 17:16	
IC-401-1D-101117	K1711288-005	94.8	-	1	11/17/17 17:16	
IC-401-2B-101117	K1711288-006	96.0	-	1	11/17/17 17:16	
IC1-401-2A-101217	K1711288-007	95.7	-	1	11/17/17 17:16	
IC2-401-2A-101217	K1711288-008	95.9	-	1	11/17/17 17:16	
IC3-401-2A-101217	K1711288-009	96.7	-	1	11/17/17 17:16	
IC-401-2C-101217	K1711288-010	96.1	-	1	11/17/17 17:16	
IC-401-2D-101217	K1711288-011	94.1	-	1	11/17/17 17:16	
IC-258-3A-101717	K1711288-012	98.3	-	1	11/17/17 17:16	
IC-258-3B-101717	K1711288-013	98.5	-	1	11/17/17 17:16	
IC-258-3C-101717	K1711288-014	95.5	-	1	11/17/17 17:16	
IC-258-3D-101717	K1711288-015	98.3	-	1	11/17/17 17:16	
IC-441-1A-101617	K1711288-016	95.4	-	1	11/17/17 17:16	
IC-441-1B-101617	K1711288-017	95.1	-	1	11/17/17 17:16	
IC-441-1C-101617	K1711288-018	95.8	-	1	11/17/17 17:16	
IC-441-1D-101617	K1711288-019	93.7	-	1	11/17/17 17:16	

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QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil  
**Analysis Method:** 160.3 Modified  
**Prep Method:** None

**Service Request:** K1711288  
**Date Collected:** 10/10/17 - 10/12/17  
**Date Received:** 10/12/17 - 10/14/17

**Units:** Percent  
**Basis:** Air Dried

**Replicate Sample Summary**  
**Inorganic Parameters**

<b>Sample Name:</b>	<b>Lab Code:</b>	<b>MRL</b>	<b>Sample Result</b>	<b>Duplicate Result</b>	<b>Average</b>	<b>RPD</b>	<b>RPD Limit</b>	<b>Date Analyzed</b>
IC-401-1A-101017	K1711288-001DUP	-	97.8	97.7	97.8	<1	10	11/17/17
IC-401-2D-101217	K1711288-011DUP	-	94.1	94.5	94.3	<1	10	11/17/17

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



# General Chemistry

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil  
**Analysis Method:** 9060  
**Prep Method:** Method

**Service Request:** K1711288  
**Date Collected:** 10/10/17 - 10/17/17  
**Date Received:** 10/12/17 - 10/18/17

**Units:** Percent  
**Basis:** Dry, per Method

**Carbon, Total Organic (TOC)**

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
IC-401-1A-101017	K1711288-001	<b>5.97</b>	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC-401-1B-101017	K1711288-002	<b>4.56</b>	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC-401-1C-101117	K1711288-003	<b>4.73</b>	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC-401-1C-101117-D	K1711288-004	<b>5.00</b>	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC-401-1D-101117	K1711288-005	<b>6.09</b>	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC-401-2B-101117	K1711288-006	<b>5.73</b>	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC1-401-2A-101217	K1711288-007	<b>5.93</b>	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC2-401-2A-101217	K1711288-008	<b>4.24</b>	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC3-401-2A-101217	K1711288-009	<b>7.74</b>	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC-401-2C-101217	K1711288-010	<b>5.57</b>	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC-401-2D-101217	K1711288-011	<b>8.48</b>	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC-258-3A-101717	K1711288-012	<b>3.55</b>	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC-258-3B-101717	K1711288-013	<b>3.55</b>	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC-258-3C-101717	K1711288-014	<b>6.55</b>	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC-258-3D-101717	K1711288-015	<b>3.33</b>	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC-441-1A-101617	K1711288-016	<b>6.24</b>	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC-441-1B-101617	K1711288-017	<b>6.82</b>	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC-441-1C-101617	K1711288-018	<b>7.00</b>	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC-441-1D-101617	K1711288-019	<b>7.91</b>	0.10	0.02	1	11/07/17 13:07	11/7/17	
Method Blank	K1711288-MB1	ND U	0.10	0.02	1	11/07/17 13:07	11/7/17	



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QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil

**Service Request:** K1711288  
**Date Collected:** 10/10/17  
**Date Received:** 10/12/17  
**Date Analyzed:** 11/07/17

**Replicate Sample Summary**  
**General Chemistry Parameters**

**Sample Name:** IC-401-1A-101017  
**Lab Code:** K1711288-001

**Units:** Percent  
**Basis:** Dry, per Method

<u>Analyte Name</u>	<u>Analysis Method</u>	<u>MRL</u>	<u>MDL</u>	<u>Sample Result</u>	<u>Duplicate Sample K1711288-001DUP Result</u>	<u>Average</u>	<u>RPD</u>	<u>RPD Limit</u>
Carbon, Total Organic (TOC)	9060	0.10	0.02	5.97	5.98	5.98	<1	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.  
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QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil

**Service Request:** K1711288  
**Date Collected:** 10/10/17  
**Date Received:** 10/12/17  
**Date Analyzed:** 11/7/17  
**Date Extracted:** 11/7/17

**Duplicate Matrix Spike Summary**  
**Carbon, Total Organic (TOC)**

**Sample Name:** IC-401-1A-101017  
**Lab Code:** K1711288-001  
**Analysis Method:** 9060  
**Prep Method:** Method

**Units:** Percent  
**Basis:** Dry, per Method

Analyte Name	Sample Result	Matrix Spike K1711288-001MS			Duplicate Matrix Spike K1711288-001DMS			% Rec Limits	RPD	RPD Limit
		Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
Carbon, Total Organic (TOC)	5.97	12.0	6.00	100	11.9	5.95	100	70-122	<1	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.  
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QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil

**Service Request:** K1711288  
**Date Analyzed:** 11/07/17  
**Date Extracted:** 11/07/17

**Lab Control Sample Summary**  
**Carbon, Total Organic (TOC)**

**Analysis Method:** 9060  
**Prep Method:** Method

**Units:** Percent  
**Basis:** Dry, per Method  
**Analysis Lot:** 569162

<b>Sample Name</b>	<b>Lab Code</b>	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>% Rec Limits</b>
Lab Control Sample	K1711288-LCS1	0.600	0.60	100	72-122

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil  
**Analysis Method:** PSEP Sulfide  
**Prep Method:** Method

**Service Request:** K1711288  
**Date Collected:** 10/10/17 - 10/17/17  
**Date Received:** 10/12/17 - 10/18/17  
**Units:** mg/Kg  
**Basis:** Dry

Sulfide, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
IC-401-1A-101017	K1711288-001	ND U	1.7	0.6	1	10/20/17 02:12	10/19/17	**
IC-401-1B-101017	K1711288-002	ND U	1.7	0.6	1	10/20/17 02:12	10/19/17	**
IC-401-1C-101117	K1711288-003	<b>0.5 J</b>	1.6	0.5	1	10/20/17 02:12	10/19/17	**
IC-401-1C-101117-D	K1711288-004	<b>0.8 J</b>	1.7	0.6	1	10/20/17 02:12	10/19/17	**
IC-401-1D-101117	K1711288-005	<b>0.6 J</b>	1.9	0.6	1	10/20/17 02:12	10/19/17	**
IC-401-2B-101117	K1711288-006	<b>0.5 J</b>	1.7	0.5	1	10/20/17 02:12	10/19/17	**
IC1-401-2A-101217	K1711288-007	ND U	1.7	0.6	1	10/20/17 02:12	10/19/17	
IC2-401-2A-101217	K1711288-008	ND U	1.7	0.6	1	10/20/17 02:12	10/19/17	
IC3-401-2A-101217	K1711288-009	ND U	1.5	0.5	1	10/20/17 02:12	10/19/17	
IC-401-2C-101217	K1711288-010	<b>0.5 J</b>	1.5	0.5	1	10/20/17 02:12	10/19/17	
IC-401-2D-101217	K1711288-011	ND U	1.9	0.6	1	10/20/17 02:12	10/19/17	
IC-258-3A-101717	K1711288-012	ND U	1.4	0.5	1	10/24/17 01:05	10/23/17	
IC-258-3B-101717	K1711288-013	ND U	1.5	0.5	1	10/24/17 01:05	10/23/17	
IC-258-3C-101717	K1711288-014	ND U	1.5	0.5	1	10/24/17 01:05	10/23/17	
IC-258-3D-101717	K1711288-015	ND U	1.5	0.5	1	10/24/17 01:05	10/23/17	
IC-441-1A-101617	K1711288-016	ND U	1.5	0.5	1	10/24/17 01:05	10/23/17	
IC-441-1B-101617	K1711288-017	ND U	2.1	0.7	1	11/10/17 20:56	11/10/17	**
IC-441-1C-101617	K1711288-018	ND U	1.5	0.5	1	10/24/17 01:05	10/23/17	
IC-441-1D-101617	K1711288-019	ND U	1.5	0.5	1	10/24/17 01:05	10/23/17	
Method Blank	K1711288-MB1	ND U	1.0	0.3	1	10/20/17 02:12	10/19/17	
Method Blank	K1711288-MB2	<b>1.2</b>	1.0	0.3	1	10/24/17 01:05	10/23/17	
Method Blank	K1711288-MB3	ND U	1.0	0.3	1	11/10/17 20:56	11/10/17	

ALS Group USA, Corp.

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QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil

**Service Request:** K1711288  
**Date Collected:** 10/12/17  
**Date Received:** 10/14/17  
**Date Analyzed:** 10/20/17

**Triplicate Sample Summary**  
**General Chemistry Parameters**

**Sample Name:** IC1-401-2A-101217 **Units:** mg/Kg  
**Lab Code:** K1711288-007 **Basis:** Dry  
**Analysis Method:** PSEP Sulfide  
**Prep Method:** Method

Analyte Name	MRL	MDL	Sample Result	Duplicate K1711288-007DUP Result	Triplicate K1711288-007TRP Result	Average	RSD	RSD Limit
Sulfide, Total	1.7	0.6	ND	ND	ND	NC	NC	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil

**Service Request:** K1711288  
**Date Collected:** 10/17/17  
**Date Received:** 10/18/17  
**Date Analyzed:** 10/24/17

**Triplicate Sample Summary**  
**General Chemistry Parameters**

**Sample Name:** IC-258-3A-101717 **Units:** mg/Kg  
**Lab Code:** K1711288-012 **Basis:** Dry  
**Analysis Method:** PSEP Sulfide  
**Prep Method:** Method

Analyte Name	MRL	MDL	Sample Result	Duplicate K1711288-012DUP Result	Triplicate K1711288-012TRP Result	Average	RSD	RSD Limit
Sulfide, Total	1.4	0.5	ND	ND	ND	NC	NC	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.

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QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil

**Service Request:** K1711288  
**Date Collected:** NA  
**Date Received:** NA  
**Date Analyzed:** 11/10/17

**Triplicate Sample Summary**  
**General Chemistry Parameters**

**Sample Name:** Batch QC **Units:** mg/Kg  
**Lab Code:** K1712207-001 **Basis:** Dry  
**Analysis Method:** PSEP Sulfide  
**Prep Method:** Method

Analyte Name	MRL	MDL	Sample Result	Duplicate K1712207-001DUP Result	Triplicate K1712207-001TRP Result	Average	RSD	RSD Limit
Sulfide, Total	420	130	830	890	890	872	4	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil

**Service Request:** K1711288  
**Date Collected:** 10/12/17  
**Date Received:** 10/14/17  
**Date Analyzed:** 10/20/17  
**Date Extracted:** 10/19/17

**Duplicate Matrix Spike Summary  
Sulfide, Total**

**Sample Name:** IC1-401-2A-101217  
**Lab Code:** K1711288-007  
**Analysis Method:** PSEP Sulfide  
**Prep Method:** Method

**Units:** mg/Kg  
**Basis:** Dry

Analyte Name	Sample Result	Result	Matrix Spike K1711288-007MS		Result	Duplicate Matrix Spike K1711288-007DMS		% Rec Limits	RPD	RPD Limit
			Spike Amount	% Rec		Spike Amount	% Rec			
Sulfide, Total	ND U	480	610	78	490	620	80	28-175	3	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil

**Service Request:** K1711288  
**Date Collected:** 10/17/17  
**Date Received:** 10/18/17  
**Date Analyzed:** 10/24/17  
**Date Extracted:** 10/23/17

**Duplicate Matrix Spike Summary  
Sulfide, Total**

**Sample Name:** IC-258-3A-101717  
**Lab Code:** K1711288-012  
**Analysis Method:** PSEP Sulfide  
**Prep Method:** Method

**Units:** mg/Kg  
**Basis:** Dry

Analyte Name	Sample Result	Result	Matrix Spike K1711288-012MS		Duplicate Matrix Spike K1711288-012DMS		% Rec Limits	RPD	RPD Limit	
			Spike Amount	% Rec	Result	Spike Amount				% Rec
Sulfide, Total	ND U	460	500	92	470	510	93	28-175	2	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil

**Service Request:** K1711288  
**Date Collected:** N/A  
**Date Received:** N/A  
**Date Analyzed:** 11/10/17  
**Date Extracted:** 11/10/17

**Duplicate Matrix Spike Summary**  
**Sulfide, Total**

**Sample Name:** Batch QC  
**Lab Code:** K1712207-001  
**Analysis Method:** PSEP Sulfide  
**Prep Method:** Method

**Units:** mg/Kg  
**Basis:** Dry

Analyte Name	Sample Result	Result	Matrix Spike K1712207-001MS		Duplicate Matrix Spike K1712207-001DMS		% Rec Limits	RPD	RPD Limit	
			Spike Amount	% Rec	Result	Spike Amount				% Rec
Sulfide, Total	830	2040	1190	101	1910	1190	90	28-175	6	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil

**Service Request:** K1711288  
**Date Analyzed:** 10/20/17  
**Date Extracted:** 10/19/17

**Lab Control Sample Summary**  
**Sulfide, Total**

**Analysis Method:** PSEP Sulfide  
**Prep Method:** Method

**Units:** mg/Kg  
**Basis:** Dry  
**Analysis Lot:** 566694

<b>Sample Name</b>	<b>Lab Code</b>	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>% Rec Limits</b>
Lab Control Sample	K1711288-LCS1	346	360	97	39-166

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QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil

**Service Request:** K1711288  
**Date Analyzed:** 10/24/17  
**Date Extracted:** 10/23/17

**Lab Control Sample Summary**  
**Sulfide, Total**

**Analysis Method:** PSEP Sulfide  
**Prep Method:** Method

**Units:** mg/Kg  
**Basis:** Dry  
**Analysis Lot:** 567112

<b>Sample Name</b>	<b>Lab Code</b>	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>% Rec Limits</b>
Lab Control Sample	K1711288-LCS2	349	360	98	39-166

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QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil

**Service Request:** K1711288  
**Date Analyzed:** 11/10/17  
**Date Extracted:** 11/10/17

**Lab Control Sample Summary**  
**Sulfide, Total**

**Analysis Method:** PSEP Sulfide  
**Prep Method:** Method

**Units:** mg/Kg  
**Basis:** Dry  
**Analysis Lot:** 569680

<b>Sample Name</b>	<b>Lab Code</b>	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>% Rec Limits</b>
Lab Control Sample	K1711288-LCS3	279	330	85	39-166



# Metals

**ALS Environmental—Kelso Laboratory**  
1317 South 13th Avenue, Kelso, WA 98626  
Phone (360)577-7222 Fax (360)636-1068  
[www.alsglobal.com](http://www.alsglobal.com)

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil  
**Sample Name:** IC-401-1A-101017  
**Lab Code:** K1711288-001

**Service Request:** K1711288  
**Date Collected:** 10/10/17 10:58  
**Date Received:** 10/12/17 09:30

**Basis:** NA

SPLP Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	6010C	20.0	mg/L	0.010	0.003	1	11/27/17 16:09	11/21/17	
Antimony	6010C	0.045	mg/L	0.020	0.006	1	11/27/17 16:09	11/21/17	
Arsenic	6010C	0.101	mg/L	0.010	0.004	1	11/27/17 16:09	11/21/17	
Barium	6010C	0.17 J	mg/L	0.20	0.10	1	11/27/17 16:09	11/21/17	
Beryllium	6010C	ND U	mg/L	0.010	0.0002	1	11/27/17 16:09	11/21/17	
Cadmium	6010C	0.004 J	mg/L	0.010	0.0002	1	11/27/17 16:09	11/21/17	
Calcium	6010C	3.4	mg/L	2.0	0.008	1	11/27/17 16:09	11/21/17	
Chromium	6010C	0.004 J	mg/L	0.010	0.002	1	11/27/17 16:09	11/21/17	
Cobalt	6010C	0.003 J	mg/L	0.010	0.0005	1	11/27/17 16:09	11/21/17	
Copper	6010C	0.023	mg/L	0.010	0.002	1	11/27/17 16:09	11/21/17	
Iron	6010C	9.97	mg/L	0.020	0.006	1	11/27/17 16:09	11/21/17	
Lead	6010C	0.371	mg/L	0.010	0.003	1	11/27/17 16:09	11/21/17	
Magnesium	6010C	1.29	mg/L	0.50	0.002	1	11/27/17 16:09	11/21/17	
Manganese	6010C	0.539	mg/L	0.010	0.0005	1	11/27/17 16:09	11/21/17	
Nickel	6010C	0.005 J	mg/L	0.010	0.0007	1	11/27/17 16:09	11/21/17	
Potassium	6010C	2.25	mg/L	0.20	0.04	1	11/27/17 16:09	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 16:09	11/21/17	
Silver	6010C	0.004 J	mg/L	0.020	0.0008	1	11/27/17 16:09	11/21/17	
Sodium	6010C	1.9 J	mg/L	2.0	0.03	1	11/27/17 16:09	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 16:09	11/21/17	
Vanadium	6010C	0.013	mg/L	0.010	0.0008	1	11/27/17 16:09	11/21/17	
Zinc	6010C	0.380	mg/L	0.0040	0.0200	1	11/27/17 16:09	11/21/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil  
**Sample Name:** IC-401-1B-101017  
**Lab Code:** K1711288-002

**Service Request:** K1711288  
**Date Collected:** 10/10/17 11:55  
**Date Received:** 10/12/17 09:30

**Basis:** NA

SPLP Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	6010C	16.2	mg/L	0.010	0.003	1	11/27/17 16:25	11/21/17	
Antimony	6010C	0.038	mg/L	0.020	0.006	1	11/27/17 16:25	11/21/17	
Arsenic	6010C	0.085	mg/L	0.010	0.004	1	11/27/17 16:25	11/21/17	
Barium	6010C	0.15 J	mg/L	0.20	0.10	1	11/27/17 16:25	11/21/17	
Beryllium	6010C	ND U	mg/L	0.010	0.0002	1	11/27/17 16:25	11/21/17	
Cadmium	6010C	0.004 J	mg/L	0.010	0.0002	1	11/27/17 16:25	11/21/17	
Calcium	6010C	3.0	mg/L	2.0	0.008	1	11/27/17 16:25	11/21/17	
Chromium	6010C	0.004 J	mg/L	0.010	0.002	1	11/27/17 16:25	11/21/17	
Cobalt	6010C	0.003 J	mg/L	0.010	0.0005	1	11/27/17 16:25	11/21/17	
Copper	6010C	0.019	mg/L	0.010	0.002	1	11/27/17 16:25	11/21/17	
Iron	6010C	7.82	mg/L	0.020	0.006	1	11/27/17 16:25	11/21/17	
Lead	6010C	0.256	mg/L	0.010	0.003	1	11/27/17 16:25	11/21/17	
Magnesium	6010C	0.97	mg/L	0.50	0.002	1	11/27/17 16:25	11/21/17	
Manganese	6010C	0.580	mg/L	0.010	0.0005	1	11/27/17 16:25	11/21/17	
Nickel	6010C	0.004 J	mg/L	0.010	0.0007	1	11/27/17 16:25	11/21/17	
Potassium	6010C	1.75	mg/L	0.20	0.04	1	11/27/17 16:25	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 16:25	11/21/17	
Silver	6010C	ND U	mg/L	0.020	0.0008	1	11/27/17 16:25	11/21/17	
Sodium	6010C	1.8 J	mg/L	2.0	0.03	1	11/27/17 16:25	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 16:25	11/21/17	
Vanadium	6010C	0.010 J	mg/L	0.010	0.0008	1	11/27/17 16:25	11/21/17	
Zinc	6010C	0.338	mg/L	0.0040	0.0200	1	11/27/17 16:25	11/21/17	



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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil  
**Sample Name:** IC-401-1C-101117  
**Lab Code:** K1711288-003

**Service Request:** K1711288  
**Date Collected:** 10/11/17 10:23  
**Date Received:** 10/13/17 09:30

**Basis:** NA

SPLP Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	6010C	17.3	mg/L	0.010	0.003	1	11/27/17 16:28	11/21/17	
Antimony	6010C	0.038	mg/L	0.020	0.006	1	11/27/17 16:28	11/21/17	
Arsenic	6010C	0.099	mg/L	0.010	0.004	1	11/27/17 16:28	11/21/17	
Barium	6010C	0.16 J	mg/L	0.20	0.10	1	11/27/17 16:28	11/21/17	
Beryllium	6010C	0.0003 J	mg/L	0.010	0.0002	1	11/27/17 16:28	11/21/17	
Cadmium	6010C	0.004 J	mg/L	0.010	0.0002	1	11/27/17 16:28	11/21/17	
Calcium	6010C	3.2	mg/L	2.0	0.008	1	11/27/17 16:28	11/21/17	
Chromium	6010C	0.004 J	mg/L	0.010	0.002	1	11/27/17 16:28	11/21/17	
Cobalt	6010C	0.003 J	mg/L	0.010	0.0005	1	11/27/17 16:28	11/21/17	
Copper	6010C	0.021	mg/L	0.010	0.002	1	11/27/17 16:28	11/21/17	
Iron	6010C	8.74	mg/L	0.020	0.006	1	11/27/17 16:28	11/21/17	
Lead	6010C	0.371	mg/L	0.010	0.003	1	11/27/17 16:28	11/21/17	
Magnesium	6010C	1.09	mg/L	0.50	0.002	1	11/27/17 16:28	11/21/17	
Manganese	6010C	0.537	mg/L	0.010	0.0005	1	11/27/17 16:28	11/21/17	
Nickel	6010C	0.004 J	mg/L	0.010	0.0007	1	11/27/17 16:28	11/21/17	
Potassium	6010C	2.06	mg/L	0.20	0.04	1	11/27/17 16:28	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 16:28	11/21/17	
Silver	6010C	0.0008 J	mg/L	0.020	0.0008	1	11/27/17 16:28	11/21/17	
Sodium	6010C	1.8 J	mg/L	2.0	0.03	1	11/27/17 16:28	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 16:28	11/21/17	
Vanadium	6010C	0.011	mg/L	0.010	0.0008	1	11/27/17 16:28	11/21/17	
Zinc	6010C	0.369	mg/L	0.0040	0.0200	1	11/27/17 16:28	11/21/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil  
**Sample Name:** IC-401-1C-101117-D  
**Lab Code:** K1711288-004

**Service Request:** K1711288  
**Date Collected:** 10/11/17 12:35  
**Date Received:** 10/13/17 09:30

**Basis:** NA

SPLP Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	6010C	16.8	mg/L	0.010	0.003	1	11/27/17 16:44	11/21/17	
Antimony	6010C	0.042	mg/L	0.020	0.006	1	11/27/17 16:44	11/21/17	
Arsenic	6010C	0.094	mg/L	0.010	0.004	1	11/27/17 16:44	11/21/17	
Barium	6010C	0.17 J	mg/L	0.20	0.10	1	11/27/17 16:44	11/21/17	
Beryllium	6010C	0.0002 J	mg/L	0.010	0.0002	1	11/27/17 16:44	11/21/17	
Cadmium	6010C	0.004 J	mg/L	0.010	0.0002	1	11/27/17 16:44	11/21/17	
Calcium	6010C	3.2	mg/L	2.0	0.008	1	11/27/17 16:44	11/21/17	
Chromium	6010C	0.004 J	mg/L	0.010	0.002	1	11/27/17 16:44	11/21/17	
Cobalt	6010C	0.003 J	mg/L	0.010	0.0005	1	11/27/17 16:44	11/21/17	
Copper	6010C	0.020	mg/L	0.010	0.002	1	11/27/17 16:44	11/21/17	
Iron	6010C	8.81	mg/L	0.020	0.006	1	11/27/17 16:44	11/21/17	
Lead	6010C	0.361	mg/L	0.010	0.003	1	11/27/17 16:44	11/21/17	
Magnesium	6010C	1.13	mg/L	0.50	0.002	1	11/27/17 16:44	11/21/17	
Manganese	6010C	0.528	mg/L	0.010	0.0005	1	11/27/17 16:44	11/21/17	
Nickel	6010C	0.005 J	mg/L	0.010	0.0007	1	11/27/17 16:44	11/21/17	
Potassium	6010C	2.22	mg/L	0.20	0.04	1	11/27/17 16:44	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 16:44	11/21/17	
Silver	6010C	0.001 J	mg/L	0.020	0.0008	1	11/27/17 16:44	11/21/17	
Sodium	6010C	1.8 J	mg/L	2.0	0.03	1	11/27/17 16:44	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 16:44	11/21/17	
Vanadium	6010C	0.012	mg/L	0.010	0.0008	1	11/27/17 16:44	11/21/17	
Zinc	6010C	0.370	mg/L	0.0040	0.0200	1	11/27/17 16:44	11/21/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil  
**Sample Name:** IC-401-1D-101117  
**Lab Code:** K1711288-005

**Service Request:** K1711288  
**Date Collected:** 10/11/17 14:00  
**Date Received:** 10/13/17 09:30

**Basis:** NA

SPLP Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	6010C	11.7	mg/L	0.010	0.003	1	11/27/17 16:46	11/21/17	
Antimony	6010C	0.041	mg/L	0.020	0.006	1	11/27/17 16:46	11/21/17	
Arsenic	6010C	0.101	mg/L	0.010	0.004	1	11/27/17 16:46	11/21/17	
Barium	6010C	0.15 J	mg/L	0.20	0.10	1	11/27/17 16:46	11/21/17	
Beryllium	6010C	ND U	mg/L	0.010	0.0002	1	11/27/17 16:46	11/21/17	
Cadmium	6010C	0.003 J	mg/L	0.010	0.0002	1	11/27/17 16:46	11/21/17	
Calcium	6010C	3.4	mg/L	2.0	0.008	1	11/27/17 16:46	11/21/17	
Chromium	6010C	0.002 J	mg/L	0.010	0.002	1	11/27/17 16:46	11/21/17	
Cobalt	6010C	0.001 J	mg/L	0.010	0.0005	1	11/27/17 16:46	11/21/17	
Copper	6010C	0.021	mg/L	0.010	0.002	1	11/27/17 16:46	11/21/17	
Iron	6010C	6.56	mg/L	0.020	0.006	1	11/27/17 16:46	11/21/17	
Lead	6010C	0.300	mg/L	0.010	0.003	1	11/27/17 16:46	11/21/17	
Magnesium	6010C	0.98	mg/L	0.50	0.002	1	11/27/17 16:46	11/21/17	
Manganese	6010C	0.343	mg/L	0.010	0.0005	1	11/27/17 16:46	11/21/17	
Nickel	6010C	0.003 J	mg/L	0.010	0.0007	1	11/27/17 16:46	11/21/17	
Potassium	6010C	3.25	mg/L	0.20	0.04	1	11/27/17 16:46	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 16:46	11/21/17	
Silver	6010C	0.001 J	mg/L	0.020	0.0008	1	11/27/17 16:46	11/21/17	
Sodium	6010C	1.9 J	mg/L	2.0	0.03	1	11/27/17 16:46	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 16:46	11/21/17	
Vanadium	6010C	0.009 J	mg/L	0.010	0.0008	1	11/27/17 16:46	11/21/17	
Zinc	6010C	0.339	mg/L	0.0040	0.0200	1	11/27/17 16:46	11/21/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil  
**Sample Name:** IC-401-2B-101117  
**Lab Code:** K1711288-006

**Service Request:** K1711288  
**Date Collected:** 10/11/17 15:38  
**Date Received:** 10/13/17 09:30

**Basis:** NA

SPLP Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	6010C	15.1	mg/L	0.010	0.003	1	11/27/17 16:49	11/21/17	
Antimony	6010C	0.035	mg/L	0.020	0.006	1	11/27/17 16:49	11/21/17	
Arsenic	6010C	0.085	mg/L	0.010	0.004	1	11/27/17 16:49	11/21/17	
Barium	6010C	0.16 J	mg/L	0.20	0.10	1	11/27/17 16:49	11/21/17	
Beryllium	6010C	0.0002 J	mg/L	0.010	0.0002	1	11/27/17 16:49	11/21/17	
Cadmium	6010C	0.005 J	mg/L	0.010	0.0002	1	11/27/17 16:49	11/21/17	
Calcium	6010C	3.5	mg/L	2.0	0.008	1	11/27/17 16:49	11/21/17	
Chromium	6010C	0.003 J	mg/L	0.010	0.002	1	11/27/17 16:49	11/21/17	
Cobalt	6010C	0.002 J	mg/L	0.010	0.0005	1	11/27/17 16:49	11/21/17	
Copper	6010C	0.020	mg/L	0.010	0.002	1	11/27/17 16:49	11/21/17	
Iron	6010C	6.92	mg/L	0.020	0.006	1	11/27/17 16:49	11/21/17	
Lead	6010C	0.264	mg/L	0.010	0.003	1	11/27/17 16:49	11/21/17	
Magnesium	6010C	0.98	mg/L	0.50	0.002	1	11/27/17 16:49	11/21/17	
Manganese	6010C	0.571	mg/L	0.010	0.0005	1	11/27/17 16:49	11/21/17	
Nickel	6010C	0.003 J	mg/L	0.010	0.0007	1	11/27/17 16:49	11/21/17	
Potassium	6010C	2.46	mg/L	0.20	0.04	1	11/27/17 16:49	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 16:49	11/21/17	
Silver	6010C	0.0008 J	mg/L	0.020	0.0008	1	11/27/17 16:49	11/21/17	
Sodium	6010C	1.9 J	mg/L	2.0	0.03	1	11/27/17 16:49	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 16:49	11/21/17	
Vanadium	6010C	0.008 J	mg/L	0.010	0.0008	1	11/27/17 16:49	11/21/17	
Zinc	6010C	0.383	mg/L	0.0040	0.0200	1	11/27/17 16:49	11/21/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil  
**Sample Name:** IC1-401-2A-101217  
**Lab Code:** K1711288-007

**Service Request:** K1711288  
**Date Collected:** 10/12/17 09:20  
**Date Received:** 10/14/17 09:30

**Basis:** NA

SPLP Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	6010C	15.1	mg/L	0.010	0.003	1	11/27/17 16:51	11/21/17	
Antimony	6010C	0.066	mg/L	0.020	0.006	1	11/27/17 16:51	11/21/17	
Arsenic	6010C	0.148	mg/L	0.010	0.004	1	11/27/17 16:51	11/21/17	
Barium	6010C	0.15 J	mg/L	0.20	0.10	1	11/27/17 16:51	11/21/17	
Beryllium	6010C	ND U	mg/L	0.010	0.0002	1	11/27/17 16:51	11/21/17	
Cadmium	6010C	0.006 J	mg/L	0.010	0.0002	1	11/27/17 16:51	11/21/17	
Calcium	6010C	3.1	mg/L	2.0	0.008	1	11/27/17 16:51	11/21/17	
Chromium	6010C	0.004 J	mg/L	0.010	0.002	1	11/27/17 16:51	11/21/17	
Cobalt	6010C	0.003 J	mg/L	0.010	0.0005	1	11/27/17 16:51	11/21/17	
Copper	6010C	0.027	mg/L	0.010	0.002	1	11/27/17 16:51	11/21/17	
Iron	6010C	7.82	mg/L	0.020	0.006	1	11/27/17 16:51	11/21/17	
Lead	6010C	0.439	mg/L	0.010	0.003	1	11/27/17 16:51	11/21/17	
Magnesium	6010C	1.08	mg/L	0.50	0.002	1	11/27/17 16:51	11/21/17	
Manganese	6010C	0.596	mg/L	0.010	0.0005	1	11/27/17 16:51	11/21/17	
Nickel	6010C	0.004 J	mg/L	0.010	0.0007	1	11/27/17 16:51	11/21/17	
Potassium	6010C	2.73	mg/L	0.20	0.04	1	11/27/17 16:51	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 16:51	11/21/17	
Silver	6010C	0.002 J	mg/L	0.020	0.0008	1	11/27/17 16:51	11/21/17	
Sodium	6010C	2.0 J	mg/L	2.0	0.03	1	11/27/17 16:51	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 16:51	11/21/17	
Vanadium	6010C	0.010	mg/L	0.010	0.0008	1	11/27/17 16:51	11/21/17	
Zinc	6010C	0.446	mg/L	0.0040	0.0200	1	11/27/17 16:51	11/21/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil  
**Sample Name:** IC2-401-2A-101217  
**Lab Code:** K1711288-008

**Service Request:** K1711288  
**Date Collected:** 10/12/17 10:15  
**Date Received:** 10/14/17 09:30

**Basis:** NA

SPLP Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	6010C	15.2	mg/L	0.010	0.003	1	11/27/17 16:54	11/21/17	
Antimony	6010C	0.052	mg/L	0.020	0.006	1	11/27/17 16:54	11/21/17	
Arsenic	6010C	0.148	mg/L	0.010	0.004	1	11/27/17 16:54	11/21/17	
Barium	6010C	0.16 J	mg/L	0.20	0.10	1	11/27/17 16:54	11/21/17	
Beryllium	6010C	0.0002 J	mg/L	0.010	0.0002	1	11/27/17 16:54	11/21/17	
Cadmium	6010C	0.006 J	mg/L	0.010	0.0002	1	11/27/17 16:54	11/21/17	
Calcium	6010C	3.2	mg/L	2.0	0.008	1	11/27/17 16:54	11/21/17	
Chromium	6010C	0.003 J	mg/L	0.010	0.002	1	11/27/17 16:54	11/21/17	
Cobalt	6010C	0.003 J	mg/L	0.010	0.0005	1	11/27/17 16:54	11/21/17	
Copper	6010C	0.025	mg/L	0.010	0.002	1	11/27/17 16:54	11/21/17	
Iron	6010C	7.83	mg/L	0.020	0.006	1	11/27/17 16:54	11/21/17	
Lead	6010C	0.400	mg/L	0.010	0.003	1	11/27/17 16:54	11/21/17	
Magnesium	6010C	1.04	mg/L	0.50	0.002	1	11/27/17 16:54	11/21/17	
Manganese	6010C	0.686	mg/L	0.010	0.0005	1	11/27/17 16:54	11/21/17	
Nickel	6010C	0.004 J	mg/L	0.010	0.0007	1	11/27/17 16:54	11/21/17	
Potassium	6010C	2.59	mg/L	0.20	0.04	1	11/27/17 16:54	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 16:54	11/21/17	
Silver	6010C	0.001 J	mg/L	0.020	0.0008	1	11/27/17 16:54	11/21/17	
Sodium	6010C	1.9 J	mg/L	2.0	0.03	1	11/27/17 16:54	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 16:54	11/21/17	
Vanadium	6010C	0.010	mg/L	0.010	0.0008	1	11/27/17 16:54	11/21/17	
Zinc	6010C	0.419	mg/L	0.0040	0.0200	1	11/27/17 16:54	11/21/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil  
**Sample Name:** IC3-401-2A-101217  
**Lab Code:** K1711288-009

**Service Request:** K1711288  
**Date Collected:** 10/12/17 10:55  
**Date Received:** 10/14/17 09:30

**Basis:** NA

SPLP Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	6010C	16.3	mg/L	0.010	0.003	1	11/27/17 16:56	11/21/17	
Antimony	6010C	0.065	mg/L	0.020	0.006	1	11/27/17 16:56	11/21/17	
Arsenic	6010C	0.154	mg/L	0.010	0.004	1	11/27/17 16:56	11/21/17	
Barium	6010C	0.15 J	mg/L	0.20	0.10	1	11/27/17 16:56	11/21/17	
Beryllium	6010C	0.0003 J	mg/L	0.010	0.0002	1	11/27/17 16:56	11/21/17	
Cadmium	6010C	0.007 J	mg/L	0.010	0.0002	1	11/27/17 16:56	11/21/17	
Calcium	6010C	3.3	mg/L	2.0	0.008	1	11/27/17 16:56	11/21/17	
Chromium	6010C	0.003 J	mg/L	0.010	0.002	1	11/27/17 16:56	11/21/17	
Cobalt	6010C	0.003 J	mg/L	0.010	0.0005	1	11/27/17 16:56	11/21/17	
Copper	6010C	0.027	mg/L	0.010	0.002	1	11/27/17 16:56	11/21/17	
Iron	6010C	8.37	mg/L	0.020	0.006	1	11/27/17 16:56	11/21/17	
Lead	6010C	0.431	mg/L	0.010	0.003	1	11/27/17 16:56	11/21/17	
Magnesium	6010C	1.10	mg/L	0.50	0.002	1	11/27/17 16:56	11/21/17	
Manganese	6010C	0.672	mg/L	0.010	0.0005	1	11/27/17 16:56	11/21/17	
Nickel	6010C	0.004 J	mg/L	0.010	0.0007	1	11/27/17 16:56	11/21/17	
Potassium	6010C	2.60	mg/L	0.20	0.04	1	11/27/17 16:56	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 16:56	11/21/17	
Silver	6010C	0.001 J	mg/L	0.020	0.0008	1	11/27/17 16:56	11/21/17	
Sodium	6010C	1.9 J	mg/L	2.0	0.03	1	11/27/17 16:56	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 16:56	11/21/17	
Vanadium	6010C	0.011	mg/L	0.010	0.0008	1	11/27/17 16:56	11/21/17	
Zinc	6010C	0.482	mg/L	0.0040	0.0200	1	11/27/17 16:56	11/21/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil  
**Sample Name:** IC-401-2C-101217  
**Lab Code:** K1711288-010

**Service Request:** K1711288  
**Date Collected:** 10/12/17 12:50  
**Date Received:** 10/14/17 09:30

**Basis:** NA

SPLP Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	6010C	15.9	mg/L	0.010	0.003	1	11/27/17 16:58	11/21/17	
Antimony	6010C	0.041	mg/L	0.020	0.006	1	11/27/17 16:58	11/21/17	
Arsenic	6010C	0.110	mg/L	0.010	0.004	1	11/27/17 16:58	11/21/17	
Barium	6010C	0.16 J	mg/L	0.20	0.10	1	11/27/17 16:58	11/21/17	
Beryllium	6010C	0.0002 J	mg/L	0.010	0.0002	1	11/27/17 16:58	11/21/17	
Cadmium	6010C	0.005 J	mg/L	0.010	0.0002	1	11/27/17 16:58	11/21/17	
Calcium	6010C	3.2	mg/L	2.0	0.008	1	11/27/17 16:58	11/21/17	
Chromium	6010C	0.003 J	mg/L	0.010	0.002	1	11/27/17 16:58	11/21/17	
Cobalt	6010C	0.002 J	mg/L	0.010	0.0005	1	11/27/17 16:58	11/21/17	
Copper	6010C	0.023	mg/L	0.010	0.002	1	11/27/17 16:58	11/21/17	
Iron	6010C	8.14	mg/L	0.020	0.006	1	11/27/17 16:58	11/21/17	
Lead	6010C	0.346	mg/L	0.010	0.003	1	11/27/17 16:58	11/21/17	
Magnesium	6010C	1.00	mg/L	0.50	0.002	1	11/27/17 16:58	11/21/17	
Manganese	6010C	0.558	mg/L	0.010	0.0005	1	11/27/17 16:58	11/21/17	
Nickel	6010C	0.004 J	mg/L	0.010	0.0007	1	11/27/17 16:58	11/21/17	
Potassium	6010C	2.08	mg/L	0.20	0.04	1	11/27/17 16:58	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 16:58	11/21/17	
Silver	6010C	0.001 J	mg/L	0.020	0.0008	1	11/27/17 16:58	11/21/17	
Sodium	6010C	1.9 J	mg/L	2.0	0.03	1	11/27/17 16:58	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 16:58	11/21/17	
Vanadium	6010C	0.010 J	mg/L	0.010	0.0008	1	11/27/17 16:58	11/21/17	
Zinc	6010C	0.404	mg/L	0.0040	0.0200	1	11/27/17 16:58	11/21/17	



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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil  
**Sample Name:** IC-401-2D-101217  
**Lab Code:** K1711288-011

**Service Request:** K1711288  
**Date Collected:** 10/12/17 14:00  
**Date Received:** 10/14/17 09:30

**Basis:** NA

SPLP Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	6010C	16.8	mg/L	0.010	0.003	1	11/27/17 17:01	11/21/17	
Antimony	6010C	0.038	mg/L	0.020	0.006	1	11/27/17 17:01	11/21/17	
Arsenic	6010C	0.122	mg/L	0.010	0.004	1	11/27/17 17:01	11/21/17	
Barium	6010C	0.15 J	mg/L	0.20	0.10	1	11/27/17 17:01	11/21/17	
Beryllium	6010C	ND U	mg/L	0.010	0.0002	1	11/27/17 17:01	11/21/17	
Cadmium	6010C	0.006 J	mg/L	0.010	0.0002	1	11/27/17 17:01	11/21/17	
Calcium	6010C	3.7	mg/L	2.0	0.008	1	11/27/17 17:01	11/21/17	
Chromium	6010C	0.004 J	mg/L	0.010	0.002	1	11/27/17 17:01	11/21/17	
Cobalt	6010C	0.002 J	mg/L	0.010	0.0005	1	11/27/17 17:01	11/21/17	
Copper	6010C	0.025	mg/L	0.010	0.002	1	11/27/17 17:01	11/21/17	
Iron	6010C	8.08	mg/L	0.020	0.006	1	11/27/17 17:01	11/21/17	
Lead	6010C	0.370	mg/L	0.010	0.003	1	11/27/17 17:01	11/21/17	
Magnesium	6010C	1.06	mg/L	0.50	0.002	1	11/27/17 17:01	11/21/17	
Manganese	6010C	0.549	mg/L	0.010	0.0005	1	11/27/17 17:01	11/21/17	
Nickel	6010C	0.004 J	mg/L	0.010	0.0007	1	11/27/17 17:01	11/21/17	
Potassium	6010C	4.14	mg/L	0.20	0.04	1	11/27/17 17:01	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 17:01	11/21/17	
Silver	6010C	0.001 J	mg/L	0.020	0.0008	1	11/27/17 17:01	11/21/17	
Sodium	6010C	1.8 J	mg/L	2.0	0.03	1	11/27/17 17:01	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 17:01	11/21/17	
Vanadium	6010C	0.011	mg/L	0.010	0.0008	1	11/27/17 17:01	11/21/17	
Zinc	6010C	0.448	mg/L	0.0040	0.0200	1	11/27/17 17:01	11/21/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil  
**Sample Name:** IC-258-3A-101717  
**Lab Code:** K1711288-012

**Service Request:** K1711288  
**Date Collected:** 10/17/17 08:40  
**Date Received:** 10/18/17 09:30

**Basis:** NA

SPLP Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	6010C	22.0	mg/L	0.010	0.003	1	11/27/17 17:03	11/21/17	
Antimony	6010C	0.014 J	mg/L	0.020	0.006	1	11/27/17 17:03	11/21/17	
Arsenic	6010C	0.032	mg/L	0.010	0.004	1	11/27/17 17:03	11/21/17	
Barium	6010C	0.20 J	mg/L	0.20	0.10	1	11/27/17 17:03	11/21/17	
Beryllium	6010C	0.0004 J	mg/L	0.010	0.0002	1	11/27/17 17:03	11/21/17	
Cadmium	6010C	0.002 J	mg/L	0.010	0.0002	1	11/27/17 17:03	11/21/17	
Calcium	6010C	4.3	mg/L	2.0	0.008	1	11/27/17 17:03	11/21/17	
Chromium	6010C	0.003 J	mg/L	0.010	0.002	1	11/27/17 17:03	11/21/17	
Cobalt	6010C	0.003 J	mg/L	0.010	0.0005	1	11/27/17 17:03	11/21/17	
Copper	6010C	0.015	mg/L	0.010	0.002	1	11/27/17 17:03	11/21/17	
Iron	6010C	9.10	mg/L	0.020	0.006	1	11/27/17 17:03	11/21/17	
Lead	6010C	0.149	mg/L	0.010	0.003	1	11/27/17 17:03	11/21/17	
Magnesium	6010C	1.08	mg/L	0.50	0.002	1	11/27/17 17:03	11/21/17	
Manganese	6010C	0.607	mg/L	0.010	0.0005	1	11/27/17 17:03	11/21/17	
Nickel	6010C	0.003 J	mg/L	0.010	0.0007	1	11/27/17 17:03	11/21/17	
Potassium	6010C	1.86	mg/L	0.20	0.04	1	11/27/17 17:03	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 17:03	11/21/17	
Silver	6010C	0.0009 J	mg/L	0.020	0.0008	1	11/27/17 17:03	11/21/17	
Sodium	6010C	1.7 J	mg/L	2.0	0.03	1	11/27/17 17:03	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 17:03	11/21/17	
Vanadium	6010C	0.010	mg/L	0.010	0.0008	1	11/27/17 17:03	11/21/17	
Zinc	6010C	0.233	mg/L	0.0040	0.0200	1	11/27/17 17:03	11/21/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil  
**Sample Name:** IC-258-3B-101717  
**Lab Code:** K1711288-013

**Service Request:** K1711288  
**Date Collected:** 10/17/17 09:15  
**Date Received:** 10/18/17 09:30

**Basis:** NA

SPLP Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	6010C	17.6	mg/L	0.010	0.003	1	11/27/17 17:14	11/21/17	
Antimony	6010C	0.015 J	mg/L	0.020	0.006	1	11/27/17 17:14	11/21/17	
Arsenic	6010C	0.048	mg/L	0.010	0.004	1	11/27/17 17:14	11/21/17	
Barium	6010C	0.18 J	mg/L	0.20	0.10	1	11/27/17 17:14	11/21/17	
Beryllium	6010C	0.0002 J	mg/L	0.010	0.0002	1	11/27/17 17:14	11/21/17	
Cadmium	6010C	0.003 J	mg/L	0.010	0.0002	1	11/27/17 17:14	11/21/17	
Calcium	6010C	3.9	mg/L	2.0	0.008	1	11/27/17 17:14	11/21/17	
Chromium	6010C	0.003 J	mg/L	0.010	0.002	1	11/27/17 17:14	11/21/17	
Cobalt	6010C	0.003 J	mg/L	0.010	0.0005	1	11/27/17 17:14	11/21/17	
Copper	6010C	0.016	mg/L	0.010	0.002	1	11/27/17 17:14	11/21/17	
Iron	6010C	7.96	mg/L	0.020	0.006	1	11/27/17 17:14	11/21/17	
Lead	6010C	0.194	mg/L	0.010	0.003	1	11/27/17 17:14	11/21/17	
Magnesium	6010C	1.10	mg/L	0.50	0.002	1	11/27/17 17:14	11/21/17	
Manganese	6010C	0.587	mg/L	0.010	0.0005	1	11/27/17 17:14	11/21/17	
Nickel	6010C	0.003 J	mg/L	0.010	0.0007	1	11/27/17 17:14	11/21/17	
Potassium	6010C	2.02	mg/L	0.20	0.04	1	11/27/17 17:14	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 17:14	11/21/17	
Silver	6010C	ND U	mg/L	0.020	0.0008	1	11/27/17 17:14	11/21/17	
Sodium	6010C	1.7 J	mg/L	2.0	0.03	1	11/27/17 17:14	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 17:14	11/21/17	
Vanadium	6010C	0.009 J	mg/L	0.010	0.0008	1	11/27/17 17:14	11/21/17	
Zinc	6010C	0.292	mg/L	0.0040	0.0200	1	11/27/17 17:14	11/21/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil  
**Sample Name:** IC-258-3C-101717  
**Lab Code:** K1711288-014

**Service Request:** K1711288  
**Date Collected:** 10/17/17 09:50  
**Date Received:** 10/18/17 09:30

**Basis:** NA

SPLP Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	6010C	14.1	mg/L	0.010	0.003	1	11/27/17 17:16	11/21/17	
Antimony	6010C	0.018 J	mg/L	0.020	0.006	1	11/27/17 17:16	11/21/17	
Arsenic	6010C	0.041	mg/L	0.010	0.004	1	11/27/17 17:16	11/21/17	
Barium	6010C	0.19 J	mg/L	0.20	0.10	1	11/27/17 17:16	11/21/17	
Beryllium	6010C	ND U	mg/L	0.010	0.0002	1	11/27/17 17:16	11/21/17	
Cadmium	6010C	0.004 J	mg/L	0.010	0.0002	1	11/27/17 17:16	11/21/17	
Calcium	6010C	4.2	mg/L	2.0	0.008	1	11/27/17 17:16	11/21/17	
Chromium	6010C	0.003 J	mg/L	0.010	0.002	1	11/27/17 17:16	11/21/17	
Cobalt	6010C	0.002 J	mg/L	0.010	0.0005	1	11/27/17 17:16	11/21/17	
Copper	6010C	0.016	mg/L	0.010	0.002	1	11/27/17 17:16	11/21/17	
Iron	6010C	6.36	mg/L	0.020	0.006	1	11/27/17 17:16	11/21/17	
Lead	6010C	0.224	mg/L	0.010	0.003	1	11/27/17 17:16	11/21/17	
Magnesium	6010C	1.02	mg/L	0.50	0.002	1	11/27/17 17:16	11/21/17	
Manganese	6010C	0.442	mg/L	0.010	0.0005	1	11/27/17 17:16	11/21/17	
Nickel	6010C	0.002 J	mg/L	0.010	0.0007	1	11/27/17 17:16	11/21/17	
Potassium	6010C	2.54	mg/L	0.20	0.04	1	11/27/17 17:16	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 17:16	11/21/17	
Silver	6010C	0.0009 J	mg/L	0.020	0.0008	1	11/27/17 17:16	11/21/17	
Sodium	6010C	2.0 J	mg/L	2.0	0.03	1	11/27/17 17:16	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 17:16	11/21/17	
Vanadium	6010C	0.007 J	mg/L	0.010	0.0008	1	11/27/17 17:16	11/21/17	
Zinc	6010C	0.292	mg/L	0.0040	0.0200	1	11/27/17 17:16	11/21/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil  
**Sample Name:** IC-258-3D-101717  
**Lab Code:** K1711288-015

**Service Request:** K1711288  
**Date Collected:** 10/17/17 10:20  
**Date Received:** 10/18/17 09:30

**Basis:** NA

SPLP Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	6010C	13.4	mg/L	0.010	0.003	1	11/27/17 17:18	11/21/17	
Antimony	6010C	0.017 J	mg/L	0.020	0.006	1	11/27/17 17:18	11/21/17	
Arsenic	6010C	0.058	mg/L	0.010	0.004	1	11/27/17 17:18	11/21/17	
Barium	6010C	0.15 J	mg/L	0.20	0.10	1	11/27/17 17:18	11/21/17	
Beryllium	6010C	ND U	mg/L	0.010	0.0002	1	11/27/17 17:18	11/21/17	
Cadmium	6010C	0.003 J	mg/L	0.010	0.0002	1	11/27/17 17:18	11/21/17	
Calcium	6010C	4.1	mg/L	2.0	0.008	1	11/27/17 17:18	11/21/17	
Chromium	6010C	0.003 J	mg/L	0.010	0.002	1	11/27/17 17:18	11/21/17	
Cobalt	6010C	0.002 J	mg/L	0.010	0.0005	1	11/27/17 17:18	11/21/17	
Copper	6010C	0.016	mg/L	0.010	0.002	1	11/27/17 17:18	11/21/17	
Iron	6010C	6.66	mg/L	0.020	0.006	1	11/27/17 17:18	11/21/17	
Lead	6010C	0.208	mg/L	0.010	0.003	1	11/27/17 17:18	11/21/17	
Magnesium	6010C	1.04	mg/L	0.50	0.002	1	11/27/17 17:18	11/21/17	
Manganese	6010C	0.497	mg/L	0.010	0.0005	1	11/27/17 17:18	11/21/17	
Nickel	6010C	0.002 J	mg/L	0.010	0.0007	1	11/27/17 17:18	11/21/17	
Potassium	6010C	1.94	mg/L	0.20	0.04	1	11/27/17 17:18	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 17:18	11/21/17	
Silver	6010C	ND U	mg/L	0.020	0.0008	1	11/27/17 17:18	11/21/17	
Sodium	6010C	1.7 J	mg/L	2.0	0.03	1	11/27/17 17:18	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 17:18	11/21/17	
Vanadium	6010C	0.008 J	mg/L	0.010	0.0008	1	11/27/17 17:18	11/21/17	
Zinc	6010C	0.276	mg/L	0.0040	0.0200	1	11/27/17 17:18	11/21/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil  
**Sample Name:** IC-441-1A-101617  
**Lab Code:** K1711288-016

**Service Request:** K1711288  
**Date Collected:** 10/16/17 09:15  
**Date Received:** 10/18/17 09:30

**Basis:** NA

SPLP Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	6010C	18.3	mg/L	0.010	0.003	1	11/27/17 17:21	11/21/17	
Antimony	6010C	0.008 J	mg/L	0.020	0.006	1	11/27/17 17:21	11/21/17	
Arsenic	6010C	0.033	mg/L	0.010	0.004	1	11/27/17 17:21	11/21/17	
Barium	6010C	0.28	mg/L	0.20	0.10	1	11/27/17 17:21	11/21/17	
Beryllium	6010C	0.0004 J	mg/L	0.010	0.0002	1	11/27/17 17:21	11/21/17	
Cadmium	6010C	0.004 J	mg/L	0.010	0.0002	1	11/27/17 17:21	11/21/17	
Calcium	6010C	7.5	mg/L	2.0	0.008	1	11/27/17 17:21	11/21/17	
Chromium	6010C	0.009 J	mg/L	0.010	0.002	1	11/27/17 17:21	11/21/17	
Cobalt	6010C	0.006 J	mg/L	0.010	0.0005	1	11/27/17 17:21	11/21/17	
Copper	6010C	0.024	mg/L	0.010	0.002	1	11/27/17 17:21	11/21/17	
Iron	6010C	11.5	mg/L	0.020	0.006	1	11/27/17 17:21	11/21/17	
Lead	6010C	0.245	mg/L	0.010	0.003	1	11/27/17 17:21	11/21/17	
Magnesium	6010C	2.48	mg/L	0.50	0.002	1	11/27/17 17:21	11/21/17	
Manganese	6010C	0.856	mg/L	0.010	0.0005	1	11/27/17 17:21	11/21/17	
Nickel	6010C	0.011	mg/L	0.010	0.0007	1	11/27/17 17:21	11/21/17	
Potassium	6010C	6.25	mg/L	0.20	0.04	1	11/27/17 17:21	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 17:21	11/21/17	
Silver	6010C	0.001 J	mg/L	0.020	0.0008	1	11/27/17 17:21	11/21/17	
Sodium	6010C	1.8 J	mg/L	2.0	0.03	1	11/27/17 17:21	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 17:21	11/21/17	
Vanadium	6010C	0.017	mg/L	0.010	0.0008	1	11/27/17 17:21	11/21/17	
Zinc	6010C	0.329	mg/L	0.0040	0.0200	1	11/27/17 17:21	11/21/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil  
**Sample Name:** IC-441-1B-101617  
**Lab Code:** K1711288-017

**Service Request:** K1711288  
**Date Collected:** 10/16/17 10:15  
**Date Received:** 10/18/17 09:30

**Basis:** NA

SPLP Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	6010C	13.2	mg/L	0.010	0.003	1	11/27/17 17:23	11/21/17	
Antimony	6010C	0.020 J	mg/L	0.020	0.006	1	11/27/17 17:23	11/21/17	
Arsenic	6010C	0.050	mg/L	0.010	0.004	1	11/27/17 17:23	11/21/17	
Barium	6010C	0.22	mg/L	0.20	0.10	1	11/27/17 17:23	11/21/17	
Beryllium	6010C	0.0002 J	mg/L	0.010	0.0002	1	11/27/17 17:23	11/21/17	
Cadmium	6010C	0.006 J	mg/L	0.010	0.0002	1	11/27/17 17:23	11/21/17	
Calcium	6010C	7.3	mg/L	2.0	0.008	1	11/27/17 17:23	11/21/17	
Chromium	6010C	0.006 J	mg/L	0.010	0.002	1	11/27/17 17:23	11/21/17	
Cobalt	6010C	0.004 J	mg/L	0.010	0.0005	1	11/27/17 17:23	11/21/17	
Copper	6010C	0.029	mg/L	0.010	0.002	1	11/27/17 17:23	11/21/17	
Iron	6010C	8.02	mg/L	0.020	0.006	1	11/27/17 17:23	11/21/17	
Lead	6010C	0.348	mg/L	0.010	0.003	1	11/27/17 17:23	11/21/17	
Magnesium	6010C	1.67	mg/L	0.50	0.002	1	11/27/17 17:23	11/21/17	
Manganese	6010C	0.686	mg/L	0.010	0.0005	1	11/27/17 17:23	11/21/17	
Nickel	6010C	0.006 J	mg/L	0.010	0.0007	1	11/27/17 17:23	11/21/17	
Potassium	6010C	4.96	mg/L	0.20	0.04	1	11/27/17 17:23	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 17:23	11/21/17	
Silver	6010C	0.002 J	mg/L	0.020	0.0008	1	11/27/17 17:23	11/21/17	
Sodium	6010C	1.9 J	mg/L	2.0	0.03	1	11/27/17 17:23	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 17:23	11/21/17	
Vanadium	6010C	0.012	mg/L	0.010	0.0008	1	11/27/17 17:23	11/21/17	
Zinc	6010C	0.511	mg/L	0.0040	0.0200	1	11/27/17 17:23	11/21/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil  
**Sample Name:** IC-441-1C-101617  
**Lab Code:** K1711288-018

**Service Request:** K1711288  
**Date Collected:** 10/16/17 11:25  
**Date Received:** 10/18/17 09:30

**Basis:** NA

SPLP Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	6010C	13.9	mg/L	0.010	0.003	1	11/27/17 17:26	11/21/17	
Antimony	6010C	0.014 J	mg/L	0.020	0.006	1	11/27/17 17:26	11/21/17	
Arsenic	6010C	0.044	mg/L	0.010	0.004	1	11/27/17 17:26	11/21/17	
Barium	6010C	0.23	mg/L	0.20	0.10	1	11/27/17 17:26	11/21/17	
Beryllium	6010C	0.0003 J	mg/L	0.010	0.0002	1	11/27/17 17:26	11/21/17	
Cadmium	6010C	0.007 J	mg/L	0.010	0.0002	1	11/27/17 17:26	11/21/17	
Calcium	6010C	9.2	mg/L	2.0	0.008	1	11/27/17 17:26	11/21/17	
Chromium	6010C	0.005 J	mg/L	0.010	0.002	1	11/27/17 17:26	11/21/17	
Cobalt	6010C	0.004 J	mg/L	0.010	0.0005	1	11/27/17 17:26	11/21/17	
Copper	6010C	0.025	mg/L	0.010	0.002	1	11/27/17 17:26	11/21/17	
Iron	6010C	8.20	mg/L	0.020	0.006	1	11/27/17 17:26	11/21/17	
Lead	6010C	0.382	mg/L	0.010	0.003	1	11/27/17 17:26	11/21/17	
Magnesium	6010C	2.03	mg/L	0.50	0.002	1	11/27/17 17:26	11/21/17	
Manganese	6010C	0.583	mg/L	0.010	0.0005	1	11/27/17 17:26	11/21/17	
Nickel	6010C	0.007 J	mg/L	0.010	0.0007	1	11/27/17 17:26	11/21/17	
Potassium	6010C	7.18	mg/L	0.20	0.04	1	11/27/17 17:26	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 17:26	11/21/17	
Silver	6010C	0.0009 J	mg/L	0.020	0.0008	1	11/27/17 17:26	11/21/17	
Sodium	6010C	1.8 J	mg/L	2.0	0.03	1	11/27/17 17:26	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 17:26	11/21/17	
Vanadium	6010C	0.012	mg/L	0.010	0.0008	1	11/27/17 17:26	11/21/17	
Zinc	6010C	0.583	mg/L	0.0040	0.0200	1	11/27/17 17:26	11/21/17	



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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil  
**Sample Name:** IC-441-1D-101617  
**Lab Code:** K1711288-019

**Service Request:** K1711288  
**Date Collected:** 10/16/17 12:50  
**Date Received:** 10/18/17 09:30

**Basis:** NA

SPLP Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	6010C	10.7	mg/L	0.010	0.003	1	11/27/17 17:28	11/21/17	
Antimony	6010C	0.011 J	mg/L	0.020	0.006	1	11/27/17 17:28	11/21/17	
Arsenic	6010C	0.035	mg/L	0.010	0.004	1	11/27/17 17:28	11/21/17	
Barium	6010C	0.20 J	mg/L	0.20	0.10	1	11/27/17 17:28	11/21/17	
Beryllium	6010C	ND U	mg/L	0.010	0.0002	1	11/27/17 17:28	11/21/17	
Cadmium	6010C	0.004 J	mg/L	0.010	0.0002	1	11/27/17 17:28	11/21/17	
Calcium	6010C	6.6	mg/L	2.0	0.008	1	11/27/17 17:28	11/21/17	
Chromium	6010C	0.004 J	mg/L	0.010	0.002	1	11/27/17 17:28	11/21/17	
Cobalt	6010C	0.003 J	mg/L	0.010	0.0005	1	11/27/17 17:28	11/21/17	
Copper	6010C	0.021	mg/L	0.010	0.002	1	11/27/17 17:28	11/21/17	
Iron	6010C	6.36	mg/L	0.020	0.006	1	11/27/17 17:28	11/21/17	
Lead	6010C	0.235	mg/L	0.010	0.003	1	11/27/17 17:28	11/21/17	
Magnesium	6010C	1.54	mg/L	0.50	0.002	1	11/27/17 17:28	11/21/17	
Manganese	6010C	0.471	mg/L	0.010	0.0005	1	11/27/17 17:28	11/21/17	
Nickel	6010C	0.004 J	mg/L	0.010	0.0007	1	11/27/17 17:28	11/21/17	
Potassium	6010C	5.69	mg/L	0.20	0.04	1	11/27/17 17:28	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 17:28	11/21/17	
Silver	6010C	0.001 J	mg/L	0.020	0.0008	1	11/27/17 17:28	11/21/17	
Sodium	6010C	1.7 J	mg/L	2.0	0.03	1	11/27/17 17:28	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 17:28	11/21/17	
Vanadium	6010C	0.009 J	mg/L	0.010	0.0008	1	11/27/17 17:28	11/21/17	
Zinc	6010C	0.314	mg/L	0.0040	0.0200	1	11/27/17 17:28	11/21/17	

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Analytical Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil  
**Sample Name:** Method Blank  
**Lab Code:** KQ1717330-02

**Service Request:** K1711288  
**Date Collected:** NA  
**Date Received:** NA  
**Basis:** NA

SPLP Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	6010C	<b>0.065</b>	mg/L	0.010	0.003	1	11/27/17 16:04	11/21/17	
Antimony	6010C	ND U	mg/L	0.020	0.006	1	11/27/17 16:04	11/21/17	
Arsenic	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 16:04	11/21/17	
Barium	6010C	ND U	mg/L	0.20	0.10	1	11/27/17 16:04	11/21/17	
Beryllium	6010C	ND U	mg/L	0.010	0.0002	1	11/27/17 16:04	11/21/17	
Cadmium	6010C	ND U	mg/L	0.010	0.0002	1	11/27/17 16:04	11/21/17	
Calcium	6010C	<b>1.8 J</b>	mg/L	2.0	0.008	1	11/27/17 16:04	11/21/17	
Chromium	6010C	ND U	mg/L	0.010	0.002	1	11/27/17 16:04	11/21/17	
Cobalt	6010C	ND U	mg/L	0.010	0.0005	1	11/27/17 16:04	11/21/17	
Copper	6010C	ND U	mg/L	0.010	0.002	1	11/27/17 16:04	11/21/17	
Iron	6010C	<b>0.009 J</b>	mg/L	0.020	0.006	1	11/27/17 16:04	11/21/17	
Lead	6010C	ND U	mg/L	0.010	0.003	1	11/27/17 16:04	11/21/17	
Magnesium	6010C	<b>0.20 J</b>	mg/L	0.50	0.002	1	11/27/17 16:04	11/21/17	
Manganese	6010C	ND U	mg/L	0.010	0.0005	1	11/27/17 16:04	11/21/17	
Nickel	6010C	ND U	mg/L	0.010	0.0007	1	11/27/17 16:04	11/21/17	
Potassium	6010C	<b>0.08 J</b>	mg/L	0.20	0.04	1	11/27/17 16:04	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 16:04	11/21/17	
Silver	6010C	ND U	mg/L	0.020	0.0008	1	11/27/17 16:04	11/21/17	
Sodium	6010C	<b>1.2 J</b>	mg/L	2.0	0.03	1	11/27/17 16:04	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 16:04	11/21/17	
Vanadium	6010C	ND U	mg/L	0.010	0.0008	1	11/27/17 16:04	11/21/17	
Zinc	6010C	ND U	mg/L	0.0040	0.0200	1	11/27/17 16:04	11/21/17	

ALS Group USA, Corp.

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QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil

**Service Request:** K1711288  
**Date Collected:** 10/10/17  
**Date Received:** 10/12/17  
**Date Analyzed:** 11/27/17

Replicate Sample Summary

SPLP Metals

**Sample Name:** IC-401-1A-101017  
**Lab Code:** K1711288-001

**Units:** mg/L  
**Basis:** NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample KQ1717330-03		Average	RPD	RPD Limit
					Result	Result			
Aluminum	6010C	0.010	0.003	20.0	20.1	20.1	<1	20	
Antimony	6010C	0.020	0.006	0.045	0.044	0.045	2	20	
Arsenic	6010C	0.010	0.004	0.101	0.105	0.103	4	20	
Barium	6010C	0.20	0.10	0.17 J	0.18 J	0.18	6	20	
Beryllium	6010C	0.010	0.0002	0.0002 J	0.0003 J	NC	NC	20	
Cadmium	6010C	0.010	0.0002	0.004 J	0.004 J	0.004	<1	20	
Calcium	6010C	2.0	0.008	3.4	3.4	3.4	<1	20	
Chromium	6010C	0.010	0.002	0.004 J	0.004 J	0.004	<1	20	
Cobalt	6010C	0.010	0.0005	0.003 J	0.003 J	0.003	<1	20	
Copper	6010C	0.010	0.002	0.023	0.024	0.024	4	20	
Iron	6010C	0.020	0.006	9.97	10.2	10.1	2	20	
Lead	6010C	0.010	0.003	0.371	0.381	0.376	3	20	
Magnesium	6010C	0.50	0.002	1.29	1.32	1.31	2	20	
Manganese	6010C	0.010	0.0005	0.539	0.541	0.540	<1	20	
Nickel	6010C	0.010	0.0007	0.005 J	0.005 J	0.005	<1	20	
Potassium	6010C	0.20	0.04	2.25	2.27	2.26	<1	20	
Selenium	6010C	0.020	0.004	ND U	ND U	ND	-	20	
Silver	6010C	0.020	0.0008	0.004 J	0.001 J	0.003	120 #	20	
Sodium	6010C	2.0	0.03	1.9 J	2.0 J	2.0	5	20	
Thallium	6010C	0.010	0.004	ND U	ND U	ND	-	20	
Vanadium	6010C	0.010	0.0008	0.013	0.013	0.013	<1	20	
Zinc	6010C	0.0040	0.0200	0.380	0.391	0.386	3	20	

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil

**Service Request:** K1711288  
**Date Collected:** 10/10/17  
**Date Received:** 10/12/17  
**Date Analyzed:** 11/27/17  
**Date Extracted:** 11/21/17

**Matrix Spike Summary**  
**SPLP Metals**

**Sample Name:** IC-401-1A-101017  
**Lab Code:** K1711288-001  
**Analysis Method:** 6010C  
**Prep Method:** EPA 3010A

**Units:** mg/L  
**Basis:** NA

**Matrix Spike**  
KQ1717330-04

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Aluminum	20.0	20.5	2.00	25 #	75-125
Antimony	0.045	0.431	0.500	77	75-125
Arsenic	0.101	1.09	1.00	99	75-125
Barium	0.17 J	1.17	1.00	100	75-125
Beryllium	ND U	0.049	0.050	97	75-125
Cadmium	0.004 J	0.052	0.050	96	75-125
Calcium	3.4	13.2	10.0	98	75-125
Chromium	0.004 J	0.203	0.200	99	75-125
Cobalt	0.003 J	0.492	0.500	98	75-125
Copper	0.023	0.269	0.250	98	75-125
Iron	9.97	10.6	1.00	64 #	75-125
Lead	0.371	0.838	0.500	93	75-125
Magnesium	1.29	11.0	10.0	97	75-125
Manganese	0.539	1.01	0.500	95	75-125
Nickel	0.005 J	0.488	0.500	96	75-125
Potassium	2.25	12.2	10.0	99	75-125
Selenium	ND U	0.861	1.00	86	75-125
Silver	0.004 J	0.049	0.050	90	75-125
Sodium	1.9 J	11.9	10.0	99	75-125
Thallium	ND U	0.186	0.200	93	75-125
Vanadium	0.013	0.519	0.500	101	75-125
Zinc	0.380	0.856	0.500	95	75-125

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Teck American Incorporated  
**Project:** August 2017 Sampling SAT Study/B0095010.0005.00002  
**Sample Matrix:** Soil

**Service Request:** K1711288

**Date Analyzed:** 11/27/17

**Lab Control Sample Summary**  
**SPLP Metals**

**Units:**mg/L

**Basis:**NA

**Lab Control Sample**  
KQ1717330-01

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Aluminum	6010C	5.41	5.00	108	80-120
Antimony	6010C	2.03	2.00	102	80-120
Arsenic	6010C	2.58	2.50	103	80-120
Barium	6010C	5.20	5.00	104	80-120
Beryllium	6010C	0.126	0.125	101	80-120
Cadmium	6010C	1.25	1.25	100	80-120
Calcium	6010C	14.9	12.5	119	80-120
Chromium	6010C	0.510	0.500	102	80-120
Cobalt	6010C	1.25	1.25	100	80-120
Copper	6010C	0.631	0.625	101	80-120
Iron	6010C	2.60	2.50	104	80-120
Lead	6010C	2.47	2.50	99	80-120
Magnesium	6010C	13.0	12.5	104	80-120
Manganese	6010C	1.25	1.25	100	80-120
Nickel	6010C	1.24	1.25	99	80-120
Potassium	6010C	13.1	12.5	105	80-120
Selenium	6010C	2.24	2.50	90	80-120
Silver	6010C	0.613	0.625	98	80-120
Sodium	6010C	14.2	12.5	114	80-120
Thallium	6010C	2.41	2.50	97	80-120
Vanadium	6010C	1.30	1.25	104	80-120
Zinc	6010C	1.28	1.25	102	80-120

# **Soil Amendment Technology Evaluation Study**

## **Phase IA: Test Plot Characterization**

**Nicholas Basta**  
**Professor of Soil and Environmental Chemistry**

**Shane Whitacre**  
**Research Associate**

**Soil Water Environmental Laboratory**  
**School of Environment and Natural Resources**

### **FACILITY**

The Ohio State University (OSU) Soil Water Environmental Laboratory is located at 2021 Coffey Rd., Columbus OH, 43210 in the School of Environment and Natural Resources. The facility exists to meet the needs of research grants, individuals, companies, state and federal agencies in regard to physical and chemical analysis of soil, water, plant, and other environmental samples. Professor Nick Basta, Director

### **SCOPE OF WORK**

As part of Phase 1A of the Soil Amendment Technology Evaluation Study (SATES), OSU performed analysis required to characterize soils on the test plots according to Table 3 of the Phase 1 Work Plan (Ramboll Environ, 2017). Test plots were subject to two initial field characterization efforts: an initial screening effort and a second detailed characterization effort. The initial effort utilized discrete samples collected from near-surface soils and included non-bulk samples as well as intact cores. The second detailed characterization effort utilized incremental composite (IC) bulk samples from near-surface soils.

### **METHODS**

Sample collection was conducted according to the Phase I Work Plan (Ramboll Environ, 2017). A summary of samples provided to OSU is provided in Appendix A.

#### ***Discrete Samples***

Bulk soil samples and intact soil cores were collected and sent by Arcadis U.S., Inc. directly to The Ohio State University. Bulk soil samples were processed to < 2mm and analyzed for total elemental content by acid digestion using USEPA Method 3051a (USEPA, 2007a) followed by Inductively couple plasma-atomic emission spectrometry according to USEPA Method 6010C (USEPA, 2007b). Intact soil cores were analyzed for moisture holding capacity according to Cassel and Nielsen (1986).

#### ***Incremental Composite Samples***

Incremental composite samples were collected by Arcadis U.S., Inc. and shipped to ALS Laboratories for homogenization and sieving prior shipping to OSU. The samples were received in three size fractions; bulk, <2mm, and, 150µm. Bulk samples were analyzed for pH according to Thomas (1996), electrical conductivity/salinity according to Rhoades (1996) which is consistent with APHA method 2510, and particle size according to Gee and Bauder (1986) which is consistent with ASTM method D422. Samples sieved to < 2mm were analyzed for total elemental content by acid digestion using USEPA Method 3051a (USEPA, 2007a) followed by USEPA Method 6010C (USEPA, 2007b), chloride and sulfate according to USEPA Method 300.0 (Pfaff, 1993), total carbon according to Neslon and Sommers (1996), and total nitrogen according to Bremner (1996). Samples sieved to <150µm were analyzed for total elemental content by acid digestion using USEPA Method 3051a (USEPA, 2007a) followed by USEPA Method 6010C (USEPA, 2007b), bioaccessible arsenic and lead according USEPA Method 9200

(2008) at pH 1.5 as well as at pH 2.5 followed by USEPA Method 6010C (USEPA, 2007b), and Mehlich 3 extractable phosphorus and lead (Mehlich, 1984) by USEPA Method 6010C (USEPA, 2007b).

## **QUALITY CONTROL**

### ***Quality Control Measures***

**Control Soils:** A certified reference material or laboratory reference material that goes through the same extraction/preparation procedure as the samples. The analyte composition of the laboratory control sample is known included in each sample preparation batch.

**Matrix Spike:** A duplicate sample is spiked with a known analyte concentration prior to extraction and run through the complete procedure in order to provide information about the effect of the sample matrix on the measurement methodology.

**Reagent Blank:** The Reagent Blank is a sample that contains only the reagents used in the extraction procedure. The preparation blank is processed through the same preparation procedures as the samples and therefore gives an indication of any contamination picked up during the sample preparation process.

**Duplicate sample:** A duplicate of one sample per batch is processed through the same preparation procedures as the samples to determine reproducibility within each batch.

**Reporting Limit:** Reporting limit (RL) is set at the lowest concentration in a calibration curve with an independently calculated accuracy of +/- 15%.

**Method Detection Limit:** Method detection limits (MDL) are calculated for specific methods and consequent conditions of that method developed for analysis on ICP. The method detection limit is determined as three times the standard deviation of the signal of 10 blanks solutions.

**Hold Time:** Hold times (days) are determined as date of analysis – collection date.

### ***Quality Control Limits and Flags***

#### **Control Soils**

- Recovery: +/- 20% or within prediction interval of certified value
- Flag: crm
- Frequency: 1/batch

#### **Matrix Spike**

- Recovery: +/- 25%
- Flag: spk
- Frequency: 1/batch

#### **Reagent Blank**

- Method blank <RL or <10X sample concentration
- Flag: blk



- Frequency: 1/batch

Duplicate Sample

- Duplicate relative percent difference +/- 20%
- Flag: dup
- Frequency: 1/batch

Reporting Limit

- Analyte concentration > RL
- Flag: RL
- Frequency: Every Sample

Method Detection Limit

- Analyte concentration >MDL
- Flag: MDL
- Frequency: Every Sample

Between MDL and RL

- If an analyte concentration is between >MDL and <RL, a flag will be assigned to denote this occurrence
- Flag: rl
- Frequency: Every Sample

Hold Time

- Hold times were established in Phase I Work Plan (Ramboll Environ, 2017). The only analysis under this scope of work that has USEPA Contract Laboratory Program (CLP) designated hold times is for metals (USEPA, 2014). The hold times in the Phase I work plan are more conservative than the 180 days designated for metal analysis under the USEPA CLP. As a result, while hold times may be exceeded for some analysis under the current statement of work, the results are valid and in no way impact the *Soil Amendment Technology Evaluation Study* data quality objectives.
- Flag: ht

**SAMPLE RESULTS**

*Discrete Sample*

Detailed bulk and core sample results for total elemental content are provided in Appendix B and associated Reporting Limits (RL) and Method Detection Limits (MDL) by method/analyte in appendix D. Summary statistics for total elemental content (samples SA\_1 to SA\_100) are provided in Table 1 and moisture holding capacity (samples SA\_101 to SA\_12) in Table 2.

Table 1. Summary of total elemental content in discrete samples				
<b>d_labresult.analyte</b>	<b>Unit</b>	<b>Min</b>	<b>Mean</b>	<b>Max</b>
Aluminum	mg/kg	4766	16664	25867
Antimony	mg/kg	1.15	7.85	47.6
Arsenic	mg/kg	1.72	14.98	75.7
Barium	mg/kg	47.6	152	369
Beryllium	mg/kg	0.12	0.54	0.83
Cadmium	mg/kg	0.24	4.09	27.0
Calcium	mg/kg	1655	4016	16525
Chromium	mg/kg	11.7	27.5	46.7
Cobalt	mg/kg	1.99	6.53	11.6
Copper	mg/kg	6.80	22.9	94.0
Iron	mg/kg	8764	21219	31675
Lead	mg/kg	2.90	146	1161
Magnesium	mg/kg	1120	3246	8032
Manganese	mg/kg	188	539	1568
Nickel	mg/kg	5.00	14.8	28.3
Phosphorus	mg/kg	569	1313	3202
Potassium	mg/kg	667	1461	3431
Selenium	mg/kg	1.24	3.12	5.44
Silver	mg/kg	0.20 <sup>a</sup>	0.20 <sup>a</sup>	0.20 <sup>a</sup>
Sodium	mg/kg	87.0	214	510
Thallium	mg/kg	0.262 <sup>a</sup>	0.64	1.37
Vanadium	mg/kg	20.0	52.6	84.1
Zinc	mg/kg	26.5	237	1222

<sup>a</sup>Analyte < MDL, value of MDL reported

Table 2. Summary of water storage capacity of intact core samples				
<b>d_labresult.analyte</b>	<b>Unit</b>	<b>Min</b>	<b>Mean</b>	<b>Max</b>
WatStorCap	%	29.7	42.3	58.4

**Incremental Composite Samples**

Detailed sample results for pH, electrical conductivity/salinity, particle size, total elemental content, chloride, sulfate, total carbon, total nitrogen, and bioaccessible arsenic and lead, and Mehlich 3 extractable phosphorus and lead are provided in Appendix C and RLs add MDLs by method/analyte in Appendix D. Summary statistics for IC samples are provided in Table 3.

Table 3. Summary statistics from incremental composite (IC) samples.

<b>d_labresult.method_code</b>	<b>d_labresult.analyte</b>	<b>Size</b>	<b>Unit</b>	<b>Min</b>	<b>Mean</b>	<b>max</b>
SM2510B	Conductivity	Bulk	mS/m	4.5	8.3	15.0
pH	pH	Bulk		4.6	5.1	6.2
D422	Fines	Bulk	%	2.5	3.5	4.5
D422	Gravel	Bulk	%	1.3	25.5	44.3
D422	Sand	Bulk	%	57.6	75.0	84.7
D422	Silt	Bulk	%	12.8	21.5	39.3
EPA 6010	Aluminum	2mm	mg/kg	10649.4	15906.5	25983.4
EPA 6010	Antimony	2mm	mg/kg	4.9	18.1	41.7
EPA 6010	Arsenic	2mm	mg/kg	12.6	34.0	58.0
EPA 6010	Barium	2mm	mg/kg	77.5	130.5	222.0
EPA 6010	Beryllium	2mm	mg/kg	0.0	0.0	0.2
EPA 6010	Cadmium	2mm	mg/kg	3.6	9.3	13.6
EPA 6010	Calcium	2mm	mg/kg	2860.4	4700.1	9720.8
EPA 6010	Chromium	2mm	mg/kg	15.4	33.6	53.2
EPA 6010	Cobalt	2mm	mg/kg	4.0	6.5	11.0
EPA 6010	Copper	2mm	mg/kg	15.0	32.5	59.4
EPA 6010	Iron	2mm	mg/kg	11358.6	20790.6	26556.5
EPA 6010	Lead	2mm	mg/kg	132.7	514.5	1087.3
EPA 6010	Magnesium	2mm	mg/kg	2303.0	3332.0	6122.6
EPA 6010	Manganese	2mm	mg/kg	322.4	543.9	870.5
EPA 6010	Nickel	2mm	mg/kg	8.3	13.8	24.3
EPA 6010	Phosphorus	2mm	mg/kg	893.2	1390.1	2950.9
EPA 6010	Potassium	2mm	mg/kg	1126.5	1778.8	3790.1
EPA 6010	Selenium	2mm	mg/kg	0.7	1.1	1.9
EPA 6010	Silver	2mm	mg/kg	0.2 <sup>a</sup>	0.2 <sup>a</sup>	0.2 <sup>a</sup>
EPA 6010	Sodium	2mm	mg/kg	154.7	262.3	541.0
EPA 6010	Thallium	2mm	mg/kg	0.3 <sup>a</sup>	0.6	0.9
EPA 6010	Vanadium	2mm	mg/kg	25.4	52.0	68.0
EPA 6010	Zinc	2mm	mg/kg	173.6	389.1	719.4
NELSON82	Carbon_total	2mm	%	2.3	5.6	10.5
BREMNER82	Nitrogen_total	2mm	%	0.1	0.3	0.5
EPA_300.0	Chloride	2mm	mg/kg	15.9	18.4	29.1
EPA_300.0	Sulfate	2mm	mg/kg	30.0	57.8	100.2

Table 3 Cont. Summary statistics from incremental composite (IC) samples.						
<b>d_labresult.method_code</b>	<b>d_labresult.analyte</b>	<b>Size</b>	<b>Unit</b>	<b>Min</b>	<b>Mean</b>	<b>max</b>
EPA 6010	Aluminum	150um	mg/kg	19802.8	24005.4	26893.4
EPA 6010	Antimony	150um	mg/kg	8.6	28.0	54.0
EPA 6010	Arsenic	150um	mg/kg	33.3	69.8	117.1
EPA 6010	Barium	150um	mg/kg	204.0	259.6	337.9
EPA 6010	Beryllium	150um	mg/kg	0.7	0.8	0.9
EPA 6010	Cadmium	150um	mg/kg	10.4	18.8	29.6
EPA 6010	Calcium	150um	mg/kg	3587.2	5975.8	10586.4
EPA 6010	Chromium	150um	mg/kg	19.1	34.5	54.3
EPA 6010	Cobalt	150um	mg/kg	7.0	8.9	11.1
EPA 6010	Copper	150um	mg/kg	47.4	67.0	86.5
EPA 6010	Iron	150um	mg/kg	17126.1	25950.1	39862.3
EPA 6010	Lead	150um	mg/kg	419.4	1011.0	1787.5
EPA 6010	Magnesium	150um	mg/kg	2501.7	3164.4	4239.5
EPA 6010	Manganese	150um	mg/kg	748.4	976.1	1243.9
EPA 6010	Nickel	150um	mg/kg	12.3	17.1	23.3
EPA 6010	Phosphorus	150um	mg/kg	1849.8	2353.6	3373.0
EPA 6010	Potassium	150um	mg/kg	1837.9	2245.1	3474.8
EPA 6010	Selenium	150um	mg/kg	2.7	3.6	4.9
EPA 6010	Silver	150um	mg/kg	0.2 <sup>a</sup>	0.2 <sup>a</sup>	0.2 <sup>a</sup>
EPA 6010	Sodium	150um	mg/kg	428.9	539.1	752.8
EPA 6010	Thallium	150um	mg/kg	0.5	1.0	1.6
EPA 6010	Vanadium	150um	mg/kg	39.7	64.9	106.6
EPA 6010	Zinc	150um	mg/kg	474.3	714.0	882.4
EPA 6010_9200Bio1.5	Arsenic	150um	mg/kg	3.2	12.8	25.0
EPA 6010_9200Bio1.5	Lead	150um	mg/kg	289.9	758.6	1399.6
EPA 6010_9200Bio2.5	Arsenic	150um	mg/kg	0.7	5.0	11.4
EPA 6010_9200Bio2.5	Lead	150um	mg/kg	111.0	361.4	689.9
EPA 6010_MEHLICH3	Lead	150um	mg/kg	106.4	255.5	453.9
EPA 6010_MEHLICH3	Phosphorus	150um	mg/kg	28.7	104.2	205.9
Bioaccess1.5	Arsenic	150um	%	8.6	18.0	24.7
Bioaccess1.5	Lead	150um	%	63.2	74.8	82.2
Bioaccess2.5	Arsenic	150um	%	2.0	6.8	10.9
Bioaccess2.5	Lead	150um	%	24.5	34.2	41.6

<sup>a</sup>Analyte < MDL, value of MDL reported

SWEL – Soil Water Environmental Lab

QUALITY CONTROL RESULTS

EPA6010

Quality control results for EPA6010 are presented in Table 4.

Table 4. EPA6010 method QC summary for discrete and IC samples of all size fractions.

Lab ID	SA_36 dup	SA_36 spk	CRM	blk	SA_72 dup	SA_72 spk	CRM	blk	SA_10 0 dup	SA_10 0 spk	CRM	blk	SA_13 5	SA_13 5	CRM	blk	SA_13 5	<2mm	CRM	blank
Batch	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5
QC	RPD	rec %	rec %	Sample 43	RPD	rec %	rec %	Sample 83	RPD	rec %	rec %	Sample 114	RPD	rec %	rec %	Sample 138	RPD	rec %	rec %	Sample 29
Ag	1	90	142	-0.01	5	86	138	-0.01	3	71	137	-0.01	1	69	135	-0.01	22	63	117	0.00
Al	9		134	0.05	5		152	0.10	2		179	0.17	0		278	0.14	5		246	0.17
As	27	113	117	0.00	6	111	116	0.00	5	108	113	0.00	2	106	113	0.00	11	112	115	0.01
Ba	13	119	122	0.00	11	111	121	0.00	6	110	122	0.00	1	106	127	0.00	7	97	105	0.00
Be	11		140	0.00	10		140	0.00	1		137	0.00	1		137	0.00	6		129	0.00
Ca	7		114	-0.05	17		113	-0.02	4		111	-0.05	0		110	0.00	6		113	0.06
Cd	7		116	0.00	11		105	0.00	7		106	0.00	0		112	0.00	7		113	0.00
Co	13	101	106	0.00	8	100	105	0.00	2	97	103	0.00	3	95	104	0.00	4	104	109	0.00
Cr	7	118	123	-0.01	28	105	126	0.00	1	128	125	0.00	0	102	135	0.00	48	79	135	0.01
Cu	7	119	112	0.00	6	108	110	0.00	3	108	108	0.00	1	101	109	0.00	5	106	108	0.00
Fe	7		109	0.16	11		109	0.12	2		107	0.14	2		109	0.11	4		106	0.16
K	11		150	-0.03	10		150	-0.08	18		158	-0.12	0		176	-0.12	1		182	-0.13
Mg	5		105	0.01	0		104	0.01			105	0.03	0		109	0.01			96	0.03
Mn	7		126	0.00	0		121	0.00	3		120	0.00	0		121	0.00	4		116	0.00
Na	6		118	-0.12	13		117	-0.13	2		117	-0.15	1		116	-0.14	16			0.03
Ni	20	109	110	0.00	2	107	111	0.00	3	105	110	0.00	1	101	113	0.00	7	108	113	0.00
P	11			0.01	13			0.00	4			0.01	0			0.00	4			0.01
Pb	21	108	110	0.00	12	104	102	0.00	11	102	105	0.00	0	83	113	0.00	8	102	111	0.00
Sb	7	97	181	0.00	8	101	213	0.01	1	96	161	0.01	14	95	131	0.00	10	107	185	0.00
Se	22	120	121	0.02	10	117	120	0.02	23	113	118	0.03	40	112	118	0.02	42	114	112	0.00
Tl	6	104	105	0.01	51	104	102	0.00	61	99	101	0.00	20	98	99	0.01	35	99	98	0.00
V	1	107		0.00	15	99		0.00	2	105		0.00	4	103		0.00	2	101		0.00
Zn	12	118	112	0.00	13	97	111	0.00	3	109	109	0.00	1	78	110	0.01	6	109	116	0.01

**EPA 6010\_9200Bio1.5 and EPA 6010\_9200Bio2.5**

Quality control results for EPA 6010\_9200Bio1.5 and EPA 6010\_9200Bio2.5 are presented in Table 5.

Table5. EPA 6010_9200Bio1.5 and EPA 6010_9200Bio2.5				
<b>d_labresult.method_code</b>	<b>Batch</b>	<b>Element</b>	<b>As</b>	<b>Pb</b>
EPA 6010_9200Bio1.5	1	dup RPD	3	0
EPA 6010_9200Bio1.5	2	dup RPD	3	3
EPA 6010_9200Bio1.5	3	dup RPD	2	1
EPA 6010_9200Bio1.5	1	Dup SPK % rec	98	89
EPA 6010_9200Bio1.5	2	Dup SPK % rec	100	94
EPA 6010_9200Bio1.5	3	Dup SPK % rec		96
EPA 6010_9200Bio1.5	1	Blk	0.01	0.03
EPA 6010_9200Bio1.5	2	Blk	0.00	0.04
EPA 6010_9200Bio1.5	3	Blk	0.04	0.01
EPA 6010_9200Bio1.5	1	Blk	0.01	0.03
EPA 6010_9200Bio1.5	1	Blk SPK % rec	115	105
EPA 6010_9200Bio1.5	2	Blk SPK % rec	114	104
EPA 6010_9200Bio1.5	3	Blk SPK % rec		107
EPA 6010_9200Bio1.5	1	SRM 2711a %	32.94	64.86
EPA 6010_9200Bio1.5	2	SRM 2711a %	31.95	61.86
EPA 6010_9200Bio1.5	3	SRM 2711a %	32.73	62.91
EPA 6010_9200Bio2.5	1	dup RPD	3	1
EPA 6010_9200Bio2.5	2	dup RPD	35	2
EPA 6010_9200Bio2.5	3	dup RPD	7	1
EPA 6010_9200Bio2.5	1	Dup SPK % rec	93	78
EPA 6010_9200Bio2.5	2	Dup SPK % rec	96	60
EPA 6010_9200Bio2.5	3	Dup SPK % rec	92	64
EPA 6010_9200Bio2.5	1	Blk	0.00	0.03
EPA 6010_9200Bio2.5	2	Blk	0.00	0.01
EPA 6010_9200Bio2.5	3	Blk	0.00	0.01
EPA 6010_9200Bio2.5	1	Blk	0.00	0.03
EPA 6010_9200Bio2.5	1	Blk SPK % rec	114	98
EPA 6010_9200Bio2.5	2	Blk SPK % rec	113	101
EPA 6010_9200Bio2.5	3	Blk SPK % rec	114	102
EPA 6010_9200Bio2.5	1	SRM 2711a %	9.03	52.12
EPA 6010_9200Bio2.5	2	SRM 2711a %	9.35	52.72
EPA 6010_9200Bio2.5	3	SRM 2711a %	9.40	53.20

**EPA6010\_MEHLICH3, D422, PH, SM2510B, EPA300.0, NELSON82, and BREMNER82**

Quality control results for EPA6010\_MEHLICH3, D422, PH, SM2510B, EPA300.0, NELSON82, and BREMNER82 are presented in Table 6.

Table 6. Method QC summary for EPA610_MEHLICH3, D422, PH/SM2510B, EPA300.0, NELSON82, and BREMNER82													
d_labresult.method_code	Batch	QC	P	Pb	Sand	Silt	Clay	pH	EC	Cl	SO4	N	C
EPA 6010_MEHLICH3	8	dup RPD	6	1									
EPA 6010_MEHLICH3	10	dup RPD	1	3									
EPA 6010_MEHLICH3	12	dup RPD	1	0									
EPA 6010_MEHLICH3	8	chk std % rec	105	106									
EPA 6010_MEHLICH3	9	chk std % rec	106	106									
EPA 6010_MEHLICH3	10	chk std % rec	105	102									
EPA 6010_MEHLICH3	11	chk std % rec	106	101									
EPA 6010_MEHLICH3	12	chk std % rec	107	100									
EPA 6010_MEHLICH3	1	Blk	0.060	0.004									
EPA 6010_MEHLICH3	3	Blk	0.028	0.006									
EPA 6010_MEHLICH3	5	Blk	0.030	0.006									
EPA 6010_MEHLICH3	7	Blk	0.025	0.004									
EPA 6010_MEHLICH3	9	Blk	0.032	0.016									
EPA 6010_MEHLICH3	11	Blk	0.028	0.008									
EPA 6010_MEHLICH3	13	Blk	0.014	0.002									
D422	1	RPD			0	3	20						
D422	1	chk std % rec			96	105	96						
pH/SM2510B	1	dup RPD						0.2	1.3				
pH/SM2510B	1	chk std % rec						93.3	93.0				
EPA300.0	1	dup RPD								6	5		
EPA300.0	1	spk Rec %								93	104		
EPA300.0	1	Blk								0.0	0.0		
NELSON82/BREMNER82	1	Blk										0.0	0.0
NELSON82/BREMNER82	1	chk std % rec										102	98
NELSON82/BREMNER82	1	chk std % rec										95	102
NELSON82/BREMNER82	1	chk std % rec										97	101
NELSON82/BREMNER82	1	chk std % rec										102	98
NELSON82/BREMNER82	1	chk std % rec										95	101
NELSON82/BREMNER82	1	chk std % rec										101	101

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Sample ID	Discrete/ Discrete Core/IC	Collection Date	Collection Time	Received Date	OSU Lab ID
D-401-1C-101317-0-2	Discrete	10/13/2017	1059	10/17/2017	SA_1
D-401-1A-101317-0-2	Discrete	10/13/2017	1040	10/17/2017	SA_2
D-401-1B-101317-0-2	Discrete	10/13/2017	1051	10/17/2017	SA_3
D-401-2B-101317-10-12	Discrete	10/13/2017	1016	10/17/2017	SA_4
D-401-2D-101317-10-12	Discrete	10/13/2017	1010	10/17/2017	SA_5
D-401-1A-101317-2-4	Discrete	10/13/2017	1041	10/17/2017	SA_6
D-401-1B-101317-2-4	Discrete	10/13/2017	1052	10/17/2017	SA_7
D-401-1D-101317-0-2	Discrete	10/13/2017	1116	10/17/2017	SA_8
D-401-1D-101317-2-4	Discrete	10/13/2017	1117	10/17/2017	SA_9
D-401-1C-101317-2-4	Discrete	10/13/2017	1100	10/17/2017	SA_10
D-401-1D-101317-6-8	Discrete	10/13/2017	1119	10/17/2017	SA_11
D-401-1A-101317-4-6	Discrete	10/13/2017	1042	10/17/2017	SA_12
D-401-1B-101317-4-6	Discrete	10/13/2017	1053	10/17/2017	SA_13
D-401-1C-101317-4-6	Discrete	10/13/2017	1101	10/17/2017	SA_14
D-401-1D-101317-4-6	Discrete	10/13/2017	1118	10/17/2017	SA_15
D-401-1C-101317-8-10	Discrete	10/13/2017	1103	10/17/2017	SA_16
D-401-1D-101317-8-10	Discrete	10/13/2017	1120	10/17/2017	SA_17
D-401-1A-101317-6-8	Discrete	10/13/2017	1043	10/17/2017	SA_18
D-401-1B-101317-6-8	Discrete	10/13/2017	1054	10/17/2017	SA_19
D-401-1C-101317-6-8	Discrete	10/13/2017	1102	10/17/2017	SA_20
D-401-1A-101317-10-12	Discrete	10/13/2017	1045	10/17/2017	SA_21
D-401-1C-101317-10-12	Discrete	10/13/2017	1104	10/17/2017	SA_22
D-401-1D-101317-10-12	Discrete	10/13/2017	1121	10/17/2017	SA_23
D-401-1A-101317-8-10	Discrete	10/13/2017	1044	10/17/2017	SA_24
D-401-1B-101317-8-10	Discrete	10/13/2017	1055	10/17/2017	SA_25
D-401-2C-101317-2-4D	Discrete	10/13/2017	1021	10/17/2017	SA_26
D-258-3C-101317-2-4D	Discrete	10/13/2017	1314	10/17/2017	SA_27
D-441-1B-101317-2-4D	Discrete	10/13/2017	1442	10/17/2017	SA_28
D-401-1B-101317-2-4D	Discrete	10/13/2017	1052	10/17/2017	SA_29
D-401-1B-101317-10-12	Discrete	10/13/2017	1056	10/17/2017	SA_30
D-441-1B-101317-4-6	Discrete	10/13/2017	1444	10/17/2017	SA_31
D-441-1B-101317-6-8	Discrete	10/13/2017	1445	10/17/2017	SA_32
D-441-1B-101317-8-10	Discrete	10/13/2017	1446	10/17/2017	SA_33
D-441-1D-101317-0-2	Discrete	10/13/2017	1450	10/17/2017	SA_34
D-441-1D-101317-2-4	Discrete	10/13/2017	1451	10/17/2017	SA_35
D-441-1C-101317-8-10	Discrete	10/13/2017	1439	10/17/2017	SA_36
D-441-1C-101317-10-12	Discrete	10/13/2017	1440	10/17/2017	SA_37



**SWEL – Soil Water Environmental Lab**

**Summary of Samples Received by OSU**

Sample ID	Discrete/ Discrete Core/IC	Collection Date	Collection Time	Received Date	OSU Lab ID
D-441-1B-101317-0-2	Discrete	10/13/2017	1441	10/17/2017	SA_38
D-441-1B-101317-2-4	Discrete	10/13/2017	1442	10/17/2017	SA_39
D-441-1B-101317-10-12	Discrete	10/13/2017	1447	10/17/2017	SA_40
D-258-3A-101317-10-12	Discrete	10/13/2017	1340	10/17/2017	SA_41
D-441-1C-101317-0-2	Discrete	10/13/2017	1435	10/17/2017	SA_42
D-441-1C-101317-2-4	Discrete	10/13/2017	1436	10/17/2017	SA_43
D-441-1C-101317-4-6	Discrete	10/13/2017	1437	10/17/2017	SA_44
D-441-1C-101317-6-8	Discrete	10/13/2017	1438	10/17/2017	SA_45
D-258-3A-101317-0-2	Discrete	10/13/2017	1335	10/17/2017	SA_46
D-258-3A-101317-2-4	Discrete	10/13/2017	1336	10/17/2017	SA_47
D-258-3A-101317-4-6	Discrete	10/13/2017	1337	10/17/2017	SA_48
D-258-3A-101317-6-8	Discrete	10/13/2017	1338	10/17/2017	SA_49
D-258-3A-101317-8-10	Discrete	10/13/2017	1339	10/17/2017	SA_50
D-258-3D-101317-2-4	Discrete	10/13/2017	1329	10/17/2017	SA_51
D-258-3D-101317-4-6	Discrete	10/13/2017	1330	10/17/2017	SA_52
D-258-3D-101317-6-8	Discrete	10/13/2017	1331	10/17/2017	SA_53
D-258-3D-101317-8-10	Discrete	10/13/2017	1332	10/17/2017	SA_54
D-258-3D-101317-10-12	Discrete	10/13/2017	1333	10/17/2017	SA_55
D-258-3B-101317-4-6	Discrete	10/13/2017	1322	10/17/2017	SA_56
D-258-3B-101317-6-8	Discrete	10/13/2017	1323	10/17/2017	SA_57
D-258-3B-101317-8-10	Discrete	10/13/2017	1324	10/17/2017	SA_58
D-258-3B-101317-10-12	Discrete	10/13/2017	1325	10/17/2017	SA_59
D-258-3D-101317-0-2	Discrete	10/13/2017	1328	10/17/2017	SA_60
D-401-2A-101317-8-10	Discrete	10/13/2017	1024	10/17/2017	SA_61
D-401-2B-101317-8-10	Discrete	10/13/2017	1015	10/17/2017	SA_62
D-401-2D-101317-8-10	Discrete	10/13/2017	1009	10/17/2017	SA_63
D-401-2C-101317-10-12	Discrete	10/13/2017	1033	10/17/2017	SA_64
D-401-2A-101317-10-12	Discrete	10/13/2017	1025	10/17/2017	SA_65
D-401-2C-101317-6-8	Discrete	10/13/2017	1031	10/17/2017	SA_66
D-401-2A-101317-6-8	Discrete	10/13/2017	1023	10/17/2017	SA_67
D-401-2B-101317-6-8	Discrete	10/13/2017	1014	10/17/2017	SA_68
D-401-2D-101317-6-8	Discrete	10/13/2017	1008	10/17/2017	SA_69
D-401-2C-101317-8-10	Discrete	10/13/2017	1032	10/17/2017	SA_70
D-401-2D-101317-2-4	Discrete	10/13/2017	1006	10/17/2017	SA_71
D-401-2C-101317-4-6	Discrete	10/13/2017	1030	10/17/2017	SA_72
D-401-2A-101317-4-6	Discrete	10/13/2017	1022	10/17/2017	SA_73
D-401-2B-101317-4-6	Discrete	10/13/2017	1013	10/17/2017	SA_74
D-401-2D-101317-4-6	Discrete	10/13/2017	1007	10/17/2017	SA_75

**SWEL – Soil Water Environmental Lab****Summary of Samples Received by OSU**

Sample ID	Discrete/ Discrete Core/IC	Collection Date	Collection Time	Received Date	OSU Lab ID
D-401-2B-101317-0-2	Discrete	10/13/2017	1011	10/17/2017	SA_76
D-401-2D-101317-0-2	Discrete	10/13/2017	1005	10/17/2017	SA_77
D-401-2C-101317-2-4	Discrete	10/13/2017	1029	10/17/2017	SA_78
D-401-2A-101317-2-4	Discrete	10/13/2017	1021	10/17/2017	SA_79
D-401-2B-101317-2-4	Discrete	10/13/2017	1012	10/17/2017	SA_80
D-258-3C-101317-4-6	Discrete	10/13/2017	1316	10/17/2017	SA_81
D-258-3C-101317-2-4	Discrete	10/13/2017	1314	10/17/2017	SA_82
D-258-3C-101317-0-2	Discrete	10/13/2017	1313	10/17/2017	SA_83
D-401-2C-101317-0-2	Discrete	10/13/2017	1028	10/17/2017	SA_84
D-401-2A-101317-0-2	Discrete	10/13/2017	1020	10/17/2017	SA_85
D-258-3B-101317-2-4	Discrete	10/13/2017	1321	10/17/2017	SA_86
D-258-3B-101317-0-2	Discrete	10/13/2017	1320	10/17/2017	SA_87
D-258-3C-101317-10-12	Discrete	10/13/2017	1319	10/17/2017	SA_88
D-258-3C-101317-8-10	Discrete	10/13/2017	1318	10/17/2017	SA_89
D-258-3C-101317-6-8	Discrete	10/13/2017	1317	10/17/2017	SA_90
D-441-1D-101317-4-6	Discrete	10/13/2017	1452	10/17/2017	SA_91
D-441-1D-101317-6-8	Discrete	10/13/2017	1453	10/17/2017	SA_92
D-441-1D-101317-8-10	Discrete	10/13/2017	1454	10/17/2017	SA_93
D-441-1D-101317-10-12	Discrete	10/13/2017	1455	10/17/2017	SA_94
D-441-1A-101317-0-2	Discrete	10/13/2017	1458	10/17/2017	SA_95
D-441-1A-101317-2-4	Discrete	10/13/2017	1459	10/17/2017	SA_96
D-441-1A-101317-4-6	Discrete	10/13/2017	1500	10/17/2017	SA_97
D-441-1A-101317-6-8	Discrete	10/13/2017	1501	10/17/2017	SA_98
D-441-1A-101317-8-10	Discrete	10/13/2017	1503	10/17/2017	SA_99
D-441-1A-101317-10-12	Discrete	10/13/2017	1503	10/17/2017	SA_100
D-401-1C-100417-0-6	Discrete Core	10/4/2017	0940	10/13/2017	SA_101
D-401-2B-100517-0-6	Discrete Core	10/5/2017	1105	10/13/2017	SA_102
D-401-2C-100517-0-6	Discrete Core	10/5/2017	1215	10/13/2017	SA_103
D-258-3D-100717-0-6	Discrete Core	10/7/2017	0915	10/13/2017	SA_104
D-441-1A-100617-0-6	Discrete Core	10/6/2017	0955	10/13/2017	SA_105
D-258-3C-100717-0-6	Discrete Core	10/7/2017	0942	10/13/2017	SA_106
D-401-2A-100517-0-6	Discrete Core	10/5/2017	1009	10/13/2017	SA_107
D-401-2D-100517-0-6	Discrete Core	10/5/2017	1305	10/13/2017	SA_108
D-258-3A-100717-0-6	Discrete Core	10/7/2017	1005	10/13/2017	SA_109
D-441-1D-100617-0-6	Discrete Core	10/6/2017	1315	10/13/2017	SA_110
D-441-1B-100617-0-6	Discrete Core	10/6/2017	1147	10/13/2017	SA_111
D-401-1A-100417-0-6	Discrete Core	10/4/2017	1120	10/13/2017	SA_112
D-441-1C-100617-0-6	Discrete Core	10/6/2017	1105	10/13/2017	SA_113



**SWEL – Soil Water Environmental Lab**

**Summary of Samples Received by OSU**

Sample ID	Discrete/ Discrete Core/IC	Collection Date	Collection Time	Received Date	OSU Lab ID
D-401-1D-100417-0-6	Discrete Core	10/4/2017	1400	10/13/2017	SA_114
D-401-1B-100417-0-6	Discrete Core	10/4/2017	1300	10/13/2017	SA_115
D-258-3B-100717-0-6	Discrete Core	10/7/2017	1028	10/13/2017	SA_116
IC-401-1A-101017	IC	10/10/2017	1058	11/9/2017	SA_117
IC-401-1B-101017	IC	10/10/2017	1055	11/9/2017	SA_118
IC-401-1C-101117	IC	10/11/2017	1023	11/9/2017	SA_119
IC-401-1C-101117 -D	IC	10/11/2017	1235	11/9/2017	SA_120
IC-401-1D-101117	IC	10/11/2017	1400	11/9/2017	SA_121
IC-401-2B-101117	IC	10/11/2017	1538	11/9/2017	SA_122
IC1-401-2A-101217	IC	10/12/2017	0920	11/9/2017	SA_123
IC2-401-2A-101217	IC	10/12/2017	1015	11/9/2017	SA_124
IC3-401-2A-101217	IC	10/12/2017	1055	11/9/2017	SA_125
IC-401-2C-101217	IC	10/12/2017	1250	11/9/2017	SA_126
IC-401-2D-101217	IC	10/12/2017	1400	11/9/2017	SA_127
IC-258-3A-101717	IC	10/17/2017	0840	11/9/2017	SA_128
IC-258-3B-101717	IC	10/17/2017	0915	11/9/2017	SA_129
IC-258-3C-101717	IC	10/17/2017	0950	11/9/2017	SA_130
IC-258-3D-101717	IC	10/17/2017	1020	11/9/2017	SA_131
IC-441-1A-101617	IC	10/16/2017	0915	11/9/2017	SA_132
IC-441-1B-101617	IC	10/16/2017	1015	11/9/2017	SA_133
IC-441-1C-101617	IC	10/16/2017	1125	11/9/2017	SA_134
IC-441-1D-101617	IC	10/16/2017	1250	11/9/2017	SA_135

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-1C-101317-0-2	SA_1-2mm	EPA6010	1	mg/kg	Aluminum	11141.25	
D-401-1C-101317-0-2	SA_1-2mm	EPA6010	1	mg/kg	Antimony	20.48	
D-401-1C-101317-0-2	SA_1-2mm	EPA6010	1	mg/kg	Arsenic	38.28	dup
D-401-1C-101317-0-2	SA_1-2mm	EPA6010	1	mg/kg	Barium	147.60	
D-401-1C-101317-0-2	SA_1-2mm	EPA6010	1	mg/kg	Beryllium	0.38	crm rl
D-401-1C-101317-0-2	SA_1-2mm	EPA6010	1	mg/kg	Cadmium	14.84	
D-401-1C-101317-0-2	SA_1-2mm	EPA6010	1	mg/kg	Calcium	3303.25	
D-401-1C-101317-0-2	SA_1-2mm	EPA6010	1	mg/kg	Chromium	22.71	
D-401-1C-101317-0-2	SA_1-2mm	EPA6010	1	mg/kg	Cobalt	5.04	
D-401-1C-101317-0-2	SA_1-2mm	EPA6010	1	mg/kg	Copper	28.24	
D-401-1C-101317-0-2	SA_1-2mm	EPA6010	1	mg/kg	Iron	17731.04	
D-401-1C-101317-0-2	SA_1-2mm	EPA6010	1	mg/kg	Lead	884.23	dup
D-401-1C-101317-0-2	SA_1-2mm	EPA6010	1	mg/kg	Magnesium	2398.44	
D-401-1C-101317-0-2	SA_1-2mm	EPA6010	1	mg/kg	Manganese	544.08	
D-401-1C-101317-0-2	SA_1-2mm	EPA6010	1	mg/kg	Nickel	11.20	
D-401-1C-101317-0-2	SA_1-2mm	EPA6010	1	mg/kg	Phosphorus	756.96	
D-401-1C-101317-0-2	SA_1-2mm	EPA6010	1	mg/kg	Potassium	967.45	crm
D-401-1C-101317-0-2	SA_1-2mm	EPA6010	1	mg/kg	Selenium	4.93	rl
D-401-1C-101317-0-2	SA_1-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-401-1C-101317-0-2	SA_1-2mm	EPA6010	1	mg/kg	Sodium	113.21	
D-401-1C-101317-0-2	SA_1-2mm	EPA6010	1	mg/kg	Thallium	0.74	rl
D-401-1C-101317-0-2	SA_1-2mm	EPA6010	1	mg/kg	Vanadium	39.84	
D-401-1C-101317-0-2	SA_1-2mm	EPA6010	1	mg/kg	Zinc	550.30	
D-401-1A-101317-0-2	SA_2-2mm	EPA6010	1	mg/kg	Aluminum	4766.50	
D-401-1A-101317-0-2	SA_2-2mm	EPA6010	1	mg/kg	Antimony	47.62	
D-401-1A-101317-0-2	SA_2-2mm	EPA6010	1	mg/kg	Arsenic	16.95	dup



**Appendix B**

**SWEL – Soil Water Environmental Lab**

**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-1A-101317-0-2	SA_2-2mm	EPA6010	1	mg/kg	Barium	60.19	
D-401-1A-101317-0-2	SA_2-2mm	EPA6010	1	mg/kg	Beryllium	0.12	crm rl
D-401-1A-101317-0-2	SA_2-2mm	EPA6010	1	mg/kg	Cadmium	8.35	
D-401-1A-101317-0-2	SA_2-2mm	EPA6010	1	mg/kg	Calcium	3894.94	
D-401-1A-101317-0-2	SA_2-2mm	EPA6010	1	mg/kg	Chromium	13.70	
D-401-1A-101317-0-2	SA_2-2mm	EPA6010	1	mg/kg	Cobalt	1.99	
D-401-1A-101317-0-2	SA_2-2mm	EPA6010	1	mg/kg	Copper	40.58	
D-401-1A-101317-0-2	SA_2-2mm	EPA6010	1	mg/kg	Iron	8764.08	
D-401-1A-101317-0-2	SA_2-2mm	EPA6010	1	mg/kg	Lead	1005.56	dup
D-401-1A-101317-0-2	SA_2-2mm	EPA6010	1	mg/kg	Magnesium	1119.57	
D-401-1A-101317-0-2	SA_2-2mm	EPA6010	1	mg/kg	Manganese	224.74	
D-401-1A-101317-0-2	SA_2-2mm	EPA6010	1	mg/kg	Nickel	5.00	
D-401-1A-101317-0-2	SA_2-2mm	EPA6010	1	mg/kg	Phosphorus	610.92	
D-401-1A-101317-0-2	SA_2-2mm	EPA6010	1	mg/kg	Potassium	790.43	crm
D-401-1A-101317-0-2	SA_2-2mm	EPA6010	1	mg/kg	Selenium	4.68	rl
D-401-1A-101317-0-2	SA_2-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-401-1A-101317-0-2	SA_2-2mm	EPA6010	1	mg/kg	Sodium	86.98	
D-401-1A-101317-0-2	SA_2-2mm	EPA6010	1	mg/kg	Thallium	0.47	rl
D-401-1A-101317-0-2	SA_2-2mm	EPA6010	1	mg/kg	Vanadium	19.95	
D-401-1A-101317-0-2	SA_2-2mm	EPA6010	1	mg/kg	Zinc	724.08	
D-401-1B-101317-0-2	SA_3-2mm	EPA6010	1	mg/kg	Aluminum	16095.83	
D-401-1B-101317-0-2	SA_3-2mm	EPA6010	1	mg/kg	Antimony	9.62	
D-401-1B-101317-0-2	SA_3-2mm	EPA6010	1	mg/kg	Arsenic	47.53	dup
D-401-1B-101317-0-2	SA_3-2mm	EPA6010	1	mg/kg	Barium	151.58	
D-401-1B-101317-0-2	SA_3-2mm	EPA6010	1	mg/kg	Beryllium	0.58	crm rl
D-401-1B-101317-0-2	SA_3-2mm	EPA6010	1	mg/kg	Cadmium	14.37	
D-401-1B-101317-0-2	SA_3-2mm	EPA6010	1	mg/kg	Calcium	2729.95	
D-401-1B-101317-0-2	SA_3-2mm	EPA6010	1	mg/kg	Chromium	28.57	



**Appendix B**

**SWEL – Soil Water Environmental Lab**

**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-1B-101317-0-2	SA_3-2mm	EPA6010	1	mg/kg	Cobalt	6.88	
D-401-1B-101317-0-2	SA_3-2mm	EPA6010	1	mg/kg	Copper	20.77	
D-401-1B-101317-0-2	SA_3-2mm	EPA6010	1	mg/kg	Iron	26859.89	
D-401-1B-101317-0-2	SA_3-2mm	EPA6010	1	mg/kg	Lead	113.03	dup
D-401-1B-101317-0-2	SA_3-2mm	EPA6010	1	mg/kg	Magnesium	2626.08	
D-401-1B-101317-0-2	SA_3-2mm	EPA6010	1	mg/kg	Manganese	854.29	
D-401-1B-101317-0-2	SA_3-2mm	EPA6010	1	mg/kg	Nickel	14.36	
D-401-1B-101317-0-2	SA_3-2mm	EPA6010	1	mg/kg	Phosphorus	1279.54	
D-401-1B-101317-0-2	SA_3-2mm	EPA6010	1	mg/kg	Potassium	1140.43	crm
D-401-1B-101317-0-2	SA_3-2mm	EPA6010	1	mg/kg	Selenium	4.92	rl
D-401-1B-101317-0-2	SA_3-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-401-1B-101317-0-2	SA_3-2mm	EPA6010	1	mg/kg	Sodium	166.03	
D-401-1B-101317-0-2	SA_3-2mm	EPA6010	1	mg/kg	Thallium	0.57	rl
D-401-1B-101317-0-2	SA_3-2mm	EPA6010	1	mg/kg	Vanadium	68.87	
D-401-1B-101317-0-2	SA_3-2mm	EPA6010	1	mg/kg	Zinc	449.24	
D-401-2B-101317-10-12	SA_4-2mm	EPA6010	1	mg/kg	Aluminum	16672.93	
D-401-2B-101317-10-12	SA_4-2mm	EPA6010	1	mg/kg	Antimony	2.27	rl
D-401-2B-101317-10-12	SA_4-2mm	EPA6010	1	mg/kg	Arsenic	3.84	dup
D-401-2B-101317-10-12	SA_4-2mm	EPA6010	1	mg/kg	Barium	120.53	
D-401-2B-101317-10-12	SA_4-2mm	EPA6010	1	mg/kg	Beryllium	0.48	crm rl
D-401-2B-101317-10-12	SA_4-2mm	EPA6010	1	mg/kg	Cadmium	0.54	rl
D-401-2B-101317-10-12	SA_4-2mm	EPA6010	1	mg/kg	Calcium	3214.57	
D-401-2B-101317-10-12	SA_4-2mm	EPA6010	1	mg/kg	Chromium	30.79	
D-401-2B-101317-10-12	SA_4-2mm	EPA6010	1	mg/kg	Cobalt	6.54	
D-401-2B-101317-10-12	SA_4-2mm	EPA6010	1	mg/kg	Copper	15.87	
D-401-2B-101317-10-12	SA_4-2mm	EPA6010	1	mg/kg	Iron	25778.17	
D-401-2B-101317-10-12	SA_4-2mm	EPA6010	1	mg/kg	Lead	7.03	dup
D-401-2B-101317-10-12	SA_4-2mm	EPA6010	1	mg/kg	Magnesium	3674.43	

**Appendix B**  
**Detailed Discrete Sample Results**

**SWEL – Soil Water Environmental Lab**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-2B-101317-10-12	SA_4-2mm	EPA6010	1	mg/kg	Manganese	417.85	
D-401-2B-101317-10-12	SA_4-2mm	EPA6010	1	mg/kg	Nickel	15.10	
D-401-2B-101317-10-12	SA_4-2mm	EPA6010	1	mg/kg	Phosphorus	1056.27	
D-401-2B-101317-10-12	SA_4-2mm	EPA6010	1	mg/kg	Potassium	1122.97	crm
D-401-2B-101317-10-12	SA_4-2mm	EPA6010	1	mg/kg	Selenium	3.61	rl
D-401-2B-101317-10-12	SA_4-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-401-2B-101317-10-12	SA_4-2mm	EPA6010	1	mg/kg	Sodium	166.47	
D-401-2B-101317-10-12	SA_4-2mm	EPA6010	1	mg/kg	Thallium	0.47	rl
D-401-2B-101317-10-12	SA_4-2mm	EPA6010	1	mg/kg	Vanadium	66.13	
D-401-2B-101317-10-12	SA_4-2mm	EPA6010	1	mg/kg	Zinc	50.13	
D-401-2D-101317-10-12	SA_5-2mm	EPA6010	1	mg/kg	Aluminum	21009.94	
D-401-2D-101317-10-12	SA_5-2mm	EPA6010	1	mg/kg	Antimony	3.25	rl
D-401-2D-101317-10-12	SA_5-2mm	EPA6010	1	mg/kg	Arsenic	4.57	dup
D-401-2D-101317-10-12	SA_5-2mm	EPA6010	1	mg/kg	Barium	127.12	
D-401-2D-101317-10-12	SA_5-2mm	EPA6010	1	mg/kg	Beryllium	0.66	crm rl
D-401-2D-101317-10-12	SA_5-2mm	EPA6010	1	mg/kg	Cadmium	0.61	rl
D-401-2D-101317-10-12	SA_5-2mm	EPA6010	1	mg/kg	Calcium	3036.99	
D-401-2D-101317-10-12	SA_5-2mm	EPA6010	1	mg/kg	Chromium	33.12	
D-401-2D-101317-10-12	SA_5-2mm	EPA6010	1	mg/kg	Cobalt	7.14	
D-401-2D-101317-10-12	SA_5-2mm	EPA6010	1	mg/kg	Copper	17.46	
D-401-2D-101317-10-12	SA_5-2mm	EPA6010	1	mg/kg	Iron	29901.47	
D-401-2D-101317-10-12	SA_5-2mm	EPA6010	1	mg/kg	Lead	11.73	dup
D-401-2D-101317-10-12	SA_5-2mm	EPA6010	1	mg/kg	Magnesium	2777.12	
D-401-2D-101317-10-12	SA_5-2mm	EPA6010	1	mg/kg	Manganese	441.70	
D-401-2D-101317-10-12	SA_5-2mm	EPA6010	1	mg/kg	Nickel	14.92	
D-401-2D-101317-10-12	SA_5-2mm	EPA6010	1	mg/kg	Phosphorus	1156.36	
D-401-2D-101317-10-12	SA_5-2mm	EPA6010	1	mg/kg	Potassium	1312.32	crm
D-401-2D-101317-10-12	SA_5-2mm	EPA6010	1	mg/kg	Selenium	3.46	rl





**Appendix B**

**SWEL – Soil Water Environmental Lab**

**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-2D-101317-10-12	SA_5-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-401-2D-101317-10-12	SA_5-2mm	EPA6010	1	mg/kg	Sodium	247.03	
D-401-2D-101317-10-12	SA_5-2mm	EPA6010	1	mg/kg	Thallium	0.58	rl
D-401-2D-101317-10-12	SA_5-2mm	EPA6010	1	mg/kg	Vanadium	74.63	
D-401-2D-101317-10-12	SA_5-2mm	EPA6010	1	mg/kg	Zinc	57.95	
D-401-1A-101317-2-4	SA_6-2mm	EPA6010	1	mg/kg	Aluminum	11031.97	
D-401-1A-101317-2-4	SA_6-2mm	EPA6010	1	mg/kg	Antimony	21.76	
D-401-1A-101317-2-4	SA_6-2mm	EPA6010	1	mg/kg	Arsenic	39.35	dup
D-401-1A-101317-2-4	SA_6-2mm	EPA6010	1	mg/kg	Barium	106.40	
D-401-1A-101317-2-4	SA_6-2mm	EPA6010	1	mg/kg	Beryllium	0.36	crm rl
D-401-1A-101317-2-4	SA_6-2mm	EPA6010	1	mg/kg	Cadmium	4.60	
D-401-1A-101317-2-4	SA_6-2mm	EPA6010	1	mg/kg	Calcium	1798.40	
D-401-1A-101317-2-4	SA_6-2mm	EPA6010	1	mg/kg	Chromium	20.04	
D-401-1A-101317-2-4	SA_6-2mm	EPA6010	1	mg/kg	Cobalt	4.59	
D-401-1A-101317-2-4	SA_6-2mm	EPA6010	1	mg/kg	Copper	27.14	
D-401-1A-101317-2-4	SA_6-2mm	EPA6010	1	mg/kg	Iron	18788.84	
D-401-1A-101317-2-4	SA_6-2mm	EPA6010	1	mg/kg	Lead	487.34	dup
D-401-1A-101317-2-4	SA_6-2mm	EPA6010	1	mg/kg	Magnesium	2410.71	
D-401-1A-101317-2-4	SA_6-2mm	EPA6010	1	mg/kg	Manganese	309.10	
D-401-1A-101317-2-4	SA_6-2mm	EPA6010	1	mg/kg	Nickel	11.26	
D-401-1A-101317-2-4	SA_6-2mm	EPA6010	1	mg/kg	Phosphorus	909.02	
D-401-1A-101317-2-4	SA_6-2mm	EPA6010	1	mg/kg	Potassium	1023.86	crm
D-401-1A-101317-2-4	SA_6-2mm	EPA6010	1	mg/kg	Selenium	2.58	rl
D-401-1A-101317-2-4	SA_6-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-401-1A-101317-2-4	SA_6-2mm	EPA6010	1	mg/kg	Sodium	112.01	
D-401-1A-101317-2-4	SA_6-2mm	EPA6010	1	mg/kg	Thallium	0.59	rl
D-401-1A-101317-2-4	SA_6-2mm	EPA6010	1	mg/kg	Vanadium	45.41	
D-401-1A-101317-2-4	SA_6-2mm	EPA6010	1	mg/kg	Zinc	174.92	



**Appendix B**

**SWEL – Soil Water Environmental Lab**

**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-1B-101317-2-4	SA_7-2mm	EPA6010	1	mg/kg	Aluminum	15717.64	
D-401-1B-101317-2-4	SA_7-2mm	EPA6010	1	mg/kg	Antimony	3.89	rl
D-401-1B-101317-2-4	SA_7-2mm	EPA6010	1	mg/kg	Arsenic	6.13	dup
D-401-1B-101317-2-4	SA_7-2mm	EPA6010	1	mg/kg	Barium	130.32	
D-401-1B-101317-2-4	SA_7-2mm	EPA6010	1	mg/kg	Beryllium	0.46	crm rl
D-401-1B-101317-2-4	SA_7-2mm	EPA6010	1	mg/kg	Cadmium	1.70	
D-401-1B-101317-2-4	SA_7-2mm	EPA6010	1	mg/kg	Calcium	3464.85	
D-401-1B-101317-2-4	SA_7-2mm	EPA6010	1	mg/kg	Chromium	27.39	
D-401-1B-101317-2-4	SA_7-2mm	EPA6010	1	mg/kg	Cobalt	6.43	
D-401-1B-101317-2-4	SA_7-2mm	EPA6010	1	mg/kg	Copper	13.16	
D-401-1B-101317-2-4	SA_7-2mm	EPA6010	1	mg/kg	Iron	24185.58	
D-401-1B-101317-2-4	SA_7-2mm	EPA6010	1	mg/kg	Lead	14.57	dup
D-401-1B-101317-2-4	SA_7-2mm	EPA6010	1	mg/kg	Magnesium	2888.94	
D-401-1B-101317-2-4	SA_7-2mm	EPA6010	1	mg/kg	Manganese	511.80	
D-401-1B-101317-2-4	SA_7-2mm	EPA6010	1	mg/kg	Nickel	13.27	
D-401-1B-101317-2-4	SA_7-2mm	EPA6010	1	mg/kg	Phosphorus	1215.65	
D-401-1B-101317-2-4	SA_7-2mm	EPA6010	1	mg/kg	Potassium	1096.54	crm
D-401-1B-101317-2-4	SA_7-2mm	EPA6010	1	mg/kg	Selenium	4.01	rl
D-401-1B-101317-2-4	SA_7-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-401-1B-101317-2-4	SA_7-2mm	EPA6010	1	mg/kg	Sodium	156.84	
D-401-1B-101317-2-4	SA_7-2mm	EPA6010	1	mg/kg	Thallium	0.43	rl
D-401-1B-101317-2-4	SA_7-2mm	EPA6010	1	mg/kg	Vanadium	60.00	
D-401-1B-101317-2-4	SA_7-2mm	EPA6010	1	mg/kg	Zinc	225.41	
D-401-1D-101317-0-2	SA_8-2mm	EPA6010	1	mg/kg	Aluminum	13158.32	
D-401-1D-101317-0-2	SA_8-2mm	EPA6010	1	mg/kg	Antimony	32.36	
D-401-1D-101317-0-2	SA_8-2mm	EPA6010	1	mg/kg	Arsenic	45.02	dup
D-401-1D-101317-0-2	SA_8-2mm	EPA6010	1	mg/kg	Barium	145.01	
D-401-1D-101317-0-2	SA_8-2mm	EPA6010	1	mg/kg	Beryllium	0.45	crm rl



**Appendix B**

**SWEL – Soil Water Environmental Lab**

**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-1D-101317-0-2	SA_8-2mm	EPA6010	1	mg/kg	Cadmium	18.89	
D-401-1D-101317-0-2	SA_8-2mm	EPA6010	1	mg/kg	Calcium	4297.67	
D-401-1D-101317-0-2	SA_8-2mm	EPA6010	1	mg/kg	Chromium	26.38	
D-401-1D-101317-0-2	SA_8-2mm	EPA6010	1	mg/kg	Cobalt	5.49	
D-401-1D-101317-0-2	SA_8-2mm	EPA6010	1	mg/kg	Copper	43.97	
D-401-1D-101317-0-2	SA_8-2mm	EPA6010	1	mg/kg	Iron	22647.02	
D-401-1D-101317-0-2	SA_8-2mm	EPA6010	1	mg/kg	Lead	1161.47	dup
D-401-1D-101317-0-2	SA_8-2mm	EPA6010	1	mg/kg	Magnesium	2905.99	
D-401-1D-101317-0-2	SA_8-2mm	EPA6010	1	mg/kg	Manganese	616.50	
D-401-1D-101317-0-2	SA_8-2mm	EPA6010	1	mg/kg	Nickel	12.05	
D-401-1D-101317-0-2	SA_8-2mm	EPA6010	1	mg/kg	Phosphorus	1267.08	
D-401-1D-101317-0-2	SA_8-2mm	EPA6010	1	mg/kg	Potassium	1239.32	crm
D-401-1D-101317-0-2	SA_8-2mm	EPA6010	1	mg/kg	Selenium	5.44	rl
D-401-1D-101317-0-2	SA_8-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-401-1D-101317-0-2	SA_8-2mm	EPA6010	1	mg/kg	Sodium	171.27	
D-401-1D-101317-0-2	SA_8-2mm	EPA6010	1	mg/kg	Thallium	0.97	rl
D-401-1D-101317-0-2	SA_8-2mm	EPA6010	1	mg/kg	Vanadium	57.07	
D-401-1D-101317-0-2	SA_8-2mm	EPA6010	1	mg/kg	Zinc	697.43	
D-401-1D-101317-2-4	SA_9-2mm	EPA6010	1	mg/kg	Aluminum	16482.67	
D-401-1D-101317-2-4	SA_9-2mm	EPA6010	1	mg/kg	Antimony	9.04	
D-401-1D-101317-2-4	SA_9-2mm	EPA6010	1	mg/kg	Arsenic	17.48	dup
D-401-1D-101317-2-4	SA_9-2mm	EPA6010	1	mg/kg	Barium	175.96	
D-401-1D-101317-2-4	SA_9-2mm	EPA6010	1	mg/kg	Beryllium	0.53	crm rl
D-401-1D-101317-2-4	SA_9-2mm	EPA6010	1	mg/kg	Cadmium	4.35	
D-401-1D-101317-2-4	SA_9-2mm	EPA6010	1	mg/kg	Calcium	3489.91	
D-401-1D-101317-2-4	SA_9-2mm	EPA6010	1	mg/kg	Chromium	31.62	
D-401-1D-101317-2-4	SA_9-2mm	EPA6010	1	mg/kg	Cobalt	6.75	
D-401-1D-101317-2-4	SA_9-2mm	EPA6010	1	mg/kg	Copper	19.40	



**Appendix B**

**SWEL – Soil Water Environmental Lab**

**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-1D-101317-2-4	SA_9-2mm	EPA6010	1	mg/kg	Iron	27048.78	
D-401-1D-101317-2-4	SA_9-2mm	EPA6010	1	mg/kg	Lead	75.86	dup
D-401-1D-101317-2-4	SA_9-2mm	EPA6010	1	mg/kg	Magnesium	2772.87	
D-401-1D-101317-2-4	SA_9-2mm	EPA6010	1	mg/kg	Manganese	679.97	
D-401-1D-101317-2-4	SA_9-2mm	EPA6010	1	mg/kg	Nickel	15.47	
D-401-1D-101317-2-4	SA_9-2mm	EPA6010	1	mg/kg	Phosphorus	1202.82	
D-401-1D-101317-2-4	SA_9-2mm	EPA6010	1	mg/kg	Potassium	1229.37	crm
D-401-1D-101317-2-4	SA_9-2mm	EPA6010	1	mg/kg	Selenium	4.33	rl
D-401-1D-101317-2-4	SA_9-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-401-1D-101317-2-4	SA_9-2mm	EPA6010	1	mg/kg	Sodium	178.14	
D-401-1D-101317-2-4	SA_9-2mm	EPA6010	1	mg/kg	Thallium	0.97	rl
D-401-1D-101317-2-4	SA_9-2mm	EPA6010	1	mg/kg	Vanadium	69.23	
D-401-1D-101317-2-4	SA_9-2mm	EPA6010	1	mg/kg	Zinc	432.05	
D-401-1C-101317-2-4	SA_10-2mm	EPA6010	1	mg/kg	Aluminum	13662.27	
D-401-1C-101317-2-4	SA_10-2mm	EPA6010	1	mg/kg	Antimony	6.86	
D-401-1C-101317-2-4	SA_10-2mm	EPA6010	1	mg/kg	Arsenic	30.58	dup
D-401-1C-101317-2-4	SA_10-2mm	EPA6010	1	mg/kg	Barium	121.36	
D-401-1C-101317-2-4	SA_10-2mm	EPA6010	1	mg/kg	Beryllium	0.42	crm rl
D-401-1C-101317-2-4	SA_10-2mm	EPA6010	1	mg/kg	Cadmium	4.97	
D-401-1C-101317-2-4	SA_10-2mm	EPA6010	1	mg/kg	Calcium	3067.90	
D-401-1C-101317-2-4	SA_10-2mm	EPA6010	1	mg/kg	Chromium	27.38	
D-401-1C-101317-2-4	SA_10-2mm	EPA6010	1	mg/kg	Cobalt	5.81	
D-401-1C-101317-2-4	SA_10-2mm	EPA6010	1	mg/kg	Copper	19.85	
D-401-1C-101317-2-4	SA_10-2mm	EPA6010	1	mg/kg	Iron	23871.98	
D-401-1C-101317-2-4	SA_10-2mm	EPA6010	1	mg/kg	Lead	82.40	dup
D-401-1C-101317-2-4	SA_10-2mm	EPA6010	1	mg/kg	Magnesium	2985.65	
D-401-1C-101317-2-4	SA_10-2mm	EPA6010	1	mg/kg	Manganese	496.89	
D-401-1C-101317-2-4	SA_10-2mm	EPA6010	1	mg/kg	Nickel	12.68	

**Appendix B**  
**Detailed Discrete Sample Results**

**SWEL – Soil Water Environmental Lab**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-1C-101317-2-4	SA_10-2mm	EPA6010	1	mg/kg	Phosphorus	868.58	
D-401-1C-101317-2-4	SA_10-2mm	EPA6010	1	mg/kg	Potassium	1187.33	crm
D-401-1C-101317-2-4	SA_10-2mm	EPA6010	1	mg/kg	Selenium	3.10	rl
D-401-1C-101317-2-4	SA_10-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-401-1C-101317-2-4	SA_10-2mm	EPA6010	1	mg/kg	Sodium	147.31	
D-401-1C-101317-2-4	SA_10-2mm	EPA6010	1	mg/kg	Thallium	0.37	rl
D-401-1C-101317-2-4	SA_10-2mm	EPA6010	1	mg/kg	Vanadium	60.65	
D-401-1C-101317-2-4	SA_10-2mm	EPA6010	1	mg/kg	Zinc	263.67	
D-401-1D-101317-6-8	SA_11-2mm	EPA6010	1	mg/kg	Aluminum	18048.94	
D-401-1D-101317-6-8	SA_11-2mm	EPA6010	1	mg/kg	Antimony	3.38	rl
D-401-1D-101317-6-8	SA_11-2mm	EPA6010	1	mg/kg	Arsenic	4.67	dup
D-401-1D-101317-6-8	SA_11-2mm	EPA6010	1	mg/kg	Barium	135.37	
D-401-1D-101317-6-8	SA_11-2mm	EPA6010	1	mg/kg	Beryllium	0.61	crm rl
D-401-1D-101317-6-8	SA_11-2mm	EPA6010	1	mg/kg	Cadmium	0.71	rl
D-401-1D-101317-6-8	SA_11-2mm	EPA6010	1	mg/kg	Calcium	3236.65	
D-401-1D-101317-6-8	SA_11-2mm	EPA6010	1	mg/kg	Chromium	33.80	
D-401-1D-101317-6-8	SA_11-2mm	EPA6010	1	mg/kg	Cobalt	6.62	
D-401-1D-101317-6-8	SA_11-2mm	EPA6010	1	mg/kg	Copper	17.49	
D-401-1D-101317-6-8	SA_11-2mm	EPA6010	1	mg/kg	Iron	27856.89	
D-401-1D-101317-6-8	SA_11-2mm	EPA6010	1	mg/kg	Lead	10.91	dup
D-401-1D-101317-6-8	SA_11-2mm	EPA6010	1	mg/kg	Magnesium	2889.71	
D-401-1D-101317-6-8	SA_11-2mm	EPA6010	1	mg/kg	Manganese	489.14	
D-401-1D-101317-6-8	SA_11-2mm	EPA6010	1	mg/kg	Nickel	14.28	
D-401-1D-101317-6-8	SA_11-2mm	EPA6010	1	mg/kg	Phosphorus	1222.42	
D-401-1D-101317-6-8	SA_11-2mm	EPA6010	1	mg/kg	Potassium	1080.53	crm
D-401-1D-101317-6-8	SA_11-2mm	EPA6010	1	mg/kg	Selenium	3.38	rl
D-401-1D-101317-6-8	SA_11-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-401-1D-101317-6-8	SA_11-2mm	EPA6010	1	mg/kg	Sodium	179.75	



**Appendix B**

**SWEL – Soil Water Environmental Lab**

**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-1D-101317-6-8	SA_11-2mm	EPA6010	1	mg/kg	Thallium	0.52	rl
D-401-1D-101317-6-8	SA_11-2mm	EPA6010	1	mg/kg	Vanadium	71.64	
D-401-1D-101317-6-8	SA_11-2mm	EPA6010	1	mg/kg	Zinc	62.11	
D-401-1A-101317-4-6	SA_12-2mm	EPA6010	1	mg/kg	Aluminum	12727.80	
D-401-1A-101317-4-6	SA_12-2mm	EPA6010	1	mg/kg	Antimony	10.50	
D-401-1A-101317-4-6	SA_12-2mm	EPA6010	1	mg/kg	Arsenic	29.79	dup
D-401-1A-101317-4-6	SA_12-2mm	EPA6010	1	mg/kg	Barium	145.84	
D-401-1A-101317-4-6	SA_12-2mm	EPA6010	1	mg/kg	Beryllium	0.44	crm rl
D-401-1A-101317-4-6	SA_12-2mm	EPA6010	1	mg/kg	Cadmium	8.13	
D-401-1A-101317-4-6	SA_12-2mm	EPA6010	1	mg/kg	Calcium	1654.82	
D-401-1A-101317-4-6	SA_12-2mm	EPA6010	1	mg/kg	Chromium	26.29	
D-401-1A-101317-4-6	SA_12-2mm	EPA6010	1	mg/kg	Cobalt	5.78	
D-401-1A-101317-4-6	SA_12-2mm	EPA6010	1	mg/kg	Copper	22.10	
D-401-1A-101317-4-6	SA_12-2mm	EPA6010	1	mg/kg	Iron	21885.21	
D-401-1A-101317-4-6	SA_12-2mm	EPA6010	1	mg/kg	Lead	199.02	dup
D-401-1A-101317-4-6	SA_12-2mm	EPA6010	1	mg/kg	Magnesium	2447.62	
D-401-1A-101317-4-6	SA_12-2mm	EPA6010	1	mg/kg	Manganese	597.53	
D-401-1A-101317-4-6	SA_12-2mm	EPA6010	1	mg/kg	Nickel	11.75	
D-401-1A-101317-4-6	SA_12-2mm	EPA6010	1	mg/kg	Phosphorus	917.87	
D-401-1A-101317-4-6	SA_12-2mm	EPA6010	1	mg/kg	Potassium	911.33	crm
D-401-1A-101317-4-6	SA_12-2mm	EPA6010	1	mg/kg	Selenium	3.40	rl
D-401-1A-101317-4-6	SA_12-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-401-1A-101317-4-6	SA_12-2mm	EPA6010	1	mg/kg	Sodium	101.69	
D-401-1A-101317-4-6	SA_12-2mm	EPA6010	1	mg/kg	Thallium	0.39	rl
D-401-1A-101317-4-6	SA_12-2mm	EPA6010	1	mg/kg	Vanadium	52.57	
D-401-1A-101317-4-6	SA_12-2mm	EPA6010	1	mg/kg	Zinc	151.08	
D-401-1B-101317-4-6	SA_13-2mm	EPA6010	1	mg/kg	Aluminum	17567.05	
D-401-1B-101317-4-6	SA_13-2mm	EPA6010	1	mg/kg	Antimony	4.19	rl



**Appendix B**

**SWEL – Soil Water Environmental Lab**

**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-1B-101317-4-6	SA_13-2mm	EPA6010	1	mg/kg	Arsenic	10.11	dup
D-401-1B-101317-4-6	SA_13-2mm	EPA6010	1	mg/kg	Barium	113.53	
D-401-1B-101317-4-6	SA_13-2mm	EPA6010	1	mg/kg	Beryllium	0.52	crm rl
D-401-1B-101317-4-6	SA_13-2mm	EPA6010	1	mg/kg	Cadmium	2.66	
D-401-1B-101317-4-6	SA_13-2mm	EPA6010	1	mg/kg	Calcium	2669.19	
D-401-1B-101317-4-6	SA_13-2mm	EPA6010	1	mg/kg	Chromium	36.64	
D-401-1B-101317-4-6	SA_13-2mm	EPA6010	1	mg/kg	Cobalt	6.75	
D-401-1B-101317-4-6	SA_13-2mm	EPA6010	1	mg/kg	Copper	16.16	
D-401-1B-101317-4-6	SA_13-2mm	EPA6010	1	mg/kg	Iron	28238.99	
D-401-1B-101317-4-6	SA_13-2mm	EPA6010	1	mg/kg	Lead	32.12	dup
D-401-1B-101317-4-6	SA_13-2mm	EPA6010	1	mg/kg	Magnesium	3010.98	
D-401-1B-101317-4-6	SA_13-2mm	EPA6010	1	mg/kg	Manganese	481.83	
D-401-1B-101317-4-6	SA_13-2mm	EPA6010	1	mg/kg	Nickel	14.95	
D-401-1B-101317-4-6	SA_13-2mm	EPA6010	1	mg/kg	Phosphorus	1142.61	
D-401-1B-101317-4-6	SA_13-2mm	EPA6010	1	mg/kg	Potassium	1085.21	crm
D-401-1B-101317-4-6	SA_13-2mm	EPA6010	1	mg/kg	Selenium	3.16	rl
D-401-1B-101317-4-6	SA_13-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-401-1B-101317-4-6	SA_13-2mm	EPA6010	1	mg/kg	Sodium	166.68	
D-401-1B-101317-4-6	SA_13-2mm	EPA6010	1	mg/kg	Thallium	0.71	rl
D-401-1B-101317-4-6	SA_13-2mm	EPA6010	1	mg/kg	Vanadium	71.59	
D-401-1B-101317-4-6	SA_13-2mm	EPA6010	1	mg/kg	Zinc	112.66	
D-401-1C-101317-4-6	SA_14-2mm	EPA6010	1	mg/kg	Aluminum	15033.09	
D-401-1C-101317-4-6	SA_14-2mm	EPA6010	1	mg/kg	Antimony	3.66	rl
D-401-1C-101317-4-6	SA_14-2mm	EPA6010	1	mg/kg	Arsenic	5.70	dup
D-401-1C-101317-4-6	SA_14-2mm	EPA6010	1	mg/kg	Barium	121.84	
D-401-1C-101317-4-6	SA_14-2mm	EPA6010	1	mg/kg	Beryllium	0.48	crm rl
D-401-1C-101317-4-6	SA_14-2mm	EPA6010	1	mg/kg	Cadmium	0.76	rl
D-401-1C-101317-4-6	SA_14-2mm	EPA6010	1	mg/kg	Calcium	2857.18	



**Appendix B**

**SWEL – Soil Water Environmental Lab**

**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-1C-101317-4-6	SA_14-2mm	EPA6010	1	mg/kg	Chromium	38.93	
D-401-1C-101317-4-6	SA_14-2mm	EPA6010	1	mg/kg	Cobalt	6.14	
D-401-1C-101317-4-6	SA_14-2mm	EPA6010	1	mg/kg	Copper	13.76	
D-401-1C-101317-4-6	SA_14-2mm	EPA6010	1	mg/kg	Iron	28702.35	
D-401-1C-101317-4-6	SA_14-2mm	EPA6010	1	mg/kg	Lead	11.71	dup
D-401-1C-101317-4-6	SA_14-2mm	EPA6010	1	mg/kg	Magnesium	2663.20	
D-401-1C-101317-4-6	SA_14-2mm	EPA6010	1	mg/kg	Manganese	447.19	
D-401-1C-101317-4-6	SA_14-2mm	EPA6010	1	mg/kg	Nickel	13.33	
D-401-1C-101317-4-6	SA_14-2mm	EPA6010	1	mg/kg	Phosphorus	872.02	
D-401-1C-101317-4-6	SA_14-2mm	EPA6010	1	mg/kg	Potassium	1009.11	crm
D-401-1C-101317-4-6	SA_14-2mm	EPA6010	1	mg/kg	Selenium	2.46	rl
D-401-1C-101317-4-6	SA_14-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-401-1C-101317-4-6	SA_14-2mm	EPA6010	1	mg/kg	Sodium	145.99	
D-401-1C-101317-4-6	SA_14-2mm	EPA6010	1	mg/kg	Thallium	0.39	rl
D-401-1C-101317-4-6	SA_14-2mm	EPA6010	1	mg/kg	Vanadium	76.42	
D-401-1C-101317-4-6	SA_14-2mm	EPA6010	1	mg/kg	Zinc	74.39	
D-401-1D-101317-4-6	SA_15-2mm	EPA6010	1	mg/kg	Aluminum	17029.19	
D-401-1D-101317-4-6	SA_15-2mm	EPA6010	1	mg/kg	Antimony	6.02	
D-401-1D-101317-4-6	SA_15-2mm	EPA6010	1	mg/kg	Arsenic	5.90	dup
D-401-1D-101317-4-6	SA_15-2mm	EPA6010	1	mg/kg	Barium	153.91	
D-401-1D-101317-4-6	SA_15-2mm	EPA6010	1	mg/kg	Beryllium	0.61	crm rl
D-401-1D-101317-4-6	SA_15-2mm	EPA6010	1	mg/kg	Cadmium	1.07	
D-401-1D-101317-4-6	SA_15-2mm	EPA6010	1	mg/kg	Calcium	3315.78	
D-401-1D-101317-4-6	SA_15-2mm	EPA6010	1	mg/kg	Chromium	32.34	
D-401-1D-101317-4-6	SA_15-2mm	EPA6010	1	mg/kg	Cobalt	6.66	
D-401-1D-101317-4-6	SA_15-2mm	EPA6010	1	mg/kg	Copper	18.44	
D-401-1D-101317-4-6	SA_15-2mm	EPA6010	1	mg/kg	Iron	27121.36	
D-401-1D-101317-4-6	SA_15-2mm	EPA6010	1	mg/kg	Lead	14.18	dup





**Appendix B**

**SWEL – Soil Water Environmental Lab**

**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-1D-101317-4-6	SA_15-2mm	EPA6010	1	mg/kg	Magnesium	2744.04	
D-401-1D-101317-4-6	SA_15-2mm	EPA6010	1	mg/kg	Manganese	519.81	
D-401-1D-101317-4-6	SA_15-2mm	EPA6010	1	mg/kg	Nickel	14.33	
D-401-1D-101317-4-6	SA_15-2mm	EPA6010	1	mg/kg	Phosphorus	1223.15	
D-401-1D-101317-4-6	SA_15-2mm	EPA6010	1	mg/kg	Potassium	1035.67	crm
D-401-1D-101317-4-6	SA_15-2mm	EPA6010	1	mg/kg	Selenium	2.96	rl
D-401-1D-101317-4-6	SA_15-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-401-1D-101317-4-6	SA_15-2mm	EPA6010	1	mg/kg	Sodium	158.84	
D-401-1D-101317-4-6	SA_15-2mm	EPA6010	1	mg/kg	Thallium	0.41	rl
D-401-1D-101317-4-6	SA_15-2mm	EPA6010	1	mg/kg	Vanadium	67.70	
D-401-1D-101317-4-6	SA_15-2mm	EPA6010	1	mg/kg	Zinc	140.19	
D-401-1C-101317-8-10	SA_16-2mm	EPA6010	1	mg/kg	Aluminum	16074.57	
D-401-1C-101317-8-10	SA_16-2mm	EPA6010	1	mg/kg	Antimony	2.44	rl
D-401-1C-101317-8-10	SA_16-2mm	EPA6010	1	mg/kg	Arsenic	4.60	dup
D-401-1C-101317-8-10	SA_16-2mm	EPA6010	1	mg/kg	Barium	104.54	
D-401-1C-101317-8-10	SA_16-2mm	EPA6010	1	mg/kg	Beryllium	0.54	crm rl
D-401-1C-101317-8-10	SA_16-2mm	EPA6010	1	mg/kg	Cadmium	0.51	rl
D-401-1C-101317-8-10	SA_16-2mm	EPA6010	1	mg/kg	Calcium	2578.85	
D-401-1C-101317-8-10	SA_16-2mm	EPA6010	1	mg/kg	Chromium	29.52	
D-401-1C-101317-8-10	SA_16-2mm	EPA6010	1	mg/kg	Cobalt	6.25	
D-401-1C-101317-8-10	SA_16-2mm	EPA6010	1	mg/kg	Copper	14.30	
D-401-1C-101317-8-10	SA_16-2mm	EPA6010	1	mg/kg	Iron	27707.15	
D-401-1C-101317-8-10	SA_16-2mm	EPA6010	1	mg/kg	Lead	8.27	dup
D-401-1C-101317-8-10	SA_16-2mm	EPA6010	1	mg/kg	Magnesium	2817.00	
D-401-1C-101317-8-10	SA_16-2mm	EPA6010	1	mg/kg	Manganese	367.52	
D-401-1C-101317-8-10	SA_16-2mm	EPA6010	1	mg/kg	Nickel	13.41	
D-401-1C-101317-8-10	SA_16-2mm	EPA6010	1	mg/kg	Phosphorus	838.42	
D-401-1C-101317-8-10	SA_16-2mm	EPA6010	1	mg/kg	Potassium	990.86	crm



**Appendix B**

**SWEL – Soil Water Environmental Lab**

**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-1C-101317-8-10	SA_16-2mm	EPA6010	1	mg/kg	Selenium	2.72	rl
D-401-1C-101317-8-10	SA_16-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-401-1C-101317-8-10	SA_16-2mm	EPA6010	1	mg/kg	Sodium	172.02	
D-401-1C-101317-8-10	SA_16-2mm	EPA6010	1	mg/kg	Thallium	0.56	rl
D-401-1C-101317-8-10	SA_16-2mm	EPA6010	1	mg/kg	Vanadium	71.00	
D-401-1C-101317-8-10	SA_16-2mm	EPA6010	1	mg/kg	Zinc	45.92	
D-401-1D-101317-8-10	SA_17-2mm	EPA6010	1	mg/kg	Aluminum	17612.51	
D-401-1D-101317-8-10	SA_17-2mm	EPA6010	1	mg/kg	Antimony	2.88	rl
D-401-1D-101317-8-10	SA_17-2mm	EPA6010	1	mg/kg	Arsenic	4.21	dup
D-401-1D-101317-8-10	SA_17-2mm	EPA6010	1	mg/kg	Barium	118.05	
D-401-1D-101317-8-10	SA_17-2mm	EPA6010	1	mg/kg	Beryllium	0.57	crm rl
D-401-1D-101317-8-10	SA_17-2mm	EPA6010	1	mg/kg	Cadmium	0.60	rl
D-401-1D-101317-8-10	SA_17-2mm	EPA6010	1	mg/kg	Calcium	2641.12	
D-401-1D-101317-8-10	SA_17-2mm	EPA6010	1	mg/kg	Chromium	33.57	
D-401-1D-101317-8-10	SA_17-2mm	EPA6010	1	mg/kg	Cobalt	6.42	
D-401-1D-101317-8-10	SA_17-2mm	EPA6010	1	mg/kg	Copper	16.71	
D-401-1D-101317-8-10	SA_17-2mm	EPA6010	1	mg/kg	Iron	28743.62	
D-401-1D-101317-8-10	SA_17-2mm	EPA6010	1	mg/kg	Lead	9.03	dup
D-401-1D-101317-8-10	SA_17-2mm	EPA6010	1	mg/kg	Magnesium	2791.97	
D-401-1D-101317-8-10	SA_17-2mm	EPA6010	1	mg/kg	Manganese	471.98	
D-401-1D-101317-8-10	SA_17-2mm	EPA6010	1	mg/kg	Nickel	15.02	
D-401-1D-101317-8-10	SA_17-2mm	EPA6010	1	mg/kg	Phosphorus	1105.67	
D-401-1D-101317-8-10	SA_17-2mm	EPA6010	1	mg/kg	Potassium	916.28	crm
D-401-1D-101317-8-10	SA_17-2mm	EPA6010	1	mg/kg	Selenium	3.11	rl
D-401-1D-101317-8-10	SA_17-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-401-1D-101317-8-10	SA_17-2mm	EPA6010	1	mg/kg	Sodium	152.07	
D-401-1D-101317-8-10	SA_17-2mm	EPA6010	1	mg/kg	Thallium	0.71	rl
D-401-1D-101317-8-10	SA_17-2mm	EPA6010	1	mg/kg	Vanadium	73.15	



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**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-1D-101317-8-10	SA_17-2mm	EPA6010	1	mg/kg	Zinc	58.03	
D-401-1A-101317-6-8	SA_18-2mm	EPA6010	1	mg/kg	Aluminum	12883.28	
D-401-1A-101317-6-8	SA_18-2mm	EPA6010	1	mg/kg	Antimony	5.22	
D-401-1A-101317-6-8	SA_18-2mm	EPA6010	1	mg/kg	Arsenic	7.72	dup
D-401-1A-101317-6-8	SA_18-2mm	EPA6010	1	mg/kg	Barium	130.27	
D-401-1A-101317-6-8	SA_18-2mm	EPA6010	1	mg/kg	Beryllium	0.45	crm rl
D-401-1A-101317-6-8	SA_18-2mm	EPA6010	1	mg/kg	Cadmium	13.79	
D-401-1A-101317-6-8	SA_18-2mm	EPA6010	1	mg/kg	Calcium	1913.00	
D-401-1A-101317-6-8	SA_18-2mm	EPA6010	1	mg/kg	Chromium	27.31	
D-401-1A-101317-6-8	SA_18-2mm	EPA6010	1	mg/kg	Cobalt	5.48	
D-401-1A-101317-6-8	SA_18-2mm	EPA6010	1	mg/kg	Copper	12.57	
D-401-1A-101317-6-8	SA_18-2mm	EPA6010	1	mg/kg	Iron	23248.19	
D-401-1A-101317-6-8	SA_18-2mm	EPA6010	1	mg/kg	Lead	41.16	dup
D-401-1A-101317-6-8	SA_18-2mm	EPA6010	1	mg/kg	Magnesium	2394.34	
D-401-1A-101317-6-8	SA_18-2mm	EPA6010	1	mg/kg	Manganese	545.52	
D-401-1A-101317-6-8	SA_18-2mm	EPA6010	1	mg/kg	Nickel	13.30	
D-401-1A-101317-6-8	SA_18-2mm	EPA6010	1	mg/kg	Phosphorus	870.40	
D-401-1A-101317-6-8	SA_18-2mm	EPA6010	1	mg/kg	Potassium	872.20	crm
D-401-1A-101317-6-8	SA_18-2mm	EPA6010	1	mg/kg	Selenium	3.66	rl
D-401-1A-101317-6-8	SA_18-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-401-1A-101317-6-8	SA_18-2mm	EPA6010	1	mg/kg	Sodium	97.90	
D-401-1A-101317-6-8	SA_18-2mm	EPA6010	1	mg/kg	Thallium	0.50	rl
D-401-1A-101317-6-8	SA_18-2mm	EPA6010	1	mg/kg	Vanadium	57.15	
D-401-1A-101317-6-8	SA_18-2mm	EPA6010	1	mg/kg	Zinc	259.79	
D-401-1B-101317-6-8	SA_19-2mm	EPA6010	1	mg/kg	Aluminum	17608.39	
D-401-1B-101317-6-8	SA_19-2mm	EPA6010	1	mg/kg	Antimony	3.16	rl
D-401-1B-101317-6-8	SA_19-2mm	EPA6010	1	mg/kg	Arsenic	5.32	dup
D-401-1B-101317-6-8	SA_19-2mm	EPA6010	1	mg/kg	Barium	118.85	



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**SWEL – Soil Water Environmental Lab**

**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-1B-101317-6-8	SA_19-2mm	EPA6010	1	mg/kg	Beryllium	0.57	crm rl
D-401-1B-101317-6-8	SA_19-2mm	EPA6010	1	mg/kg	Cadmium	1.95	
D-401-1B-101317-6-8	SA_19-2mm	EPA6010	1	mg/kg	Calcium	2496.91	
D-401-1B-101317-6-8	SA_19-2mm	EPA6010	1	mg/kg	Chromium	35.35	
D-401-1B-101317-6-8	SA_19-2mm	EPA6010	1	mg/kg	Cobalt	6.36	
D-401-1B-101317-6-8	SA_19-2mm	EPA6010	1	mg/kg	Copper	15.06	
D-401-1B-101317-6-8	SA_19-2mm	EPA6010	1	mg/kg	Iron	27158.87	
D-401-1B-101317-6-8	SA_19-2mm	EPA6010	1	mg/kg	Lead	11.04	dup
D-401-1B-101317-6-8	SA_19-2mm	EPA6010	1	mg/kg	Magnesium	2728.33	
D-401-1B-101317-6-8	SA_19-2mm	EPA6010	1	mg/kg	Manganese	463.05	
D-401-1B-101317-6-8	SA_19-2mm	EPA6010	1	mg/kg	Nickel	15.54	
D-401-1B-101317-6-8	SA_19-2mm	EPA6010	1	mg/kg	Phosphorus	1005.33	
D-401-1B-101317-6-8	SA_19-2mm	EPA6010	1	mg/kg	Potassium	945.66	crm
D-401-1B-101317-6-8	SA_19-2mm	EPA6010	1	mg/kg	Selenium	1.96	rl
D-401-1B-101317-6-8	SA_19-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-401-1B-101317-6-8	SA_19-2mm	EPA6010	1	mg/kg	Sodium	134.67	
D-401-1B-101317-6-8	SA_19-2mm	EPA6010	1	mg/kg	Thallium	0.43	rl
D-401-1B-101317-6-8	SA_19-2mm	EPA6010	1	mg/kg	Vanadium	68.83	
D-401-1B-101317-6-8	SA_19-2mm	EPA6010	1	mg/kg	Zinc	146.34	
D-401-1C-101317-6-8	SA_20-2mm	EPA6010	1	mg/kg	Aluminum	15574.18	
D-401-1C-101317-6-8	SA_20-2mm	EPA6010	1	mg/kg	Antimony	2.94	rl
D-401-1C-101317-6-8	SA_20-2mm	EPA6010	1	mg/kg	Arsenic	4.16	dup
D-401-1C-101317-6-8	SA_20-2mm	EPA6010	1	mg/kg	Barium	110.27	
D-401-1C-101317-6-8	SA_20-2mm	EPA6010	1	mg/kg	Beryllium	0.51	crm rl
D-401-1C-101317-6-8	SA_20-2mm	EPA6010	1	mg/kg	Cadmium	0.55	rl
D-401-1C-101317-6-8	SA_20-2mm	EPA6010	1	mg/kg	Calcium	2522.92	
D-401-1C-101317-6-8	SA_20-2mm	EPA6010	1	mg/kg	Chromium	35.77	
D-401-1C-101317-6-8	SA_20-2mm	EPA6010	1	mg/kg	Cobalt	6.45	



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**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-1C-101317-6-8	SA_20-2mm	EPA6010	1	mg/kg	Copper	13.49	
D-401-1C-101317-6-8	SA_20-2mm	EPA6010	1	mg/kg	Iron	29885.31	
D-401-1C-101317-6-8	SA_20-2mm	EPA6010	1	mg/kg	Lead	7.39	dup
D-401-1C-101317-6-8	SA_20-2mm	EPA6010	1	mg/kg	Magnesium	2912.31	
D-401-1C-101317-6-8	SA_20-2mm	EPA6010	1	mg/kg	Manganese	374.77	
D-401-1C-101317-6-8	SA_20-2mm	EPA6010	1	mg/kg	Nickel	14.62	
D-401-1C-101317-6-8	SA_20-2mm	EPA6010	1	mg/kg	Phosphorus	910.53	
D-401-1C-101317-6-8	SA_20-2mm	EPA6010	1	mg/kg	Potassium	920.18	crm
D-401-1C-101317-6-8	SA_20-2mm	EPA6010	1	mg/kg	Selenium	2.07	rl
D-401-1C-101317-6-8	SA_20-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-401-1C-101317-6-8	SA_20-2mm	EPA6010	1	mg/kg	Sodium	126.28	
D-401-1C-101317-6-8	SA_20-2mm	EPA6010	1	mg/kg	Thallium	0.75	rl
D-401-1C-101317-6-8	SA_20-2mm	EPA6010	1	mg/kg	Vanadium	78.57	
D-401-1C-101317-6-8	SA_20-2mm	EPA6010	1	mg/kg	Zinc	47.99	
D-401-1A-101317-10-12	SA_21-2mm	EPA6010	1	mg/kg	Aluminum	12748.00	
D-401-1A-101317-10-12	SA_21-2mm	EPA6010	1	mg/kg	Antimony	2.61	rl
D-401-1A-101317-10-12	SA_21-2mm	EPA6010	1	mg/kg	Arsenic	3.62	dup
D-401-1A-101317-10-12	SA_21-2mm	EPA6010	1	mg/kg	Barium	109.98	
D-401-1A-101317-10-12	SA_21-2mm	EPA6010	1	mg/kg	Beryllium	0.38	crm rl
D-401-1A-101317-10-12	SA_21-2mm	EPA6010	1	mg/kg	Cadmium	0.90	rl
D-401-1A-101317-10-12	SA_21-2mm	EPA6010	1	mg/kg	Calcium	2140.55	
D-401-1A-101317-10-12	SA_21-2mm	EPA6010	1	mg/kg	Chromium	22.32	
D-401-1A-101317-10-12	SA_21-2mm	EPA6010	1	mg/kg	Cobalt	5.34	
D-401-1A-101317-10-12	SA_21-2mm	EPA6010	1	mg/kg	Copper	11.58	
D-401-1A-101317-10-12	SA_21-2mm	EPA6010	1	mg/kg	Iron	19525.60	
D-401-1A-101317-10-12	SA_21-2mm	EPA6010	1	mg/kg	Lead	14.09	dup
D-401-1A-101317-10-12	SA_21-2mm	EPA6010	1	mg/kg	Magnesium	3204.49	
D-401-1A-101317-10-12	SA_21-2mm	EPA6010	1	mg/kg	Manganese	325.18	



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**SWEL – Soil Water Environmental Lab**

**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-1A-101317-10-12	SA_21-2mm	EPA6010	1	mg/kg	Nickel	11.24	
D-401-1A-101317-10-12	SA_21-2mm	EPA6010	1	mg/kg	Phosphorus	814.00	
D-401-1A-101317-10-12	SA_21-2mm	EPA6010	1	mg/kg	Potassium	1024.46	crm
D-401-1A-101317-10-12	SA_21-2mm	EPA6010	1	mg/kg	Selenium	2.90	rl
D-401-1A-101317-10-12	SA_21-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-401-1A-101317-10-12	SA_21-2mm	EPA6010	1	mg/kg	Sodium	102.06	
D-401-1A-101317-10-12	SA_21-2mm	EPA6010	1	mg/kg	Thallium	0.61	rl
D-401-1A-101317-10-12	SA_21-2mm	EPA6010	1	mg/kg	Vanadium	47.63	
D-401-1A-101317-10-12	SA_21-2mm	EPA6010	1	mg/kg	Zinc	246.84	
D-401-1C-101317-10-12	SA_22-2mm	EPA6010	1	mg/kg	Aluminum	15046.73	
D-401-1C-101317-10-12	SA_22-2mm	EPA6010	1	mg/kg	Antimony	2.78	rl
D-401-1C-101317-10-12	SA_22-2mm	EPA6010	1	mg/kg	Arsenic	2.94	dup
D-401-1C-101317-10-12	SA_22-2mm	EPA6010	1	mg/kg	Barium	102.40	
D-401-1C-101317-10-12	SA_22-2mm	EPA6010	1	mg/kg	Beryllium	0.49	crm rl
D-401-1C-101317-10-12	SA_22-2mm	EPA6010	1	mg/kg	Cadmium	0.47	rl
D-401-1C-101317-10-12	SA_22-2mm	EPA6010	1	mg/kg	Calcium	2584.08	
D-401-1C-101317-10-12	SA_22-2mm	EPA6010	1	mg/kg	Chromium	28.41	
D-401-1C-101317-10-12	SA_22-2mm	EPA6010	1	mg/kg	Cobalt	5.76	
D-401-1C-101317-10-12	SA_22-2mm	EPA6010	1	mg/kg	Copper	13.76	
D-401-1C-101317-10-12	SA_22-2mm	EPA6010	1	mg/kg	Iron	26817.76	
D-401-1C-101317-10-12	SA_22-2mm	EPA6010	1	mg/kg	Lead	6.85	dup
D-401-1C-101317-10-12	SA_22-2mm	EPA6010	1	mg/kg	Magnesium	2848.37	
D-401-1C-101317-10-12	SA_22-2mm	EPA6010	1	mg/kg	Manganese	330.51	
D-401-1C-101317-10-12	SA_22-2mm	EPA6010	1	mg/kg	Nickel	12.96	
D-401-1C-101317-10-12	SA_22-2mm	EPA6010	1	mg/kg	Phosphorus	850.36	
D-401-1C-101317-10-12	SA_22-2mm	EPA6010	1	mg/kg	Potassium	890.08	crm
D-401-1C-101317-10-12	SA_22-2mm	EPA6010	1	mg/kg	Selenium	2.79	rl
D-401-1C-101317-10-12	SA_22-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL



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**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-1C-101317-10-12	SA_22-2mm	EPA6010	1	mg/kg	Sodium	146.33	
D-401-1C-101317-10-12	SA_22-2mm	EPA6010	1	mg/kg	Thallium	0.79	rl
D-401-1C-101317-10-12	SA_22-2mm	EPA6010	1	mg/kg	Vanadium	71.47	
D-401-1C-101317-10-12	SA_22-2mm	EPA6010	1	mg/kg	Zinc	47.39	
D-401-1D-101317-10-12	SA_23-2mm	EPA6010	1	mg/kg	Aluminum	18827.28	
D-401-1D-101317-10-12	SA_23-2mm	EPA6010	1	mg/kg	Antimony	2.11	rl
D-401-1D-101317-10-12	SA_23-2mm	EPA6010	1	mg/kg	Arsenic	4.87	dup
D-401-1D-101317-10-12	SA_23-2mm	EPA6010	1	mg/kg	Barium	135.35	
D-401-1D-101317-10-12	SA_23-2mm	EPA6010	1	mg/kg	Beryllium	0.63	crm rl
D-401-1D-101317-10-12	SA_23-2mm	EPA6010	1	mg/kg	Cadmium	0.57	rl
D-401-1D-101317-10-12	SA_23-2mm	EPA6010	1	mg/kg	Calcium	2730.91	
D-401-1D-101317-10-12	SA_23-2mm	EPA6010	1	mg/kg	Chromium	32.71	
D-401-1D-101317-10-12	SA_23-2mm	EPA6010	1	mg/kg	Cobalt	6.75	
D-401-1D-101317-10-12	SA_23-2mm	EPA6010	1	mg/kg	Copper	17.83	
D-401-1D-101317-10-12	SA_23-2mm	EPA6010	1	mg/kg	Iron	28702.35	
D-401-1D-101317-10-12	SA_23-2mm	EPA6010	1	mg/kg	Lead	7.89	dup
D-401-1D-101317-10-12	SA_23-2mm	EPA6010	1	mg/kg	Magnesium	2853.84	
D-401-1D-101317-10-12	SA_23-2mm	EPA6010	1	mg/kg	Manganese	439.37	
D-401-1D-101317-10-12	SA_23-2mm	EPA6010	1	mg/kg	Nickel	14.54	
D-401-1D-101317-10-12	SA_23-2mm	EPA6010	1	mg/kg	Phosphorus	1137.39	
D-401-1D-101317-10-12	SA_23-2mm	EPA6010	1	mg/kg	Potassium	1032.22	crm
D-401-1D-101317-10-12	SA_23-2mm	EPA6010	1	mg/kg	Selenium	3.38	rl
D-401-1D-101317-10-12	SA_23-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-401-1D-101317-10-12	SA_23-2mm	EPA6010	1	mg/kg	Sodium	203.70	
D-401-1D-101317-10-12	SA_23-2mm	EPA6010	1	mg/kg	Thallium	0.35	rl
D-401-1D-101317-10-12	SA_23-2mm	EPA6010	1	mg/kg	Vanadium	77.67	
D-401-1D-101317-10-12	SA_23-2mm	EPA6010	1	mg/kg	Zinc	48.40	
D-401-1A-101317-8-10	SA_24-2mm	EPA6010	1	mg/kg	Aluminum	13388.90	



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**SWEL – Soil Water Environmental Lab**

**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-1A-101317-8-10	SA_24-2mm	EPA6010	1	mg/kg	Antimony	3.59	rl
D-401-1A-101317-8-10	SA_24-2mm	EPA6010	1	mg/kg	Arsenic	3.85	dup
D-401-1A-101317-8-10	SA_24-2mm	EPA6010	1	mg/kg	Barium	130.48	
D-401-1A-101317-8-10	SA_24-2mm	EPA6010	1	mg/kg	Beryllium	0.44	crm rl
D-401-1A-101317-8-10	SA_24-2mm	EPA6010	1	mg/kg	Cadmium	2.55	
D-401-1A-101317-8-10	SA_24-2mm	EPA6010	1	mg/kg	Calcium	2251.59	
D-401-1A-101317-8-10	SA_24-2mm	EPA6010	1	mg/kg	Chromium	27.45	
D-401-1A-101317-8-10	SA_24-2mm	EPA6010	1	mg/kg	Cobalt	5.32	
D-401-1A-101317-8-10	SA_24-2mm	EPA6010	1	mg/kg	Copper	12.88	
D-401-1A-101317-8-10	SA_24-2mm	EPA6010	1	mg/kg	Iron	24591.26	
D-401-1A-101317-8-10	SA_24-2mm	EPA6010	1	mg/kg	Lead	14.20	dup
D-401-1A-101317-8-10	SA_24-2mm	EPA6010	1	mg/kg	Magnesium	2644.23	
D-401-1A-101317-8-10	SA_24-2mm	EPA6010	1	mg/kg	Manganese	382.37	
D-401-1A-101317-8-10	SA_24-2mm	EPA6010	1	mg/kg	Nickel	12.68	
D-401-1A-101317-8-10	SA_24-2mm	EPA6010	1	mg/kg	Phosphorus	806.48	
D-401-1A-101317-8-10	SA_24-2mm	EPA6010	1	mg/kg	Potassium	1057.41	crm
D-401-1A-101317-8-10	SA_24-2mm	EPA6010	1	mg/kg	Selenium	3.42	rl
D-401-1A-101317-8-10	SA_24-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-401-1A-101317-8-10	SA_24-2mm	EPA6010	1	mg/kg	Sodium	122.26	
D-401-1A-101317-8-10	SA_24-2mm	EPA6010	1	mg/kg	Thallium	0.65	rl
D-401-1A-101317-8-10	SA_24-2mm	EPA6010	1	mg/kg	Vanadium	60.30	
D-401-1A-101317-8-10	SA_24-2mm	EPA6010	1	mg/kg	Zinc	335.35	
D-401-1B-101317-8-10	SA_25-2mm	EPA6010	1	mg/kg	Aluminum	17425.08	
D-401-1B-101317-8-10	SA_25-2mm	EPA6010	1	mg/kg	Antimony	2.07	rl
D-401-1B-101317-8-10	SA_25-2mm	EPA6010	1	mg/kg	Arsenic	3.60	dup
D-401-1B-101317-8-10	SA_25-2mm	EPA6010	1	mg/kg	Barium	116.30	
D-401-1B-101317-8-10	SA_25-2mm	EPA6010	1	mg/kg	Beryllium	0.54	crm rl
D-401-1B-101317-8-10	SA_25-2mm	EPA6010	1	mg/kg	Cadmium	0.50	rl





**Appendix B**

**SWEL – Soil Water Environmental Lab**

**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-1B-101317-8-10	SA_25-2mm	EPA6010	1	mg/kg	Calcium	2719.02	
D-401-1B-101317-8-10	SA_25-2mm	EPA6010	1	mg/kg	Chromium	29.93	
D-401-1B-101317-8-10	SA_25-2mm	EPA6010	1	mg/kg	Cobalt	5.88	
D-401-1B-101317-8-10	SA_25-2mm	EPA6010	1	mg/kg	Copper	15.69	
D-401-1B-101317-8-10	SA_25-2mm	EPA6010	1	mg/kg	Iron	24259.62	
D-401-1B-101317-8-10	SA_25-2mm	EPA6010	1	mg/kg	Lead	6.45	dup
D-401-1B-101317-8-10	SA_25-2mm	EPA6010	1	mg/kg	Magnesium	3019.78	
D-401-1B-101317-8-10	SA_25-2mm	EPA6010	1	mg/kg	Manganese	347.38	
D-401-1B-101317-8-10	SA_25-2mm	EPA6010	1	mg/kg	Nickel	14.39	
D-401-1B-101317-8-10	SA_25-2mm	EPA6010	1	mg/kg	Phosphorus	898.23	
D-401-1B-101317-8-10	SA_25-2mm	EPA6010	1	mg/kg	Potassium	989.68	crm
D-401-1B-101317-8-10	SA_25-2mm	EPA6010	1	mg/kg	Selenium	3.45	rl
D-401-1B-101317-8-10	SA_25-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-401-1B-101317-8-10	SA_25-2mm	EPA6010	1	mg/kg	Sodium	207.83	
D-401-1B-101317-8-10	SA_25-2mm	EPA6010	1	mg/kg	Thallium	0.76	rl
D-401-1B-101317-8-10	SA_25-2mm	EPA6010	1	mg/kg	Vanadium	63.00	
D-401-1B-101317-8-10	SA_25-2mm	EPA6010	1	mg/kg	Zinc	94.70	
D-401-2C-101317-2-4D	SA_26-2mm	EPA6010	1	mg/kg	Aluminum	17117.45	
D-401-2C-101317-2-4D	SA_26-2mm	EPA6010	1	mg/kg	Antimony	7.63	
D-401-2C-101317-2-4D	SA_26-2mm	EPA6010	1	mg/kg	Arsenic	18.55	dup
D-401-2C-101317-2-4D	SA_26-2mm	EPA6010	1	mg/kg	Barium	181.65	
D-401-2C-101317-2-4D	SA_26-2mm	EPA6010	1	mg/kg	Beryllium	0.54	crm rl
D-401-2C-101317-2-4D	SA_26-2mm	EPA6010	1	mg/kg	Cadmium	10.84	
D-401-2C-101317-2-4D	SA_26-2mm	EPA6010	1	mg/kg	Calcium	2460.26	
D-401-2C-101317-2-4D	SA_26-2mm	EPA6010	1	mg/kg	Chromium	27.24	
D-401-2C-101317-2-4D	SA_26-2mm	EPA6010	1	mg/kg	Cobalt	6.12	
D-401-2C-101317-2-4D	SA_26-2mm	EPA6010	1	mg/kg	Copper	19.42	
D-401-2C-101317-2-4D	SA_26-2mm	EPA6010	1	mg/kg	Iron	24448.79	



**Appendix B**

**SWEL – Soil Water Environmental Lab**

**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-2C-101317-2-4D	SA_26-2mm	EPA6010	1	mg/kg	Lead	68.94	dup
D-401-2C-101317-2-4D	SA_26-2mm	EPA6010	1	mg/kg	Magnesium	2928.45	
D-401-2C-101317-2-4D	SA_26-2mm	EPA6010	1	mg/kg	Manganese	666.10	
D-401-2C-101317-2-4D	SA_26-2mm	EPA6010	1	mg/kg	Nickel	14.13	
D-401-2C-101317-2-4D	SA_26-2mm	EPA6010	1	mg/kg	Phosphorus	1084.80	
D-401-2C-101317-2-4D	SA_26-2mm	EPA6010	1	mg/kg	Potassium	1087.70	crm
D-401-2C-101317-2-4D	SA_26-2mm	EPA6010	1	mg/kg	Selenium	3.28	rl
D-401-2C-101317-2-4D	SA_26-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-401-2C-101317-2-4D	SA_26-2mm	EPA6010	1	mg/kg	Sodium	143.28	
D-401-2C-101317-2-4D	SA_26-2mm	EPA6010	1	mg/kg	Thallium	0.60	rl
D-401-2C-101317-2-4D	SA_26-2mm	EPA6010	1	mg/kg	Vanadium	59.85	
D-401-2C-101317-2-4D	SA_26-2mm	EPA6010	1	mg/kg	Zinc	772.52	
D-258-3C-101317-2-4D	SA_27-2mm	EPA6010	1	mg/kg	Aluminum	9921.84	
D-258-3C-101317-2-4D	SA_27-2mm	EPA6010	1	mg/kg	Antimony	6.88	
D-258-3C-101317-2-4D	SA_27-2mm	EPA6010	1	mg/kg	Arsenic	14.85	dup
D-258-3C-101317-2-4D	SA_27-2mm	EPA6010	1	mg/kg	Barium	97.59	
D-258-3C-101317-2-4D	SA_27-2mm	EPA6010	1	mg/kg	Beryllium	0.32	crm rl
D-258-3C-101317-2-4D	SA_27-2mm	EPA6010	1	mg/kg	Cadmium	4.69	
D-258-3C-101317-2-4D	SA_27-2mm	EPA6010	1	mg/kg	Calcium	2609.11	
D-258-3C-101317-2-4D	SA_27-2mm	EPA6010	1	mg/kg	Chromium	11.97	
D-258-3C-101317-2-4D	SA_27-2mm	EPA6010	1	mg/kg	Cobalt	3.33	
D-258-3C-101317-2-4D	SA_27-2mm	EPA6010	1	mg/kg	Copper	17.41	
D-258-3C-101317-2-4D	SA_27-2mm	EPA6010	1	mg/kg	Iron	11081.23	
D-258-3C-101317-2-4D	SA_27-2mm	EPA6010	1	mg/kg	Lead	246.63	dup
D-258-3C-101317-2-4D	SA_27-2mm	EPA6010	1	mg/kg	Magnesium	2217.52	
D-258-3C-101317-2-4D	SA_27-2mm	EPA6010	1	mg/kg	Manganese	310.36	
D-258-3C-101317-2-4D	SA_27-2mm	EPA6010	1	mg/kg	Nickel	7.72	
D-258-3C-101317-2-4D	SA_27-2mm	EPA6010	1	mg/kg	Phosphorus	1075.81	



**Appendix B**

**SWEL – Soil Water Environmental Lab**

**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-258-3C-101317-2-4D	SA_27-2mm	EPA6010	1	mg/kg	Potassium	815.12	crm
D-258-3C-101317-2-4D	SA_27-2mm	EPA6010	1	mg/kg	Selenium	2.81	rl
D-258-3C-101317-2-4D	SA_27-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-258-3C-101317-2-4D	SA_27-2mm	EPA6010	1	mg/kg	Sodium	88.82	
D-258-3C-101317-2-4D	SA_27-2mm	EPA6010	1	mg/kg	Thallium	0.60	rl
D-258-3C-101317-2-4D	SA_27-2mm	EPA6010	1	mg/kg	Vanadium	23.83	
D-258-3C-101317-2-4D	SA_27-2mm	EPA6010	1	mg/kg	Zinc	197.17	
D-441-1B-101317-2-4D	SA_28-2mm	EPA6010	1	mg/kg	Aluminum	20782.91	
D-441-1B-101317-2-4D	SA_28-2mm	EPA6010	1	mg/kg	Antimony	6.94	
D-441-1B-101317-2-4D	SA_28-2mm	EPA6010	1	mg/kg	Arsenic	20.39	dup
D-441-1B-101317-2-4D	SA_28-2mm	EPA6010	1	mg/kg	Barium	253.21	
D-441-1B-101317-2-4D	SA_28-2mm	EPA6010	1	mg/kg	Beryllium	0.69	crm rl
D-441-1B-101317-2-4D	SA_28-2mm	EPA6010	1	mg/kg	Cadmium	2.56	
D-441-1B-101317-2-4D	SA_28-2mm	EPA6010	1	mg/kg	Calcium	6958.21	
D-441-1B-101317-2-4D	SA_28-2mm	EPA6010	1	mg/kg	Chromium	34.30	
D-441-1B-101317-2-4D	SA_28-2mm	EPA6010	1	mg/kg	Cobalt	9.77	
D-441-1B-101317-2-4D	SA_28-2mm	EPA6010	1	mg/kg	Copper	33.13	
D-441-1B-101317-2-4D	SA_28-2mm	EPA6010	1	mg/kg	Iron	21874.05	
D-441-1B-101317-2-4D	SA_28-2mm	EPA6010	1	mg/kg	Lead	39.05	dup
D-441-1B-101317-2-4D	SA_28-2mm	EPA6010	1	mg/kg	Magnesium	4725.57	
D-441-1B-101317-2-4D	SA_28-2mm	EPA6010	1	mg/kg	Manganese	699.51	
D-441-1B-101317-2-4D	SA_28-2mm	EPA6010	1	mg/kg	Nickel	21.85	
D-441-1B-101317-2-4D	SA_28-2mm	EPA6010	1	mg/kg	Phosphorus	2003.91	
D-441-1B-101317-2-4D	SA_28-2mm	EPA6010	1	mg/kg	Potassium	2458.39	crm
D-441-1B-101317-2-4D	SA_28-2mm	EPA6010	1	mg/kg	Selenium	4.73	rl
D-441-1B-101317-2-4D	SA_28-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-441-1B-101317-2-4D	SA_28-2mm	EPA6010	1	mg/kg	Sodium	265.10	
D-441-1B-101317-2-4D	SA_28-2mm	EPA6010	1	mg/kg	Thallium	0.78	rl



**Appendix B**

**SWEL – Soil Water Environmental Lab**

**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-441-1B-101317-2-4D	SA_28-2mm	EPA6010	1	mg/kg	Vanadium	51.61	
D-441-1B-101317-2-4D	SA_28-2mm	EPA6010	1	mg/kg	Zinc	175.84	
D-401-1B-101317-2-4D	SA_29-2mm	EPA6010	1	mg/kg	Aluminum	16591.88	
D-401-1B-101317-2-4D	SA_29-2mm	EPA6010	1	mg/kg	Antimony	3.85	rl
D-401-1B-101317-2-4D	SA_29-2mm	EPA6010	1	mg/kg	Arsenic	7.09	dup
D-401-1B-101317-2-4D	SA_29-2mm	EPA6010	1	mg/kg	Barium	142.41	
D-401-1B-101317-2-4D	SA_29-2mm	EPA6010	1	mg/kg	Beryllium	0.51	crm rl
D-401-1B-101317-2-4D	SA_29-2mm	EPA6010	1	mg/kg	Cadmium	1.82	
D-401-1B-101317-2-4D	SA_29-2mm	EPA6010	1	mg/kg	Calcium	2993.04	
D-401-1B-101317-2-4D	SA_29-2mm	EPA6010	1	mg/kg	Chromium	27.94	
D-401-1B-101317-2-4D	SA_29-2mm	EPA6010	1	mg/kg	Cobalt	6.53	
D-401-1B-101317-2-4D	SA_29-2mm	EPA6010	1	mg/kg	Copper	15.49	
D-401-1B-101317-2-4D	SA_29-2mm	EPA6010	1	mg/kg	Iron	25428.99	
D-401-1B-101317-2-4D	SA_29-2mm	EPA6010	1	mg/kg	Lead	14.56	dup
D-401-1B-101317-2-4D	SA_29-2mm	EPA6010	1	mg/kg	Magnesium	3047.38	
D-401-1B-101317-2-4D	SA_29-2mm	EPA6010	1	mg/kg	Manganese	555.65	
D-401-1B-101317-2-4D	SA_29-2mm	EPA6010	1	mg/kg	Nickel	15.01	
D-401-1B-101317-2-4D	SA_29-2mm	EPA6010	1	mg/kg	Phosphorus	1060.29	
D-401-1B-101317-2-4D	SA_29-2mm	EPA6010	1	mg/kg	Potassium	1143.25	crm
D-401-1B-101317-2-4D	SA_29-2mm	EPA6010	1	mg/kg	Selenium	3.96	rl
D-401-1B-101317-2-4D	SA_29-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-401-1B-101317-2-4D	SA_29-2mm	EPA6010	1	mg/kg	Sodium	130.57	
D-401-1B-101317-2-4D	SA_29-2mm	EPA6010	1	mg/kg	Thallium	0.66	rl
D-401-1B-101317-2-4D	SA_29-2mm	EPA6010	1	mg/kg	Vanadium	61.62	
D-401-1B-101317-2-4D	SA_29-2mm	EPA6010	1	mg/kg	Zinc	237.43	
D-401-1B-101317-10-12	SA_30-2mm	EPA6010	1	mg/kg	Aluminum	17620.35	
D-401-1B-101317-10-12	SA_30-2mm	EPA6010	1	mg/kg	Antimony	2.17	rl
D-401-1B-101317-10-12	SA_30-2mm	EPA6010	1	mg/kg	Arsenic	3.67	dup



**Appendix B**

**SWEL – Soil Water Environmental Lab**

**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-1B-101317-10-12	SA_30-2mm	EPA6010	1	mg/kg	Barium	120.81	
D-401-1B-101317-10-12	SA_30-2mm	EPA6010	1	mg/kg	Beryllium	0.55	crm rl
D-401-1B-101317-10-12	SA_30-2mm	EPA6010	1	mg/kg	Cadmium	0.50	rl
D-401-1B-101317-10-12	SA_30-2mm	EPA6010	1	mg/kg	Calcium	2311.72	
D-401-1B-101317-10-12	SA_30-2mm	EPA6010	1	mg/kg	Chromium	29.61	
D-401-1B-101317-10-12	SA_30-2mm	EPA6010	1	mg/kg	Cobalt	6.82	
D-401-1B-101317-10-12	SA_30-2mm	EPA6010	1	mg/kg	Copper	15.93	
D-401-1B-101317-10-12	SA_30-2mm	EPA6010	1	mg/kg	Iron	27174.67	
D-401-1B-101317-10-12	SA_30-2mm	EPA6010	1	mg/kg	Lead	7.03	dup
D-401-1B-101317-10-12	SA_30-2mm	EPA6010	1	mg/kg	Magnesium	2892.40	
D-401-1B-101317-10-12	SA_30-2mm	EPA6010	1	mg/kg	Manganese	337.49	
D-401-1B-101317-10-12	SA_30-2mm	EPA6010	1	mg/kg	Nickel	13.71	
D-401-1B-101317-10-12	SA_30-2mm	EPA6010	1	mg/kg	Phosphorus	912.93	
D-401-1B-101317-10-12	SA_30-2mm	EPA6010	1	mg/kg	Potassium	965.83	crm
D-401-1B-101317-10-12	SA_30-2mm	EPA6010	1	mg/kg	Selenium	3.56	rl
D-401-1B-101317-10-12	SA_30-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-401-1B-101317-10-12	SA_30-2mm	EPA6010	1	mg/kg	Sodium	150.20	
D-401-1B-101317-10-12	SA_30-2mm	EPA6010	1	mg/kg	Thallium	0.49	rl
D-401-1B-101317-10-12	SA_30-2mm	EPA6010	1	mg/kg	Vanadium	68.38	
D-401-1B-101317-10-12	SA_30-2mm	EPA6010	1	mg/kg	Zinc	51.09	
D-441-1B-101317-4-6	SA_31-2mm	EPA6010	1	mg/kg	Aluminum	20486.17	
D-441-1B-101317-4-6	SA_31-2mm	EPA6010	1	mg/kg	Antimony	7.53	
D-441-1B-101317-4-6	SA_31-2mm	EPA6010	1	mg/kg	Arsenic	15.48	dup
D-441-1B-101317-4-6	SA_31-2mm	EPA6010	1	mg/kg	Barium	248.14	
D-441-1B-101317-4-6	SA_31-2mm	EPA6010	1	mg/kg	Beryllium	0.66	crm rl
D-441-1B-101317-4-6	SA_31-2mm	EPA6010	1	mg/kg	Cadmium	3.86	
D-441-1B-101317-4-6	SA_31-2mm	EPA6010	1	mg/kg	Calcium	6922.07	
D-441-1B-101317-4-6	SA_31-2mm	EPA6010	1	mg/kg	Chromium	31.51	

**Appendix B**  
**Detailed Discrete Sample Results**

**SWEL – Soil Water Environmental Lab**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-441-1B-101317-4-6	SA_31-2mm	EPA6010	1	mg/kg	Cobalt	9.00	
D-441-1B-101317-4-6	SA_31-2mm	EPA6010	1	mg/kg	Copper	32.97	
D-441-1B-101317-4-6	SA_31-2mm	EPA6010	1	mg/kg	Iron	21969.44	
D-441-1B-101317-4-6	SA_31-2mm	EPA6010	1	mg/kg	Lead	188.34	dup
D-441-1B-101317-4-6	SA_31-2mm	EPA6010	1	mg/kg	Magnesium	4663.53	
D-441-1B-101317-4-6	SA_31-2mm	EPA6010	1	mg/kg	Manganese	757.94	
D-441-1B-101317-4-6	SA_31-2mm	EPA6010	1	mg/kg	Nickel	21.74	
D-441-1B-101317-4-6	SA_31-2mm	EPA6010	1	mg/kg	Phosphorus	1961.51	
D-441-1B-101317-4-6	SA_31-2mm	EPA6010	1	mg/kg	Potassium	2500.80	crm
D-441-1B-101317-4-6	SA_31-2mm	EPA6010	1	mg/kg	Selenium	2.77	rl
D-441-1B-101317-4-6	SA_31-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-441-1B-101317-4-6	SA_31-2mm	EPA6010	1	mg/kg	Sodium	249.06	
D-441-1B-101317-4-6	SA_31-2mm	EPA6010	1	mg/kg	Thallium	0.39	rl
D-441-1B-101317-4-6	SA_31-2mm	EPA6010	1	mg/kg	Vanadium	52.76	
D-441-1B-101317-4-6	SA_31-2mm	EPA6010	1	mg/kg	Zinc	224.80	
D-441-1B-101317-6-8	SA_32-2mm	EPA6010	1	mg/kg	Aluminum	23404.98	
D-441-1B-101317-6-8	SA_32-2mm	EPA6010	1	mg/kg	Antimony	4.64	rl
D-441-1B-101317-6-8	SA_32-2mm	EPA6010	1	mg/kg	Arsenic	10.60	dup
D-441-1B-101317-6-8	SA_32-2mm	EPA6010	1	mg/kg	Barium	258.29	
D-441-1B-101317-6-8	SA_32-2mm	EPA6010	1	mg/kg	Beryllium	0.75	crm rl
D-441-1B-101317-6-8	SA_32-2mm	EPA6010	1	mg/kg	Cadmium	1.30	
D-441-1B-101317-6-8	SA_32-2mm	EPA6010	1	mg/kg	Calcium	6100.21	
D-441-1B-101317-6-8	SA_32-2mm	EPA6010	1	mg/kg	Chromium	35.65	
D-441-1B-101317-6-8	SA_32-2mm	EPA6010	1	mg/kg	Cobalt	9.95	
D-441-1B-101317-6-8	SA_32-2mm	EPA6010	1	mg/kg	Copper	26.49	
D-441-1B-101317-6-8	SA_32-2mm	EPA6010	1	mg/kg	Iron	23728.28	
D-441-1B-101317-6-8	SA_32-2mm	EPA6010	1	mg/kg	Lead	33.51	dup
D-441-1B-101317-6-8	SA_32-2mm	EPA6010	1	mg/kg	Magnesium	4766.33	



**Appendix B**

**SWEL – Soil Water Environmental Lab**

**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-441-1B-101317-6-8	SA_32-2mm	EPA6010	1	mg/kg	Manganese	778.26	
D-441-1B-101317-6-8	SA_32-2mm	EPA6010	1	mg/kg	Nickel	23.74	
D-441-1B-101317-6-8	SA_32-2mm	EPA6010	1	mg/kg	Phosphorus	1776.58	
D-441-1B-101317-6-8	SA_32-2mm	EPA6010	1	mg/kg	Potassium	2599.95	crm
D-441-1B-101317-6-8	SA_32-2mm	EPA6010	1	mg/kg	Selenium	4.06	rl
D-441-1B-101317-6-8	SA_32-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-441-1B-101317-6-8	SA_32-2mm	EPA6010	1	mg/kg	Sodium	352.55	
D-441-1B-101317-6-8	SA_32-2mm	EPA6010	1	mg/kg	Thallium	0.69	rl
D-441-1B-101317-6-8	SA_32-2mm	EPA6010	1	mg/kg	Vanadium	58.23	
D-441-1B-101317-6-8	SA_32-2mm	EPA6010	1	mg/kg	Zinc	104.18	
D-441-1B-101317-8-10	SA_33-2mm	EPA6010	1	mg/kg	Aluminum	22641.38	
D-441-1B-101317-8-10	SA_33-2mm	EPA6010	1	mg/kg	Antimony	3.19	rl
D-441-1B-101317-8-10	SA_33-2mm	EPA6010	1	mg/kg	Arsenic	6.90	dup
D-441-1B-101317-8-10	SA_33-2mm	EPA6010	1	mg/kg	Barium	260.36	
D-441-1B-101317-8-10	SA_33-2mm	EPA6010	1	mg/kg	Beryllium	0.71	crm rl
D-441-1B-101317-8-10	SA_33-2mm	EPA6010	1	mg/kg	Cadmium	0.88	rl
D-441-1B-101317-8-10	SA_33-2mm	EPA6010	1	mg/kg	Calcium	5272.72	
D-441-1B-101317-8-10	SA_33-2mm	EPA6010	1	mg/kg	Chromium	33.04	
D-441-1B-101317-8-10	SA_33-2mm	EPA6010	1	mg/kg	Cobalt	9.43	
D-441-1B-101317-8-10	SA_33-2mm	EPA6010	1	mg/kg	Copper	24.11	
D-441-1B-101317-8-10	SA_33-2mm	EPA6010	1	mg/kg	Iron	23992.60	
D-441-1B-101317-8-10	SA_33-2mm	EPA6010	1	mg/kg	Lead	22.02	dup
D-441-1B-101317-8-10	SA_33-2mm	EPA6010	1	mg/kg	Magnesium	5038.70	
D-441-1B-101317-8-10	SA_33-2mm	EPA6010	1	mg/kg	Manganese	657.21	
D-441-1B-101317-8-10	SA_33-2mm	EPA6010	1	mg/kg	Nickel	23.62	
D-441-1B-101317-8-10	SA_33-2mm	EPA6010	1	mg/kg	Phosphorus	1666.49	
D-441-1B-101317-8-10	SA_33-2mm	EPA6010	1	mg/kg	Potassium	2579.83	crm
D-441-1B-101317-8-10	SA_33-2mm	EPA6010	1	mg/kg	Selenium	4.17	rl



**Appendix B**

**SWEL – Soil Water Environmental Lab**

**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-441-1B-101317-8-10	SA_33-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-441-1B-101317-8-10	SA_33-2mm	EPA6010	1	mg/kg	Sodium	308.19	
D-441-1B-101317-8-10	SA_33-2mm	EPA6010	1	mg/kg	Thallium	0.75	rl
D-441-1B-101317-8-10	SA_33-2mm	EPA6010	1	mg/kg	Vanadium	59.23	
D-441-1B-101317-8-10	SA_33-2mm	EPA6010	1	mg/kg	Zinc	82.25	
D-441-1D-101317-0-2	SA_34-2mm	EPA6010	1	mg/kg	Aluminum	21204.44	
D-441-1D-101317-0-2	SA_34-2mm	EPA6010	1	mg/kg	Antimony	6.60	
D-441-1D-101317-0-2	SA_34-2mm	EPA6010	1	mg/kg	Arsenic	19.75	dup
D-441-1D-101317-0-2	SA_34-2mm	EPA6010	1	mg/kg	Barium	199.82	
D-441-1D-101317-0-2	SA_34-2mm	EPA6010	1	mg/kg	Beryllium	0.62	crm rl
D-441-1D-101317-0-2	SA_34-2mm	EPA6010	1	mg/kg	Cadmium	4.00	
D-441-1D-101317-0-2	SA_34-2mm	EPA6010	1	mg/kg	Calcium	6015.07	
D-441-1D-101317-0-2	SA_34-2mm	EPA6010	1	mg/kg	Chromium	31.12	
D-441-1D-101317-0-2	SA_34-2mm	EPA6010	1	mg/kg	Cobalt	8.92	
D-441-1D-101317-0-2	SA_34-2mm	EPA6010	1	mg/kg	Copper	49.90	
D-441-1D-101317-0-2	SA_34-2mm	EPA6010	1	mg/kg	Iron	22294.66	
D-441-1D-101317-0-2	SA_34-2mm	EPA6010	1	mg/kg	Lead	143.49	dup
D-441-1D-101317-0-2	SA_34-2mm	EPA6010	1	mg/kg	Magnesium	5686.19	
D-441-1D-101317-0-2	SA_34-2mm	EPA6010	1	mg/kg	Manganese	643.38	
D-441-1D-101317-0-2	SA_34-2mm	EPA6010	1	mg/kg	Nickel	23.95	
D-441-1D-101317-0-2	SA_34-2mm	EPA6010	1	mg/kg	Phosphorus	1745.32	
D-441-1D-101317-0-2	SA_34-2mm	EPA6010	1	mg/kg	Potassium	2468.53	crm
D-441-1D-101317-0-2	SA_34-2mm	EPA6010	1	mg/kg	Selenium	2.41	rl
D-441-1D-101317-0-2	SA_34-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-441-1D-101317-0-2	SA_34-2mm	EPA6010	1	mg/kg	Sodium	259.38	
D-441-1D-101317-0-2	SA_34-2mm	EPA6010	1	mg/kg	Thallium	0.47	rl
D-441-1D-101317-0-2	SA_34-2mm	EPA6010	1	mg/kg	Vanadium	52.16	
D-441-1D-101317-0-2	SA_34-2mm	EPA6010	1	mg/kg	Zinc	208.08	





**Appendix B**

**SWEL – Soil Water Environmental Lab**

**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-441-1D-101317-2-4	SA_35-2mm	EPA6010	1	mg/kg	Aluminum	24527.15	
D-441-1D-101317-2-4	SA_35-2mm	EPA6010	1	mg/kg	Antimony	7.65	
D-441-1D-101317-2-4	SA_35-2mm	EPA6010	1	mg/kg	Arsenic	13.45	dup
D-441-1D-101317-2-4	SA_35-2mm	EPA6010	1	mg/kg	Barium	236.79	
D-441-1D-101317-2-4	SA_35-2mm	EPA6010	1	mg/kg	Beryllium	0.80	crm rl
D-441-1D-101317-2-4	SA_35-2mm	EPA6010	1	mg/kg	Cadmium	2.13	
D-441-1D-101317-2-4	SA_35-2mm	EPA6010	1	mg/kg	Calcium	6029.93	
D-441-1D-101317-2-4	SA_35-2mm	EPA6010	1	mg/kg	Chromium	26.15	
D-441-1D-101317-2-4	SA_35-2mm	EPA6010	1	mg/kg	Cobalt	9.35	
D-441-1D-101317-2-4	SA_35-2mm	EPA6010	1	mg/kg	Copper	31.98	
D-441-1D-101317-2-4	SA_35-2mm	EPA6010	1	mg/kg	Iron	21837.99	
D-441-1D-101317-2-4	SA_35-2mm	EPA6010	1	mg/kg	Lead	62.10	dup
D-441-1D-101317-2-4	SA_35-2mm	EPA6010	1	mg/kg	Magnesium	4205.64	
D-441-1D-101317-2-4	SA_35-2mm	EPA6010	1	mg/kg	Manganese	772.75	
D-441-1D-101317-2-4	SA_35-2mm	EPA6010	1	mg/kg	Nickel	20.94	
D-441-1D-101317-2-4	SA_35-2mm	EPA6010	1	mg/kg	Phosphorus	1862.81	
D-441-1D-101317-2-4	SA_35-2mm	EPA6010	1	mg/kg	Potassium	2290.99	crm
D-441-1D-101317-2-4	SA_35-2mm	EPA6010	1	mg/kg	Selenium	3.38	rl
D-441-1D-101317-2-4	SA_35-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-441-1D-101317-2-4	SA_35-2mm	EPA6010	1	mg/kg	Sodium	264.80	
D-441-1D-101317-2-4	SA_35-2mm	EPA6010	1	mg/kg	Thallium	0.51	rl
D-441-1D-101317-2-4	SA_35-2mm	EPA6010	1	mg/kg	Vanadium	46.14	
D-441-1D-101317-2-4	SA_35-2mm	EPA6010	1	mg/kg	Zinc	129.39	
D-441-1C-101317-8-10	SA_36-2mm	EPA6010	1	mg/kg	Aluminum	22467.07	
D-441-1C-101317-8-10	SA_36-2mm	EPA6010	1	mg/kg	Antimony	3.84	rl
D-441-1C-101317-8-10	SA_36-2mm	EPA6010	1	mg/kg	Arsenic	5.96	dup
D-441-1C-101317-8-10	SA_36-2mm	EPA6010	1	mg/kg	Barium	192.63	
D-441-1C-101317-8-10	SA_36-2mm	EPA6010	1	mg/kg	Beryllium	0.68	crm rl



**Appendix B**

**SWEL – Soil Water Environmental Lab**

**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-441-1C-101317-8-10	SA_36-2mm	EPA6010	1	mg/kg	Cadmium	0.57	rl
D-441-1C-101317-8-10	SA_36-2mm	EPA6010	1	mg/kg	Calcium	4851.99	
D-441-1C-101317-8-10	SA_36-2mm	EPA6010	1	mg/kg	Chromium	29.97	
D-441-1C-101317-8-10	SA_36-2mm	EPA6010	1	mg/kg	Cobalt	8.58	
D-441-1C-101317-8-10	SA_36-2mm	EPA6010	1	mg/kg	Copper	22.47	
D-441-1C-101317-8-10	SA_36-2mm	EPA6010	1	mg/kg	Iron	20826.84	
D-441-1C-101317-8-10	SA_36-2mm	EPA6010	1	mg/kg	Lead	8.90	dup
D-441-1C-101317-8-10	SA_36-2mm	EPA6010	1	mg/kg	Magnesium	4955.50	
D-441-1C-101317-8-10	SA_36-2mm	EPA6010	1	mg/kg	Manganese	594.42	
D-441-1C-101317-8-10	SA_36-2mm	EPA6010	1	mg/kg	Nickel	19.27	
D-441-1C-101317-8-10	SA_36-2mm	EPA6010	1	mg/kg	Phosphorus	1734.32	
D-441-1C-101317-8-10	SA_36-2mm	EPA6010	1	mg/kg	Potassium	2066.75	crm
D-441-1C-101317-8-10	SA_36-2mm	EPA6010	1	mg/kg	Selenium	2.64	rl
D-441-1C-101317-8-10	SA_36-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-441-1C-101317-8-10	SA_36-2mm	EPA6010	1	mg/kg	Sodium	304.45	
D-441-1C-101317-8-10	SA_36-2mm	EPA6010	1	mg/kg	Thallium	0.67	rl
D-441-1C-101317-8-10	SA_36-2mm	EPA6010	1	mg/kg	Vanadium	52.86	
D-441-1C-101317-8-10	SA_36-2mm	EPA6010	1	mg/kg	Zinc	67.05	
D-441-1C-101317-10-12	SA_37-2mm	EPA6010	2	mg/kg	Aluminum	24606.65	
D-441-1C-101317-10-12	SA_37-2mm	EPA6010	2	mg/kg	Antimony	2.87	blk rl
D-441-1C-101317-10-12	SA_37-2mm	EPA6010	2	mg/kg	Arsenic	6.30	
D-441-1C-101317-10-12	SA_37-2mm	EPA6010	2	mg/kg	Barium	198.83	
D-441-1C-101317-10-12	SA_37-2mm	EPA6010	2	mg/kg	Beryllium	0.76	crm rl
D-441-1C-101317-10-12	SA_37-2mm	EPA6010	2	mg/kg	Cadmium	0.54	rl
D-441-1C-101317-10-12	SA_37-2mm	EPA6010	2	mg/kg	Calcium	4879.84	
D-441-1C-101317-10-12	SA_37-2mm	EPA6010	2	mg/kg	Chromium	36.82	dup
D-441-1C-101317-10-12	SA_37-2mm	EPA6010	2	mg/kg	Cobalt	9.31	
D-441-1C-101317-10-12	SA_37-2mm	EPA6010	2	mg/kg	Copper	22.79	



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**SWEL – Soil Water Environmental Lab**

**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-441-1C-101317-10-12	SA_37-2mm	EPA6010	2	mg/kg	Iron	22779.01	
D-441-1C-101317-10-12	SA_37-2mm	EPA6010	2	mg/kg	Lead	10.07	
D-441-1C-101317-10-12	SA_37-2mm	EPA6010	2	mg/kg	Magnesium	4866.33	
D-441-1C-101317-10-12	SA_37-2mm	EPA6010	2	mg/kg	Manganese	537.97	
D-441-1C-101317-10-12	SA_37-2mm	EPA6010	2	mg/kg	Nickel	21.98	
D-441-1C-101317-10-12	SA_37-2mm	EPA6010	2	mg/kg	Phosphorus	1576.96	
D-441-1C-101317-10-12	SA_37-2mm	EPA6010	2	mg/kg	Potassium	2260.28	crm
D-441-1C-101317-10-12	SA_37-2mm	EPA6010	2	mg/kg	Selenium	3.86	rl
D-441-1C-101317-10-12	SA_37-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-441-1C-101317-10-12	SA_37-2mm	EPA6010	2	mg/kg	Sodium	404.09	
D-441-1C-101317-10-12	SA_37-2mm	EPA6010	2	mg/kg	Thallium	0.48	rl
D-441-1C-101317-10-12	SA_37-2mm	EPA6010	2	mg/kg	Vanadium	58.35	
D-441-1C-101317-10-12	SA_37-2mm	EPA6010	2	mg/kg	Zinc	72.85	
D-441-1B-101317-0-2	SA_38-2mm	EPA6010	2	mg/kg	Aluminum	22832.30	
D-441-1B-101317-0-2	SA_38-2mm	EPA6010	2	mg/kg	Antimony	17.62	blk
D-441-1B-101317-0-2	SA_38-2mm	EPA6010	2	mg/kg	Arsenic	40.24	
D-441-1B-101317-0-2	SA_38-2mm	EPA6010	2	mg/kg	Barium	268.91	
D-441-1B-101317-0-2	SA_38-2mm	EPA6010	2	mg/kg	Beryllium	0.78	crm rl
D-441-1B-101317-0-2	SA_38-2mm	EPA6010	2	mg/kg	Cadmium	12.15	
D-441-1B-101317-0-2	SA_38-2mm	EPA6010	2	mg/kg	Calcium	6851.05	
D-441-1B-101317-0-2	SA_38-2mm	EPA6010	2	mg/kg	Chromium	41.85	dup
D-441-1B-101317-0-2	SA_38-2mm	EPA6010	2	mg/kg	Cobalt	10.83	
D-441-1B-101317-0-2	SA_38-2mm	EPA6010	2	mg/kg	Copper	94.00	
D-441-1B-101317-0-2	SA_38-2mm	EPA6010	2	mg/kg	Iron	24152.75	
D-441-1B-101317-0-2	SA_38-2mm	EPA6010	2	mg/kg	Lead	674.53	
D-441-1B-101317-0-2	SA_38-2mm	EPA6010	2	mg/kg	Magnesium	4896.57	
D-441-1B-101317-0-2	SA_38-2mm	EPA6010	2	mg/kg	Manganese	665.11	
D-441-1B-101317-0-2	SA_38-2mm	EPA6010	2	mg/kg	Nickel	26.39	



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**SWEL – Soil Water Environmental Lab**

**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-441-1B-101317-0-2	SA_38-2mm	EPA6010	2	mg/kg	Phosphorus	2333.17	
D-441-1B-101317-0-2	SA_38-2mm	EPA6010	2	mg/kg	Potassium	2952.47	crm
D-441-1B-101317-0-2	SA_38-2mm	EPA6010	2	mg/kg	Selenium	2.70	rl
D-441-1B-101317-0-2	SA_38-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-441-1B-101317-0-2	SA_38-2mm	EPA6010	2	mg/kg	Sodium	405.57	
D-441-1B-101317-0-2	SA_38-2mm	EPA6010	2	mg/kg	Thallium	0.61	rl
D-441-1B-101317-0-2	SA_38-2mm	EPA6010	2	mg/kg	Vanadium	59.68	
D-441-1B-101317-0-2	SA_38-2mm	EPA6010	2	mg/kg	Zinc	475.04	
D-441-1B-101317-2-4	SA_39-2mm	EPA6010	2	mg/kg	Aluminum	22772.52	
D-441-1B-101317-2-4	SA_39-2mm	EPA6010	2	mg/kg	Antimony	7.14	blk
D-441-1B-101317-2-4	SA_39-2mm	EPA6010	2	mg/kg	Arsenic	21.86	
D-441-1B-101317-2-4	SA_39-2mm	EPA6010	2	mg/kg	Barium	265.40	
D-441-1B-101317-2-4	SA_39-2mm	EPA6010	2	mg/kg	Beryllium	0.76	crm rl
D-441-1B-101317-2-4	SA_39-2mm	EPA6010	2	mg/kg	Cadmium	2.79	
D-441-1B-101317-2-4	SA_39-2mm	EPA6010	2	mg/kg	Calcium	7961.68	
D-441-1B-101317-2-4	SA_39-2mm	EPA6010	2	mg/kg	Chromium	38.79	dup
D-441-1B-101317-2-4	SA_39-2mm	EPA6010	2	mg/kg	Cobalt	9.98	
D-441-1B-101317-2-4	SA_39-2mm	EPA6010	2	mg/kg	Copper	35.05	
D-441-1B-101317-2-4	SA_39-2mm	EPA6010	2	mg/kg	Iron	22917.60	
D-441-1B-101317-2-4	SA_39-2mm	EPA6010	2	mg/kg	Lead	44.13	
D-441-1B-101317-2-4	SA_39-2mm	EPA6010	2	mg/kg	Magnesium	4523.44	
D-441-1B-101317-2-4	SA_39-2mm	EPA6010	2	mg/kg	Manganese	729.39	
D-441-1B-101317-2-4	SA_39-2mm	EPA6010	2	mg/kg	Nickel	23.60	
D-441-1B-101317-2-4	SA_39-2mm	EPA6010	2	mg/kg	Phosphorus	2116.09	
D-441-1B-101317-2-4	SA_39-2mm	EPA6010	2	mg/kg	Potassium	2721.20	crm
D-441-1B-101317-2-4	SA_39-2mm	EPA6010	2	mg/kg	Selenium	3.46	rl
D-441-1B-101317-2-4	SA_39-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-441-1B-101317-2-4	SA_39-2mm	EPA6010	2	mg/kg	Sodium	433.05	



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**SWEL – Soil Water Environmental Lab**

**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-441-1B-101317-2-4	SA_39-2mm	EPA6010	2	mg/kg	Thallium	0.60	rl
D-441-1B-101317-2-4	SA_39-2mm	EPA6010	2	mg/kg	Vanadium	58.30	
D-441-1B-101317-2-4	SA_39-2mm	EPA6010	2	mg/kg	Zinc	179.03	
D-441-1B-101317-10-12	SA_40-2mm	EPA6010	2	mg/kg	Aluminum	25866.61	
D-441-1B-101317-10-12	SA_40-2mm	EPA6010	2	mg/kg	Antimony	2.99	blk rl
D-441-1B-101317-10-12	SA_40-2mm	EPA6010	2	mg/kg	Arsenic	7.93	
D-441-1B-101317-10-12	SA_40-2mm	EPA6010	2	mg/kg	Barium	259.71	
D-441-1B-101317-10-12	SA_40-2mm	EPA6010	2	mg/kg	Beryllium	0.83	crm rl
D-441-1B-101317-10-12	SA_40-2mm	EPA6010	2	mg/kg	Cadmium	0.70	rl
D-441-1B-101317-10-12	SA_40-2mm	EPA6010	2	mg/kg	Calcium	5540.94	
D-441-1B-101317-10-12	SA_40-2mm	EPA6010	2	mg/kg	Chromium	46.12	dup
D-441-1B-101317-10-12	SA_40-2mm	EPA6010	2	mg/kg	Cobalt	10.72	
D-441-1B-101317-10-12	SA_40-2mm	EPA6010	2	mg/kg	Copper	27.20	
D-441-1B-101317-10-12	SA_40-2mm	EPA6010	2	mg/kg	Iron	25204.55	
D-441-1B-101317-10-12	SA_40-2mm	EPA6010	2	mg/kg	Lead	14.88	
D-441-1B-101317-10-12	SA_40-2mm	EPA6010	2	mg/kg	Magnesium	5008.51	
D-441-1B-101317-10-12	SA_40-2mm	EPA6010	2	mg/kg	Manganese	665.73	
D-441-1B-101317-10-12	SA_40-2mm	EPA6010	2	mg/kg	Nickel	26.26	
D-441-1B-101317-10-12	SA_40-2mm	EPA6010	2	mg/kg	Phosphorus	1621.58	
D-441-1B-101317-10-12	SA_40-2mm	EPA6010	2	mg/kg	Potassium	2728.68	crm
D-441-1B-101317-10-12	SA_40-2mm	EPA6010	2	mg/kg	Selenium	3.00	rl
D-441-1B-101317-10-12	SA_40-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-441-1B-101317-10-12	SA_40-2mm	EPA6010	2	mg/kg	Sodium	509.91	
D-441-1B-101317-10-12	SA_40-2mm	EPA6010	2	mg/kg	Thallium	0.72	rl
D-441-1B-101317-10-12	SA_40-2mm	EPA6010	2	mg/kg	Vanadium	63.78	
D-441-1B-101317-10-12	SA_40-2mm	EPA6010	2	mg/kg	Zinc	78.08	
D-258-3A-101317-10-12	SA_41-2mm	EPA6010	2	mg/kg	Aluminum	10978.50	
D-258-3A-101317-10-12	SA_41-2mm	EPA6010	2	mg/kg	Antimony	2.29	blk rl



**Appendix B**

**SWEL – Soil Water Environmental Lab**

**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-258-3A-101317-10-12	SA_41-2mm	EPA6010	2	mg/kg	Arsenic	3.85	
D-258-3A-101317-10-12	SA_41-2mm	EPA6010	2	mg/kg	Barium	81.99	
D-258-3A-101317-10-12	SA_41-2mm	EPA6010	2	mg/kg	Beryllium	0.36	crm rl
D-258-3A-101317-10-12	SA_41-2mm	EPA6010	2	mg/kg	Cadmium	0.60	rl
D-258-3A-101317-10-12	SA_41-2mm	EPA6010	2	mg/kg	Calcium	3392.67	
D-258-3A-101317-10-12	SA_41-2mm	EPA6010	2	mg/kg	Chromium	12.18	dup
D-258-3A-101317-10-12	SA_41-2mm	EPA6010	2	mg/kg	Cobalt	3.52	
D-258-3A-101317-10-12	SA_41-2mm	EPA6010	2	mg/kg	Copper	9.12	
D-258-3A-101317-10-12	SA_41-2mm	EPA6010	2	mg/kg	Iron	11667.83	
D-258-3A-101317-10-12	SA_41-2mm	EPA6010	2	mg/kg	Lead	7.02	
D-258-3A-101317-10-12	SA_41-2mm	EPA6010	2	mg/kg	Magnesium	2144.05	
D-258-3A-101317-10-12	SA_41-2mm	EPA6010	2	mg/kg	Manganese	298.18	
D-258-3A-101317-10-12	SA_41-2mm	EPA6010	2	mg/kg	Nickel	8.08	
D-258-3A-101317-10-12	SA_41-2mm	EPA6010	2	mg/kg	Phosphorus	1042.01	
D-258-3A-101317-10-12	SA_41-2mm	EPA6010	2	mg/kg	Potassium	803.15	crm
D-258-3A-101317-10-12	SA_41-2mm	EPA6010	2	mg/kg	Selenium	2.24	rl
D-258-3A-101317-10-12	SA_41-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-258-3A-101317-10-12	SA_41-2mm	EPA6010	2	mg/kg	Sodium	137.39	
D-258-3A-101317-10-12	SA_41-2mm	EPA6010	2	mg/kg	Thallium	0.49	rl
D-258-3A-101317-10-12	SA_41-2mm	EPA6010	2	mg/kg	Vanadium	26.66	
D-258-3A-101317-10-12	SA_41-2mm	EPA6010	2	mg/kg	Zinc	53.55	
D-441-1C-101317-0-2	SA_42-2mm	EPA6010	2	mg/kg	Aluminum	22927.12	
D-441-1C-101317-0-2	SA_42-2mm	EPA6010	2	mg/kg	Antimony	9.19	blk
D-441-1C-101317-0-2	SA_42-2mm	EPA6010	2	mg/kg	Arsenic	34.82	
D-441-1C-101317-0-2	SA_42-2mm	EPA6010	2	mg/kg	Barium	298.67	
D-441-1C-101317-0-2	SA_42-2mm	EPA6010	2	mg/kg	Beryllium	0.74	crm rl
D-441-1C-101317-0-2	SA_42-2mm	EPA6010	2	mg/kg	Cadmium	2.83	
D-441-1C-101317-0-2	SA_42-2mm	EPA6010	2	mg/kg	Calcium	9635.63	



**Appendix B**

**SWEL – Soil Water Environmental Lab**

**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-441-1C-101317-0-2	SA_42-2mm	EPA6010	2	mg/kg	Chromium	29.39	dup
D-441-1C-101317-0-2	SA_42-2mm	EPA6010	2	mg/kg	Cobalt	9.11	
D-441-1C-101317-0-2	SA_42-2mm	EPA6010	2	mg/kg	Copper	42.52	
D-441-1C-101317-0-2	SA_42-2mm	EPA6010	2	mg/kg	Iron	20287.70	
D-441-1C-101317-0-2	SA_42-2mm	EPA6010	2	mg/kg	Lead	38.31	
D-441-1C-101317-0-2	SA_42-2mm	EPA6010	2	mg/kg	Magnesium	4080.14	
D-441-1C-101317-0-2	SA_42-2mm	EPA6010	2	mg/kg	Manganese	990.18	
D-441-1C-101317-0-2	SA_42-2mm	EPA6010	2	mg/kg	Nickel	19.25	
D-441-1C-101317-0-2	SA_42-2mm	EPA6010	2	mg/kg	Phosphorus	2804.35	
D-441-1C-101317-0-2	SA_42-2mm	EPA6010	2	mg/kg	Potassium	2774.47	crm
D-441-1C-101317-0-2	SA_42-2mm	EPA6010	2	mg/kg	Selenium	4.01	rl
D-441-1C-101317-0-2	SA_42-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-441-1C-101317-0-2	SA_42-2mm	EPA6010	2	mg/kg	Sodium	406.95	
D-441-1C-101317-0-2	SA_42-2mm	EPA6010	2	mg/kg	Thallium	0.45	rl
D-441-1C-101317-0-2	SA_42-2mm	EPA6010	2	mg/kg	Vanadium	49.02	
D-441-1C-101317-0-2	SA_42-2mm	EPA6010	2	mg/kg	Zinc	233.43	
D-441-1C-101317-2-4	SA_43-2mm	EPA6010	2	mg/kg	Aluminum	23905.83	
D-441-1C-101317-2-4	SA_43-2mm	EPA6010	2	mg/kg	Antimony	7.17	blk
D-441-1C-101317-2-4	SA_43-2mm	EPA6010	2	mg/kg	Arsenic	16.59	
D-441-1C-101317-2-4	SA_43-2mm	EPA6010	2	mg/kg	Barium	255.78	
D-441-1C-101317-2-4	SA_43-2mm	EPA6010	2	mg/kg	Beryllium	0.74	crm rl
D-441-1C-101317-2-4	SA_43-2mm	EPA6010	2	mg/kg	Cadmium	1.11	
D-441-1C-101317-2-4	SA_43-2mm	EPA6010	2	mg/kg	Calcium	7275.52	
D-441-1C-101317-2-4	SA_43-2mm	EPA6010	2	mg/kg	Chromium	37.81	dup
D-441-1C-101317-2-4	SA_43-2mm	EPA6010	2	mg/kg	Cobalt	9.91	
D-441-1C-101317-2-4	SA_43-2mm	EPA6010	2	mg/kg	Copper	26.88	
D-441-1C-101317-2-4	SA_43-2mm	EPA6010	2	mg/kg	Iron	23314.27	
D-441-1C-101317-2-4	SA_43-2mm	EPA6010	2	mg/kg	Lead	16.28	

**Appendix B**  
**Detailed Discrete Sample Results**

**SWEL – Soil Water Environmental Lab**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-441-1C-101317-2-4	SA_43-2mm	EPA6010	2	mg/kg	Magnesium	5307.00	
D-441-1C-101317-2-4	SA_43-2mm	EPA6010	2	mg/kg	Manganese	873.22	
D-441-1C-101317-2-4	SA_43-2mm	EPA6010	2	mg/kg	Nickel	23.72	
D-441-1C-101317-2-4	SA_43-2mm	EPA6010	2	mg/kg	Phosphorus	2370.34	
D-441-1C-101317-2-4	SA_43-2mm	EPA6010	2	mg/kg	Potassium	2608.37	crm
D-441-1C-101317-2-4	SA_43-2mm	EPA6010	2	mg/kg	Selenium	3.21	rl
D-441-1C-101317-2-4	SA_43-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-441-1C-101317-2-4	SA_43-2mm	EPA6010	2	mg/kg	Sodium	350.80	
D-441-1C-101317-2-4	SA_43-2mm	EPA6010	2	mg/kg	Thallium	0.71	rl
D-441-1C-101317-2-4	SA_43-2mm	EPA6010	2	mg/kg	Vanadium	55.93	
D-441-1C-101317-2-4	SA_43-2mm	EPA6010	2	mg/kg	Zinc	105.38	
D-441-1C-101317-4-6	SA_44-2mm	EPA6010	2	mg/kg	Aluminum	24343.86	
D-441-1C-101317-4-6	SA_44-2mm	EPA6010	2	mg/kg	Antimony	5.29	blk
D-441-1C-101317-4-6	SA_44-2mm	EPA6010	2	mg/kg	Arsenic	7.97	
D-441-1C-101317-4-6	SA_44-2mm	EPA6010	2	mg/kg	Barium	237.38	
D-441-1C-101317-4-6	SA_44-2mm	EPA6010	2	mg/kg	Beryllium	0.79	crm rl
D-441-1C-101317-4-6	SA_44-2mm	EPA6010	2	mg/kg	Cadmium	0.66	rl
D-441-1C-101317-4-6	SA_44-2mm	EPA6010	2	mg/kg	Calcium	6339.52	
D-441-1C-101317-4-6	SA_44-2mm	EPA6010	2	mg/kg	Chromium	33.09	dup
D-441-1C-101317-4-6	SA_44-2mm	EPA6010	2	mg/kg	Cobalt	10.01	
D-441-1C-101317-4-6	SA_44-2mm	EPA6010	2	mg/kg	Copper	25.06	
D-441-1C-101317-4-6	SA_44-2mm	EPA6010	2	mg/kg	Iron	22474.65	
D-441-1C-101317-4-6	SA_44-2mm	EPA6010	2	mg/kg	Lead	9.61	
D-441-1C-101317-4-6	SA_44-2mm	EPA6010	2	mg/kg	Magnesium	4957.94	
D-441-1C-101317-4-6	SA_44-2mm	EPA6010	2	mg/kg	Manganese	737.45	
D-441-1C-101317-4-6	SA_44-2mm	EPA6010	2	mg/kg	Nickel	22.88	
D-441-1C-101317-4-6	SA_44-2mm	EPA6010	2	mg/kg	Phosphorus	2071.59	
D-441-1C-101317-4-6	SA_44-2mm	EPA6010	2	mg/kg	Potassium	2617.08	crm



**Appendix B**  
**Detailed Discrete Sample Results**

**SWEL – Soil Water Environmental Lab**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-441-1C-101317-4-6	SA_44-2mm	EPA6010	2	mg/kg	Selenium	4.53	rl
D-441-1C-101317-4-6	SA_44-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-441-1C-101317-4-6	SA_44-2mm	EPA6010	2	mg/kg	Sodium	471.74	
D-441-1C-101317-4-6	SA_44-2mm	EPA6010	2	mg/kg	Thallium	1.02	rl
D-441-1C-101317-4-6	SA_44-2mm	EPA6010	2	mg/kg	Vanadium	56.75	
D-441-1C-101317-4-6	SA_44-2mm	EPA6010	2	mg/kg	Zinc	82.63	
D-441-1C-101317-6-8	SA_45-2mm	EPA6010	2	mg/kg	Aluminum	23663.84	
D-441-1C-101317-6-8	SA_45-2mm	EPA6010	2	mg/kg	Antimony	5.08	blk
D-441-1C-101317-6-8	SA_45-2mm	EPA6010	2	mg/kg	Arsenic	8.06	
D-441-1C-101317-6-8	SA_45-2mm	EPA6010	2	mg/kg	Barium	221.74	
D-441-1C-101317-6-8	SA_45-2mm	EPA6010	2	mg/kg	Beryllium	0.74	crm rl
D-441-1C-101317-6-8	SA_45-2mm	EPA6010	2	mg/kg	Cadmium	0.64	rl
D-441-1C-101317-6-8	SA_45-2mm	EPA6010	2	mg/kg	Calcium	5976.99	
D-441-1C-101317-6-8	SA_45-2mm	EPA6010	2	mg/kg	Chromium	39.97	dup
D-441-1C-101317-6-8	SA_45-2mm	EPA6010	2	mg/kg	Cobalt	9.89	
D-441-1C-101317-6-8	SA_45-2mm	EPA6010	2	mg/kg	Copper	24.11	
D-441-1C-101317-6-8	SA_45-2mm	EPA6010	2	mg/kg	Iron	23992.62	
D-441-1C-101317-6-8	SA_45-2mm	EPA6010	2	mg/kg	Lead	9.59	
D-441-1C-101317-6-8	SA_45-2mm	EPA6010	2	mg/kg	Magnesium	4851.42	
D-441-1C-101317-6-8	SA_45-2mm	EPA6010	2	mg/kg	Manganese	647.85	
D-441-1C-101317-6-8	SA_45-2mm	EPA6010	2	mg/kg	Nickel	23.35	
D-441-1C-101317-6-8	SA_45-2mm	EPA6010	2	mg/kg	Phosphorus	1884.77	
D-441-1C-101317-6-8	SA_45-2mm	EPA6010	2	mg/kg	Potassium	2628.87	crm
D-441-1C-101317-6-8	SA_45-2mm	EPA6010	2	mg/kg	Selenium	4.20	rl
D-441-1C-101317-6-8	SA_45-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-441-1C-101317-6-8	SA_45-2mm	EPA6010	2	mg/kg	Sodium	408.36	
D-441-1C-101317-6-8	SA_45-2mm	EPA6010	2	mg/kg	Thallium	0.79	rl
D-441-1C-101317-6-8	SA_45-2mm	EPA6010	2	mg/kg	Vanadium	61.20	



**Appendix B**

**SWEL – Soil Water Environmental Lab**

**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-441-1C-101317-6-8	SA_45-2mm	EPA6010	2	mg/kg	Zinc	76.22	
D-258-3A-101317-0-2	SA_46-2mm	EPA6010	2	mg/kg	Aluminum	11150.43	
D-258-3A-101317-0-2	SA_46-2mm	EPA6010	2	mg/kg	Antimony	11.09	blk
D-258-3A-101317-0-2	SA_46-2mm	EPA6010	2	mg/kg	Arsenic	21.45	
D-258-3A-101317-0-2	SA_46-2mm	EPA6010	2	mg/kg	Barium	123.44	
D-258-3A-101317-0-2	SA_46-2mm	EPA6010	2	mg/kg	Beryllium	0.38	crm rl
D-258-3A-101317-0-2	SA_46-2mm	EPA6010	2	mg/kg	Cadmium	11.62	
D-258-3A-101317-0-2	SA_46-2mm	EPA6010	2	mg/kg	Calcium	3678.09	
D-258-3A-101317-0-2	SA_46-2mm	EPA6010	2	mg/kg	Chromium	18.80	dup
D-258-3A-101317-0-2	SA_46-2mm	EPA6010	2	mg/kg	Cobalt	4.97	
D-258-3A-101317-0-2	SA_46-2mm	EPA6010	2	mg/kg	Copper	27.53	
D-258-3A-101317-0-2	SA_46-2mm	EPA6010	2	mg/kg	Iron	13975.55	
D-258-3A-101317-0-2	SA_46-2mm	EPA6010	2	mg/kg	Lead	473.61	
D-258-3A-101317-0-2	SA_46-2mm	EPA6010	2	mg/kg	Magnesium	2845.95	
D-258-3A-101317-0-2	SA_46-2mm	EPA6010	2	mg/kg	Manganese	423.69	
D-258-3A-101317-0-2	SA_46-2mm	EPA6010	2	mg/kg	Nickel	9.30	
D-258-3A-101317-0-2	SA_46-2mm	EPA6010	2	mg/kg	Phosphorus	1000.30	
D-258-3A-101317-0-2	SA_46-2mm	EPA6010	2	mg/kg	Potassium	1224.89	crm
D-258-3A-101317-0-2	SA_46-2mm	EPA6010	2	mg/kg	Selenium	3.20	rl
D-258-3A-101317-0-2	SA_46-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-258-3A-101317-0-2	SA_46-2mm	EPA6010	2	mg/kg	Sodium	150.84	
D-258-3A-101317-0-2	SA_46-2mm	EPA6010	2	mg/kg	Thallium	0.64	rl
D-258-3A-101317-0-2	SA_46-2mm	EPA6010	2	mg/kg	Vanadium	32.02	
D-258-3A-101317-0-2	SA_46-2mm	EPA6010	2	mg/kg	Zinc	346.73	
D-258-3A-101317-2-4	SA_47-2mm	EPA6010	2	mg/kg	Aluminum	11606.91	
D-258-3A-101317-2-4	SA_47-2mm	EPA6010	2	mg/kg	Antimony	6.48	blk
D-258-3A-101317-2-4	SA_47-2mm	EPA6010	2	mg/kg	Arsenic	22.47	
D-258-3A-101317-2-4	SA_47-2mm	EPA6010	2	mg/kg	Barium	117.86	

**Appendix B**  
**Detailed Discrete Sample Results**

**SWEL – Soil Water Environmental Lab**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-258-3A-101317-2-4	SA_47-2mm	EPA6010	2	mg/kg	Beryllium	0.39	crm rl
D-258-3A-101317-2-4	SA_47-2mm	EPA6010	2	mg/kg	Cadmium	5.33	
D-258-3A-101317-2-4	SA_47-2mm	EPA6010	2	mg/kg	Calcium	3229.97	
D-258-3A-101317-2-4	SA_47-2mm	EPA6010	2	mg/kg	Chromium	17.80	dup
D-258-3A-101317-2-4	SA_47-2mm	EPA6010	2	mg/kg	Cobalt	4.17	
D-258-3A-101317-2-4	SA_47-2mm	EPA6010	2	mg/kg	Copper	17.97	
D-258-3A-101317-2-4	SA_47-2mm	EPA6010	2	mg/kg	Iron	12340.53	
D-258-3A-101317-2-4	SA_47-2mm	EPA6010	2	mg/kg	Lead	85.41	
D-258-3A-101317-2-4	SA_47-2mm	EPA6010	2	mg/kg	Magnesium	2300.00	
D-258-3A-101317-2-4	SA_47-2mm	EPA6010	2	mg/kg	Manganese	429.50	
D-258-3A-101317-2-4	SA_47-2mm	EPA6010	2	mg/kg	Nickel	10.71	
D-258-3A-101317-2-4	SA_47-2mm	EPA6010	2	mg/kg	Phosphorus	1045.58	
D-258-3A-101317-2-4	SA_47-2mm	EPA6010	2	mg/kg	Potassium	1061.22	crm
D-258-3A-101317-2-4	SA_47-2mm	EPA6010	2	mg/kg	Selenium	3.06	rl
D-258-3A-101317-2-4	SA_47-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-258-3A-101317-2-4	SA_47-2mm	EPA6010	2	mg/kg	Sodium	156.44	
D-258-3A-101317-2-4	SA_47-2mm	EPA6010	2	mg/kg	Thallium	0.62	rl
D-258-3A-101317-2-4	SA_47-2mm	EPA6010	2	mg/kg	Vanadium	29.28	
D-258-3A-101317-2-4	SA_47-2mm	EPA6010	2	mg/kg	Zinc	322.32	
D-258-3A-101317-4-6	SA_48-2mm	EPA6010	2	mg/kg	Aluminum	11588.69	
D-258-3A-101317-4-6	SA_48-2mm	EPA6010	2	mg/kg	Antimony	6.01	blk
D-258-3A-101317-4-6	SA_48-2mm	EPA6010	2	mg/kg	Arsenic	22.86	
D-258-3A-101317-4-6	SA_48-2mm	EPA6010	2	mg/kg	Barium	121.18	
D-258-3A-101317-4-6	SA_48-2mm	EPA6010	2	mg/kg	Beryllium	0.38	crm rl
D-258-3A-101317-4-6	SA_48-2mm	EPA6010	2	mg/kg	Cadmium	4.41	
D-258-3A-101317-4-6	SA_48-2mm	EPA6010	2	mg/kg	Calcium	3037.26	
D-258-3A-101317-4-6	SA_48-2mm	EPA6010	2	mg/kg	Chromium	17.04	dup
D-258-3A-101317-4-6	SA_48-2mm	EPA6010	2	mg/kg	Cobalt	4.54	

**Appendix B**  
**Detailed Discrete Sample Results**

**SWEL – Soil Water Environmental Lab**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-258-3A-101317-4-6	SA_48-2mm	EPA6010	2	mg/kg	Copper	16.38	
D-258-3A-101317-4-6	SA_48-2mm	EPA6010	2	mg/kg	Iron	12948.07	
D-258-3A-101317-4-6	SA_48-2mm	EPA6010	2	mg/kg	Lead	78.79	
D-258-3A-101317-4-6	SA_48-2mm	EPA6010	2	mg/kg	Magnesium	2338.15	
D-258-3A-101317-4-6	SA_48-2mm	EPA6010	2	mg/kg	Manganese	445.20	
D-258-3A-101317-4-6	SA_48-2mm	EPA6010	2	mg/kg	Nickel	9.36	
D-258-3A-101317-4-6	SA_48-2mm	EPA6010	2	mg/kg	Phosphorus	1051.25	
D-258-3A-101317-4-6	SA_48-2mm	EPA6010	2	mg/kg	Potassium	927.73	crm
D-258-3A-101317-4-6	SA_48-2mm	EPA6010	2	mg/kg	Selenium	2.13	rl
D-258-3A-101317-4-6	SA_48-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-258-3A-101317-4-6	SA_48-2mm	EPA6010	2	mg/kg	Sodium	137.48	
D-258-3A-101317-4-6	SA_48-2mm	EPA6010	2	mg/kg	Thallium	0.80	rl
D-258-3A-101317-4-6	SA_48-2mm	EPA6010	2	mg/kg	Vanadium	29.69	
D-258-3A-101317-4-6	SA_48-2mm	EPA6010	2	mg/kg	Zinc	287.92	
D-258-3A-101317-6-8	SA_49-2mm	EPA6010	2	mg/kg	Aluminum	11475.15	
D-258-3A-101317-6-8	SA_49-2mm	EPA6010	2	mg/kg	Antimony	4.15	blk rl
D-258-3A-101317-6-8	SA_49-2mm	EPA6010	2	mg/kg	Arsenic	8.12	
D-258-3A-101317-6-8	SA_49-2mm	EPA6010	2	mg/kg	Barium	110.49	
D-258-3A-101317-6-8	SA_49-2mm	EPA6010	2	mg/kg	Beryllium	0.37	crm rl
D-258-3A-101317-6-8	SA_49-2mm	EPA6010	2	mg/kg	Cadmium	1.36	
D-258-3A-101317-6-8	SA_49-2mm	EPA6010	2	mg/kg	Calcium	3203.26	
D-258-3A-101317-6-8	SA_49-2mm	EPA6010	2	mg/kg	Chromium	15.19	dup
D-258-3A-101317-6-8	SA_49-2mm	EPA6010	2	mg/kg	Cobalt	4.07	
D-258-3A-101317-6-8	SA_49-2mm	EPA6010	2	mg/kg	Copper	11.57	
D-258-3A-101317-6-8	SA_49-2mm	EPA6010	2	mg/kg	Iron	13616.93	
D-258-3A-101317-6-8	SA_49-2mm	EPA6010	2	mg/kg	Lead	23.93	
D-258-3A-101317-6-8	SA_49-2mm	EPA6010	2	mg/kg	Magnesium	2405.02	
D-258-3A-101317-6-8	SA_49-2mm	EPA6010	2	mg/kg	Manganese	398.49	



**Appendix B**

**SWEL – Soil Water Environmental Lab**

**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-258-3A-101317-6-8	SA_49-2mm	EPA6010	2	mg/kg	Nickel	9.90	
D-258-3A-101317-6-8	SA_49-2mm	EPA6010	2	mg/kg	Phosphorus	973.48	
D-258-3A-101317-6-8	SA_49-2mm	EPA6010	2	mg/kg	Potassium	854.82	crm
D-258-3A-101317-6-8	SA_49-2mm	EPA6010	2	mg/kg	Selenium	2.28	rl
D-258-3A-101317-6-8	SA_49-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-258-3A-101317-6-8	SA_49-2mm	EPA6010	2	mg/kg	Sodium	146.51	
D-258-3A-101317-6-8	SA_49-2mm	EPA6010	2	mg/kg	Thallium	0.59	rl
D-258-3A-101317-6-8	SA_49-2mm	EPA6010	2	mg/kg	Vanadium	31.33	
D-258-3A-101317-6-8	SA_49-2mm	EPA6010	2	mg/kg	Zinc	138.37	
D-258-3A-101317-8-10	SA_50-2mm	EPA6010	2	mg/kg	Aluminum	12762.45	
D-258-3A-101317-8-10	SA_50-2mm	EPA6010	2	mg/kg	Antimony	2.97	blk rl
D-258-3A-101317-8-10	SA_50-2mm	EPA6010	2	mg/kg	Arsenic	4.26	
D-258-3A-101317-8-10	SA_50-2mm	EPA6010	2	mg/kg	Barium	104.42	
D-258-3A-101317-8-10	SA_50-2mm	EPA6010	2	mg/kg	Beryllium	0.41	crm rl
D-258-3A-101317-8-10	SA_50-2mm	EPA6010	2	mg/kg	Cadmium	0.62	rl
D-258-3A-101317-8-10	SA_50-2mm	EPA6010	2	mg/kg	Calcium	3619.79	
D-258-3A-101317-8-10	SA_50-2mm	EPA6010	2	mg/kg	Chromium	16.21	dup
D-258-3A-101317-8-10	SA_50-2mm	EPA6010	2	mg/kg	Cobalt	4.62	
D-258-3A-101317-8-10	SA_50-2mm	EPA6010	2	mg/kg	Copper	10.68	
D-258-3A-101317-8-10	SA_50-2mm	EPA6010	2	mg/kg	Iron	14200.30	
D-258-3A-101317-8-10	SA_50-2mm	EPA6010	2	mg/kg	Lead	8.89	
D-258-3A-101317-8-10	SA_50-2mm	EPA6010	2	mg/kg	Magnesium	2468.07	
D-258-3A-101317-8-10	SA_50-2mm	EPA6010	2	mg/kg	Manganese	385.17	
D-258-3A-101317-8-10	SA_50-2mm	EPA6010	2	mg/kg	Nickel	10.23	
D-258-3A-101317-8-10	SA_50-2mm	EPA6010	2	mg/kg	Phosphorus	1015.08	
D-258-3A-101317-8-10	SA_50-2mm	EPA6010	2	mg/kg	Potassium	969.72	crm
D-258-3A-101317-8-10	SA_50-2mm	EPA6010	2	mg/kg	Selenium	3.02	rl
D-258-3A-101317-8-10	SA_50-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL



**Appendix B**

**SWEL – Soil Water Environmental Lab**

**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-258-3A-101317-8-10	SA_50-2mm	EPA6010	2	mg/kg	Sodium	180.03	
D-258-3A-101317-8-10	SA_50-2mm	EPA6010	2	mg/kg	Thallium	0.60	rl
D-258-3A-101317-8-10	SA_50-2mm	EPA6010	2	mg/kg	Vanadium	32.85	
D-258-3A-101317-8-10	SA_50-2mm	EPA6010	2	mg/kg	Zinc	66.47	
D-258-3D-101317-2-4	SA_51-2mm	EPA6010	2	mg/kg	Aluminum	9047.44	
D-258-3D-101317-2-4	SA_51-2mm	EPA6010	2	mg/kg	Antimony	5.94	blk
D-258-3D-101317-2-4	SA_51-2mm	EPA6010	2	mg/kg	Arsenic	11.40	
D-258-3D-101317-2-4	SA_51-2mm	EPA6010	2	mg/kg	Barium	91.45	
D-258-3D-101317-2-4	SA_51-2mm	EPA6010	2	mg/kg	Beryllium	0.33	crm rl
D-258-3D-101317-2-4	SA_51-2mm	EPA6010	2	mg/kg	Cadmium	3.64	
D-258-3D-101317-2-4	SA_51-2mm	EPA6010	2	mg/kg	Calcium	3326.76	
D-258-3D-101317-2-4	SA_51-2mm	EPA6010	2	mg/kg	Chromium	14.82	dup
D-258-3D-101317-2-4	SA_51-2mm	EPA6010	2	mg/kg	Cobalt	3.53	
D-258-3D-101317-2-4	SA_51-2mm	EPA6010	2	mg/kg	Copper	14.89	
D-258-3D-101317-2-4	SA_51-2mm	EPA6010	2	mg/kg	Iron	11375.48	
D-258-3D-101317-2-4	SA_51-2mm	EPA6010	2	mg/kg	Lead	150.19	
D-258-3D-101317-2-4	SA_51-2mm	EPA6010	2	mg/kg	Magnesium	2009.76	
D-258-3D-101317-2-4	SA_51-2mm	EPA6010	2	mg/kg	Manganese	365.99	
D-258-3D-101317-2-4	SA_51-2mm	EPA6010	2	mg/kg	Nickel	8.35	
D-258-3D-101317-2-4	SA_51-2mm	EPA6010	2	mg/kg	Phosphorus	891.10	
D-258-3D-101317-2-4	SA_51-2mm	EPA6010	2	mg/kg	Potassium	771.67	crm
D-258-3D-101317-2-4	SA_51-2mm	EPA6010	2	mg/kg	Selenium	3.30	rl
D-258-3D-101317-2-4	SA_51-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-258-3D-101317-2-4	SA_51-2mm	EPA6010	2	mg/kg	Sodium	103.18	
D-258-3D-101317-2-4	SA_51-2mm	EPA6010	2	mg/kg	Thallium	0.56	rl
D-258-3D-101317-2-4	SA_51-2mm	EPA6010	2	mg/kg	Vanadium	25.72	
D-258-3D-101317-2-4	SA_51-2mm	EPA6010	2	mg/kg	Zinc	177.17	
D-258-3D-101317-4-6	SA_52-2mm	EPA6010	2	mg/kg	Aluminum	10620.93	

**Appendix B**  
**Detailed Discrete Sample Results**

**SWEL – Soil Water Environmental Lab**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-258-3D-101317-4-6	SA_52-2mm	EPA6010	2	mg/kg	Antimony	2.74	blk rl
D-258-3D-101317-4-6	SA_52-2mm	EPA6010	2	mg/kg	Arsenic	2.78	
D-258-3D-101317-4-6	SA_52-2mm	EPA6010	2	mg/kg	Barium	91.27	
D-258-3D-101317-4-6	SA_52-2mm	EPA6010	2	mg/kg	Beryllium	0.35	crm rl
D-258-3D-101317-4-6	SA_52-2mm	EPA6010	2	mg/kg	Cadmium	0.42	rl
D-258-3D-101317-4-6	SA_52-2mm	EPA6010	2	mg/kg	Calcium	3302.01	
D-258-3D-101317-4-6	SA_52-2mm	EPA6010	2	mg/kg	Chromium	15.24	dup
D-258-3D-101317-4-6	SA_52-2mm	EPA6010	2	mg/kg	Cobalt	4.02	
D-258-3D-101317-4-6	SA_52-2mm	EPA6010	2	mg/kg	Copper	9.05	
D-258-3D-101317-4-6	SA_52-2mm	EPA6010	2	mg/kg	Iron	12777.72	
D-258-3D-101317-4-6	SA_52-2mm	EPA6010	2	mg/kg	Lead	6.96	
D-258-3D-101317-4-6	SA_52-2mm	EPA6010	2	mg/kg	Magnesium	2075.15	
D-258-3D-101317-4-6	SA_52-2mm	EPA6010	2	mg/kg	Manganese	356.87	
D-258-3D-101317-4-6	SA_52-2mm	EPA6010	2	mg/kg	Nickel	8.47	
D-258-3D-101317-4-6	SA_52-2mm	EPA6010	2	mg/kg	Phosphorus	896.16	
D-258-3D-101317-4-6	SA_52-2mm	EPA6010	2	mg/kg	Potassium	881.60	crm
D-258-3D-101317-4-6	SA_52-2mm	EPA6010	2	mg/kg	Selenium	1.94	rl
D-258-3D-101317-4-6	SA_52-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-258-3D-101317-4-6	SA_52-2mm	EPA6010	2	mg/kg	Sodium	131.39	
D-258-3D-101317-4-6	SA_52-2mm	EPA6010	2	mg/kg	Thallium	0.59	rl
D-258-3D-101317-4-6	SA_52-2mm	EPA6010	2	mg/kg	Vanadium	29.91	
D-258-3D-101317-4-6	SA_52-2mm	EPA6010	2	mg/kg	Zinc	45.81	
D-258-3D-101317-6-8	SA_53-2mm	EPA6010	2	mg/kg	Aluminum	9925.99	
D-258-3D-101317-6-8	SA_53-2mm	EPA6010	2	mg/kg	Antimony	1.81	blk rl
D-258-3D-101317-6-8	SA_53-2mm	EPA6010	2	mg/kg	Arsenic	1.85	
D-258-3D-101317-6-8	SA_53-2mm	EPA6010	2	mg/kg	Barium	64.43	
D-258-3D-101317-6-8	SA_53-2mm	EPA6010	2	mg/kg	Beryllium	0.32	crm rl
D-258-3D-101317-6-8	SA_53-2mm	EPA6010	2	mg/kg	Cadmium	0.30	rl



**Appendix B**

**SWEL – Soil Water Environmental Lab**

**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-258-3D-101317-6-8	SA_53-2mm	EPA6010	2	mg/kg	Calcium	2662.49	
D-258-3D-101317-6-8	SA_53-2mm	EPA6010	2	mg/kg	Chromium	11.80	dup
D-258-3D-101317-6-8	SA_53-2mm	EPA6010	2	mg/kg	Cobalt	3.46	
D-258-3D-101317-6-8	SA_53-2mm	EPA6010	2	mg/kg	Copper	7.47	
D-258-3D-101317-6-8	SA_53-2mm	EPA6010	2	mg/kg	Iron	12459.03	
D-258-3D-101317-6-8	SA_53-2mm	EPA6010	2	mg/kg	Lead	4.65	
D-258-3D-101317-6-8	SA_53-2mm	EPA6010	2	mg/kg	Magnesium	1888.51	
D-258-3D-101317-6-8	SA_53-2mm	EPA6010	2	mg/kg	Manganese	272.55	
D-258-3D-101317-6-8	SA_53-2mm	EPA6010	2	mg/kg	Nickel	7.79	
D-258-3D-101317-6-8	SA_53-2mm	EPA6010	2	mg/kg	Phosphorus	867.91	
D-258-3D-101317-6-8	SA_53-2mm	EPA6010	2	mg/kg	Potassium	690.72	crm
D-258-3D-101317-6-8	SA_53-2mm	EPA6010	2	mg/kg	Selenium	1.37	rl
D-258-3D-101317-6-8	SA_53-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-258-3D-101317-6-8	SA_53-2mm	EPA6010	2	mg/kg	Sodium	103.16	
D-258-3D-101317-6-8	SA_53-2mm	EPA6010	2	mg/kg	Thallium	0.37	rl
D-258-3D-101317-6-8	SA_53-2mm	EPA6010	2	mg/kg	Vanadium	28.41	
D-258-3D-101317-6-8	SA_53-2mm	EPA6010	2	mg/kg	Zinc	36.02	
D-258-3D-101317-8-10	SA_54-2mm	EPA6010	2	mg/kg	Aluminum	9316.86	
D-258-3D-101317-8-10	SA_54-2mm	EPA6010	2	mg/kg	Antimony	1.51	blk rl
D-258-3D-101317-8-10	SA_54-2mm	EPA6010	2	mg/kg	Arsenic	1.72	
D-258-3D-101317-8-10	SA_54-2mm	EPA6010	2	mg/kg	Barium	48.04	
D-258-3D-101317-8-10	SA_54-2mm	EPA6010	2	mg/kg	Beryllium	0.32	crm rl
D-258-3D-101317-8-10	SA_54-2mm	EPA6010	2	mg/kg	Cadmium	0.26	rl
D-258-3D-101317-8-10	SA_54-2mm	EPA6010	2	mg/kg	Calcium	2092.95	
D-258-3D-101317-8-10	SA_54-2mm	EPA6010	2	mg/kg	Chromium	22.21	dup
D-258-3D-101317-8-10	SA_54-2mm	EPA6010	2	mg/kg	Cobalt	3.34	
D-258-3D-101317-8-10	SA_54-2mm	EPA6010	2	mg/kg	Copper	6.94	
D-258-3D-101317-8-10	SA_54-2mm	EPA6010	2	mg/kg	Iron	11813.43	



**Appendix B**  
**Detailed Discrete Sample Results**

**SWEL – Soil Water Environmental Lab**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-258-3D-101317-8-10	SA_54-2mm	EPA6010	2	mg/kg	Lead	2.90	
D-258-3D-101317-8-10	SA_54-2mm	EPA6010	2	mg/kg	Magnesium	2044.41	
D-258-3D-101317-8-10	SA_54-2mm	EPA6010	2	mg/kg	Manganese	207.28	
D-258-3D-101317-8-10	SA_54-2mm	EPA6010	2	mg/kg	Nickel	8.29	
D-258-3D-101317-8-10	SA_54-2mm	EPA6010	2	mg/kg	Phosphorus	699.32	
D-258-3D-101317-8-10	SA_54-2mm	EPA6010	2	mg/kg	Potassium	667.01	crm
D-258-3D-101317-8-10	SA_54-2mm	EPA6010	2	mg/kg	Selenium	2.91	rl
D-258-3D-101317-8-10	SA_54-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-258-3D-101317-8-10	SA_54-2mm	EPA6010	2	mg/kg	Sodium	99.74	
D-258-3D-101317-8-10	SA_54-2mm	EPA6010	2	mg/kg	Thallium	0.34	rl
D-258-3D-101317-8-10	SA_54-2mm	EPA6010	2	mg/kg	Vanadium	26.23	
D-258-3D-101317-8-10	SA_54-2mm	EPA6010	2	mg/kg	Zinc	28.11	
D-258-3D-101317-10-12	SA_55-2mm	EPA6010	2	mg/kg	Aluminum	7899.04	
D-258-3D-101317-10-12	SA_55-2mm	EPA6010	2	mg/kg	Antimony	2.31	blk rl
D-258-3D-101317-10-12	SA_55-2mm	EPA6010	2	mg/kg	Arsenic	2.08	
D-258-3D-101317-10-12	SA_55-2mm	EPA6010	2	mg/kg	Barium	47.58	
D-258-3D-101317-10-12	SA_55-2mm	EPA6010	2	mg/kg	Beryllium	0.29	crm rl
D-258-3D-101317-10-12	SA_55-2mm	EPA6010	2	mg/kg	Cadmium	0.24	rl
D-258-3D-101317-10-12	SA_55-2mm	EPA6010	2	mg/kg	Calcium	2012.66	
D-258-3D-101317-10-12	SA_55-2mm	EPA6010	2	mg/kg	Chromium	19.02	dup
D-258-3D-101317-10-12	SA_55-2mm	EPA6010	2	mg/kg	Cobalt	3.35	
D-258-3D-101317-10-12	SA_55-2mm	EPA6010	2	mg/kg	Copper	6.80	
D-258-3D-101317-10-12	SA_55-2mm	EPA6010	2	mg/kg	Iron	12282.46	
D-258-3D-101317-10-12	SA_55-2mm	EPA6010	2	mg/kg	Lead	3.25	
D-258-3D-101317-10-12	SA_55-2mm	EPA6010	2	mg/kg	Magnesium	1908.33	
D-258-3D-101317-10-12	SA_55-2mm	EPA6010	2	mg/kg	Manganese	187.72	
D-258-3D-101317-10-12	SA_55-2mm	EPA6010	2	mg/kg	Nickel	8.80	
D-258-3D-101317-10-12	SA_55-2mm	EPA6010	2	mg/kg	Phosphorus	569.05	



**Appendix B**

**SWEL – Soil Water Environmental Lab**

**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-258-3D-101317-10-12	SA_55-2mm	EPA6010	2	mg/kg	Potassium	669.05	crm
D-258-3D-101317-10-12	SA_55-2mm	EPA6010	2	mg/kg	Selenium	2.63	rl
D-258-3D-101317-10-12	SA_55-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-258-3D-101317-10-12	SA_55-2mm	EPA6010	2	mg/kg	Sodium	111.30	
D-258-3D-101317-10-12	SA_55-2mm	EPA6010	2	mg/kg	Thallium	0.40	rl
D-258-3D-101317-10-12	SA_55-2mm	EPA6010	2	mg/kg	Vanadium	28.75	
D-258-3D-101317-10-12	SA_55-2mm	EPA6010	2	mg/kg	Zinc	26.47	
D-258-3B-101317-4-6	SA_56-2mm	EPA6010	2	mg/kg	Aluminum	13457.18	
D-258-3B-101317-4-6	SA_56-2mm	EPA6010	2	mg/kg	Antimony	2.82	blk rl
D-258-3B-101317-4-6	SA_56-2mm	EPA6010	2	mg/kg	Arsenic	2.45	
D-258-3B-101317-4-6	SA_56-2mm	EPA6010	2	mg/kg	Barium	115.73	
D-258-3B-101317-4-6	SA_56-2mm	EPA6010	2	mg/kg	Beryllium	0.42	crm rl
D-258-3B-101317-4-6	SA_56-2mm	EPA6010	2	mg/kg	Cadmium	0.53	rl
D-258-3B-101317-4-6	SA_56-2mm	EPA6010	2	mg/kg	Calcium	3134.74	
D-258-3B-101317-4-6	SA_56-2mm	EPA6010	2	mg/kg	Chromium	13.74	dup
D-258-3B-101317-4-6	SA_56-2mm	EPA6010	2	mg/kg	Cobalt	4.13	
D-258-3B-101317-4-6	SA_56-2mm	EPA6010	2	mg/kg	Copper	10.97	
D-258-3B-101317-4-6	SA_56-2mm	EPA6010	2	mg/kg	Iron	12033.61	
D-258-3B-101317-4-6	SA_56-2mm	EPA6010	2	mg/kg	Lead	9.88	
D-258-3B-101317-4-6	SA_56-2mm	EPA6010	2	mg/kg	Magnesium	2423.96	
D-258-3B-101317-4-6	SA_56-2mm	EPA6010	2	mg/kg	Manganese	362.18	
D-258-3B-101317-4-6	SA_56-2mm	EPA6010	2	mg/kg	Nickel	9.19	
D-258-3B-101317-4-6	SA_56-2mm	EPA6010	2	mg/kg	Phosphorus	897.21	
D-258-3B-101317-4-6	SA_56-2mm	EPA6010	2	mg/kg	Potassium	911.40	crm
D-258-3B-101317-4-6	SA_56-2mm	EPA6010	2	mg/kg	Selenium	3.01	rl
D-258-3B-101317-4-6	SA_56-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-258-3B-101317-4-6	SA_56-2mm	EPA6010	2	mg/kg	Sodium	169.48	
D-258-3B-101317-4-6	SA_56-2mm	EPA6010	2	mg/kg	Thallium	0.50	rl



**Appendix B**

**SWEL – Soil Water Environmental Lab**

**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-258-3B-101317-4-6	SA_56-2mm	EPA6010	2	mg/kg	Vanadium	26.60	
D-258-3B-101317-4-6	SA_56-2mm	EPA6010	2	mg/kg	Zinc	56.11	
D-258-3B-101317-6-8	SA_57-2mm	EPA6010	2	mg/kg	Aluminum	14024.13	
D-258-3B-101317-6-8	SA_57-2mm	EPA6010	2	mg/kg	Antimony	2.51	blk rl
D-258-3B-101317-6-8	SA_57-2mm	EPA6010	2	mg/kg	Arsenic	1.91	
D-258-3B-101317-6-8	SA_57-2mm	EPA6010	2	mg/kg	Barium	109.97	
D-258-3B-101317-6-8	SA_57-2mm	EPA6010	2	mg/kg	Beryllium	0.43	crm rl
D-258-3B-101317-6-8	SA_57-2mm	EPA6010	2	mg/kg	Cadmium	0.30	rl
D-258-3B-101317-6-8	SA_57-2mm	EPA6010	2	mg/kg	Calcium	3256.11	
D-258-3B-101317-6-8	SA_57-2mm	EPA6010	2	mg/kg	Chromium	20.84	dup
D-258-3B-101317-6-8	SA_57-2mm	EPA6010	2	mg/kg	Cobalt	4.14	
D-258-3B-101317-6-8	SA_57-2mm	EPA6010	2	mg/kg	Copper	10.32	
D-258-3B-101317-6-8	SA_57-2mm	EPA6010	2	mg/kg	Iron	11918.46	
D-258-3B-101317-6-8	SA_57-2mm	EPA6010	2	mg/kg	Lead	4.96	
D-258-3B-101317-6-8	SA_57-2mm	EPA6010	2	mg/kg	Magnesium	2340.76	
D-258-3B-101317-6-8	SA_57-2mm	EPA6010	2	mg/kg	Manganese	316.52	
D-258-3B-101317-6-8	SA_57-2mm	EPA6010	2	mg/kg	Nickel	9.35	
D-258-3B-101317-6-8	SA_57-2mm	EPA6010	2	mg/kg	Phosphorus	923.00	
D-258-3B-101317-6-8	SA_57-2mm	EPA6010	2	mg/kg	Potassium	934.26	crm
D-258-3B-101317-6-8	SA_57-2mm	EPA6010	2	mg/kg	Selenium	2.80	rl
D-258-3B-101317-6-8	SA_57-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-258-3B-101317-6-8	SA_57-2mm	EPA6010	2	mg/kg	Sodium	190.07	
D-258-3B-101317-6-8	SA_57-2mm	EPA6010	2	mg/kg	Thallium	0.26	
D-258-3B-101317-6-8	SA_57-2mm	EPA6010	2	mg/kg	Vanadium	28.01	
D-258-3B-101317-6-8	SA_57-2mm	EPA6010	2	mg/kg	Zinc	37.30	
D-258-3B-101317-8-10	SA_58-2mm	EPA6010	2	mg/kg	Aluminum	13644.68	
D-258-3B-101317-8-10	SA_58-2mm	EPA6010	2	mg/kg	Antimony	1.48	blk rl
D-258-3B-101317-8-10	SA_58-2mm	EPA6010	2	mg/kg	Arsenic	2.34	

**Appendix B**  
**Detailed Discrete Sample Results**

**SWEL – Soil Water Environmental Lab**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-258-3B-101317-8-10	SA_58-2mm	EPA6010	2	mg/kg	Barium	92.26	
D-258-3B-101317-8-10	SA_58-2mm	EPA6010	2	mg/kg	Beryllium	0.42	crm rl
D-258-3B-101317-8-10	SA_58-2mm	EPA6010	2	mg/kg	Cadmium	0.25	rl
D-258-3B-101317-8-10	SA_58-2mm	EPA6010	2	mg/kg	Calcium	2493.45	
D-258-3B-101317-8-10	SA_58-2mm	EPA6010	2	mg/kg	Chromium	12.58	dup
D-258-3B-101317-8-10	SA_58-2mm	EPA6010	2	mg/kg	Cobalt	3.89	
D-258-3B-101317-8-10	SA_58-2mm	EPA6010	2	mg/kg	Copper	10.16	
D-258-3B-101317-8-10	SA_58-2mm	EPA6010	2	mg/kg	Iron	11467.32	
D-258-3B-101317-8-10	SA_58-2mm	EPA6010	2	mg/kg	Lead	4.07	
D-258-3B-101317-8-10	SA_58-2mm	EPA6010	2	mg/kg	Magnesium	2871.54	
D-258-3B-101317-8-10	SA_58-2mm	EPA6010	2	mg/kg	Manganese	278.94	
D-258-3B-101317-8-10	SA_58-2mm	EPA6010	2	mg/kg	Nickel	8.71	
D-258-3B-101317-8-10	SA_58-2mm	EPA6010	2	mg/kg	Phosphorus	754.63	
D-258-3B-101317-8-10	SA_58-2mm	EPA6010	2	mg/kg	Potassium	858.26	crm
D-258-3B-101317-8-10	SA_58-2mm	EPA6010	2	mg/kg	Selenium	2.19	rl
D-258-3B-101317-8-10	SA_58-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-258-3B-101317-8-10	SA_58-2mm	EPA6010	2	mg/kg	Sodium	163.52	
D-258-3B-101317-8-10	SA_58-2mm	EPA6010	2	mg/kg	Thallium	0.53	rl
D-258-3B-101317-8-10	SA_58-2mm	EPA6010	2	mg/kg	Vanadium	26.57	
D-258-3B-101317-8-10	SA_58-2mm	EPA6010	2	mg/kg	Zinc	32.94	
D-258-3B-101317-10-12	SA_59-2mm	EPA6010	2	mg/kg	Aluminum	14351.23	
D-258-3B-101317-10-12	SA_59-2mm	EPA6010	2	mg/kg	Antimony	1.15	blk rl
D-258-3B-101317-10-12	SA_59-2mm	EPA6010	2	mg/kg	Arsenic	1.96	
D-258-3B-101317-10-12	SA_59-2mm	EPA6010	2	mg/kg	Barium	81.77	
D-258-3B-101317-10-12	SA_59-2mm	EPA6010	2	mg/kg	Beryllium	0.45	crm rl
D-258-3B-101317-10-12	SA_59-2mm	EPA6010	2	mg/kg	Cadmium	0.28	rl
D-258-3B-101317-10-12	SA_59-2mm	EPA6010	2	mg/kg	Calcium	2957.80	
D-258-3B-101317-10-12	SA_59-2mm	EPA6010	2	mg/kg	Chromium	12.67	dup



**Appendix B**

**SWEL – Soil Water Environmental Lab**

**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-258-3B-101317-10-12	SA_59-2mm	EPA6010	2	mg/kg	Cobalt	4.37	
D-258-3B-101317-10-12	SA_59-2mm	EPA6010	2	mg/kg	Copper	10.16	
D-258-3B-101317-10-12	SA_59-2mm	EPA6010	2	mg/kg	Iron	12920.79	
D-258-3B-101317-10-12	SA_59-2mm	EPA6010	2	mg/kg	Lead	4.05	
D-258-3B-101317-10-12	SA_59-2mm	EPA6010	2	mg/kg	Magnesium	2689.40	
D-258-3B-101317-10-12	SA_59-2mm	EPA6010	2	mg/kg	Manganese	267.56	
D-258-3B-101317-10-12	SA_59-2mm	EPA6010	2	mg/kg	Nickel	8.95	
D-258-3B-101317-10-12	SA_59-2mm	EPA6010	2	mg/kg	Phosphorus	786.33	
D-258-3B-101317-10-12	SA_59-2mm	EPA6010	2	mg/kg	Potassium	907.18	crm
D-258-3B-101317-10-12	SA_59-2mm	EPA6010	2	mg/kg	Selenium	2.64	rl
D-258-3B-101317-10-12	SA_59-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-258-3B-101317-10-12	SA_59-2mm	EPA6010	2	mg/kg	Sodium	229.33	
D-258-3B-101317-10-12	SA_59-2mm	EPA6010	2	mg/kg	Thallium	0.51	rl
D-258-3B-101317-10-12	SA_59-2mm	EPA6010	2	mg/kg	Vanadium	30.12	
D-258-3B-101317-10-12	SA_59-2mm	EPA6010	2	mg/kg	Zinc	31.84	
D-258-3D-101317-0-2	SA_60-2mm	EPA6010	2	mg/kg	Aluminum	8559.95	
D-258-3D-101317-0-2	SA_60-2mm	EPA6010	2	mg/kg	Antimony	7.34	blk
D-258-3D-101317-0-2	SA_60-2mm	EPA6010	2	mg/kg	Arsenic	13.37	
D-258-3D-101317-0-2	SA_60-2mm	EPA6010	2	mg/kg	Barium	88.73	
D-258-3D-101317-0-2	SA_60-2mm	EPA6010	2	mg/kg	Beryllium	0.29	crm rl
D-258-3D-101317-0-2	SA_60-2mm	EPA6010	2	mg/kg	Cadmium	4.74	
D-258-3D-101317-0-2	SA_60-2mm	EPA6010	2	mg/kg	Calcium	3034.66	
D-258-3D-101317-0-2	SA_60-2mm	EPA6010	2	mg/kg	Chromium	11.69	dup
D-258-3D-101317-0-2	SA_60-2mm	EPA6010	2	mg/kg	Cobalt	3.13	
D-258-3D-101317-0-2	SA_60-2mm	EPA6010	2	mg/kg	Copper	16.42	
D-258-3D-101317-0-2	SA_60-2mm	EPA6010	2	mg/kg	Iron	10410.11	
D-258-3D-101317-0-2	SA_60-2mm	EPA6010	2	mg/kg	Lead	196.48	
D-258-3D-101317-0-2	SA_60-2mm	EPA6010	2	mg/kg	Magnesium	1987.02	



**Appendix B**

**SWEL – Soil Water Environmental Lab**

**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-258-3D-101317-0-2	SA_60-2mm	EPA6010	2	mg/kg	Manganese	355.38	
D-258-3D-101317-0-2	SA_60-2mm	EPA6010	2	mg/kg	Nickel	6.89	
D-258-3D-101317-0-2	SA_60-2mm	EPA6010	2	mg/kg	Phosphorus	803.90	
D-258-3D-101317-0-2	SA_60-2mm	EPA6010	2	mg/kg	Potassium	756.45	crm
D-258-3D-101317-0-2	SA_60-2mm	EPA6010	2	mg/kg	Selenium	2.76	rl
D-258-3D-101317-0-2	SA_60-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-258-3D-101317-0-2	SA_60-2mm	EPA6010	2	mg/kg	Sodium	90.30	
D-258-3D-101317-0-2	SA_60-2mm	EPA6010	2	mg/kg	Thallium	0.80	rl
D-258-3D-101317-0-2	SA_60-2mm	EPA6010	2	mg/kg	Vanadium	23.19	
D-258-3D-101317-0-2	SA_60-2mm	EPA6010	2	mg/kg	Zinc	220.83	
D-401-2A-101317-8-10	SA_61-2mm	EPA6010	2	mg/kg	Aluminum	16731.72	
D-401-2A-101317-8-10	SA_61-2mm	EPA6010	2	mg/kg	Antimony	2.64	blk rl
D-401-2A-101317-8-10	SA_61-2mm	EPA6010	2	mg/kg	Arsenic	4.56	
D-401-2A-101317-8-10	SA_61-2mm	EPA6010	2	mg/kg	Barium	132.84	
D-401-2A-101317-8-10	SA_61-2mm	EPA6010	2	mg/kg	Beryllium	0.53	crm rl
D-401-2A-101317-8-10	SA_61-2mm	EPA6010	2	mg/kg	Cadmium	0.60	rl
D-401-2A-101317-8-10	SA_61-2mm	EPA6010	2	mg/kg	Calcium	2588.85	
D-401-2A-101317-8-10	SA_61-2mm	EPA6010	2	mg/kg	Chromium	28.13	dup
D-401-2A-101317-8-10	SA_61-2mm	EPA6010	2	mg/kg	Cobalt	5.92	
D-401-2A-101317-8-10	SA_61-2mm	EPA6010	2	mg/kg	Copper	15.97	
D-401-2A-101317-8-10	SA_61-2mm	EPA6010	2	mg/kg	Iron	25820.08	
D-401-2A-101317-8-10	SA_61-2mm	EPA6010	2	mg/kg	Lead	12.71	
D-401-2A-101317-8-10	SA_61-2mm	EPA6010	2	mg/kg	Magnesium	2645.93	
D-401-2A-101317-8-10	SA_61-2mm	EPA6010	2	mg/kg	Manganese	385.06	
D-401-2A-101317-8-10	SA_61-2mm	EPA6010	2	mg/kg	Nickel	12.91	
D-401-2A-101317-8-10	SA_61-2mm	EPA6010	2	mg/kg	Phosphorus	922.57	
D-401-2A-101317-8-10	SA_61-2mm	EPA6010	2	mg/kg	Potassium	933.55	crm
D-401-2A-101317-8-10	SA_61-2mm	EPA6010	2	mg/kg	Selenium	2.62	rl



**Appendix B**

**SWEL – Soil Water Environmental Lab**

**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-2A-101317-8-10	SA_61-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-401-2A-101317-8-10	SA_61-2mm	EPA6010	2	mg/kg	Sodium	163.19	
D-401-2A-101317-8-10	SA_61-2mm	EPA6010	2	mg/kg	Thallium	0.57	rl
D-401-2A-101317-8-10	SA_61-2mm	EPA6010	2	mg/kg	Vanadium	65.14	
D-401-2A-101317-8-10	SA_61-2mm	EPA6010	2	mg/kg	Zinc	53.43	
D-401-2B-101317-8-10	SA_62-2mm	EPA6010	2	mg/kg	Aluminum	16360.83	
D-401-2B-101317-8-10	SA_62-2mm	EPA6010	2	mg/kg	Antimony	2.82	blk rl
D-401-2B-101317-8-10	SA_62-2mm	EPA6010	2	mg/kg	Arsenic	4.34	
D-401-2B-101317-8-10	SA_62-2mm	EPA6010	2	mg/kg	Barium	145.73	
D-401-2B-101317-8-10	SA_62-2mm	EPA6010	2	mg/kg	Beryllium	0.53	crm rl
D-401-2B-101317-8-10	SA_62-2mm	EPA6010	2	mg/kg	Cadmium	0.56	rl
D-401-2B-101317-8-10	SA_62-2mm	EPA6010	2	mg/kg	Calcium	2962.89	
D-401-2B-101317-8-10	SA_62-2mm	EPA6010	2	mg/kg	Chromium	32.35	dup
D-401-2B-101317-8-10	SA_62-2mm	EPA6010	2	mg/kg	Cobalt	6.60	
D-401-2B-101317-8-10	SA_62-2mm	EPA6010	2	mg/kg	Copper	17.19	
D-401-2B-101317-8-10	SA_62-2mm	EPA6010	2	mg/kg	Iron	27741.88	
D-401-2B-101317-8-10	SA_62-2mm	EPA6010	2	mg/kg	Lead	6.80	
D-401-2B-101317-8-10	SA_62-2mm	EPA6010	2	mg/kg	Magnesium	2868.46	
D-401-2B-101317-8-10	SA_62-2mm	EPA6010	2	mg/kg	Manganese	481.25	
D-401-2B-101317-8-10	SA_62-2mm	EPA6010	2	mg/kg	Nickel	16.26	
D-401-2B-101317-8-10	SA_62-2mm	EPA6010	2	mg/kg	Phosphorus	1034.24	
D-401-2B-101317-8-10	SA_62-2mm	EPA6010	2	mg/kg	Potassium	1025.42	crm
D-401-2B-101317-8-10	SA_62-2mm	EPA6010	2	mg/kg	Selenium	2.22	rl
D-401-2B-101317-8-10	SA_62-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-401-2B-101317-8-10	SA_62-2mm	EPA6010	2	mg/kg	Sodium	162.13	
D-401-2B-101317-8-10	SA_62-2mm	EPA6010	2	mg/kg	Thallium	0.41	rl
D-401-2B-101317-8-10	SA_62-2mm	EPA6010	2	mg/kg	Vanadium	73.36	
D-401-2B-101317-8-10	SA_62-2mm	EPA6010	2	mg/kg	Zinc	63.55	



**Appendix B**

**SWEL – Soil Water Environmental Lab**

**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-2D-101317-8-10	SA_63-2mm	EPA6010	2	mg/kg	Aluminum	19805.77	
D-401-2D-101317-8-10	SA_63-2mm	EPA6010	2	mg/kg	Antimony	6.21	blk
D-401-2D-101317-8-10	SA_63-2mm	EPA6010	2	mg/kg	Arsenic	4.89	
D-401-2D-101317-8-10	SA_63-2mm	EPA6010	2	mg/kg	Barium	139.09	
D-401-2D-101317-8-10	SA_63-2mm	EPA6010	2	mg/kg	Beryllium	0.63	crm rl
D-401-2D-101317-8-10	SA_63-2mm	EPA6010	2	mg/kg	Cadmium	0.69	rl
D-401-2D-101317-8-10	SA_63-2mm	EPA6010	2	mg/kg	Calcium	3375.82	
D-401-2D-101317-8-10	SA_63-2mm	EPA6010	2	mg/kg	Chromium	35.31	dup
D-401-2D-101317-8-10	SA_63-2mm	EPA6010	2	mg/kg	Cobalt	7.20	
D-401-2D-101317-8-10	SA_63-2mm	EPA6010	2	mg/kg	Copper	15.87	
D-401-2D-101317-8-10	SA_63-2mm	EPA6010	2	mg/kg	Iron	29259.61	
D-401-2D-101317-8-10	SA_63-2mm	EPA6010	2	mg/kg	Lead	15.55	
D-401-2D-101317-8-10	SA_63-2mm	EPA6010	2	mg/kg	Magnesium	3043.00	
D-401-2D-101317-8-10	SA_63-2mm	EPA6010	2	mg/kg	Manganese	472.43	
D-401-2D-101317-8-10	SA_63-2mm	EPA6010	2	mg/kg	Nickel	14.95	
D-401-2D-101317-8-10	SA_63-2mm	EPA6010	2	mg/kg	Phosphorus	1074.68	
D-401-2D-101317-8-10	SA_63-2mm	EPA6010	2	mg/kg	Potassium	1262.07	crm
D-401-2D-101317-8-10	SA_63-2mm	EPA6010	2	mg/kg	Selenium	2.87	rl
D-401-2D-101317-8-10	SA_63-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-401-2D-101317-8-10	SA_63-2mm	EPA6010	2	mg/kg	Sodium	235.18	
D-401-2D-101317-8-10	SA_63-2mm	EPA6010	2	mg/kg	Thallium	0.35	rl
D-401-2D-101317-8-10	SA_63-2mm	EPA6010	2	mg/kg	Vanadium	77.39	
D-401-2D-101317-8-10	SA_63-2mm	EPA6010	2	mg/kg	Zinc	97.20	
D-401-2C-101317-10-12	SA_64-2mm	EPA6010	2	mg/kg	Aluminum	17671.16	
D-401-2C-101317-10-12	SA_64-2mm	EPA6010	2	mg/kg	Antimony	2.96	blk rl
D-401-2C-101317-10-12	SA_64-2mm	EPA6010	2	mg/kg	Arsenic	4.38	
D-401-2C-101317-10-12	SA_64-2mm	EPA6010	2	mg/kg	Barium	114.42	
D-401-2C-101317-10-12	SA_64-2mm	EPA6010	2	mg/kg	Beryllium	0.60	crm rl





**Appendix B**

**SWEL – Soil Water Environmental Lab**

**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-2C-101317-10-12	SA_64-2mm	EPA6010	2	mg/kg	Cadmium	0.57	rl
D-401-2C-101317-10-12	SA_64-2mm	EPA6010	2	mg/kg	Calcium	2933.74	
D-401-2C-101317-10-12	SA_64-2mm	EPA6010	2	mg/kg	Chromium	28.16	dup
D-401-2C-101317-10-12	SA_64-2mm	EPA6010	2	mg/kg	Cobalt	6.47	
D-401-2C-101317-10-12	SA_64-2mm	EPA6010	2	mg/kg	Copper	16.91	
D-401-2C-101317-10-12	SA_64-2mm	EPA6010	2	mg/kg	Iron	26767.22	
D-401-2C-101317-10-12	SA_64-2mm	EPA6010	2	mg/kg	Lead	10.93	
D-401-2C-101317-10-12	SA_64-2mm	EPA6010	2	mg/kg	Magnesium	2734.79	
D-401-2C-101317-10-12	SA_64-2mm	EPA6010	2	mg/kg	Manganese	387.18	
D-401-2C-101317-10-12	SA_64-2mm	EPA6010	2	mg/kg	Nickel	13.15	
D-401-2C-101317-10-12	SA_64-2mm	EPA6010	2	mg/kg	Phosphorus	1026.39	
D-401-2C-101317-10-12	SA_64-2mm	EPA6010	2	mg/kg	Potassium	1119.97	crm
D-401-2C-101317-10-12	SA_64-2mm	EPA6010	2	mg/kg	Selenium	3.28	rl
D-401-2C-101317-10-12	SA_64-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-401-2C-101317-10-12	SA_64-2mm	EPA6010	2	mg/kg	Sodium	211.16	
D-401-2C-101317-10-12	SA_64-2mm	EPA6010	2	mg/kg	Thallium	0.43	rl
D-401-2C-101317-10-12	SA_64-2mm	EPA6010	2	mg/kg	Vanadium	68.98	
D-401-2C-101317-10-12	SA_64-2mm	EPA6010	2	mg/kg	Zinc	324.10	
D-401-2A-101317-10-12	SA_65-2mm	EPA6010	2	mg/kg	Aluminum	16922.73	
D-401-2A-101317-10-12	SA_65-2mm	EPA6010	2	mg/kg	Antimony	2.60	blk rl
D-401-2A-101317-10-12	SA_65-2mm	EPA6010	2	mg/kg	Arsenic	4.06	
D-401-2A-101317-10-12	SA_65-2mm	EPA6010	2	mg/kg	Barium	123.76	
D-401-2A-101317-10-12	SA_65-2mm	EPA6010	2	mg/kg	Beryllium	0.52	crm rl
D-401-2A-101317-10-12	SA_65-2mm	EPA6010	2	mg/kg	Cadmium	0.48	rl
D-401-2A-101317-10-12	SA_65-2mm	EPA6010	2	mg/kg	Calcium	2785.38	
D-401-2A-101317-10-12	SA_65-2mm	EPA6010	2	mg/kg	Chromium	35.08	dup
D-401-2A-101317-10-12	SA_65-2mm	EPA6010	2	mg/kg	Cobalt	6.42	
D-401-2A-101317-10-12	SA_65-2mm	EPA6010	2	mg/kg	Copper	15.25	



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**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-2A-101317-10-12	SA_65-2mm	EPA6010	2	mg/kg	Iron	29966.45	
D-401-2A-101317-10-12	SA_65-2mm	EPA6010	2	mg/kg	Lead	6.64	
D-401-2A-101317-10-12	SA_65-2mm	EPA6010	2	mg/kg	Magnesium	3108.86	
D-401-2A-101317-10-12	SA_65-2mm	EPA6010	2	mg/kg	Manganese	362.88	
D-401-2A-101317-10-12	SA_65-2mm	EPA6010	2	mg/kg	Nickel	15.65	
D-401-2A-101317-10-12	SA_65-2mm	EPA6010	2	mg/kg	Phosphorus	823.11	
D-401-2A-101317-10-12	SA_65-2mm	EPA6010	2	mg/kg	Potassium	1026.78	crm
D-401-2A-101317-10-12	SA_65-2mm	EPA6010	2	mg/kg	Selenium	2.08	rl
D-401-2A-101317-10-12	SA_65-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-401-2A-101317-10-12	SA_65-2mm	EPA6010	2	mg/kg	Sodium	206.72	
D-401-2A-101317-10-12	SA_65-2mm	EPA6010	2	mg/kg	Thallium	0.76	rl
D-401-2A-101317-10-12	SA_65-2mm	EPA6010	2	mg/kg	Vanadium	74.48	
D-401-2A-101317-10-12	SA_65-2mm	EPA6010	2	mg/kg	Zinc	44.99	
D-401-2C-101317-6-8	SA_66-2mm	EPA6010	2	mg/kg	Aluminum	17629.55	
D-401-2C-101317-6-8	SA_66-2mm	EPA6010	2	mg/kg	Antimony	4.90	blk rl
D-401-2C-101317-6-8	SA_66-2mm	EPA6010	2	mg/kg	Arsenic	6.87	
D-401-2C-101317-6-8	SA_66-2mm	EPA6010	2	mg/kg	Barium	151.64	
D-401-2C-101317-6-8	SA_66-2mm	EPA6010	2	mg/kg	Beryllium	0.56	crm rl
D-401-2C-101317-6-8	SA_66-2mm	EPA6010	2	mg/kg	Cadmium	0.90	rl
D-401-2C-101317-6-8	SA_66-2mm	EPA6010	2	mg/kg	Calcium	3127.36	
D-401-2C-101317-6-8	SA_66-2mm	EPA6010	2	mg/kg	Chromium	26.96	dup
D-401-2C-101317-6-8	SA_66-2mm	EPA6010	2	mg/kg	Cobalt	6.01	
D-401-2C-101317-6-8	SA_66-2mm	EPA6010	2	mg/kg	Copper	17.11	
D-401-2C-101317-6-8	SA_66-2mm	EPA6010	2	mg/kg	Iron	24048.34	
D-401-2C-101317-6-8	SA_66-2mm	EPA6010	2	mg/kg	Lead	20.65	
D-401-2C-101317-6-8	SA_66-2mm	EPA6010	2	mg/kg	Magnesium	2710.20	
D-401-2C-101317-6-8	SA_66-2mm	EPA6010	2	mg/kg	Manganese	526.94	
D-401-2C-101317-6-8	SA_66-2mm	EPA6010	2	mg/kg	Nickel	12.72	



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**SWEL – Soil Water Environmental Lab**

**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-2C-101317-6-8	SA_66-2mm	EPA6010	2	mg/kg	Phosphorus	1000.85	
D-401-2C-101317-6-8	SA_66-2mm	EPA6010	2	mg/kg	Potassium	1019.09	crm
D-401-2C-101317-6-8	SA_66-2mm	EPA6010	2	mg/kg	Selenium	3.12	rl
D-401-2C-101317-6-8	SA_66-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-401-2C-101317-6-8	SA_66-2mm	EPA6010	2	mg/kg	Sodium	183.64	
D-401-2C-101317-6-8	SA_66-2mm	EPA6010	2	mg/kg	Thallium	0.55	rl
D-401-2C-101317-6-8	SA_66-2mm	EPA6010	2	mg/kg	Vanadium	60.06	
D-401-2C-101317-6-8	SA_66-2mm	EPA6010	2	mg/kg	Zinc	552.56	
D-401-2A-101317-6-8	SA_67-2mm	EPA6010	2	mg/kg	Aluminum	17607.16	
D-401-2A-101317-6-8	SA_67-2mm	EPA6010	2	mg/kg	Antimony	4.54	blk rl
D-401-2A-101317-6-8	SA_67-2mm	EPA6010	2	mg/kg	Arsenic	4.32	
D-401-2A-101317-6-8	SA_67-2mm	EPA6010	2	mg/kg	Barium	110.25	
D-401-2A-101317-6-8	SA_67-2mm	EPA6010	2	mg/kg	Beryllium	0.51	crm rl
D-401-2A-101317-6-8	SA_67-2mm	EPA6010	2	mg/kg	Cadmium	0.93	rl
D-401-2A-101317-6-8	SA_67-2mm	EPA6010	2	mg/kg	Calcium	3388.19	
D-401-2A-101317-6-8	SA_67-2mm	EPA6010	2	mg/kg	Chromium	27.19	dup
D-401-2A-101317-6-8	SA_67-2mm	EPA6010	2	mg/kg	Cobalt	7.14	
D-401-2A-101317-6-8	SA_67-2mm	EPA6010	2	mg/kg	Copper	19.95	
D-401-2A-101317-6-8	SA_67-2mm	EPA6010	2	mg/kg	Iron	26649.01	
D-401-2A-101317-6-8	SA_67-2mm	EPA6010	2	mg/kg	Lead	13.50	
D-401-2A-101317-6-8	SA_67-2mm	EPA6010	2	mg/kg	Magnesium	3865.09	
D-401-2A-101317-6-8	SA_67-2mm	EPA6010	2	mg/kg	Manganese	471.26	
D-401-2A-101317-6-8	SA_67-2mm	EPA6010	2	mg/kg	Nickel	13.46	
D-401-2A-101317-6-8	SA_67-2mm	EPA6010	2	mg/kg	Phosphorus	1085.93	
D-401-2A-101317-6-8	SA_67-2mm	EPA6010	2	mg/kg	Potassium	1001.60	crm
D-401-2A-101317-6-8	SA_67-2mm	EPA6010	2	mg/kg	Selenium	2.90	rl
D-401-2A-101317-6-8	SA_67-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-401-2A-101317-6-8	SA_67-2mm	EPA6010	2	mg/kg	Sodium	156.23	



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**SWEL – Soil Water Environmental Lab**

**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-2A-101317-6-8	SA_67-2mm	EPA6010	2	mg/kg	Thallium	0.77	rl
D-401-2A-101317-6-8	SA_67-2mm	EPA6010	2	mg/kg	Vanadium	66.36	
D-401-2A-101317-6-8	SA_67-2mm	EPA6010	2	mg/kg	Zinc	225.00	
D-401-2B-101317-6-8	SA_68-2mm	EPA6010	2	mg/kg	Aluminum	16460.32	
D-401-2B-101317-6-8	SA_68-2mm	EPA6010	2	mg/kg	Antimony	3.69	blk rl
D-401-2B-101317-6-8	SA_68-2mm	EPA6010	2	mg/kg	Arsenic	4.38	
D-401-2B-101317-6-8	SA_68-2mm	EPA6010	2	mg/kg	Barium	140.50	
D-401-2B-101317-6-8	SA_68-2mm	EPA6010	2	mg/kg	Beryllium	0.51	crm rl
D-401-2B-101317-6-8	SA_68-2mm	EPA6010	2	mg/kg	Cadmium	0.92	rl
D-401-2B-101317-6-8	SA_68-2mm	EPA6010	2	mg/kg	Calcium	3320.43	
D-401-2B-101317-6-8	SA_68-2mm	EPA6010	2	mg/kg	Chromium	33.20	dup
D-401-2B-101317-6-8	SA_68-2mm	EPA6010	2	mg/kg	Cobalt	6.21	
D-401-2B-101317-6-8	SA_68-2mm	EPA6010	2	mg/kg	Copper	14.06	
D-401-2B-101317-6-8	SA_68-2mm	EPA6010	2	mg/kg	Iron	28043.87	
D-401-2B-101317-6-8	SA_68-2mm	EPA6010	2	mg/kg	Lead	7.61	
D-401-2B-101317-6-8	SA_68-2mm	EPA6010	2	mg/kg	Magnesium	3180.43	
D-401-2B-101317-6-8	SA_68-2mm	EPA6010	2	mg/kg	Manganese	501.77	
D-401-2B-101317-6-8	SA_68-2mm	EPA6010	2	mg/kg	Nickel	13.40	
D-401-2B-101317-6-8	SA_68-2mm	EPA6010	2	mg/kg	Phosphorus	1100.06	
D-401-2B-101317-6-8	SA_68-2mm	EPA6010	2	mg/kg	Potassium	1147.09	crm
D-401-2B-101317-6-8	SA_68-2mm	EPA6010	2	mg/kg	Selenium	3.25	rl
D-401-2B-101317-6-8	SA_68-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-401-2B-101317-6-8	SA_68-2mm	EPA6010	2	mg/kg	Sodium	188.49	
D-401-2B-101317-6-8	SA_68-2mm	EPA6010	2	mg/kg	Thallium	0.59	rl
D-401-2B-101317-6-8	SA_68-2mm	EPA6010	2	mg/kg	Vanadium	71.23	
D-401-2B-101317-6-8	SA_68-2mm	EPA6010	2	mg/kg	Zinc	308.99	
D-401-2D-101317-6-8	SA_69-2mm	EPA6010	2	mg/kg	Aluminum	18700.76	
D-401-2D-101317-6-8	SA_69-2mm	EPA6010	2	mg/kg	Antimony	8.38	blk



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**SWEL – Soil Water Environmental Lab**

**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-2D-101317-6-8	SA_69-2mm	EPA6010	2	mg/kg	Arsenic	15.45	
D-401-2D-101317-6-8	SA_69-2mm	EPA6010	2	mg/kg	Barium	156.99	
D-401-2D-101317-6-8	SA_69-2mm	EPA6010	2	mg/kg	Beryllium	0.59	crm rl
D-401-2D-101317-6-8	SA_69-2mm	EPA6010	2	mg/kg	Cadmium	1.92	
D-401-2D-101317-6-8	SA_69-2mm	EPA6010	2	mg/kg	Calcium	3588.91	
D-401-2D-101317-6-8	SA_69-2mm	EPA6010	2	mg/kg	Chromium	29.18	dup
D-401-2D-101317-6-8	SA_69-2mm	EPA6010	2	mg/kg	Cobalt	6.69	
D-401-2D-101317-6-8	SA_69-2mm	EPA6010	2	mg/kg	Copper	17.19	
D-401-2D-101317-6-8	SA_69-2mm	EPA6010	2	mg/kg	Iron	27161.54	
D-401-2D-101317-6-8	SA_69-2mm	EPA6010	2	mg/kg	Lead	18.15	
D-401-2D-101317-6-8	SA_69-2mm	EPA6010	2	mg/kg	Magnesium	1743.09	
D-401-2D-101317-6-8	SA_69-2mm	EPA6010	2	mg/kg	Manganese	562.84	
D-401-2D-101317-6-8	SA_69-2mm	EPA6010	2	mg/kg	Nickel	14.08	
D-401-2D-101317-6-8	SA_69-2mm	EPA6010	2	mg/kg	Phosphorus	1226.37	
D-401-2D-101317-6-8	SA_69-2mm	EPA6010	2	mg/kg	Potassium	1366.74	crm
D-401-2D-101317-6-8	SA_69-2mm	EPA6010	2	mg/kg	Selenium	2.98	rl
D-401-2D-101317-6-8	SA_69-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-401-2D-101317-6-8	SA_69-2mm	EPA6010	2	mg/kg	Sodium	197.84	
D-401-2D-101317-6-8	SA_69-2mm	EPA6010	2	mg/kg	Thallium	0.43	rl
D-401-2D-101317-6-8	SA_69-2mm	EPA6010	2	mg/kg	Vanadium	68.90	
D-401-2D-101317-6-8	SA_69-2mm	EPA6010	2	mg/kg	Zinc	349.72	
D-401-2C-101317-8-10	SA_70-2mm	EPA6010	2	mg/kg	Aluminum	17830.11	
D-401-2C-101317-8-10	SA_70-2mm	EPA6010	2	mg/kg	Antimony	3.76	blk rl
D-401-2C-101317-8-10	SA_70-2mm	EPA6010	2	mg/kg	Arsenic	4.09	
D-401-2C-101317-8-10	SA_70-2mm	EPA6010	2	mg/kg	Barium	110.34	
D-401-2C-101317-8-10	SA_70-2mm	EPA6010	2	mg/kg	Beryllium	0.57	crm rl
D-401-2C-101317-8-10	SA_70-2mm	EPA6010	2	mg/kg	Cadmium	0.53	rl
D-401-2C-101317-8-10	SA_70-2mm	EPA6010	2	mg/kg	Calcium	2931.86	



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**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-2C-101317-8-10	SA_70-2mm	EPA6010	2	mg/kg	Chromium	32.87	dup
D-401-2C-101317-8-10	SA_70-2mm	EPA6010	2	mg/kg	Cobalt	6.46	
D-401-2C-101317-8-10	SA_70-2mm	EPA6010	2	mg/kg	Copper	16.55	
D-401-2C-101317-8-10	SA_70-2mm	EPA6010	2	mg/kg	Iron	29384.15	
D-401-2C-101317-8-10	SA_70-2mm	EPA6010	2	mg/kg	Lead	10.21	
D-401-2C-101317-8-10	SA_70-2mm	EPA6010	2	mg/kg	Magnesium	3071.59	
D-401-2C-101317-8-10	SA_70-2mm	EPA6010	2	mg/kg	Manganese	426.64	
D-401-2C-101317-8-10	SA_70-2mm	EPA6010	2	mg/kg	Nickel	14.83	
D-401-2C-101317-8-10	SA_70-2mm	EPA6010	2	mg/kg	Phosphorus	999.53	
D-401-2C-101317-8-10	SA_70-2mm	EPA6010	2	mg/kg	Potassium	1006.49	crm
D-401-2C-101317-8-10	SA_70-2mm	EPA6010	2	mg/kg	Selenium	1.24	rl
D-401-2C-101317-8-10	SA_70-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-401-2C-101317-8-10	SA_70-2mm	EPA6010	2	mg/kg	Sodium	186.11	
D-401-2C-101317-8-10	SA_70-2mm	EPA6010	2	mg/kg	Thallium	0.42	rl
D-401-2C-101317-8-10	SA_70-2mm	EPA6010	2	mg/kg	Vanadium	73.78	
D-401-2C-101317-8-10	SA_70-2mm	EPA6010	2	mg/kg	Zinc	337.21	
D-401-2D-101317-2-4	SA_71-2mm	EPA6010	2	mg/kg	Aluminum	12553.25	
D-401-2D-101317-2-4	SA_71-2mm	EPA6010	2	mg/kg	Antimony	33.83	blk
D-401-2D-101317-2-4	SA_71-2mm	EPA6010	2	mg/kg	Arsenic	41.96	
D-401-2D-101317-2-4	SA_71-2mm	EPA6010	2	mg/kg	Barium	123.72	
D-401-2D-101317-2-4	SA_71-2mm	EPA6010	2	mg/kg	Beryllium	0.41	crm rl
D-401-2D-101317-2-4	SA_71-2mm	EPA6010	2	mg/kg	Cadmium	11.90	
D-401-2D-101317-2-4	SA_71-2mm	EPA6010	2	mg/kg	Calcium	4151.87	
D-401-2D-101317-2-4	SA_71-2mm	EPA6010	2	mg/kg	Chromium	27.21	dup
D-401-2D-101317-2-4	SA_71-2mm	EPA6010	2	mg/kg	Cobalt	5.33	
D-401-2D-101317-2-4	SA_71-2mm	EPA6010	2	mg/kg	Copper	40.87	
D-401-2D-101317-2-4	SA_71-2mm	EPA6010	2	mg/kg	Iron	18185.58	
D-401-2D-101317-2-4	SA_71-2mm	EPA6010	2	mg/kg	Lead	901.07	



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**SWEL – Soil Water Environmental Lab**

**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-2D-101317-2-4	SA_71-2mm	EPA6010	2	mg/kg	Magnesium	2217.21	
D-401-2D-101317-2-4	SA_71-2mm	EPA6010	2	mg/kg	Manganese	537.53	
D-401-2D-101317-2-4	SA_71-2mm	EPA6010	2	mg/kg	Nickel	10.96	
D-401-2D-101317-2-4	SA_71-2mm	EPA6010	2	mg/kg	Phosphorus	1255.36	
D-401-2D-101317-2-4	SA_71-2mm	EPA6010	2	mg/kg	Potassium	1368.74	crm
D-401-2D-101317-2-4	SA_71-2mm	EPA6010	2	mg/kg	Selenium	3.19	rl
D-401-2D-101317-2-4	SA_71-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-401-2D-101317-2-4	SA_71-2mm	EPA6010	2	mg/kg	Sodium	183.39	
D-401-2D-101317-2-4	SA_71-2mm	EPA6010	2	mg/kg	Thallium	1.18	rl
D-401-2D-101317-2-4	SA_71-2mm	EPA6010	2	mg/kg	Vanadium	42.74	
D-401-2D-101317-2-4	SA_71-2mm	EPA6010	2	mg/kg	Zinc	557.54	
D-401-2C-101317-4-6	SA_72-2mm	EPA6010	2	mg/kg	Aluminum	17616.79	
D-401-2C-101317-4-6	SA_72-2mm	EPA6010	2	mg/kg	Antimony	8.48	blk
D-401-2C-101317-4-6	SA_72-2mm	EPA6010	2	mg/kg	Arsenic	18.75	
D-401-2C-101317-4-6	SA_72-2mm	EPA6010	2	mg/kg	Barium	202.50	
D-401-2C-101317-4-6	SA_72-2mm	EPA6010	2	mg/kg	Beryllium	0.56	crm rl
D-401-2C-101317-4-6	SA_72-2mm	EPA6010	2	mg/kg	Cadmium	7.94	
D-401-2C-101317-4-6	SA_72-2mm	EPA6010	2	mg/kg	Calcium	2894.67	
D-401-2C-101317-4-6	SA_72-2mm	EPA6010	2	mg/kg	Chromium	32.44	dup
D-401-2C-101317-4-6	SA_72-2mm	EPA6010	2	mg/kg	Cobalt	6.47	
D-401-2C-101317-4-6	SA_72-2mm	EPA6010	2	mg/kg	Copper	20.50	
D-401-2C-101317-4-6	SA_72-2mm	EPA6010	2	mg/kg	Iron	25798.25	
D-401-2C-101317-4-6	SA_72-2mm	EPA6010	2	mg/kg	Lead	106.51	
D-401-2C-101317-4-6	SA_72-2mm	EPA6010	2	mg/kg	Magnesium	2840.25	
D-401-2C-101317-4-6	SA_72-2mm	EPA6010	2	mg/kg	Manganese	686.38	
D-401-2C-101317-4-6	SA_72-2mm	EPA6010	2	mg/kg	Nickel	14.59	
D-401-2C-101317-4-6	SA_72-2mm	EPA6010	2	mg/kg	Phosphorus	1098.45	
D-401-2C-101317-4-6	SA_72-2mm	EPA6010	2	mg/kg	Potassium	1121.77	crm



**Appendix B**

**SWEL – Soil Water Environmental Lab**

**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-2C-101317-4-6	SA_72-2mm	EPA6010	2	mg/kg	Selenium	3.83	rl
D-401-2C-101317-4-6	SA_72-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-401-2C-101317-4-6	SA_72-2mm	EPA6010	2	mg/kg	Sodium	193.40	
D-401-2C-101317-4-6	SA_72-2mm	EPA6010	2	mg/kg	Thallium	0.88	rl
D-401-2C-101317-4-6	SA_72-2mm	EPA6010	2	mg/kg	Vanadium	65.90	
D-401-2C-101317-4-6	SA_72-2mm	EPA6010	2	mg/kg	Zinc	1221.88	
D-401-2A-101317-4-6	SA_73-2mm	EPA6010	3	mg/kg	Aluminum	17253.01	
D-401-2A-101317-4-6	SA_73-2mm	EPA6010	3	mg/kg	Antimony	5.21	
D-401-2A-101317-4-6	SA_73-2mm	EPA6010	3	mg/kg	Arsenic	6.62	
D-401-2A-101317-4-6	SA_73-2mm	EPA6010	3	mg/kg	Barium	154.42	
D-401-2A-101317-4-6	SA_73-2mm	EPA6010	3	mg/kg	Beryllium	0.56	crm rl
D-401-2A-101317-4-6	SA_73-2mm	EPA6010	3	mg/kg	Cadmium	3.79	
D-401-2A-101317-4-6	SA_73-2mm	EPA6010	3	mg/kg	Calcium	3342.18	
D-401-2A-101317-4-6	SA_73-2mm	EPA6010	3	mg/kg	Chromium	32.98	spk
D-401-2A-101317-4-6	SA_73-2mm	EPA6010	3	mg/kg	Cobalt	5.93	
D-401-2A-101317-4-6	SA_73-2mm	EPA6010	3	mg/kg	Copper	15.37	
D-401-2A-101317-4-6	SA_73-2mm	EPA6010	3	mg/kg	Iron	25942.85	
D-401-2A-101317-4-6	SA_73-2mm	EPA6010	3	mg/kg	Lead	13.41	
D-401-2A-101317-4-6	SA_73-2mm	EPA6010	3	mg/kg	Magnesium	2368.74	
D-401-2A-101317-4-6	SA_73-2mm	EPA6010	3	mg/kg	Manganese	570.83	
D-401-2A-101317-4-6	SA_73-2mm	EPA6010	3	mg/kg	Nickel	14.23	
D-401-2A-101317-4-6	SA_73-2mm	EPA6010	3	mg/kg	Phosphorus	1043.95	
D-401-2A-101317-4-6	SA_73-2mm	EPA6010	3	mg/kg	Potassium	1301.73	
D-401-2A-101317-4-6	SA_73-2mm	EPA6010	3	mg/kg	Selenium	3.31	blk rl
D-401-2A-101317-4-6	SA_73-2mm	EPA6010	3	mg/kg	Silver	0.2	MDL
D-401-2A-101317-4-6	SA_73-2mm	EPA6010	3	mg/kg	Sodium	246.57	
D-401-2A-101317-4-6	SA_73-2mm	EPA6010	3	mg/kg	Thallium	0.65	blk rl
D-401-2A-101317-4-6	SA_73-2mm	EPA6010	3	mg/kg	Vanadium	67.28	blk





**Appendix B**

**SWEL – Soil Water Environmental Lab**

**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-2A-101317-4-6	SA_73-2mm	EPA6010	3	mg/kg	Zinc	385.51	
D-401-2B-101317-4-6	SA_74-2mm	EPA6010	3	mg/kg	Aluminum	17663.12	
D-401-2B-101317-4-6	SA_74-2mm	EPA6010	3	mg/kg	Antimony	8.04	
D-401-2B-101317-4-6	SA_74-2mm	EPA6010	3	mg/kg	Arsenic	15.07	
D-401-2B-101317-4-6	SA_74-2mm	EPA6010	3	mg/kg	Barium	149.43	
D-401-2B-101317-4-6	SA_74-2mm	EPA6010	3	mg/kg	Beryllium	0.57	crm rl
D-401-2B-101317-4-6	SA_74-2mm	EPA6010	3	mg/kg	Cadmium	12.83	
D-401-2B-101317-4-6	SA_74-2mm	EPA6010	3	mg/kg	Calcium	3053.20	
D-401-2B-101317-4-6	SA_74-2mm	EPA6010	3	mg/kg	Chromium	35.96	spk
D-401-2B-101317-4-6	SA_74-2mm	EPA6010	3	mg/kg	Cobalt	7.49	
D-401-2B-101317-4-6	SA_74-2mm	EPA6010	3	mg/kg	Copper	23.02	
D-401-2B-101317-4-6	SA_74-2mm	EPA6010	3	mg/kg	Iron	31674.77	
D-401-2B-101317-4-6	SA_74-2mm	EPA6010	3	mg/kg	Lead	72.12	
D-401-2B-101317-4-6	SA_74-2mm	EPA6010	3	mg/kg	Magnesium	3400.80	
D-401-2B-101317-4-6	SA_74-2mm	EPA6010	3	mg/kg	Manganese	750.71	
D-401-2B-101317-4-6	SA_74-2mm	EPA6010	3	mg/kg	Nickel	16.48	
D-401-2B-101317-4-6	SA_74-2mm	EPA6010	3	mg/kg	Phosphorus	1104.92	
D-401-2B-101317-4-6	SA_74-2mm	EPA6010	3	mg/kg	Potassium	1252.62	
D-401-2B-101317-4-6	SA_74-2mm	EPA6010	3	mg/kg	Selenium	1.38	blk rl
D-401-2B-101317-4-6	SA_74-2mm	EPA6010	3	mg/kg	Silver	0.2	MDL
D-401-2B-101317-4-6	SA_74-2mm	EPA6010	3	mg/kg	Sodium	226.66	
D-401-2B-101317-4-6	SA_74-2mm	EPA6010	3	mg/kg	Thallium	0.67	blk rl
D-401-2B-101317-4-6	SA_74-2mm	EPA6010	3	mg/kg	Vanadium	84.12	blk
D-401-2B-101317-4-6	SA_74-2mm	EPA6010	3	mg/kg	Zinc	334.94	
D-401-2D-101317-4-6	SA_75-2mm	EPA6010	3	mg/kg	Aluminum	17421.68	
D-401-2D-101317-4-6	SA_75-2mm	EPA6010	3	mg/kg	Antimony	23.95	
D-401-2D-101317-4-6	SA_75-2mm	EPA6010	3	mg/kg	Arsenic	54.20	
D-401-2D-101317-4-6	SA_75-2mm	EPA6010	3	mg/kg	Barium	177.19	



**Appendix B**

**SWEL – Soil Water Environmental Lab**

**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-2D-101317-4-6	SA_75-2mm	EPA6010	3	mg/kg	Beryllium	0.55	crm rl
D-401-2D-101317-4-6	SA_75-2mm	EPA6010	3	mg/kg	Cadmium	12.58	
D-401-2D-101317-4-6	SA_75-2mm	EPA6010	3	mg/kg	Calcium	4291.79	
D-401-2D-101317-4-6	SA_75-2mm	EPA6010	3	mg/kg	Chromium	24.08	spk
D-401-2D-101317-4-6	SA_75-2mm	EPA6010	3	mg/kg	Cobalt	5.81	
D-401-2D-101317-4-6	SA_75-2mm	EPA6010	3	mg/kg	Copper	36.42	
D-401-2D-101317-4-6	SA_75-2mm	EPA6010	3	mg/kg	Iron	20942.04	
D-401-2D-101317-4-6	SA_75-2mm	EPA6010	3	mg/kg	Lead	564.07	
D-401-2D-101317-4-6	SA_75-2mm	EPA6010	3	mg/kg	Magnesium	2906.43	
D-401-2D-101317-4-6	SA_75-2mm	EPA6010	3	mg/kg	Manganese	710.37	
D-401-2D-101317-4-6	SA_75-2mm	EPA6010	3	mg/kg	Nickel	13.27	
D-401-2D-101317-4-6	SA_75-2mm	EPA6010	3	mg/kg	Phosphorus	1774.11	
D-401-2D-101317-4-6	SA_75-2mm	EPA6010	3	mg/kg	Potassium	1636.17	
D-401-2D-101317-4-6	SA_75-2mm	EPA6010	3	mg/kg	Selenium	3.73	blk rl
D-401-2D-101317-4-6	SA_75-2mm	EPA6010	3	mg/kg	Silver	0.2	MDL
D-401-2D-101317-4-6	SA_75-2mm	EPA6010	3	mg/kg	Sodium	250.24	
D-401-2D-101317-4-6	SA_75-2mm	EPA6010	3	mg/kg	Thallium	0.95	blk rl
D-401-2D-101317-4-6	SA_75-2mm	EPA6010	3	mg/kg	Vanadium	52.25	blk
D-401-2D-101317-4-6	SA_75-2mm	EPA6010	3	mg/kg	Zinc	580.27	
D-401-2B-101317-0-2	SA_76-2mm	EPA6010	3	mg/kg	Aluminum	16087.88	
D-401-2B-101317-0-2	SA_76-2mm	EPA6010	3	mg/kg	Antimony	15.74	
D-401-2B-101317-0-2	SA_76-2mm	EPA6010	3	mg/kg	Arsenic	34.84	
D-401-2B-101317-0-2	SA_76-2mm	EPA6010	3	mg/kg	Barium	130.36	
D-401-2B-101317-0-2	SA_76-2mm	EPA6010	3	mg/kg	Beryllium	0.51	crm rl
D-401-2B-101317-0-2	SA_76-2mm	EPA6010	3	mg/kg	Cadmium	8.28	
D-401-2B-101317-0-2	SA_76-2mm	EPA6010	3	mg/kg	Calcium	3754.55	
D-401-2B-101317-0-2	SA_76-2mm	EPA6010	3	mg/kg	Chromium	29.91	spk
D-401-2B-101317-0-2	SA_76-2mm	EPA6010	3	mg/kg	Cobalt	6.16	



**Appendix B**

**SWEL – Soil Water Environmental Lab**

**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-2B-101317-0-2	SA_76-2mm	EPA6010	3	mg/kg	Copper	26.80	
D-401-2B-101317-0-2	SA_76-2mm	EPA6010	3	mg/kg	Iron	19917.84	
D-401-2B-101317-0-2	SA_76-2mm	EPA6010	3	mg/kg	Lead	329.02	
D-401-2B-101317-0-2	SA_76-2mm	EPA6010	3	mg/kg	Magnesium	2853.97	
D-401-2B-101317-0-2	SA_76-2mm	EPA6010	3	mg/kg	Manganese	582.16	
D-401-2B-101317-0-2	SA_76-2mm	EPA6010	3	mg/kg	Nickel	12.75	
D-401-2B-101317-0-2	SA_76-2mm	EPA6010	3	mg/kg	Phosphorus	1273.48	
D-401-2B-101317-0-2	SA_76-2mm	EPA6010	3	mg/kg	Potassium	1442.30	
D-401-2B-101317-0-2	SA_76-2mm	EPA6010	3	mg/kg	Selenium	3.77	blk rl
D-401-2B-101317-0-2	SA_76-2mm	EPA6010	3	mg/kg	Silver	0.2	MDL
D-401-2B-101317-0-2	SA_76-2mm	EPA6010	3	mg/kg	Sodium	251.94	
D-401-2B-101317-0-2	SA_76-2mm	EPA6010	3	mg/kg	Thallium	0.57	blk rl
D-401-2B-101317-0-2	SA_76-2mm	EPA6010	3	mg/kg	Vanadium	49.40	blk
D-401-2B-101317-0-2	SA_76-2mm	EPA6010	3	mg/kg	Zinc	425.66	
D-401-2D-101317-0-2	SA_77-2mm	EPA6010	3	mg/kg	Aluminum	12341.55	
D-401-2D-101317-0-2	SA_77-2mm	EPA6010	3	mg/kg	Antimony	32.08	
D-401-2D-101317-0-2	SA_77-2mm	EPA6010	3	mg/kg	Arsenic	35.63	
D-401-2D-101317-0-2	SA_77-2mm	EPA6010	3	mg/kg	Barium	116.31	
D-401-2D-101317-0-2	SA_77-2mm	EPA6010	3	mg/kg	Beryllium	0.39	crm rl
D-401-2D-101317-0-2	SA_77-2mm	EPA6010	3	mg/kg	Cadmium	11.40	
D-401-2D-101317-0-2	SA_77-2mm	EPA6010	3	mg/kg	Calcium	4674.18	
D-401-2D-101317-0-2	SA_77-2mm	EPA6010	3	mg/kg	Chromium	21.48	spk
D-401-2D-101317-0-2	SA_77-2mm	EPA6010	3	mg/kg	Cobalt	5.41	
D-401-2D-101317-0-2	SA_77-2mm	EPA6010	3	mg/kg	Copper	39.47	
D-401-2D-101317-0-2	SA_77-2mm	EPA6010	3	mg/kg	Iron	16952.40	
D-401-2D-101317-0-2	SA_77-2mm	EPA6010	3	mg/kg	Lead	842.63	
D-401-2D-101317-0-2	SA_77-2mm	EPA6010	3	mg/kg	Magnesium	2142.22	
D-401-2D-101317-0-2	SA_77-2mm	EPA6010	3	mg/kg	Manganese	504.67	



**Appendix B**

**SWEL – Soil Water Environmental Lab**

**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-2D-101317-0-2	SA_77-2mm	EPA6010	3	mg/kg	Nickel	10.18	
D-401-2D-101317-0-2	SA_77-2mm	EPA6010	3	mg/kg	Phosphorus	1484.42	
D-401-2D-101317-0-2	SA_77-2mm	EPA6010	3	mg/kg	Potassium	1464.63	
D-401-2D-101317-0-2	SA_77-2mm	EPA6010	3	mg/kg	Selenium	3.13	blk rl
D-401-2D-101317-0-2	SA_77-2mm	EPA6010	3	mg/kg	Silver	0.2	MDL
D-401-2D-101317-0-2	SA_77-2mm	EPA6010	3	mg/kg	Sodium	209.68	
D-401-2D-101317-0-2	SA_77-2mm	EPA6010	3	mg/kg	Thallium	0.73	blk rl
D-401-2D-101317-0-2	SA_77-2mm	EPA6010	3	mg/kg	Vanadium	41.67	blk
D-401-2D-101317-0-2	SA_77-2mm	EPA6010	3	mg/kg	Zinc	541.46	
D-401-2C-101317-2-4	SA_78-2mm	EPA6010	3	mg/kg	Aluminum	18198.96	
D-401-2C-101317-2-4	SA_78-2mm	EPA6010	3	mg/kg	Antimony	17.86	
D-401-2C-101317-2-4	SA_78-2mm	EPA6010	3	mg/kg	Arsenic	69.63	
D-401-2C-101317-2-4	SA_78-2mm	EPA6010	3	mg/kg	Barium	164.11	
D-401-2C-101317-2-4	SA_78-2mm	EPA6010	3	mg/kg	Beryllium	0.64	crm rl
D-401-2C-101317-2-4	SA_78-2mm	EPA6010	3	mg/kg	Cadmium	19.54	
D-401-2C-101317-2-4	SA_78-2mm	EPA6010	3	mg/kg	Calcium	2745.11	
D-401-2C-101317-2-4	SA_78-2mm	EPA6010	3	mg/kg	Chromium	43.11	spk
D-401-2C-101317-2-4	SA_78-2mm	EPA6010	3	mg/kg	Cobalt	7.95	
D-401-2C-101317-2-4	SA_78-2mm	EPA6010	3	mg/kg	Copper	30.96	
D-401-2C-101317-2-4	SA_78-2mm	EPA6010	3	mg/kg	Iron	26455.26	
D-401-2C-101317-2-4	SA_78-2mm	EPA6010	3	mg/kg	Lead	335.22	
D-401-2C-101317-2-4	SA_78-2mm	EPA6010	3	mg/kg	Magnesium	2828.18	
D-401-2C-101317-2-4	SA_78-2mm	EPA6010	3	mg/kg	Manganese	919.97	
D-401-2C-101317-2-4	SA_78-2mm	EPA6010	3	mg/kg	Nickel	15.30	
D-401-2C-101317-2-4	SA_78-2mm	EPA6010	3	mg/kg	Phosphorus	1648.61	
D-401-2C-101317-2-4	SA_78-2mm	EPA6010	3	mg/kg	Potassium	1400.96	
D-401-2C-101317-2-4	SA_78-2mm	EPA6010	3	mg/kg	Selenium	2.88	blk rl
D-401-2C-101317-2-4	SA_78-2mm	EPA6010	3	mg/kg	Silver	0.2	MDL



**Appendix B**

**SWEL – Soil Water Environmental Lab**

**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-2C-101317-2-4	SA_78-2mm	EPA6010	3	mg/kg	Sodium	230.94	
D-401-2C-101317-2-4	SA_78-2mm	EPA6010	3	mg/kg	Thallium	0.91	blk rl
D-401-2C-101317-2-4	SA_78-2mm	EPA6010	3	mg/kg	Vanadium	65.04	blk
D-401-2C-101317-2-4	SA_78-2mm	EPA6010	3	mg/kg	Zinc	367.30	
D-401-2A-101317-2-4	SA_79-2mm	EPA6010	3	mg/kg	Aluminum	17589.85	
D-401-2A-101317-2-4	SA_79-2mm	EPA6010	3	mg/kg	Antimony	7.62	
D-401-2A-101317-2-4	SA_79-2mm	EPA6010	3	mg/kg	Arsenic	19.13	
D-401-2A-101317-2-4	SA_79-2mm	EPA6010	3	mg/kg	Barium	176.55	
D-401-2A-101317-2-4	SA_79-2mm	EPA6010	3	mg/kg	Beryllium	0.58	crm rl
D-401-2A-101317-2-4	SA_79-2mm	EPA6010	3	mg/kg	Cadmium	9.69	
D-401-2A-101317-2-4	SA_79-2mm	EPA6010	3	mg/kg	Calcium	3010.12	
D-401-2A-101317-2-4	SA_79-2mm	EPA6010	3	mg/kg	Chromium	29.04	spk
D-401-2A-101317-2-4	SA_79-2mm	EPA6010	3	mg/kg	Cobalt	6.54	
D-401-2A-101317-2-4	SA_79-2mm	EPA6010	3	mg/kg	Copper	19.18	
D-401-2A-101317-2-4	SA_79-2mm	EPA6010	3	mg/kg	Iron	23068.80	
D-401-2A-101317-2-4	SA_79-2mm	EPA6010	3	mg/kg	Lead	71.53	
D-401-2A-101317-2-4	SA_79-2mm	EPA6010	3	mg/kg	Magnesium	2734.10	
D-401-2A-101317-2-4	SA_79-2mm	EPA6010	3	mg/kg	Manganese	691.87	
D-401-2A-101317-2-4	SA_79-2mm	EPA6010	3	mg/kg	Nickel	13.74	
D-401-2A-101317-2-4	SA_79-2mm	EPA6010	3	mg/kg	Phosphorus	1150.96	
D-401-2A-101317-2-4	SA_79-2mm	EPA6010	3	mg/kg	Potassium	1263.43	
D-401-2A-101317-2-4	SA_79-2mm	EPA6010	3	mg/kg	Selenium	2.34	blk rl
D-401-2A-101317-2-4	SA_79-2mm	EPA6010	3	mg/kg	Silver	0.2	MDL
D-401-2A-101317-2-4	SA_79-2mm	EPA6010	3	mg/kg	Sodium	226.53	
D-401-2A-101317-2-4	SA_79-2mm	EPA6010	3	mg/kg	Thallium	1.04	blk rl
D-401-2A-101317-2-4	SA_79-2mm	EPA6010	3	mg/kg	Vanadium	57.21	blk
D-401-2A-101317-2-4	SA_79-2mm	EPA6010	3	mg/kg	Zinc	754.26	
D-401-2B-101317-2-4	SA_80-2mm	EPA6010	3	mg/kg	Aluminum	11718.43	



**Appendix B**

**SWEL – Soil Water Environmental Lab**

**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-2B-101317-2-4	SA_80-2mm	EPA6010	3	mg/kg	Antimony	36.45	
D-401-2B-101317-2-4	SA_80-2mm	EPA6010	3	mg/kg	Arsenic	26.02	
D-401-2B-101317-2-4	SA_80-2mm	EPA6010	3	mg/kg	Barium	102.75	
D-401-2B-101317-2-4	SA_80-2mm	EPA6010	3	mg/kg	Beryllium	0.35	crm rl
D-401-2B-101317-2-4	SA_80-2mm	EPA6010	3	mg/kg	Cadmium	7.79	
D-401-2B-101317-2-4	SA_80-2mm	EPA6010	3	mg/kg	Calcium	3810.80	
D-401-2B-101317-2-4	SA_80-2mm	EPA6010	3	mg/kg	Chromium	28.00	spk
D-401-2B-101317-2-4	SA_80-2mm	EPA6010	3	mg/kg	Cobalt	4.61	
D-401-2B-101317-2-4	SA_80-2mm	EPA6010	3	mg/kg	Copper	35.02	
D-401-2B-101317-2-4	SA_80-2mm	EPA6010	3	mg/kg	Iron	21660.36	
D-401-2B-101317-2-4	SA_80-2mm	EPA6010	3	mg/kg	Lead	869.03	
D-401-2B-101317-2-4	SA_80-2mm	EPA6010	3	mg/kg	Magnesium	2633.07	
D-401-2B-101317-2-4	SA_80-2mm	EPA6010	3	mg/kg	Manganese	346.84	
D-401-2B-101317-2-4	SA_80-2mm	EPA6010	3	mg/kg	Nickel	10.47	
D-401-2B-101317-2-4	SA_80-2mm	EPA6010	3	mg/kg	Phosphorus	948.94	
D-401-2B-101317-2-4	SA_80-2mm	EPA6010	3	mg/kg	Potassium	1269.40	
D-401-2B-101317-2-4	SA_80-2mm	EPA6010	3	mg/kg	Selenium	2.99	blk rl
D-401-2B-101317-2-4	SA_80-2mm	EPA6010	3	mg/kg	Silver	0.2	MDL
D-401-2B-101317-2-4	SA_80-2mm	EPA6010	3	mg/kg	Sodium	195.61	
D-401-2B-101317-2-4	SA_80-2mm	EPA6010	3	mg/kg	Thallium	1.09	blk rl
D-401-2B-101317-2-4	SA_80-2mm	EPA6010	3	mg/kg	Vanadium	56.15	blk
D-401-2B-101317-2-4	SA_80-2mm	EPA6010	3	mg/kg	Zinc	554.82	
D-258-3C-101317-4-6	SA_81-2mm	EPA6010	3	mg/kg	Aluminum	11960.73	
D-258-3C-101317-4-6	SA_81-2mm	EPA6010	3	mg/kg	Antimony	5.54	
D-258-3C-101317-4-6	SA_81-2mm	EPA6010	3	mg/kg	Arsenic	13.10	
D-258-3C-101317-4-6	SA_81-2mm	EPA6010	3	mg/kg	Barium	102.57	
D-258-3C-101317-4-6	SA_81-2mm	EPA6010	3	mg/kg	Beryllium	0.38	crm rl
D-258-3C-101317-4-6	SA_81-2mm	EPA6010	3	mg/kg	Cadmium	3.12	



**Appendix B**

**SWEL – Soil Water Environmental Lab**

**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-258-3C-101317-4-6	SA_81-2mm	EPA6010	3	mg/kg	Calcium	4310.67	
D-258-3C-101317-4-6	SA_81-2mm	EPA6010	3	mg/kg	Chromium	16.90	spk
D-258-3C-101317-4-6	SA_81-2mm	EPA6010	3	mg/kg	Cobalt	4.07	
D-258-3C-101317-4-6	SA_81-2mm	EPA6010	3	mg/kg	Copper	15.87	
D-258-3C-101317-4-6	SA_81-2mm	EPA6010	3	mg/kg	Iron	12564.25	
D-258-3C-101317-4-6	SA_81-2mm	EPA6010	3	mg/kg	Lead	112.49	
D-258-3C-101317-4-6	SA_81-2mm	EPA6010	3	mg/kg	Magnesium	2392.36	
D-258-3C-101317-4-6	SA_81-2mm	EPA6010	3	mg/kg	Manganese	353.22	
D-258-3C-101317-4-6	SA_81-2mm	EPA6010	3	mg/kg	Nickel	8.34	
D-258-3C-101317-4-6	SA_81-2mm	EPA6010	3	mg/kg	Phosphorus	1493.78	
D-258-3C-101317-4-6	SA_81-2mm	EPA6010	3	mg/kg	Potassium	1208.53	
D-258-3C-101317-4-6	SA_81-2mm	EPA6010	3	mg/kg	Selenium	3.04	blk rl
D-258-3C-101317-4-6	SA_81-2mm	EPA6010	3	mg/kg	Silver	0.2	MDL
D-258-3C-101317-4-6	SA_81-2mm	EPA6010	3	mg/kg	Sodium	187.78	
D-258-3C-101317-4-6	SA_81-2mm	EPA6010	3	mg/kg	Thallium	0.42	blk rl
D-258-3C-101317-4-6	SA_81-2mm	EPA6010	3	mg/kg	Vanadium	36.57	blk
D-258-3C-101317-4-6	SA_81-2mm	EPA6010	3	mg/kg	Zinc	146.11	
D-258-3C-101317-2-4	SA_82-2mm	EPA6010	3	mg/kg	Aluminum	11160.18	
D-258-3C-101317-2-4	SA_82-2mm	EPA6010	3	mg/kg	Antimony	6.98	
D-258-3C-101317-2-4	SA_82-2mm	EPA6010	3	mg/kg	Arsenic	15.87	
D-258-3C-101317-2-4	SA_82-2mm	EPA6010	3	mg/kg	Barium	107.29	
D-258-3C-101317-2-4	SA_82-2mm	EPA6010	3	mg/kg	Beryllium	0.36	crm rl
D-258-3C-101317-2-4	SA_82-2mm	EPA6010	3	mg/kg	Cadmium	4.59	
D-258-3C-101317-2-4	SA_82-2mm	EPA6010	3	mg/kg	Calcium	3283.69	
D-258-3C-101317-2-4	SA_82-2mm	EPA6010	3	mg/kg	Chromium	18.39	spk
D-258-3C-101317-2-4	SA_82-2mm	EPA6010	3	mg/kg	Cobalt	4.05	
D-258-3C-101317-2-4	SA_82-2mm	EPA6010	3	mg/kg	Copper	17.94	
D-258-3C-101317-2-4	SA_82-2mm	EPA6010	3	mg/kg	Iron	12062.40	



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**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-258-3C-101317-2-4	SA_82-2mm	EPA6010	3	mg/kg	Lead	242.72	
D-258-3C-101317-2-4	SA_82-2mm	EPA6010	3	mg/kg	Magnesium	2354.49	
D-258-3C-101317-2-4	SA_82-2mm	EPA6010	3	mg/kg	Manganese	331.77	
D-258-3C-101317-2-4	SA_82-2mm	EPA6010	3	mg/kg	Nickel	8.21	
D-258-3C-101317-2-4	SA_82-2mm	EPA6010	3	mg/kg	Phosphorus	1161.43	
D-258-3C-101317-2-4	SA_82-2mm	EPA6010	3	mg/kg	Potassium	1082.72	
D-258-3C-101317-2-4	SA_82-2mm	EPA6010	3	mg/kg	Selenium	1.84	blk rl
D-258-3C-101317-2-4	SA_82-2mm	EPA6010	3	mg/kg	Silver	0.2	MDL
D-258-3C-101317-2-4	SA_82-2mm	EPA6010	3	mg/kg	Sodium	168.54	
D-258-3C-101317-2-4	SA_82-2mm	EPA6010	3	mg/kg	Thallium	0.38	blk rl
D-258-3C-101317-2-4	SA_82-2mm	EPA6010	3	mg/kg	Vanadium	28.76	blk
D-258-3C-101317-2-4	SA_82-2mm	EPA6010	3	mg/kg	Zinc	197.84	
D-258-3C-101317-0-2	SA_83-2mm	EPA6010	3	mg/kg	Aluminum	11055.09	
D-258-3C-101317-0-2	SA_83-2mm	EPA6010	3	mg/kg	Antimony	3.85	rl
D-258-3C-101317-0-2	SA_83-2mm	EPA6010	3	mg/kg	Arsenic	9.35	
D-258-3C-101317-0-2	SA_83-2mm	EPA6010	3	mg/kg	Barium	110.70	
D-258-3C-101317-0-2	SA_83-2mm	EPA6010	3	mg/kg	Beryllium	0.36	crm rl
D-258-3C-101317-0-2	SA_83-2mm	EPA6010	3	mg/kg	Cadmium	3.19	
D-258-3C-101317-0-2	SA_83-2mm	EPA6010	3	mg/kg	Calcium	4006.68	
D-258-3C-101317-0-2	SA_83-2mm	EPA6010	3	mg/kg	Chromium	16.66	spk
D-258-3C-101317-0-2	SA_83-2mm	EPA6010	3	mg/kg	Cobalt	4.08	
D-258-3C-101317-0-2	SA_83-2mm	EPA6010	3	mg/kg	Copper	14.38	
D-258-3C-101317-0-2	SA_83-2mm	EPA6010	3	mg/kg	Iron	13025.50	
D-258-3C-101317-0-2	SA_83-2mm	EPA6010	3	mg/kg	Lead	101.78	
D-258-3C-101317-0-2	SA_83-2mm	EPA6010	3	mg/kg	Magnesium	2515.36	
D-258-3C-101317-0-2	SA_83-2mm	EPA6010	3	mg/kg	Manganese	391.07	
D-258-3C-101317-0-2	SA_83-2mm	EPA6010	3	mg/kg	Nickel	9.75	
D-258-3C-101317-0-2	SA_83-2mm	EPA6010	3	mg/kg	Phosphorus	1145.59	





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**SWEL – Soil Water Environmental Lab**

**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-258-3C-101317-0-2	SA_83-2mm	EPA6010	3	mg/kg	Potassium	1071.04	
D-258-3C-101317-0-2	SA_83-2mm	EPA6010	3	mg/kg	Selenium	3.70	blk rl
D-258-3C-101317-0-2	SA_83-2mm	EPA6010	3	mg/kg	Silver	0.2	MDL
D-258-3C-101317-0-2	SA_83-2mm	EPA6010	3	mg/kg	Sodium	166.07	
D-258-3C-101317-0-2	SA_83-2mm	EPA6010	3	mg/kg	Thallium	0.51	blk rl
D-258-3C-101317-0-2	SA_83-2mm	EPA6010	3	mg/kg	Vanadium	28.49	blk
D-258-3C-101317-0-2	SA_83-2mm	EPA6010	3	mg/kg	Zinc	213.48	
D-401-2C-101317-0-2	SA_84-2mm	EPA6010	3	mg/kg	Aluminum	16062.79	
D-401-2C-101317-0-2	SA_84-2mm	EPA6010	3	mg/kg	Antimony	37.05	
D-401-2C-101317-0-2	SA_84-2mm	EPA6010	3	mg/kg	Arsenic	62.63	
D-401-2C-101317-0-2	SA_84-2mm	EPA6010	3	mg/kg	Barium	93.72	
D-401-2C-101317-0-2	SA_84-2mm	EPA6010	3	mg/kg	Beryllium	0.50	crm rl
D-401-2C-101317-0-2	SA_84-2mm	EPA6010	3	mg/kg	Cadmium	6.84	
D-401-2C-101317-0-2	SA_84-2mm	EPA6010	3	mg/kg	Calcium	3144.57	
D-401-2C-101317-0-2	SA_84-2mm	EPA6010	3	mg/kg	Chromium	28.46	spk
D-401-2C-101317-0-2	SA_84-2mm	EPA6010	3	mg/kg	Cobalt	6.21	
D-401-2C-101317-0-2	SA_84-2mm	EPA6010	3	mg/kg	Copper	38.32	
D-401-2C-101317-0-2	SA_84-2mm	EPA6010	3	mg/kg	Iron	24387.30	
D-401-2C-101317-0-2	SA_84-2mm	EPA6010	3	mg/kg	Lead	996.12	
D-401-2C-101317-0-2	SA_84-2mm	EPA6010	3	mg/kg	Magnesium	2832.23	
D-401-2C-101317-0-2	SA_84-2mm	EPA6010	3	mg/kg	Manganese	529.15	
D-401-2C-101317-0-2	SA_84-2mm	EPA6010	3	mg/kg	Nickel	12.99	
D-401-2C-101317-0-2	SA_84-2mm	EPA6010	3	mg/kg	Phosphorus	1765.53	
D-401-2C-101317-0-2	SA_84-2mm	EPA6010	3	mg/kg	Potassium	1218.55	
D-401-2C-101317-0-2	SA_84-2mm	EPA6010	3	mg/kg	Selenium	3.56	blk rl
D-401-2C-101317-0-2	SA_84-2mm	EPA6010	3	mg/kg	Silver	0.2	MDL
D-401-2C-101317-0-2	SA_84-2mm	EPA6010	3	mg/kg	Sodium	208.68	
D-401-2C-101317-0-2	SA_84-2mm	EPA6010	3	mg/kg	Thallium	0.62	blk rl



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**SWEL – Soil Water Environmental Lab**

**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-2C-101317-0-2	SA_84-2mm	EPA6010	3	mg/kg	Vanadium	60.89	blk
D-401-2C-101317-0-2	SA_84-2mm	EPA6010	3	mg/kg	Zinc	289.30	
D-401-2A-101317-0-2	SA_85-2mm	EPA6010	3	mg/kg	Aluminum	17521.46	
D-401-2A-101317-0-2	SA_85-2mm	EPA6010	3	mg/kg	Antimony	26.89	
D-401-2A-101317-0-2	SA_85-2mm	EPA6010	3	mg/kg	Arsenic	75.70	
D-401-2A-101317-0-2	SA_85-2mm	EPA6010	3	mg/kg	Barium	164.01	
D-401-2A-101317-0-2	SA_85-2mm	EPA6010	3	mg/kg	Beryllium	0.61	crm rl
D-401-2A-101317-0-2	SA_85-2mm	EPA6010	3	mg/kg	Cadmium	23.43	
D-401-2A-101317-0-2	SA_85-2mm	EPA6010	3	mg/kg	Calcium	3065.70	
D-401-2A-101317-0-2	SA_85-2mm	EPA6010	3	mg/kg	Chromium	23.33	spk
D-401-2A-101317-0-2	SA_85-2mm	EPA6010	3	mg/kg	Cobalt	7.96	
D-401-2A-101317-0-2	SA_85-2mm	EPA6010	3	mg/kg	Copper	48.46	
D-401-2A-101317-0-2	SA_85-2mm	EPA6010	3	mg/kg	Iron	20853.49	
D-401-2A-101317-0-2	SA_85-2mm	EPA6010	3	mg/kg	Lead	384.23	
D-401-2A-101317-0-2	SA_85-2mm	EPA6010	3	mg/kg	Magnesium	2548.96	
D-401-2A-101317-0-2	SA_85-2mm	EPA6010	3	mg/kg	Manganese	998.05	
D-401-2A-101317-0-2	SA_85-2mm	EPA6010	3	mg/kg	Nickel	12.75	
D-401-2A-101317-0-2	SA_85-2mm	EPA6010	3	mg/kg	Phosphorus	1619.57	
D-401-2A-101317-0-2	SA_85-2mm	EPA6010	3	mg/kg	Potassium	1416.39	
D-401-2A-101317-0-2	SA_85-2mm	EPA6010	3	mg/kg	Selenium	3.85	blk rl
D-401-2A-101317-0-2	SA_85-2mm	EPA6010	3	mg/kg	Silver	0.2	MDL
D-401-2A-101317-0-2	SA_85-2mm	EPA6010	3	mg/kg	Sodium	232.37	
D-401-2A-101317-0-2	SA_85-2mm	EPA6010	3	mg/kg	Thallium	1.12	blk rl
D-401-2A-101317-0-2	SA_85-2mm	EPA6010	3	mg/kg	Vanadium	50.56	blk
D-401-2A-101317-0-2	SA_85-2mm	EPA6010	3	mg/kg	Zinc	460.53	
D-258-3B-101317-2-4	SA_86-2mm	EPA6010	3	mg/kg	Aluminum	14324.80	
D-258-3B-101317-2-4	SA_86-2mm	EPA6010	3	mg/kg	Antimony	5.22	
D-258-3B-101317-2-4	SA_86-2mm	EPA6010	3	mg/kg	Arsenic	11.57	



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**SWEL – Soil Water Environmental Lab**

**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-258-3B-101317-2-4	SA_86-2mm	EPA6010	3	mg/kg	Barium	146.37	
D-258-3B-101317-2-4	SA_86-2mm	EPA6010	3	mg/kg	Beryllium	0.43	crm rl
D-258-3B-101317-2-4	SA_86-2mm	EPA6010	3	mg/kg	Cadmium	2.83	
D-258-3B-101317-2-4	SA_86-2mm	EPA6010	3	mg/kg	Calcium	3819.82	
D-258-3B-101317-2-4	SA_86-2mm	EPA6010	3	mg/kg	Chromium	13.41	spk
D-258-3B-101317-2-4	SA_86-2mm	EPA6010	3	mg/kg	Cobalt	4.16	
D-258-3B-101317-2-4	SA_86-2mm	EPA6010	3	mg/kg	Copper	13.61	
D-258-3B-101317-2-4	SA_86-2mm	EPA6010	3	mg/kg	Iron	12326.21	
D-258-3B-101317-2-4	SA_86-2mm	EPA6010	3	mg/kg	Lead	30.75	
D-258-3B-101317-2-4	SA_86-2mm	EPA6010	3	mg/kg	Magnesium	2454.43	
D-258-3B-101317-2-4	SA_86-2mm	EPA6010	3	mg/kg	Manganese	452.72	
D-258-3B-101317-2-4	SA_86-2mm	EPA6010	3	mg/kg	Nickel	9.03	
D-258-3B-101317-2-4	SA_86-2mm	EPA6010	3	mg/kg	Phosphorus	1181.65	
D-258-3B-101317-2-4	SA_86-2mm	EPA6010	3	mg/kg	Potassium	1117.54	
D-258-3B-101317-2-4	SA_86-2mm	EPA6010	3	mg/kg	Selenium	2.73	blk rl
D-258-3B-101317-2-4	SA_86-2mm	EPA6010	3	mg/kg	Silver	0.2	MDL
D-258-3B-101317-2-4	SA_86-2mm	EPA6010	3	mg/kg	Sodium	236.45	
D-258-3B-101317-2-4	SA_86-2mm	EPA6010	3	mg/kg	Thallium	0.57	blk rl
D-258-3B-101317-2-4	SA_86-2mm	EPA6010	3	mg/kg	Vanadium	28.88	blk
D-258-3B-101317-2-4	SA_86-2mm	EPA6010	3	mg/kg	Zinc	598.05	
D-258-3B-101317-0-2	SA_87-2mm	EPA6010	3	mg/kg	Aluminum	13852.65	
D-258-3B-101317-0-2	SA_87-2mm	EPA6010	3	mg/kg	Antimony	9.10	
D-258-3B-101317-0-2	SA_87-2mm	EPA6010	3	mg/kg	Arsenic	35.81	
D-258-3B-101317-0-2	SA_87-2mm	EPA6010	3	mg/kg	Barium	131.93	
D-258-3B-101317-0-2	SA_87-2mm	EPA6010	3	mg/kg	Beryllium	0.43	crm rl
D-258-3B-101317-0-2	SA_87-2mm	EPA6010	3	mg/kg	Cadmium	12.44	
D-258-3B-101317-0-2	SA_87-2mm	EPA6010	3	mg/kg	Calcium	3315.02	
D-258-3B-101317-0-2	SA_87-2mm	EPA6010	3	mg/kg	Chromium	12.35	spk



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**SWEL – Soil Water Environmental Lab**

**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-258-3B-101317-0-2	SA_87-2mm	EPA6010	3	mg/kg	Cobalt	4.83	
D-258-3B-101317-0-2	SA_87-2mm	EPA6010	3	mg/kg	Copper	25.01	
D-258-3B-101317-0-2	SA_87-2mm	EPA6010	3	mg/kg	Iron	11909.08	
D-258-3B-101317-0-2	SA_87-2mm	EPA6010	3	mg/kg	Lead	215.79	
D-258-3B-101317-0-2	SA_87-2mm	EPA6010	3	mg/kg	Magnesium	2421.44	
D-258-3B-101317-0-2	SA_87-2mm	EPA6010	3	mg/kg	Manganese	562.25	
D-258-3B-101317-0-2	SA_87-2mm	EPA6010	3	mg/kg	Nickel	9.65	
D-258-3B-101317-0-2	SA_87-2mm	EPA6010	3	mg/kg	Phosphorus	1347.39	
D-258-3B-101317-0-2	SA_87-2mm	EPA6010	3	mg/kg	Potassium	1136.51	
D-258-3B-101317-0-2	SA_87-2mm	EPA6010	3	mg/kg	Selenium	2.33	blk rl
D-258-3B-101317-0-2	SA_87-2mm	EPA6010	3	mg/kg	Silver	0.2	MDL
D-258-3B-101317-0-2	SA_87-2mm	EPA6010	3	mg/kg	Sodium	208.10	
D-258-3B-101317-0-2	SA_87-2mm	EPA6010	3	mg/kg	Thallium	0.48	blk rl
D-258-3B-101317-0-2	SA_87-2mm	EPA6010	3	mg/kg	Vanadium	26.71	blk
D-258-3B-101317-0-2	SA_87-2mm	EPA6010	3	mg/kg	Zinc	455.58	
D-258-3C-101317-10-12	SA_88-2mm	EPA6010	3	mg/kg	Aluminum	14514.74	
D-258-3C-101317-10-12	SA_88-2mm	EPA6010	3	mg/kg	Antimony	2.05	rl
D-258-3C-101317-10-12	SA_88-2mm	EPA6010	3	mg/kg	Arsenic	3.01	
D-258-3C-101317-10-12	SA_88-2mm	EPA6010	3	mg/kg	Barium	81.42	
D-258-3C-101317-10-12	SA_88-2mm	EPA6010	3	mg/kg	Beryllium	0.47	crm rl
D-258-3C-101317-10-12	SA_88-2mm	EPA6010	3	mg/kg	Cadmium	0.33	rl
D-258-3C-101317-10-12	SA_88-2mm	EPA6010	3	mg/kg	Calcium	2867.86	
D-258-3C-101317-10-12	SA_88-2mm	EPA6010	3	mg/kg	Chromium	16.59	spk
D-258-3C-101317-10-12	SA_88-2mm	EPA6010	3	mg/kg	Cobalt	4.46	
D-258-3C-101317-10-12	SA_88-2mm	EPA6010	3	mg/kg	Copper	10.29	
D-258-3C-101317-10-12	SA_88-2mm	EPA6010	3	mg/kg	Iron	13842.16	
D-258-3C-101317-10-12	SA_88-2mm	EPA6010	3	mg/kg	Lead	4.71	
D-258-3C-101317-10-12	SA_88-2mm	EPA6010	3	mg/kg	Magnesium	2383.40	



**Appendix B**

**SWEL – Soil Water Environmental Lab**

**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-258-3C-101317-10-12	SA_88-2mm	EPA6010	3	mg/kg	Manganese	295.35	
D-258-3C-101317-10-12	SA_88-2mm	EPA6010	3	mg/kg	Nickel	9.03	
D-258-3C-101317-10-12	SA_88-2mm	EPA6010	3	mg/kg	Phosphorus	834.71	
D-258-3C-101317-10-12	SA_88-2mm	EPA6010	3	mg/kg	Potassium	1114.22	
D-258-3C-101317-10-12	SA_88-2mm	EPA6010	3	mg/kg	Selenium	2.09	blk rl
D-258-3C-101317-10-12	SA_88-2mm	EPA6010	3	mg/kg	Silver	0.2	MDL
D-258-3C-101317-10-12	SA_88-2mm	EPA6010	3	mg/kg	Sodium	235.83	
D-258-3C-101317-10-12	SA_88-2mm	EPA6010	3	mg/kg	Thallium	0.36	blk rl
D-258-3C-101317-10-12	SA_88-2mm	EPA6010	3	mg/kg	Vanadium	34.78	blk
D-258-3C-101317-10-12	SA_88-2mm	EPA6010	3	mg/kg	Zinc	35.33	
D-258-3C-101317-8-10	SA_89-2mm	EPA6010	3	mg/kg	Aluminum	14241.91	
D-258-3C-101317-8-10	SA_89-2mm	EPA6010	3	mg/kg	Antimony	1.97	rl
D-258-3C-101317-8-10	SA_89-2mm	EPA6010	3	mg/kg	Arsenic	2.89	
D-258-3C-101317-8-10	SA_89-2mm	EPA6010	3	mg/kg	Barium	86.05	
D-258-3C-101317-8-10	SA_89-2mm	EPA6010	3	mg/kg	Beryllium	0.43	crm rl
D-258-3C-101317-8-10	SA_89-2mm	EPA6010	3	mg/kg	Cadmium	0.40	rl
D-258-3C-101317-8-10	SA_89-2mm	EPA6010	3	mg/kg	Calcium	2753.04	
D-258-3C-101317-8-10	SA_89-2mm	EPA6010	3	mg/kg	Chromium	15.18	spk
D-258-3C-101317-8-10	SA_89-2mm	EPA6010	3	mg/kg	Cobalt	4.71	
D-258-3C-101317-8-10	SA_89-2mm	EPA6010	3	mg/kg	Copper	10.08	
D-258-3C-101317-8-10	SA_89-2mm	EPA6010	3	mg/kg	Iron	13826.87	
D-258-3C-101317-8-10	SA_89-2mm	EPA6010	3	mg/kg	Lead	6.77	
D-258-3C-101317-8-10	SA_89-2mm	EPA6010	3	mg/kg	Magnesium	2604.09	
D-258-3C-101317-8-10	SA_89-2mm	EPA6010	3	mg/kg	Manganese	307.19	
D-258-3C-101317-8-10	SA_89-2mm	EPA6010	3	mg/kg	Nickel	9.83	
D-258-3C-101317-8-10	SA_89-2mm	EPA6010	3	mg/kg	Phosphorus	914.47	
D-258-3C-101317-8-10	SA_89-2mm	EPA6010	3	mg/kg	Potassium	1031.40	
D-258-3C-101317-8-10	SA_89-2mm	EPA6010	3	mg/kg	Selenium	2.43	blk rl



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**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-258-3C-101317-8-10	SA_89-2mm	EPA6010	3	mg/kg	Silver	0.2	MDL
D-258-3C-101317-8-10	SA_89-2mm	EPA6010	3	mg/kg	Sodium	212.88	
D-258-3C-101317-8-10	SA_89-2mm	EPA6010	3	mg/kg	Thallium	0.54	blk rl
D-258-3C-101317-8-10	SA_89-2mm	EPA6010	3	mg/kg	Vanadium	31.67	blk
D-258-3C-101317-8-10	SA_89-2mm	EPA6010	3	mg/kg	Zinc	58.24	
D-258-3C-101317-6-8	SA_90-2mm	EPA6010	3	mg/kg	Aluminum	11924.25	
D-258-3C-101317-6-8	SA_90-2mm	EPA6010	3	mg/kg	Antimony	2.63	rl
D-258-3C-101317-6-8	SA_90-2mm	EPA6010	3	mg/kg	Arsenic	3.63	
D-258-3C-101317-6-8	SA_90-2mm	EPA6010	3	mg/kg	Barium	80.90	
D-258-3C-101317-6-8	SA_90-2mm	EPA6010	3	mg/kg	Beryllium	0.40	crm rl
D-258-3C-101317-6-8	SA_90-2mm	EPA6010	3	mg/kg	Cadmium	0.62	rl
D-258-3C-101317-6-8	SA_90-2mm	EPA6010	3	mg/kg	Calcium	2595.08	
D-258-3C-101317-6-8	SA_90-2mm	EPA6010	3	mg/kg	Chromium	13.86	spk
D-258-3C-101317-6-8	SA_90-2mm	EPA6010	3	mg/kg	Cobalt	4.23	
D-258-3C-101317-6-8	SA_90-2mm	EPA6010	3	mg/kg	Copper	9.97	
D-258-3C-101317-6-8	SA_90-2mm	EPA6010	3	mg/kg	Iron	13067.26	
D-258-3C-101317-6-8	SA_90-2mm	EPA6010	3	mg/kg	Lead	9.32	
D-258-3C-101317-6-8	SA_90-2mm	EPA6010	3	mg/kg	Magnesium	2298.76	
D-258-3C-101317-6-8	SA_90-2mm	EPA6010	3	mg/kg	Manganese	304.21	
D-258-3C-101317-6-8	SA_90-2mm	EPA6010	3	mg/kg	Nickel	8.47	
D-258-3C-101317-6-8	SA_90-2mm	EPA6010	3	mg/kg	Phosphorus	909.10	
D-258-3C-101317-6-8	SA_90-2mm	EPA6010	3	mg/kg	Potassium	1002.74	
D-258-3C-101317-6-8	SA_90-2mm	EPA6010	3	mg/kg	Selenium	3.13	blk rl
D-258-3C-101317-6-8	SA_90-2mm	EPA6010	3	mg/kg	Silver	0.2	MDL
D-258-3C-101317-6-8	SA_90-2mm	EPA6010	3	mg/kg	Sodium	175.33	
D-258-3C-101317-6-8	SA_90-2mm	EPA6010	3	mg/kg	Thallium	0.77	blk rl
D-258-3C-101317-6-8	SA_90-2mm	EPA6010	3	mg/kg	Vanadium	30.61	blk
D-258-3C-101317-6-8	SA_90-2mm	EPA6010	3	mg/kg	Zinc	98.97	



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**SWEL – Soil Water Environmental Lab**

**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-441-1D-101317-4-6	SA_91-2mm	EPA6010	3	mg/kg	Aluminum	25157.47	
D-441-1D-101317-4-6	SA_91-2mm	EPA6010	3	mg/kg	Antimony	6.89	
D-441-1D-101317-4-6	SA_91-2mm	EPA6010	3	mg/kg	Arsenic	7.37	
D-441-1D-101317-4-6	SA_91-2mm	EPA6010	3	mg/kg	Barium	254.65	
D-441-1D-101317-4-6	SA_91-2mm	EPA6010	3	mg/kg	Beryllium	0.76	crm rl
D-441-1D-101317-4-6	SA_91-2mm	EPA6010	3	mg/kg	Cadmium	0.99	rl
D-441-1D-101317-4-6	SA_91-2mm	EPA6010	3	mg/kg	Calcium	6556.09	
D-441-1D-101317-4-6	SA_91-2mm	EPA6010	3	mg/kg	Chromium	33.94	spk
D-441-1D-101317-4-6	SA_91-2mm	EPA6010	3	mg/kg	Cobalt	9.51	
D-441-1D-101317-4-6	SA_91-2mm	EPA6010	3	mg/kg	Copper	27.97	
D-441-1D-101317-4-6	SA_91-2mm	EPA6010	3	mg/kg	Iron	20667.50	
D-441-1D-101317-4-6	SA_91-2mm	EPA6010	3	mg/kg	Lead	19.21	
D-441-1D-101317-4-6	SA_91-2mm	EPA6010	3	mg/kg	Magnesium	4645.15	
D-441-1D-101317-4-6	SA_91-2mm	EPA6010	3	mg/kg	Manganese	755.51	
D-441-1D-101317-4-6	SA_91-2mm	EPA6010	3	mg/kg	Nickel	21.54	
D-441-1D-101317-4-6	SA_91-2mm	EPA6010	3	mg/kg	Phosphorus	1920.95	
D-441-1D-101317-4-6	SA_91-2mm	EPA6010	3	mg/kg	Potassium	2407.85	
D-441-1D-101317-4-6	SA_91-2mm	EPA6010	3	mg/kg	Selenium	4.10	blk rl
D-441-1D-101317-4-6	SA_91-2mm	EPA6010	3	mg/kg	Silver	0.2	MDL
D-441-1D-101317-4-6	SA_91-2mm	EPA6010	3	mg/kg	Sodium	459.62	
D-441-1D-101317-4-6	SA_91-2mm	EPA6010	3	mg/kg	Thallium	0.72	blk rl
D-441-1D-101317-4-6	SA_91-2mm	EPA6010	3	mg/kg	Vanadium	49.80	blk
D-441-1D-101317-4-6	SA_91-2mm	EPA6010	3	mg/kg	Zinc	92.62	
D-441-1D-101317-6-8	SA_92-2mm	EPA6010	3	mg/kg	Aluminum	22743.51	
D-441-1D-101317-6-8	SA_92-2mm	EPA6010	3	mg/kg	Antimony	3.69	rl
D-441-1D-101317-6-8	SA_92-2mm	EPA6010	3	mg/kg	Arsenic	5.82	
D-441-1D-101317-6-8	SA_92-2mm	EPA6010	3	mg/kg	Barium	233.16	
D-441-1D-101317-6-8	SA_92-2mm	EPA6010	3	mg/kg	Beryllium	0.71	crm rl



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**SWEL – Soil Water Environmental Lab**

**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-441-1D-101317-6-8	SA_92-2mm	EPA6010	3	mg/kg	Cadmium	0.58	rl
D-441-1D-101317-6-8	SA_92-2mm	EPA6010	3	mg/kg	Calcium	5376.60	
D-441-1D-101317-6-8	SA_92-2mm	EPA6010	3	mg/kg	Chromium	30.96	spk
D-441-1D-101317-6-8	SA_92-2mm	EPA6010	3	mg/kg	Cobalt	8.53	
D-441-1D-101317-6-8	SA_92-2mm	EPA6010	3	mg/kg	Copper	22.18	
D-441-1D-101317-6-8	SA_92-2mm	EPA6010	3	mg/kg	Iron	19151.60	
D-441-1D-101317-6-8	SA_92-2mm	EPA6010	3	mg/kg	Lead	9.85	
D-441-1D-101317-6-8	SA_92-2mm	EPA6010	3	mg/kg	Magnesium	4501.03	
D-441-1D-101317-6-8	SA_92-2mm	EPA6010	3	mg/kg	Manganese	674.07	
D-441-1D-101317-6-8	SA_92-2mm	EPA6010	3	mg/kg	Nickel	20.04	
D-441-1D-101317-6-8	SA_92-2mm	EPA6010	3	mg/kg	Phosphorus	1625.59	
D-441-1D-101317-6-8	SA_92-2mm	EPA6010	3	mg/kg	Potassium	2077.59	
D-441-1D-101317-6-8	SA_92-2mm	EPA6010	3	mg/kg	Selenium	3.10	blk rl
D-441-1D-101317-6-8	SA_92-2mm	EPA6010	3	mg/kg	Silver	0.2	MDL
D-441-1D-101317-6-8	SA_92-2mm	EPA6010	3	mg/kg	Sodium	388.36	
D-441-1D-101317-6-8	SA_92-2mm	EPA6010	3	mg/kg	Thallium	1.09	blk rl
D-441-1D-101317-6-8	SA_92-2mm	EPA6010	3	mg/kg	Vanadium	46.02	blk
D-441-1D-101317-6-8	SA_92-2mm	EPA6010	3	mg/kg	Zinc	70.59	
D-441-1D-101317-8-10	SA_93-2mm	EPA6010	3	mg/kg	Aluminum	25470.09	
D-441-1D-101317-8-10	SA_93-2mm	EPA6010	3	mg/kg	Antimony	1.89	rl
D-441-1D-101317-8-10	SA_93-2mm	EPA6010	3	mg/kg	Arsenic	6.23	
D-441-1D-101317-8-10	SA_93-2mm	EPA6010	3	mg/kg	Barium	247.24	
D-441-1D-101317-8-10	SA_93-2mm	EPA6010	3	mg/kg	Beryllium	0.78	crm rl
D-441-1D-101317-8-10	SA_93-2mm	EPA6010	3	mg/kg	Cadmium	0.57	rl
D-441-1D-101317-8-10	SA_93-2mm	EPA6010	3	mg/kg	Calcium	5845.24	
D-441-1D-101317-8-10	SA_93-2mm	EPA6010	3	mg/kg	Chromium	26.44	spk
D-441-1D-101317-8-10	SA_93-2mm	EPA6010	3	mg/kg	Cobalt	8.90	
D-441-1D-101317-8-10	SA_93-2mm	EPA6010	3	mg/kg	Copper	24.55	





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**SWEL – Soil Water Environmental Lab**

**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-441-1D-101317-8-10	SA_93-2mm	EPA6010	3	mg/kg	Iron	19414.58	
D-441-1D-101317-8-10	SA_93-2mm	EPA6010	3	mg/kg	Lead	9.46	
D-441-1D-101317-8-10	SA_93-2mm	EPA6010	3	mg/kg	Magnesium	4206.37	
D-441-1D-101317-8-10	SA_93-2mm	EPA6010	3	mg/kg	Manganese	683.26	
D-441-1D-101317-8-10	SA_93-2mm	EPA6010	3	mg/kg	Nickel	20.37	
D-441-1D-101317-8-10	SA_93-2mm	EPA6010	3	mg/kg	Phosphorus	1728.45	
D-441-1D-101317-8-10	SA_93-2mm	EPA6010	3	mg/kg	Potassium	2177.20	
D-441-1D-101317-8-10	SA_93-2mm	EPA6010	3	mg/kg	Selenium	1.56	blk rl
D-441-1D-101317-8-10	SA_93-2mm	EPA6010	3	mg/kg	Silver	0.2	MDL
D-441-1D-101317-8-10	SA_93-2mm	EPA6010	3	mg/kg	Sodium	479.99	
D-441-1D-101317-8-10	SA_93-2mm	EPA6010	3	mg/kg	Thallium	0.98	blk rl
D-441-1D-101317-8-10	SA_93-2mm	EPA6010	3	mg/kg	Vanadium	47.69	blk
D-441-1D-101317-8-10	SA_93-2mm	EPA6010	3	mg/kg	Zinc	72.26	
D-441-1D-101317-10-12	SA_94-2mm	EPA6010	3	mg/kg	Aluminum	24940.61	
D-441-1D-101317-10-12	SA_94-2mm	EPA6010	3	mg/kg	Antimony	2.46	rl
D-441-1D-101317-10-12	SA_94-2mm	EPA6010	3	mg/kg	Arsenic	5.90	
D-441-1D-101317-10-12	SA_94-2mm	EPA6010	3	mg/kg	Barium	223.85	
D-441-1D-101317-10-12	SA_94-2mm	EPA6010	3	mg/kg	Beryllium	0.75	crm rl
D-441-1D-101317-10-12	SA_94-2mm	EPA6010	3	mg/kg	Cadmium	0.49	rl
D-441-1D-101317-10-12	SA_94-2mm	EPA6010	3	mg/kg	Calcium	5307.39	
D-441-1D-101317-10-12	SA_94-2mm	EPA6010	3	mg/kg	Chromium	28.11	spk
D-441-1D-101317-10-12	SA_94-2mm	EPA6010	3	mg/kg	Cobalt	8.35	
D-441-1D-101317-10-12	SA_94-2mm	EPA6010	3	mg/kg	Copper	23.82	
D-441-1D-101317-10-12	SA_94-2mm	EPA6010	3	mg/kg	Iron	20676.88	
D-441-1D-101317-10-12	SA_94-2mm	EPA6010	3	mg/kg	Lead	8.78	
D-441-1D-101317-10-12	SA_94-2mm	EPA6010	3	mg/kg	Magnesium	4809.85	
D-441-1D-101317-10-12	SA_94-2mm	EPA6010	3	mg/kg	Manganese	594.65	
D-441-1D-101317-10-12	SA_94-2mm	EPA6010	3	mg/kg	Nickel	22.23	



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**SWEL – Soil Water Environmental Lab**

**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-441-1D-101317-10-12	SA_94-2mm	EPA6010	3	mg/kg	Phosphorus	1563.53	
D-441-1D-101317-10-12	SA_94-2mm	EPA6010	3	mg/kg	Potassium	2300.22	
D-441-1D-101317-10-12	SA_94-2mm	EPA6010	3	mg/kg	Selenium	3.47	blk rl
D-441-1D-101317-10-12	SA_94-2mm	EPA6010	3	mg/kg	Silver	0.2	MDL
D-441-1D-101317-10-12	SA_94-2mm	EPA6010	3	mg/kg	Sodium	433.81	
D-441-1D-101317-10-12	SA_94-2mm	EPA6010	3	mg/kg	Thallium	0.74	blk rl
D-441-1D-101317-10-12	SA_94-2mm	EPA6010	3	mg/kg	Vanadium	48.76	blk
D-441-1D-101317-10-12	SA_94-2mm	EPA6010	3	mg/kg	Zinc	69.82	
D-441-1A-101317-0-2	SA_95-2mm	EPA6010	3	mg/kg	Aluminum	17351.37	
D-441-1A-101317-0-2	SA_95-2mm	EPA6010	3	mg/kg	Antimony	15.60	
D-441-1A-101317-0-2	SA_95-2mm	EPA6010	3	mg/kg	Arsenic	22.52	
D-441-1A-101317-0-2	SA_95-2mm	EPA6010	3	mg/kg	Barium	368.71	
D-441-1A-101317-0-2	SA_95-2mm	EPA6010	3	mg/kg	Beryllium	0.59	crm rl
D-441-1A-101317-0-2	SA_95-2mm	EPA6010	3	mg/kg	Cadmium	27.02	
D-441-1A-101317-0-2	SA_95-2mm	EPA6010	3	mg/kg	Calcium	16524.95	
D-441-1A-101317-0-2	SA_95-2mm	EPA6010	3	mg/kg	Chromium	29.18	spk
D-441-1A-101317-0-2	SA_95-2mm	EPA6010	3	mg/kg	Cobalt	8.81	
D-441-1A-101317-0-2	SA_95-2mm	EPA6010	3	mg/kg	Copper	85.68	
D-441-1A-101317-0-2	SA_95-2mm	EPA6010	3	mg/kg	Iron	18440.87	
D-441-1A-101317-0-2	SA_95-2mm	EPA6010	3	mg/kg	Lead	1023.32	
D-441-1A-101317-0-2	SA_95-2mm	EPA6010	3	mg/kg	Magnesium	4673.80	
D-441-1A-101317-0-2	SA_95-2mm	EPA6010	3	mg/kg	Manganese	1568.39	
D-441-1A-101317-0-2	SA_95-2mm	EPA6010	3	mg/kg	Nickel	19.13	
D-441-1A-101317-0-2	SA_95-2mm	EPA6010	3	mg/kg	Phosphorus	2605.36	
D-441-1A-101317-0-2	SA_95-2mm	EPA6010	3	mg/kg	Potassium	3419.14	
D-441-1A-101317-0-2	SA_95-2mm	EPA6010	3	mg/kg	Selenium	4.17	blk rl
D-441-1A-101317-0-2	SA_95-2mm	EPA6010	3	mg/kg	Silver	0.2	MDL
D-441-1A-101317-0-2	SA_95-2mm	EPA6010	3	mg/kg	Sodium	224.89	



**Appendix B**

**SWEL – Soil Water Environmental Lab**

**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-441-1A-101317-0-2	SA_95-2mm	EPA6010	3	mg/kg	Thallium	1.37	blk rl
D-441-1A-101317-0-2	SA_95-2mm	EPA6010	3	mg/kg	Vanadium	44.48	blk
D-441-1A-101317-0-2	SA_95-2mm	EPA6010	3	mg/kg	Zinc	978.37	
D-441-1A-101317-2-4	SA_96-2mm	EPA6010	3	mg/kg	Aluminum	22239.65	
D-441-1A-101317-2-4	SA_96-2mm	EPA6010	3	mg/kg	Antimony	7.07	
D-441-1A-101317-2-4	SA_96-2mm	EPA6010	3	mg/kg	Arsenic	19.80	
D-441-1A-101317-2-4	SA_96-2mm	EPA6010	3	mg/kg	Barium	282.28	
D-441-1A-101317-2-4	SA_96-2mm	EPA6010	3	mg/kg	Beryllium	0.78	crm rl
D-441-1A-101317-2-4	SA_96-2mm	EPA6010	3	mg/kg	Cadmium	4.46	
D-441-1A-101317-2-4	SA_96-2mm	EPA6010	3	mg/kg	Calcium	10305.34	
D-441-1A-101317-2-4	SA_96-2mm	EPA6010	3	mg/kg	Chromium	46.25	spk
D-441-1A-101317-2-4	SA_96-2mm	EPA6010	3	mg/kg	Cobalt	11.02	
D-441-1A-101317-2-4	SA_96-2mm	EPA6010	3	mg/kg	Copper	46.96	
D-441-1A-101317-2-4	SA_96-2mm	EPA6010	3	mg/kg	Iron	23409.42	
D-441-1A-101317-2-4	SA_96-2mm	EPA6010	3	mg/kg	Lead	104.99	
D-441-1A-101317-2-4	SA_96-2mm	EPA6010	3	mg/kg	Magnesium	8032.18	
D-441-1A-101317-2-4	SA_96-2mm	EPA6010	3	mg/kg	Manganese	1255.74	
D-441-1A-101317-2-4	SA_96-2mm	EPA6010	3	mg/kg	Nickel	26.92	
D-441-1A-101317-2-4	SA_96-2mm	EPA6010	3	mg/kg	Phosphorus	3093.37	
D-441-1A-101317-2-4	SA_96-2mm	EPA6010	3	mg/kg	Potassium	3430.52	
D-441-1A-101317-2-4	SA_96-2mm	EPA6010	3	mg/kg	Selenium	3.25	blk rl
D-441-1A-101317-2-4	SA_96-2mm	EPA6010	3	mg/kg	Silver	0.2	MDL
D-441-1A-101317-2-4	SA_96-2mm	EPA6010	3	mg/kg	Sodium	270.96	
D-441-1A-101317-2-4	SA_96-2mm	EPA6010	3	mg/kg	Thallium	0.61	blk rl
D-441-1A-101317-2-4	SA_96-2mm	EPA6010	3	mg/kg	Vanadium	55.45	blk
D-441-1A-101317-2-4	SA_96-2mm	EPA6010	3	mg/kg	Zinc	363.68	
D-441-1A-101317-4-6	SA_97-2mm	EPA6010	3	mg/kg	Aluminum	23487.74	
D-441-1A-101317-4-6	SA_97-2mm	EPA6010	3	mg/kg	Antimony	5.77	



**Appendix B**

**SWEL – Soil Water Environmental Lab**

**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-441-1A-101317-4-6	SA_97-2mm	EPA6010	3	mg/kg	Arsenic	16.73	
D-441-1A-101317-4-6	SA_97-2mm	EPA6010	3	mg/kg	Barium	256.51	
D-441-1A-101317-4-6	SA_97-2mm	EPA6010	3	mg/kg	Beryllium	0.79	crm rl
D-441-1A-101317-4-6	SA_97-2mm	EPA6010	3	mg/kg	Cadmium	1.83	
D-441-1A-101317-4-6	SA_97-2mm	EPA6010	3	mg/kg	Calcium	7626.65	
D-441-1A-101317-4-6	SA_97-2mm	EPA6010	3	mg/kg	Chromium	46.71	spk
D-441-1A-101317-4-6	SA_97-2mm	EPA6010	3	mg/kg	Cobalt	11.57	
D-441-1A-101317-4-6	SA_97-2mm	EPA6010	3	mg/kg	Copper	36.98	
D-441-1A-101317-4-6	SA_97-2mm	EPA6010	3	mg/kg	Iron	26236.43	
D-441-1A-101317-4-6	SA_97-2mm	EPA6010	3	mg/kg	Lead	37.17	
D-441-1A-101317-4-6	SA_97-2mm	EPA6010	3	mg/kg	Magnesium	7601.82	
D-441-1A-101317-4-6	SA_97-2mm	EPA6010	3	mg/kg	Manganese	1042.03	
D-441-1A-101317-4-6	SA_97-2mm	EPA6010	3	mg/kg	Nickel	28.28	
D-441-1A-101317-4-6	SA_97-2mm	EPA6010	3	mg/kg	Phosphorus	3201.91	
D-441-1A-101317-4-6	SA_97-2mm	EPA6010	3	mg/kg	Potassium	3195.33	
D-441-1A-101317-4-6	SA_97-2mm	EPA6010	3	mg/kg	Selenium	2.69	blk rl
D-441-1A-101317-4-6	SA_97-2mm	EPA6010	3	mg/kg	Silver	0.2	MDL
D-441-1A-101317-4-6	SA_97-2mm	EPA6010	3	mg/kg	Sodium	287.20	
D-441-1A-101317-4-6	SA_97-2mm	EPA6010	3	mg/kg	Thallium	0.86	blk rl
D-441-1A-101317-4-6	SA_97-2mm	EPA6010	3	mg/kg	Vanadium	66.99	blk
D-441-1A-101317-4-6	SA_97-2mm	EPA6010	3	mg/kg	Zinc	172.61	
D-441-1A-101317-6-8	SA_98-2mm	EPA6010	3	mg/kg	Aluminum	21528.84	
D-441-1A-101317-6-8	SA_98-2mm	EPA6010	3	mg/kg	Antimony	5.15	
D-441-1A-101317-6-8	SA_98-2mm	EPA6010	3	mg/kg	Arsenic	15.73	
D-441-1A-101317-6-8	SA_98-2mm	EPA6010	3	mg/kg	Barium	215.70	
D-441-1A-101317-6-8	SA_98-2mm	EPA6010	3	mg/kg	Beryllium	0.72	crm rl
D-441-1A-101317-6-8	SA_98-2mm	EPA6010	3	mg/kg	Cadmium	1.48	
D-441-1A-101317-6-8	SA_98-2mm	EPA6010	3	mg/kg	Calcium	6345.82	

**Appendix B**  
**Detailed Discrete Sample Results**

**SWEL – Soil Water Environmental Lab**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-441-1A-101317-6-8	SA_98-2mm	EPA6010	3	mg/kg	Chromium	40.03	spk
D-441-1A-101317-6-8	SA_98-2mm	EPA6010	3	mg/kg	Cobalt	9.83	
D-441-1A-101317-6-8	SA_98-2mm	EPA6010	3	mg/kg	Copper	33.47	
D-441-1A-101317-6-8	SA_98-2mm	EPA6010	3	mg/kg	Iron	22908.20	
D-441-1A-101317-6-8	SA_98-2mm	EPA6010	3	mg/kg	Lead	29.56	
D-441-1A-101317-6-8	SA_98-2mm	EPA6010	3	mg/kg	Magnesium	5158.19	
D-441-1A-101317-6-8	SA_98-2mm	EPA6010	3	mg/kg	Manganese	872.87	
D-441-1A-101317-6-8	SA_98-2mm	EPA6010	3	mg/kg	Nickel	26.82	
D-441-1A-101317-6-8	SA_98-2mm	EPA6010	3	mg/kg	Phosphorus	2760.47	
D-441-1A-101317-6-8	SA_98-2mm	EPA6010	3	mg/kg	Potassium	2729.95	
D-441-1A-101317-6-8	SA_98-2mm	EPA6010	3	mg/kg	Selenium	3.02	blk rl
D-441-1A-101317-6-8	SA_98-2mm	EPA6010	3	mg/kg	Silver	0.2	MDL
D-441-1A-101317-6-8	SA_98-2mm	EPA6010	3	mg/kg	Sodium	214.82	
D-441-1A-101317-6-8	SA_98-2mm	EPA6010	3	mg/kg	Thallium	0.47	blk rl
D-441-1A-101317-6-8	SA_98-2mm	EPA6010	3	mg/kg	Vanadium	58.88	blk
D-441-1A-101317-6-8	SA_98-2mm	EPA6010	3	mg/kg	Zinc	138.45	
D-441-1A-101317-8-10	SA_99-2mm	EPA6010	3	mg/kg	Aluminum	24192.49	
D-441-1A-101317-8-10	SA_99-2mm	EPA6010	3	mg/kg	Antimony	4.29	rl
D-441-1A-101317-8-10	SA_99-2mm	EPA6010	3	mg/kg	Arsenic	16.71	
D-441-1A-101317-8-10	SA_99-2mm	EPA6010	3	mg/kg	Barium	208.53	
D-441-1A-101317-8-10	SA_99-2mm	EPA6010	3	mg/kg	Beryllium	0.78	crm rl
D-441-1A-101317-8-10	SA_99-2mm	EPA6010	3	mg/kg	Cadmium	0.80	rl
D-441-1A-101317-8-10	SA_99-2mm	EPA6010	3	mg/kg	Calcium	6670.38	
D-441-1A-101317-8-10	SA_99-2mm	EPA6010	3	mg/kg	Chromium	41.09	spk
D-441-1A-101317-8-10	SA_99-2mm	EPA6010	3	mg/kg	Cobalt	11.03	
D-441-1A-101317-8-10	SA_99-2mm	EPA6010	3	mg/kg	Copper	34.36	
D-441-1A-101317-8-10	SA_99-2mm	EPA6010	3	mg/kg	Iron	24790.04	
D-441-1A-101317-8-10	SA_99-2mm	EPA6010	3	mg/kg	Lead	13.83	



**Appendix B**

**SWEL – Soil Water Environmental Lab**

**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-441-1A-101317-8-10	SA_99-2mm	EPA6010	3	mg/kg	Magnesium	5315.97	
D-441-1A-101317-8-10	SA_99-2mm	EPA6010	3	mg/kg	Manganese	825.66	
D-441-1A-101317-8-10	SA_99-2mm	EPA6010	3	mg/kg	Nickel	27.09	
D-441-1A-101317-8-10	SA_99-2mm	EPA6010	3	mg/kg	Phosphorus	2624.57	
D-441-1A-101317-8-10	SA_99-2mm	EPA6010	3	mg/kg	Potassium	3212.33	
D-441-1A-101317-8-10	SA_99-2mm	EPA6010	3	mg/kg	Selenium	3.29	blk rl
D-441-1A-101317-8-10	SA_99-2mm	EPA6010	3	mg/kg	Silver	0.2	MDL
D-441-1A-101317-8-10	SA_99-2mm	EPA6010	3	mg/kg	Sodium	260.57	
D-441-1A-101317-8-10	SA_99-2mm	EPA6010	3	mg/kg	Thallium	0.85	blk rl
D-441-1A-101317-8-10	SA_99-2mm	EPA6010	3	mg/kg	Vanadium	65.99	blk
D-441-1A-101317-8-10	SA_99-2mm	EPA6010	3	mg/kg	Zinc	98.55	
D-441-1A-101317-10-12	SA_100-2mm	EPA6010	3	mg/kg	Aluminum	23043.26	
D-441-1A-101317-10-12	SA_100-2mm	EPA6010	3	mg/kg	Antimony	3.64	rl
D-441-1A-101317-10-12	SA_100-2mm	EPA6010	3	mg/kg	Arsenic	12.69	
D-441-1A-101317-10-12	SA_100-2mm	EPA6010	3	mg/kg	Barium	159.95	
D-441-1A-101317-10-12	SA_100-2mm	EPA6010	3	mg/kg	Beryllium	0.76	crm rl
D-441-1A-101317-10-12	SA_100-2mm	EPA6010	3	mg/kg	Cadmium	0.63	rl
D-441-1A-101317-10-12	SA_100-2mm	EPA6010	3	mg/kg	Calcium	5117.56	
D-441-1A-101317-10-12	SA_100-2mm	EPA6010	3	mg/kg	Chromium	34.87	spk
D-441-1A-101317-10-12	SA_100-2mm	EPA6010	3	mg/kg	Cobalt	10.82	
D-441-1A-101317-10-12	SA_100-2mm	EPA6010	3	mg/kg	Copper	30.73	
D-441-1A-101317-10-12	SA_100-2mm	EPA6010	3	mg/kg	Iron	24846.99	
D-441-1A-101317-10-12	SA_100-2mm	EPA6010	3	mg/kg	Lead	13.06	
D-441-1A-101317-10-12	SA_100-2mm	EPA6010	3	mg/kg	Magnesium	6044.27	
D-441-1A-101317-10-12	SA_100-2mm	EPA6010	3	mg/kg	Manganese	590.15	
D-441-1A-101317-10-12	SA_100-2mm	EPA6010	3	mg/kg	Nickel	25.12	
D-441-1A-101317-10-12	SA_100-2mm	EPA6010	3	mg/kg	Phosphorus	1885.81	
D-441-1A-101317-10-12	SA_100-2mm	EPA6010	3	mg/kg	Potassium	3248.32	



**Appendix B**

**SWEL – Soil Water Environmental Lab**

**Detailed Discrete Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-441-1A-101317-10-12	SA_100-2mm	EPA6010	3	mg/kg	Selenium	3.80	blk rl
D-441-1A-101317-10-12	SA_100-2mm	EPA6010	3	mg/kg	Silver	0.2	MDL
D-441-1A-101317-10-12	SA_100-2mm	EPA6010	3	mg/kg	Sodium	245.09	
D-441-1A-101317-10-12	SA_100-2mm	EPA6010	3	mg/kg	Thallium	0.94	blk rl
D-441-1A-101317-10-12	SA_100-2mm	EPA6010	3	mg/kg	Vanadium	65.28	blk
D-441-1A-101317-10-12	SA_100-2mm	EPA6010	3	mg/kg	Zinc	78.37	
D-401-1C-100417-0-6	SA_101-core	D2166_MOD	1	%	WatStorCap	46.77	
D-401-2B-100517-0-6	SA_102-core	D2166_MOD	1	%	WatStorCap	29.70	
D-401-2C-100517-0-6	SA_103-core	D2166_MOD	1	%	WatStorCap	30.21	
D-258-3D-100717-0-6	SA_104-core	D2166_MOD	1	%	WatStorCap	38.88	
D-441-1A-100617-0-6	SA_105-core	D2166_MOD	1	%	WatStorCap	47.97	
D-258-3C-100717-0-6	SA_106-core	D2166_MOD	1	%	WatStorCap	51.29	
D-401-2A-100517-0-6	SA_107-core	D2166_MOD	1	%	WatStorCap	36.22	
D-401-2D-100517-0-6	SA_108-core	D2166_MOD	1	%	WatStorCap	49.24	
D-258-3A-100717-0-6	SA_109-core	D2166_MOD	1	%	WatStorCap	58.36	
D-441-1D-100617-0-6	SA_110-core	D2166_MOD	1	%	WatStorCap	52.21	
D-441-1B-100617-0-6	SA_111-core	D2166_MOD	1	%	WatStorCap	31.55	
D-401-1A-100417-0-6	SA_112-core	D2166_MOD	1	%	WatStorCap	46.81	
D-441-1C-100617-0-6	SA_113-core	D2166_MOD	1	%	WatStorCap	41.84	
D-401-1D-100417-0-6	SA_114-core	D2166_MOD	1	%	WatStorCap	33.59	
D-401-1B-100417-0-6	SA_115-core	D2166_MOD	1	%	WatStorCap	46.43	
D-258-3B-100717-0-6	SA_116-core	D2166_MOD	1	%	WatStorCap	36.40	

**Appendix C**
**SWEL – Soil Water Environmental Lab**
**Detailed Incremental Composite Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC-401-1A-101017	SA_117-bulk	SM2510B	1	mS/m	Conductivity	7.70	ht
IC-401-1A-101017	SA_117-bulk	pH	1		pH	4.60	ht
IC-401-1A-101017	SA_117-150um	EPA6010_MEHLICH3	8	mg/kg	Lead	285.60	
IC-401-1A-101017	SA_117-150um	EPA6010_MEHLICH3	8	mg/kg	Phosphorus	106.20	
IC-401-1A-101017	SA_117-150um	EPA6010_9200Bio2.5	1	mg/kg	Arsenic	3.88	
IC-401-1A-101017	SA_117-150um	EPA6010_9200Bio2.5	1	mg/kg	Lead	429.19	
IC-401-1A-101017	SA_117-150um	EPA6010_9200Bio1.5	1	mg/kg	Arsenic	12.01	
IC-401-1A-101017	SA_117-150um	EPA6010_9200Bio1.5	1	mg/kg	Lead	838.34	
IC-401-1A-101017	SA_117-150um	EPA6010	4	mg/kg	Aluminum	21678.10	ht
IC-401-1A-101017	SA_117-2mm	EPA6010	5	mg/kg	Aluminum	11970.35	crm ht
IC-401-1A-101017	SA_117-150um	EPA6010	4	mg/kg	Antimony	31.44	ht
IC-401-1A-101017	SA_117-2mm	EPA6010	5	mg/kg	Antimony	15.03	ht
IC-401-1A-101017	SA_117-150um	EPA6010	4	mg/kg	Arsenic	68.39	ht
IC-401-1A-101017	SA_117-2mm	EPA6010	5	mg/kg	Arsenic	28.08	ht
IC-401-1A-101017	SA_117-150um	EPA6010	4	mg/kg	Barium	204.02	ht
IC-401-1A-101017	SA_117-2mm	EPA6010	5	mg/kg	Barium	77.51	ht
IC-401-1A-101017	SA_117-2mm	EPA6010	5	mg/kg	Beryllium	0.00	MDL crm ht
IC-401-1A-101017	SA_117-150um	EPA6010	4	mg/kg	Beryllium	0.82	crm rl ht
IC-401-1A-101017	SA_117-150um	EPA6010	4	mg/kg	Cadmium	14.57	ht
IC-401-1A-101017	SA_117-2mm	EPA6010	5	mg/kg	Cadmium	5.37	ht
IC-401-1A-101017	SA_117-150um	EPA6010	4	mg/kg	Calcium	4014.25	ht
IC-401-1A-101017	SA_117-2mm	EPA6010	5	mg/kg	Calcium	2860.44	ht
IC-401-1A-101017	SA_117-150um	EPA6010	4	mg/kg	Chromium	54.30	ht
IC-401-1A-101017	SA_117-2mm	EPA6010	5	mg/kg	Chromium	29.92	dup ht
IC-401-1A-101017	SA_117-150um	EPA6010	4	mg/kg	Cobalt	8.75	ht
IC-401-1A-101017	SA_117-2mm	EPA6010	5	mg/kg	Cobalt	5.37	ht
IC-401-1A-101017	SA_117-150um	EPA6010	4	mg/kg	Copper	64.70	ht
IC-401-1A-101017	SA_117-2mm	EPA6010	5	mg/kg	Copper	22.69	ht



**Appendix C**
**SWEL – Soil Water Environmental Lab**
**Detailed Incremental Composite Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC-401-1A-101017	SA_117-150um	EPA6010	4	mg/kg	Iron	39862.30	ht
IC-401-1A-101017	SA_117-2mm	EPA6010	5	mg/kg	Iron	23470.95	ht
IC-401-1A-101017	SA_117-150um	EPA6010	4	mg/kg	Lead	1127.06	ht
IC-401-1A-101017	SA_117-2mm	EPA6010	5	mg/kg	Lead	411.19	ht
IC-401-1A-101017	SA_117-2mm	EPA6010	5	mg/kg	Magnesium	2881.23	crm ht
IC-401-1A-101017	SA_117-150um	EPA6010	4	mg/kg	Magnesium	2790.15	ht
IC-401-1A-101017	SA_117-150um	EPA6010	4	mg/kg	Manganese	748.38	ht
IC-401-1A-101017	SA_117-2mm	EPA6010	5	mg/kg	Manganese	375.62	ht
IC-401-1A-101017	SA_117-150um	EPA6010	4	mg/kg	Nickel	19.36	ht
IC-401-1A-101017	SA_117-2mm	EPA6010	5	mg/kg	Nickel	11.34	ht
IC-401-1A-101017	SA_117-150um	EPA6010	4	mg/kg	Phosphorus	1849.81	ht
IC-401-1A-101017	SA_117-2mm	EPA6010	5	mg/kg	Phosphorus	893.23	ht
IC-401-1A-101017	SA_117-150um	EPA6010	4	mg/kg	Potassium	1977.54	crm ht
IC-401-1A-101017	SA_117-2mm	EPA6010	5	mg/kg	Potassium	1170.75	ht
IC-401-1A-101017	SA_117-2mm	EPA6010	5	mg/kg	Selenium	0.70	ht
IC-401-1A-101017	SA_117-150um	EPA6010	4	mg/kg	Selenium	3.53	rl ht
IC-401-1A-101017	SA_117-150um	EPA6010	4	mg/kg	Silver	0.20	MDL ht
IC-401-1A-101017	SA_117-2mm	EPA6010	5	mg/kg	Silver	0.20	MDL ht
IC-401-1A-101017	SA_117-150um	EPA6010	4	mg/kg	Sodium	435.07	ht
IC-401-1A-101017	SA_117-2mm	EPA6010	5	mg/kg	Sodium	154.66	ht
IC-401-1A-101017	SA_117-150um	EPA6010	4	mg/kg	Thallium	1.13	blk rl ht
IC-401-1A-101017	SA_117-2mm	EPA6010	5	mg/kg	Thallium	0.27	rl ht
IC-401-1A-101017	SA_117-150um	EPA6010	4	mg/kg	Vanadium	106.59	ht
IC-401-1A-101017	SA_117-2mm	EPA6010	5	mg/kg	Vanadium	63.96	ht
IC-401-1A-101017	SA_117-150um	EPA6010	4	mg/kg	Zinc	549.74	ht
IC-401-1A-101017	SA_117-2mm	EPA6010	5	mg/kg	Zinc	221.14	ht
IC-401-1A-101017	SA_117-2mm	EPA_300.0	1	mg/kg	Chloride	18.64	ht

**Appendix C**
**SWEL – Soil Water Environmental Lab**
**Detailed Incremental Composite Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC-401-1A-101017	SA_117-2mm	EPA_300.0	1	mg/kg	Sulfate	100.17	ht
IC-401-1A-101017	SA_117-bulk	D422	1	%	Fines	3.50	
IC-401-1A-101017	SA_117-bulk	D422	1	%	Gravel	14.82	
IC-401-1A-101017	SA_117-bulk	D422	1	%	Sand	83.60	
IC-401-1A-101017	SA_117-bulk	D422	1	%	Silt	12.90	
IC-401-1A-101017	SA_117-150um	Bioaccess2.5pH	1	%	Arsenic	5.67	
IC-401-1A-101017	SA_117-150um	Bioaccess2.5pH	1	%	Lead	38.08	
IC-401-1A-101017	SA_117-150um	Bioaccess1.5pH	1	%	Arsenic	17.56	
IC-401-1A-101017	SA_117-150um	Bioaccess1.5pH	1	%	Lead	74.38	
IC-401-1A-101017	SA_117-2mm	NELSON82	2	%	Carbon_total	2.80	ht
IC-401-1A-101017	SA_117-2mm	BREMNER82	2	%	Nitrogen_total	0.12	ht
IC-401-1B-101017	SA_118-bulk	SM2510B	1	mS/m	Conductivity	4.52	ht
IC-401-1B-101017	SA_118-bulk	pH	1		pH	4.94	ht
IC-401-1B-101017	SA_118-150um	EPA6010_MEHLICH3	8	mg/kg	Lead	229.35	
IC-401-1B-101017	SA_118-150um	EPA6010_MEHLICH3	8	mg/kg	Phosphorus	64.23	
IC-401-1B-101017	SA_118-150um	EPA6010_9200Bio2.5	1	mg/kg	Arsenic	5.13	
IC-401-1B-101017	SA_118-150um	EPA6010_9200Bio2.5	1	mg/kg	Lead	373.87	
IC-401-1B-101017	SA_118-150um	EPA6010_9200Bio1.5	1	mg/kg	Arsenic	14.62	
IC-401-1B-101017	SA_118-150um	EPA6010_9200Bio1.5	1	mg/kg	Lead	805.47	
IC-401-1B-101017	SA_118-150um	EPA6010	4	mg/kg	Aluminum	26138.48	ht
IC-401-1B-101017	SA_118-2mm	EPA6010	5	mg/kg	Aluminum	15205.98	crm ht
IC-401-1B-101017	SA_118-150um	EPA6010	4	mg/kg	Antimony	34.64	ht
IC-401-1B-101017	SA_118-2mm	EPA6010	5	mg/kg	Antimony	20.56	ht
IC-401-1B-101017	SA_118-150um	EPA6010	4	mg/kg	Arsenic	87.51	ht
IC-401-1B-101017	SA_118-2mm	EPA6010	5	mg/kg	Arsenic	37.64	ht
IC-401-1B-101017	SA_118-150um	EPA6010	4	mg/kg	Barium	265.03	ht
IC-401-1B-101017	SA_118-2mm	EPA6010	5	mg/kg	Barium	116.60	ht
IC-401-1B-101017	SA_118-2mm	EPA6010	5	mg/kg	Beryllium	0.00	MDL crm ht
IC-401-1B-101017	SA_118-150um	EPA6010	4	mg/kg	Beryllium	0.94	crm rl ht



**Appendix C**

**SWEL – Soil Water Environmental Lab**

**Detailed Incremental Composite Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC-401-1B-101017	SA_118-150um	EPA6010	4	mg/kg	Cadmium	21.06	ht
IC-401-1B-101017	SA_118-2mm	EPA6010	5	mg/kg	Cadmium	9.07	ht
IC-401-1B-101017	SA_118-150um	EPA6010	4	mg/kg	Calcium	4162.71	ht
IC-401-1B-101017	SA_118-2mm	EPA6010	5	mg/kg	Calcium	3093.26	ht
IC-401-1B-101017	SA_118-150um	EPA6010	4	mg/kg	Chromium	39.76	ht
IC-401-1B-101017	SA_118-2mm	EPA6010	5	mg/kg	Chromium	30.12	dup ht
IC-401-1B-101017	SA_118-150um	EPA6010	4	mg/kg	Cobalt	9.61	ht
IC-401-1B-101017	SA_118-2mm	EPA6010	5	mg/kg	Cobalt	6.18	ht
IC-401-1B-101017	SA_118-150um	EPA6010	4	mg/kg	Copper	75.17	ht
IC-401-1B-101017	SA_118-2mm	EPA6010	5	mg/kg	Copper	30.40	ht
IC-401-1B-101017	SA_118-150um	EPA6010	4	mg/kg	Iron	31398.11	ht
IC-401-1B-101017	SA_118-2mm	EPA6010	5	mg/kg	Iron	23925.04	ht
IC-401-1B-101017	SA_118-150um	EPA6010	4	mg/kg	Lead	1232.63	ht
IC-401-1B-101017	SA_118-2mm	EPA6010	5	mg/kg	Lead	516.32	ht
IC-401-1B-101017	SA_118-150um	EPA6010	4	mg/kg	Magnesium	3249.94	ht
IC-401-1B-101017	SA_118-2mm	EPA6010	5	mg/kg	Magnesium	3092.10	crm ht
IC-401-1B-101017	SA_118-150um	EPA6010	4	mg/kg	Manganese	1090.24	ht
IC-401-1B-101017	SA_118-2mm	EPA6010	5	mg/kg	Manganese	536.67	ht
IC-401-1B-101017	SA_118-150um	EPA6010	4	mg/kg	Nickel	18.05	ht
IC-401-1B-101017	SA_118-2mm	EPA6010	5	mg/kg	Nickel	12.87	ht
IC-401-1B-101017	SA_118-150um	EPA6010	4	mg/kg	Phosphorus	2224.69	ht
IC-401-1B-101017	SA_118-2mm	EPA6010	5	mg/kg	Phosphorus	1155.53	ht
IC-401-1B-101017	SA_118-150um	EPA6010	4	mg/kg	Potassium	2003.30	crm ht
IC-401-1B-101017	SA_118-2mm	EPA6010	5	mg/kg	Potassium	1318.40	ht
IC-401-1B-101017	SA_118-2mm	EPA6010	5	mg/kg	Selenium	0.70	ht
IC-401-1B-101017	SA_118-150um	EPA6010	4	mg/kg	Selenium	3.68	rl ht
IC-401-1B-101017	SA_118-150um	EPA6010	4	mg/kg	Silver	0.20	MDL ht



**Appendix C**

**SWEL – Soil Water Environmental Lab**

**Detailed Incremental Composite Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC-401-1B-101017	SA_118-2mm	EPA6010	5	mg/kg	Silver	0.20	MDL ht
IC-401-1B-101017	SA_118-150um	EPA6010	4	mg/kg	Sodium	485.37	ht
IC-401-1B-101017	SA_118-2mm	EPA6010	5	mg/kg	Sodium	179.65	ht
IC-401-1B-101017	SA_118-150um	EPA6010	4	mg/kg	Thallium	0.77	blk rl ht
IC-401-1B-101017	SA_118-2mm	EPA6010	5	mg/kg	Thallium	0.66	rl ht
IC-401-1B-101017	SA_118-150um	EPA6010	4	mg/kg	Vanadium	79.06	ht
IC-401-1B-101017	SA_118-2mm	EPA6010	5	mg/kg	Vanadium	57.86	ht
IC-401-1B-101017	SA_118-150um	EPA6010	4	mg/kg	Zinc	744.77	ht
IC-401-1B-101017	SA_118-2mm	EPA6010	5	mg/kg	Zinc	339.18	ht
IC-401-1B-101017	SA_118-2mm	EPA_300.0	1	mg/kg	Chloride	16.91	ht
IC-401-1B-101017	SA_118-2mm	EPA_300.0	1	mg/kg	Sulfate	60.89	ht
IC-401-1B-101017	SA_118-bulk	D422	1	%	Fines	3.57	
IC-401-1B-101017	SA_118-bulk	D422	1	%	Gravel	31.49	
IC-401-1B-101017	SA_118-bulk	D422	1	%	Sand	79.40	
IC-401-1B-101017	SA_118-bulk	D422	1	%	Silt	17.03	
IC-401-1B-101017	SA_118-150um	Bioaccess2.5pH	1	%	Arsenic	5.87	
IC-401-1B-101017	SA_118-150um	Bioaccess2.5pH	1	%	Lead	30.33	
IC-401-1B-101017	SA_118-150um	Bioaccess1.5pH	1	%	Arsenic	16.71	
IC-401-1B-101017	SA_118-150um	Bioaccess1.5pH	1	%	Lead	65.35	
IC-401-1B-101017	SA_118-2mm	NELSON82	2	%	Carbon_total	5.06	ht
IC-401-1B-101017	SA_118-2mm	BREMNER82	2	%	Nitrogen_total	0.22	ht
IC-401-1C-101117	SA_119-bulk	SM2510B	1	mS/m	Conductivity	5.63	ht
IC-401-1C-101117	SA_119-bulk	pH	1		pH	4.78	ht
IC-401-1C-101117	SA_119-150um	EPA6010_MEHLICH3	8	mg/kg	Lead	309.99	
IC-401-1C-101117	SA_119-150um	EPA6010_MEHLICH3	8	mg/kg	Phosphorus	77.22	
IC-401-1C-101117	SA_119-150um	EPA6010_9200Bio2.5	1	mg/kg	Arsenic	5.34	
IC-401-1C-101117	SA_119-150um	EPA6010_9200Bio2.5	1	mg/kg	Lead	503.36	
IC-401-1C-101117	SA_119-150um	EPA6010_9200Bio1.5	1	mg/kg	Arsenic	14.02	
IC-401-1C-101117	SA_119-150um	EPA6010_9200Bio1.5	1	mg/kg	Lead	1035.84	

**Appendix C**
**SWEL – Soil Water Environmental Lab**
**Detailed Incremental Composite Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC-401-1C-101117	SA_119-150um	EPA6010	4	mg/kg	Aluminum	23926.00	ht
IC-401-1C-101117	SA_119-2mm	EPA6010	5	mg/kg	Aluminum	12853.05	crm ht
IC-401-1C-101117	SA_119-150um	EPA6010	4	mg/kg	Antimony	34.61	ht
IC-401-1C-101117	SA_119-2mm	EPA6010	5	mg/kg	Antimony	16.32	ht
IC-401-1C-101117	SA_119-150um	EPA6010	4	mg/kg	Arsenic	80.15	ht
IC-401-1C-101117	SA_119-2mm	EPA6010	5	mg/kg	Arsenic	29.39	ht
IC-401-1C-101117	SA_119-150um	EPA6010	4	mg/kg	Barium	258.83	ht
IC-401-1C-101117	SA_119-2mm	EPA6010	5	mg/kg	Barium	90.94	ht
IC-401-1C-101117	SA_119-2mm	EPA6010	5	mg/kg	Beryllium	0.00	MDL crm ht
IC-401-1C-101117	SA_119-150um	EPA6010	4	mg/kg	Beryllium	0.89	crm rl ht
IC-401-1C-101117	SA_119-150um	EPA6010	4	mg/kg	Cadmium	22.04	ht
IC-401-1C-101117	SA_119-2mm	EPA6010	5	mg/kg	Cadmium	7.41	ht
IC-401-1C-101117	SA_119-150um	EPA6010	4	mg/kg	Calcium	4771.29	ht
IC-401-1C-101117	SA_119-2mm	EPA6010	5	mg/kg	Calcium	3385.27	ht
IC-401-1C-101117	SA_119-150um	EPA6010	4	mg/kg	Chromium	43.23	ht
IC-401-1C-101117	SA_119-2mm	EPA6010	5	mg/kg	Chromium	30.09	dup ht
IC-401-1C-101117	SA_119-150um	EPA6010	4	mg/kg	Cobalt	9.06	ht
IC-401-1C-101117	SA_119-2mm	EPA6010	5	mg/kg	Cobalt	5.47	ht
IC-401-1C-101117	SA_119-150um	EPA6010	4	mg/kg	Copper	72.16	ht
IC-401-1C-101117	SA_119-2mm	EPA6010	5	mg/kg	Copper	24.83	ht
IC-401-1C-101117	SA_119-150um	EPA6010	4	mg/kg	Iron	34798.90	ht
IC-401-1C-101117	SA_119-2mm	EPA6010	5	mg/kg	Iron	21840.86	ht
IC-401-1C-101117	SA_119-150um	EPA6010	4	mg/kg	Lead	1321.22	ht
IC-401-1C-101117	SA_119-2mm	EPA6010	5	mg/kg	Lead	453.48	ht
IC-401-1C-101117	SA_119-150um	EPA6010	4	mg/kg	Magnesium	3183.36	ht
IC-401-1C-101117	SA_119-2mm	EPA6010	5	mg/kg	Magnesium	3098.60	crm ht
IC-401-1C-101117	SA_119-150um	EPA6010	4	mg/kg	Manganese	988.05	ht

**Appendix C**
**SWEL – Soil Water Environmental Lab**
**Detailed Incremental Composite Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC-401-1C-101117	SA_119-2mm	EPA6010	5	mg/kg	Manganese	433.84	ht
IC-401-1C-101117	SA_119-150um	EPA6010	4	mg/kg	Nickel	18.37	ht
IC-401-1C-101117	SA_119-2mm	EPA6010	5	mg/kg	Nickel	12.23	ht
IC-401-1C-101117	SA_119-150um	EPA6010	4	mg/kg	Phosphorus	2136.47	ht
IC-401-1C-101117	SA_119-2mm	EPA6010	5	mg/kg	Phosphorus	1031.57	ht
IC-401-1C-101117	SA_119-150um	EPA6010	4	mg/kg	Potassium	2050.22	crm ht
IC-401-1C-101117	SA_119-2mm	EPA6010	5	mg/kg	Potassium	1200.47	ht
IC-401-1C-101117	SA_119-150um	EPA6010	4	mg/kg	Selenium	3.30	rl ht
IC-401-1C-101117	SA_119-2mm	EPA6010	5	mg/kg	Selenium	1.12	rl ht
IC-401-1C-101117	SA_119-150um	EPA6010	4	mg/kg	Silver	0.20	MDL ht
IC-401-1C-101117	SA_119-2mm	EPA6010	5	mg/kg	Silver	0.20	MDL ht
IC-401-1C-101117	SA_119-150um	EPA6010	4	mg/kg	Sodium	467.64	ht
IC-401-1C-101117	SA_119-2mm	EPA6010	5	mg/kg	Sodium	155.26	ht
IC-401-1C-101117	SA_119-150um	EPA6010	4	mg/kg	Thallium	0.54	blk rl ht
IC-401-1C-101117	SA_119-2mm	EPA6010	5	mg/kg	Thallium	0.52	rl ht
IC-401-1C-101117	SA_119-150um	EPA6010	4	mg/kg	Vanadium	90.24	ht
IC-401-1C-101117	SA_119-2mm	EPA6010	5	mg/kg	Vanadium	53.57	ht
IC-401-1C-101117	SA_119-150um	EPA6010	4	mg/kg	Zinc	782.91	ht
IC-401-1C-101117	SA_119-2mm	EPA6010	5	mg/kg	Zinc	292.72	ht
IC-401-1C-101117	SA_119-2mm	EPA_300.0	1	mg/kg	Chloride	15.95	ht
IC-401-1C-101117	SA_119-2mm	EPA_300.0	1	mg/kg	Sulfate	72.53	ht
IC-401-1C-101117	SA_119-bulk	D422	1	%	Fines	2.80	
IC-401-1C-101117	SA_119-bulk	D422	1	%	Gravel	24.66	
IC-401-1C-101117	SA_119-bulk	D422	1	%	Sand	81.60	
IC-401-1C-101117	SA_119-bulk	D422	1	%	Silt	15.60	
IC-401-1C-101117	SA_119-150um	Bioaccess2.5pH	1	%	Arsenic	6.67	
IC-401-1C-101117	SA_119-150um	Bioaccess2.5pH	1	%	Lead	38.10	
IC-401-1C-101117	SA_119-150um	Bioaccess1.5pH	1	%	Arsenic	17.49	



**Appendix C**

**SWEL – Soil Water Environmental Lab**

**Detailed Incremental Composite Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC-401-1C-101117	SA_119-150um	Bioaccess1.5pH	1	%	Lead	78.40	
IC-401-1C-101117	SA_119-2mm	NELSON82	2	%	Carbon_total	5.20	ht
IC-401-1C-101117	SA_119-2mm	BREMNER82	2	%	Nitrogen_total	0.24	ht
IC-401-1C-101117-D	SA_120-bulk	SM2510B	1	mS/m	Conductivity	4.96	ht
IC-401-1C-101117-D	SA_120-bulk	pH	1		pH	5.15	ht
IC-401-1C-101117-D	SA_120-150um	EPA6010_MEHLICH3	8	mg/kg	Lead	316.75	
IC-401-1C-101117-D	SA_120-150um	EPA6010_MEHLICH3	8	mg/kg	Phosphorus	76.62	
IC-401-1C-101117-D	SA_120-150um	EPA6010_9200Bio2.5	1	mg/kg	Arsenic	5.17	
IC-401-1C-101117-D	SA_120-150um	EPA6010_9200Bio2.5	1	mg/kg	Lead	498.62	
IC-401-1C-101117-D	SA_120-150um	EPA6010_9200Bio1.5	1	mg/kg	Arsenic	14.16	
IC-401-1C-101117-D	SA_120-150um	EPA6010_9200Bio1.5	1	mg/kg	Lead	1084.42	
IC-401-1C-101117-D	SA_120-150um	EPA6010	4	mg/kg	Aluminum	24882.59	ht
IC-401-1C-101117-D	SA_120-2mm	EPA6010	5	mg/kg	Aluminum	12920.10	crm ht
IC-401-1C-101117-D	SA_120-150um	EPA6010	4	mg/kg	Antimony	35.54	ht
IC-401-1C-101117-D	SA_120-2mm	EPA6010	5	mg/kg	Antimony	18.34	ht
IC-401-1C-101117-D	SA_120-150um	EPA6010	4	mg/kg	Arsenic	82.15	ht
IC-401-1C-101117-D	SA_120-2mm	EPA6010	5	mg/kg	Arsenic	33.36	ht
IC-401-1C-101117-D	SA_120-150um	EPA6010	4	mg/kg	Barium	258.10	ht
IC-401-1C-101117-D	SA_120-2mm	EPA6010	5	mg/kg	Barium	95.52	ht
IC-401-1C-101117-D	SA_120-2mm	EPA6010	5	mg/kg	Beryllium	0.00	MDL crm ht
IC-401-1C-101117-D	SA_120-150um	EPA6010	4	mg/kg	Beryllium	0.93	crm rl ht
IC-401-1C-101117-D	SA_120-150um	EPA6010	4	mg/kg	Cadmium	21.85	ht
IC-401-1C-101117-D	SA_120-2mm	EPA6010	5	mg/kg	Cadmium	7.89	ht
IC-401-1C-101117-D	SA_120-150um	EPA6010	4	mg/kg	Calcium	4974.25	ht
IC-401-1C-101117-D	SA_120-2mm	EPA6010	5	mg/kg	Calcium	3213.96	ht
IC-401-1C-101117-D	SA_120-2mm	EPA6010	5	mg/kg	Chromium	43.47	dup ht
IC-401-1C-101117-D	SA_120-150um	EPA6010	4	mg/kg	Chromium	43.14	ht
IC-401-1C-101117-D	SA_120-150um	EPA6010	4	mg/kg	Cobalt	9.43	ht

**Appendix C**
**SWEL – Soil Water Environmental Lab**
**Detailed Incremental Composite Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC-401-1C-101117-D	SA_120-2mm	EPA6010	5	mg/kg	Cobalt	5.91	ht
IC-401-1C-101117-D	SA_120-150um	EPA6010	4	mg/kg	Copper	73.87	ht
IC-401-1C-101117-D	SA_120-2mm	EPA6010	5	mg/kg	Copper	25.09	ht
IC-401-1C-101117-D	SA_120-150um	EPA6010	4	mg/kg	Iron	32683.66	ht
IC-401-1C-101117-D	SA_120-2mm	EPA6010	5	mg/kg	Iron	21665.73	ht
IC-401-1C-101117-D	SA_120-150um	EPA6010	4	mg/kg	Lead	1380.77	ht
IC-401-1C-101117-D	SA_120-2mm	EPA6010	5	mg/kg	Lead	503.17	ht
IC-401-1C-101117-D	SA_120-150um	EPA6010	4	mg/kg	Magnesium	3300.03	ht
IC-401-1C-101117-D	SA_120-2mm	EPA6010	5	mg/kg	Magnesium	2814.49	crm ht
IC-401-1C-101117-D	SA_120-150um	EPA6010	4	mg/kg	Manganese	987.48	ht
IC-401-1C-101117-D	SA_120-2mm	EPA6010	5	mg/kg	Manganese	435.80	ht
IC-401-1C-101117-D	SA_120-150um	EPA6010	4	mg/kg	Nickel	18.18	ht
IC-401-1C-101117-D	SA_120-2mm	EPA6010	5	mg/kg	Nickel	12.56	ht
IC-401-1C-101117-D	SA_120-150um	EPA6010	4	mg/kg	Phosphorus	2150.75	ht
IC-401-1C-101117-D	SA_120-2mm	EPA6010	5	mg/kg	Phosphorus	1016.17	ht
IC-401-1C-101117-D	SA_120-150um	EPA6010	4	mg/kg	Potassium	2187.88	crm ht
IC-401-1C-101117-D	SA_120-2mm	EPA6010	5	mg/kg	Potassium	1127.23	ht
IC-401-1C-101117-D	SA_120-150um	EPA6010	4	mg/kg	Selenium	3.53	rl ht
IC-401-1C-101117-D	SA_120-2mm	EPA6010	5	mg/kg	Selenium	0.98	rl ht
IC-401-1C-101117-D	SA_120-150um	EPA6010	4	mg/kg	Silver	0.20	MDL ht
IC-401-1C-101117-D	SA_120-2mm	EPA6010	5	mg/kg	Silver	0.20	MDL ht
IC-401-1C-101117-D	SA_120-150um	EPA6010	4	mg/kg	Sodium	552.96	ht
IC-401-1C-101117-D	SA_120-2mm	EPA6010	5	mg/kg	Sodium	160.36	ht
IC-401-1C-101117-D	SA_120-150um	EPA6010	4	mg/kg	Thallium	0.75	blk rl ht
IC-401-1C-101117-D	SA_120-2mm	EPA6010	5	mg/kg	Thallium	0.72	rl ht
IC-401-1C-101117-D	SA_120-150um	EPA6010	4	mg/kg	Vanadium	84.61	ht
IC-401-1C-101117-D	SA_120-2mm	EPA6010	5	mg/kg	Vanadium	55.54	ht



**Appendix C**
**SWEL – Soil Water Environmental Lab**
**Detailed Incremental Composite Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC-401-1C-101117-D	SA_120-150um	EPA6010	4	mg/kg	Zinc	808.29	ht
IC-401-1C-101117-D	SA_120-2mm	EPA6010	5	mg/kg	Zinc	307.35	ht
IC-401-1C-101117-D	SA_120-2mm	EPA_300.0	1	mg/kg	Chloride	27.36	ht
IC-401-1C-101117-D	SA_120-2mm	EPA_300.0	1	mg/kg	Sulfate	65.45	ht
IC-401-1C-101117-D	SA_120-bulk	D422	1	%	Fines	3.06	
IC-401-1C-101117-D	SA_120-bulk	D422	1	%	Gravel	20.65	
IC-401-1C-101117-D	SA_120-bulk	D422	1	%	Sand	82.20	
IC-401-1C-101117-D	SA_120-bulk	D422	1	%	Silt	14.74	
IC-401-1C-101117-D	SA_120-150um	Bioaccess2.5pH	1	%	Arsenic	6.30	
IC-401-1C-101117-D	SA_120-150um	Bioaccess2.5pH	1	%	Lead	36.11	
IC-401-1C-101117-D	SA_120-150um	Bioaccess1.5pH	1	%	Arsenic	17.24	
IC-401-1C-101117-D	SA_120-150um	Bioaccess1.5pH	1	%	Lead	78.54	
IC-401-1C-101117 -D	SA_120-2mm	NELSON82	2	%	Carbon_total	4.55	ht
IC-401-1C-101117 -D	SA_120-2mm	BREMNER82	2	%	Nitrogen_total	0.21	ht
IC-401-1D-101117	SA_121-bulk	SM2510B	1	mS/m	Conductivity	6.10	ht
IC-401-1D-101117	SA_121-bulk	pH	1		pH	4.92	ht
IC-401-1D-101117	SA_121-150um	EPA6010_MEHLICH3	9	mg/kg	Lead	330.22	
IC-401-1D-101117	SA_121-150um	EPA6010_MEHLICH3	9	mg/kg	Phosphorus	90.38	
IC-401-1D-101117	SA_121-150um	EPA6010_9200Bio2.5	1	mg/kg	Arsenic	5.72	
IC-401-1D-101117	SA_121-150um	EPA6010_9200Bio2.5	1	mg/kg	Lead	482.37	
IC-401-1D-101117	SA_121-150um	EPA6010_9200Bio1.5	1	mg/kg	Arsenic	16.22	
IC-401-1D-101117	SA_121-150um	EPA6010_9200Bio1.5	1	mg/kg	Lead	1060.37	
IC-401-1D-101117	SA_121-150um	EPA6010	4	mg/kg	Aluminum	23141.78	ht
IC-401-1D-101117	SA_121-2mm	EPA6010	5	mg/kg	Aluminum	13680.62	crm ht
IC-401-1D-101117	SA_121-150um	EPA6010	4	mg/kg	Antimony	37.24	ht
IC-401-1D-101117	SA_121-2mm	EPA6010	5	mg/kg	Antimony	25.73	ht
IC-401-1D-101117	SA_121-150um	EPA6010	4	mg/kg	Arsenic	92.35	ht
IC-401-1D-101117	SA_121-2mm	EPA6010	5	mg/kg	Arsenic	42.72	ht
IC-401-1D-101117	SA_121-150um	EPA6010	4	mg/kg	Barium	236.53	ht
IC-401-1D-101117	SA_121-2mm	EPA6010	5	mg/kg	Barium	114.50	ht

**Appendix C**
**SWEL – Soil Water Environmental Lab**
**Detailed Incremental Composite Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC-401-1D-101117	SA_121-2mm	EPA6010	5	mg/kg	Beryllium	0.00	MDL crm ht
IC-401-1D-101117	SA_121-150um	EPA6010	4	mg/kg	Beryllium	0.84	crm rl ht
IC-401-1D-101117	SA_121-150um	EPA6010	4	mg/kg	Cadmium	19.49	ht
IC-401-1D-101117	SA_121-2mm	EPA6010	5	mg/kg	Cadmium	9.72	ht
IC-401-1D-101117	SA_121-150um	EPA6010	4	mg/kg	Calcium	4483.67	ht
IC-401-1D-101117	SA_121-2mm	EPA6010	5	mg/kg	Calcium	3635.90	ht
IC-401-1D-101117	SA_121-150um	EPA6010	4	mg/kg	Chromium	39.69	ht
IC-401-1D-101117	SA_121-2mm	EPA6010	5	mg/kg	Chromium	34.29	dup ht
IC-401-1D-101117	SA_121-150um	EPA6010	4	mg/kg	Cobalt	8.89	ht
IC-401-1D-101117	SA_121-2mm	EPA6010	5	mg/kg	Cobalt	5.75	ht
IC-401-1D-101117	SA_121-150um	EPA6010	4	mg/kg	Copper	81.52	ht
IC-401-1D-101117	SA_121-2mm	EPA6010	5	mg/kg	Copper	36.28	ht
IC-401-1D-101117	SA_121-150um	EPA6010	4	mg/kg	Iron	30456.39	ht
IC-401-1D-101117	SA_121-2mm	EPA6010	5	mg/kg	Iron	25731.06	ht
IC-401-1D-101117	SA_121-150um	EPA6010	4	mg/kg	Lead	1445.07	ht
IC-401-1D-101117	SA_121-2mm	EPA6010	5	mg/kg	Lead	751.49	ht
IC-401-1D-101117	SA_121-150um	EPA6010	4	mg/kg	Magnesium	3043.46	ht
IC-401-1D-101117	SA_121-2mm	EPA6010	5	mg/kg	Magnesium	2859.55	crm ht
IC-401-1D-101117	SA_121-150um	EPA6010	4	mg/kg	Manganese	864.24	ht
IC-401-1D-101117	SA_121-2mm	EPA6010	5	mg/kg	Manganese	486.77	ht
IC-401-1D-101117	SA_121-150um	EPA6010	4	mg/kg	Nickel	17.40	ht
IC-401-1D-101117	SA_121-2mm	EPA6010	5	mg/kg	Nickel	13.00	ht
IC-401-1D-101117	SA_121-150um	EPA6010	4	mg/kg	Phosphorus	2148.26	ht
IC-401-1D-101117	SA_121-2mm	EPA6010	5	mg/kg	Phosphorus	1130.42	ht
IC-401-1D-101117	SA_121-150um	EPA6010	4	mg/kg	Potassium	2033.35	crm ht
IC-401-1D-101117	SA_121-2mm	EPA6010	5	mg/kg	Potassium	1279.42	ht
IC-401-1D-101117	SA_121-150um	EPA6010	4	mg/kg	Selenium	3.04	rl ht



**Appendix C**

**SWEL – Soil Water Environmental Lab**

**Detailed Incremental Composite Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC-401-1D-101117	SA_121-2mm	EPA6010	5	mg/kg	Selenium	1.08	rl ht
IC-401-1D-101117	SA_121-150um	EPA6010	4	mg/kg	Silver	0.20	MDL ht
IC-401-1D-101117	SA_121-2mm	EPA6010	5	mg/kg	Silver	0.20	MDL ht
IC-401-1D-101117	SA_121-150um	EPA6010	4	mg/kg	Sodium	473.72	ht
IC-401-1D-101117	SA_121-2mm	EPA6010	5	mg/kg	Sodium	185.70	ht
IC-401-1D-101117	SA_121-150um	EPA6010	4	mg/kg	Thallium	1.04	blk rl ht
IC-401-1D-101117	SA_121-2mm	EPA6010	5	mg/kg	Thallium	0.44	rl ht
IC-401-1D-101117	SA_121-150um	EPA6010	4	mg/kg	Vanadium	76.88	ht
IC-401-1D-101117	SA_121-2mm	EPA6010	5	mg/kg	Vanadium	64.51	ht
IC-401-1D-101117	SA_121-150um	EPA6010	4	mg/kg	Zinc	743.66	ht
IC-401-1D-101117	SA_121-2mm	EPA6010	5	mg/kg	Zinc	416.08	ht
IC-401-1D-101117	SA_121-2mm	EPA_300.0	1	mg/kg	Chloride	17.95	ht
IC-401-1D-101117	SA_121-2mm	EPA_300.0	1	mg/kg	Sulfate	57.83	ht
IC-401-1D-101117	SA_121-bulk	D422	1	%	Fines	3.57	
IC-401-1D-101117	SA_121-bulk	D422	1	%	Gravel	32.45	
IC-401-1D-101117	SA_121-bulk	D422	1	%	Sand	77.80	
IC-401-1D-101117	SA_121-bulk	D422	1	%	Silt	18.63	
IC-401-1D-101117	SA_121-150um	Bioaccess2.5pH	1	%	Arsenic	6.19	
IC-401-1D-101117	SA_121-150um	Bioaccess2.5pH	1	%	Lead	33.38	
IC-401-1D-101117	SA_121-150um	Bioaccess1.5pH	1	%	Arsenic	17.56	
IC-401-1D-101117	SA_121-150um	Bioaccess1.5pH	1	%	Lead	73.38	
IC-401-1D-101117	SA_121-2mm	NELSON82	2	%	Carbon_total	10.48	ht
IC-401-1D-101117	SA_121-2mm	BREMNER82	2	%	Nitrogen_total	0.44	ht
IC-401-2B-101117	SA_122-bulk	SM2510B	1	mS/m	Conductivity	5.50	ht
IC-401-2B-101117	SA_122-bulk	pH	1		pH	5.15	ht
IC-401-2B-101117	SA_122-150um	EPA6010_MEHLICH3	9	mg/kg	Lead	243.58	
IC-401-2B-101117	SA_122-150um	EPA6010_MEHLICH3	9	mg/kg	Phosphorus	58.94	
IC-401-2B-101117	SA_122-150um	EPA6010_9200Bio2.5	1	mg/kg	Arsenic	5.38	

**Appendix C**
**SWEL – Soil Water Environmental Lab**
**Detailed Incremental Composite Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC-401-2B-101117	SA_122-150um	EPA6010_9200Bio2.5	1	mg/kg	Lead	383.53	
IC-401-2B-101117	SA_122-150um	EPA6010_9200Bio1.5	1	mg/kg	Arsenic	14.17	
IC-401-2B-101117	SA_122-150um	EPA6010_9200Bio1.5	1	mg/kg	Lead	792.26	
IC-401-2B-101117	SA_122-150um	EPA6010	4	mg/kg	Aluminum	26082.06	ht
IC-401-2B-101117	SA_122-2mm	EPA6010	5	mg/kg	Aluminum	17693.23	crm ht
IC-401-2B-101117	SA_122-150um	EPA6010	4	mg/kg	Antimony	30.47	ht
IC-401-2B-101117	SA_122-2mm	EPA6010	5	mg/kg	Antimony	18.22	ht
IC-401-2B-101117	SA_122-150um	EPA6010	4	mg/kg	Arsenic	83.83	ht
IC-401-2B-101117	SA_122-2mm	EPA6010	5	mg/kg	Arsenic	41.99	ht
IC-401-2B-101117	SA_122-150um	EPA6010	4	mg/kg	Barium	254.07	ht
IC-401-2B-101117	SA_122-2mm	EPA6010	5	mg/kg	Barium	130.21	ht
IC-401-2B-101117	SA_122-2mm	EPA6010	5	mg/kg	Beryllium	0.00	MDL crm ht
IC-401-2B-101117	SA_122-150um	EPA6010	4	mg/kg	Beryllium	0.89	crm rl ht
IC-401-2B-101117	SA_122-150um	EPA6010	4	mg/kg	Cadmium	20.36	ht
IC-401-2B-101117	SA_122-2mm	EPA6010	5	mg/kg	Cadmium	11.34	ht
IC-401-2B-101117	SA_122-150um	EPA6010	4	mg/kg	Calcium	4807.24	ht
IC-401-2B-101117	SA_122-2mm	EPA6010	5	mg/kg	Calcium	4136.17	ht
IC-401-2B-101117	SA_122-2mm	EPA6010	5	mg/kg	Chromium	39.71	dup ht
IC-401-2B-101117	SA_122-150um	EPA6010	4	mg/kg	Chromium	35.44	ht
IC-401-2B-101117	SA_122-150um	EPA6010	4	mg/kg	Cobalt	8.89	ht
IC-401-2B-101117	SA_122-2mm	EPA6010	5	mg/kg	Cobalt	6.91	ht
IC-401-2B-101117	SA_122-150um	EPA6010	4	mg/kg	Copper	64.14	ht
IC-401-2B-101117	SA_122-2mm	EPA6010	5	mg/kg	Copper	32.25	ht
IC-401-2B-101117	SA_122-2mm	EPA6010	5	mg/kg	Iron	26556.52	ht
IC-401-2B-101117	SA_122-150um	EPA6010	4	mg/kg	Iron	26545.39	ht
IC-401-2B-101117	SA_122-150um	EPA6010	4	mg/kg	Lead	963.82	ht
IC-401-2B-101117	SA_122-2mm	EPA6010	5	mg/kg	Lead	553.59	ht



**Appendix C**

**SWEL – Soil Water Environmental Lab**

**Detailed Incremental Composite Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC-401-2B-101117	SA_122-2mm	EPA6010	5	mg/kg	Magnesium	2958.83	crm ht
IC-401-2B-101117	SA_122-150um	EPA6010	4	mg/kg	Magnesium	2920.85	ht
IC-401-2B-101117	SA_122-150um	EPA6010	4	mg/kg	Manganese	1060.67	ht
IC-401-2B-101117	SA_122-2mm	EPA6010	5	mg/kg	Manganese	652.84	ht
IC-401-2B-101117	SA_122-150um	EPA6010	4	mg/kg	Nickel	16.45	ht
IC-401-2B-101117	SA_122-2mm	EPA6010	5	mg/kg	Nickel	14.23	ht
IC-401-2B-101117	SA_122-150um	EPA6010	4	mg/kg	Phosphorus	2265.73	ht
IC-401-2B-101117	SA_122-2mm	EPA6010	5	mg/kg	Phosphorus	1350.86	ht
IC-401-2B-101117	SA_122-150um	EPA6010	4	mg/kg	Potassium	2038.52	crm ht
IC-401-2B-101117	SA_122-2mm	EPA6010	5	mg/kg	Potassium	1797.77	ht
IC-401-2B-101117	SA_122-2mm	EPA6010	5	mg/kg	Selenium	0.70	ht
IC-401-2B-101117	SA_122-150um	EPA6010	4	mg/kg	Selenium	3.20	rl ht
IC-401-2B-101117	SA_122-150um	EPA6010	4	mg/kg	Silver	0.20	MDL ht
IC-401-2B-101117	SA_122-2mm	EPA6010	5	mg/kg	Silver	0.20	MDL ht
IC-401-2B-101117	SA_122-150um	EPA6010	4	mg/kg	Sodium	627.47	ht
IC-401-2B-101117	SA_122-2mm	EPA6010	5	mg/kg	Sodium	316.89	ht
IC-401-2B-101117	SA_122-150um	EPA6010	4	mg/kg	Thallium	1.07	blk rl ht
IC-401-2B-101117	SA_122-2mm	EPA6010	5	mg/kg	Thallium	0.72	rl ht
IC-401-2B-101117	SA_122-2mm	EPA6010	5	mg/kg	Vanadium	66.97	ht
IC-401-2B-101117	SA_122-150um	EPA6010	4	mg/kg	Vanadium	66.41	ht
IC-401-2B-101117	SA_122-150um	EPA6010	4	mg/kg	Zinc	816.49	ht
IC-401-2B-101117	SA_122-2mm	EPA6010	5	mg/kg	Zinc	471.08	ht
IC-401-2B-101117	SA_122-2mm	EPA_300.0	1	mg/kg	Chloride	17.50	ht
IC-401-2B-101117	SA_122-2mm	EPA_300.0	1	mg/kg	Sulfate	62.30	ht
IC-401-2B-101117	SA_122-bulk	D422	1	%	Fines	3.89	
IC-401-2B-101117	SA_122-bulk	D422	1	%	Gravel	36.69	
IC-401-2B-101117	SA_122-bulk	D422	1	%	Sand	74.70	

**Appendix C**
**SWEL – Soil Water Environmental Lab**
**Detailed Incremental Composite Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC-401-2B-101117	SA_122-bulk	D422	1	%	Silt	21.41	
IC-401-2B-101117	SA_122-150um	Bioaccess2.5pH	1	%	Arsenic	6.42	
IC-401-2B-101117	SA_122-150um	Bioaccess2.5pH	1	%	Lead	39.79	
IC-401-2B-101117	SA_122-150um	Bioaccess1.5pH	1	%	Arsenic	16.90	
IC-401-2B-101117	SA_122-150um	Bioaccess1.5pH	1	%	Lead	82.20	
IC-401-2B-101117	SA_122-2mm	NELSON82	2	%	Carbon_total	9.14	ht
IC-401-2B-101117	SA_122-2mm	BREMNER82	2	%	Nitrogen_total	0.45	ht
IC1-401-2A-101217	SA_123-bulk	SM2510B	1	mS/m	Conductivity	6.02	ht
IC1-401-2A-101217	SA_123-bulk	pH	1		pH	4.56	ht
IC1-401-2A-101217	SA_123-150um	EPA6010_MEHLICH3	9	mg/kg	Lead	453.91	
IC1-401-2A-101217	SA_123-150um	EPA6010_MEHLICH3	9	mg/kg	Phosphorus	109.64	
IC1-401-2A-101217	SA_123-150um	EPA6010_9200Bio2.5	1	mg/kg	Arsenic	10.47	
IC1-401-2A-101217	SA_123-150um	EPA6010_9200Bio2.5	1	mg/kg	Lead	689.93	
IC1-401-2A-101217	SA_123-150um	EPA6010_9200Bio1.5	1	mg/kg	Arsenic	24.87	
IC1-401-2A-101217	SA_123-150um	EPA6010_9200Bio1.5	1	mg/kg	Lead	1399.61	
IC1-401-2A-101217	SA_123-150um	EPA6010	4	mg/kg	Aluminum	22665.93	ht
IC1-401-2A-101217	SA_123-2mm	EPA6010	5	mg/kg	Aluminum	14893.12	crm ht
IC1-401-2A-101217	SA_123-150um	EPA6010	4	mg/kg	Antimony	54.01	ht
IC1-401-2A-101217	SA_123-2mm	EPA6010	5	mg/kg	Antimony	41.74	ht
IC1-401-2A-101217	SA_123-150um	EPA6010	4	mg/kg	Arsenic	117.13	ht
IC1-401-2A-101217	SA_123-2mm	EPA6010	5	mg/kg	Arsenic	57.97	ht
IC1-401-2A-101217	SA_123-150um	EPA6010	4	mg/kg	Barium	229.70	ht
IC1-401-2A-101217	SA_123-2mm	EPA6010	5	mg/kg	Barium	114.29	ht
IC1-401-2A-101217	SA_123-2mm	EPA6010	5	mg/kg	Beryllium	0.00	MDL crm ht
IC1-401-2A-101217	SA_123-150um	EPA6010	4	mg/kg	Beryllium	0.80	crm rl ht
IC1-401-2A-101217	SA_123-150um	EPA6010	4	mg/kg	Cadmium	26.96	ht
IC1-401-2A-101217	SA_123-2mm	EPA6010	5	mg/kg	Cadmium	13.57	ht
IC1-401-2A-101217	SA_123-150um	EPA6010	4	mg/kg	Calcium	3673.65	ht
IC1-401-2A-101217	SA_123-2mm	EPA6010	5	mg/kg	Calcium	3143.62	ht

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**SWEL – Soil Water Environmental Lab**
**Detailed Incremental Composite Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC1-401-2A-101217	SA_123-150um	EPA6010	4	mg/kg	Chromium	35.26	ht
IC1-401-2A-101217	SA_123-2mm	EPA6010	5	mg/kg	Chromium	32.74	dup ht
IC1-401-2A-101217	SA_123-150um	EPA6010	4	mg/kg	Cobalt	8.54	ht
IC1-401-2A-101217	SA_123-2mm	EPA6010	5	mg/kg	Cobalt	6.27	ht
IC1-401-2A-101217	SA_123-150um	EPA6010	4	mg/kg	Copper	86.47	ht
IC1-401-2A-101217	SA_123-2mm	EPA6010	5	mg/kg	Copper	42.60	ht
IC1-401-2A-101217	SA_123-150um	EPA6010	4	mg/kg	Iron	27723.28	ht
IC1-401-2A-101217	SA_123-2mm	EPA6010	5	mg/kg	Iron	23177.56	ht
IC1-401-2A-101217	SA_123-150um	EPA6010	4	mg/kg	Lead	1787.53	ht
IC1-401-2A-101217	SA_123-2mm	EPA6010	5	mg/kg	Lead	1087.31	ht
IC1-401-2A-101217	SA_123-2mm	EPA6010	5	mg/kg	Magnesium	2995.43	crm ht
IC1-401-2A-101217	SA_123-150um	EPA6010	4	mg/kg	Magnesium	2792.73	ht
IC1-401-2A-101217	SA_123-150um	EPA6010	4	mg/kg	Manganese	1028.47	ht
IC1-401-2A-101217	SA_123-2mm	EPA6010	5	mg/kg	Manganese	567.94	ht
IC1-401-2A-101217	SA_123-150um	EPA6010	4	mg/kg	Nickel	16.38	ht
IC1-401-2A-101217	SA_123-2mm	EPA6010	5	mg/kg	Nickel	13.16	ht
IC1-401-2A-101217	SA_123-150um	EPA6010	4	mg/kg	Phosphorus	2333.32	ht
IC1-401-2A-101217	SA_123-2mm	EPA6010	5	mg/kg	Phosphorus	1371.16	ht
IC1-401-2A-101217	SA_123-150um	EPA6010	4	mg/kg	Potassium	1855.53	crm ht
IC1-401-2A-101217	SA_123-2mm	EPA6010	5	mg/kg	Potassium	1452.81	ht
IC1-401-2A-101217	SA_123-150um	EPA6010	4	mg/kg	Selenium	4.25	rl ht
IC1-401-2A-101217	SA_123-2mm	EPA6010	5	mg/kg	Selenium	1.69	rl ht
IC1-401-2A-101217	SA_123-150um	EPA6010	4	mg/kg	Silver	0.20	MDL ht
IC1-401-2A-101217	SA_123-2mm	EPA6010	5	mg/kg	Silver	0.20	MDL ht
IC1-401-2A-101217	SA_123-150um	EPA6010	4	mg/kg	Sodium	445.67	ht
IC1-401-2A-101217	SA_123-2mm	EPA6010	5	mg/kg	Sodium	204.97	ht
IC1-401-2A-101217	SA_123-150um	EPA6010	4	mg/kg	Thallium	0.98	blk rl ht



**Appendix C**

**SWEL – Soil Water Environmental Lab**

**Detailed Incremental Composite Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC1-401-2A-101217	SA_123-2mm	EPA6010	5	mg/kg	Thallium	0.78	rl ht
IC1-401-2A-101217	SA_123-150um	EPA6010	4	mg/kg	Vanadium	68.23	ht
IC1-401-2A-101217	SA_123-2mm	EPA6010	5	mg/kg	Vanadium	57.25	ht
IC1-401-2A-101217	SA_123-150um	EPA6010	4	mg/kg	Zinc	827.21	ht
IC1-401-2A-101217	SA_123-2mm	EPA6010	5	mg/kg	Zinc	446.10	ht
IC1-401-2A-101217	SA_123-2mm	EPA_300.0	1	mg/kg	Chloride	17.03	ht
IC1-401-2A-101217	SA_123-2mm	EPA_300.0	1	mg/kg	Sulfate	65.73	ht
IC1-401-2A-101217	SA_123-bulk	D422	1	%	Fines	3.89	
IC1-401-2A-101217	SA_123-bulk	D422	1	%	Gravel	27.05	
IC1-401-2A-101217	SA_123-bulk	D422	1	%	Sand	78.10	
IC1-401-2A-101217	SA_123-bulk	D422	1	%	Silt	18.01	
IC1-401-2A-101217	SA_123-150um	Bioaccess2.5pH	1	%	Arsenic	8.94	
IC1-401-2A-101217	SA_123-150um	Bioaccess2.5pH	1	%	Lead	38.60	
IC1-401-2A-101217	SA_123-150um	Bioaccess1.5pH	1	%	Arsenic	21.23	
IC1-401-2A-101217	SA_123-150um	Bioaccess1.5pH	1	%	Lead	78.30	
IC1-401-2A-101217	SA_123-2mm	NELSON82	2	%	Carbon_total	6.55	ht
IC1-401-2A-101217	SA_123-2mm	BREMNER82	2	%	Nitrogen_total	0.27	ht
IC2-401-2A-101217	SA_124-bulk	SM2510B	1	mS/m	Conductivity	5.62	ht
IC2-401-2A-101217	SA_124-bulk	pH	1		pH	4.56	ht
IC2-401-2A-101217	SA_124-150um	EPA6010_MEHLICH3	9	mg/kg	Lead	400.93	
IC2-401-2A-101217	SA_124-150um	EPA6010_MEHLICH3	9	mg/kg	Phosphorus	115.23	
IC2-401-2A-101217	SA_124-150um	EPA6010_9200Bio2.5	2	mg/kg	Arsenic	11.35	
IC2-401-2A-101217	SA_124-150um	EPA6010_9200Bio2.5	2	mg/kg	Lead	622.53	
IC2-401-2A-101217	SA_124-150um	EPA6010_9200Bio1.5	2	mg/kg	Arsenic	25.00	
IC2-401-2A-101217	SA_124-150um	EPA6010_9200Bio1.5	2	mg/kg	Lead	1160.82	
IC2-401-2A-101217	SA_124-150um	EPA6010	4	mg/kg	Aluminum	23672.30	ht
IC2-401-2A-101217	SA_124-2mm	EPA6010	5	mg/kg	Aluminum	15941.75	crm ht
IC2-401-2A-101217	SA_124-150um	EPA6010	4	mg/kg	Antimony	48.18	ht
IC2-401-2A-101217	SA_124-2mm	EPA6010	5	mg/kg	Antimony	33.33	ht
IC2-401-2A-101217	SA_124-150um	EPA6010	4	mg/kg	Arsenic	115.59	ht



**Appendix C**
**SWEL – Soil Water Environmental Lab**
**Detailed Incremental Composite Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC2-401-2A-101217	SA_124-2mm	EPA6010	5	mg/kg	Arsenic	55.50	ht
IC2-401-2A-101217	SA_124-150um	EPA6010	4	mg/kg	Barium	231.45	ht
IC2-401-2A-101217	SA_124-2mm	EPA6010	5	mg/kg	Barium	113.82	ht
IC2-401-2A-101217	SA_124-2mm	EPA6010	5	mg/kg	Beryllium	0.00	MDL crm ht
IC2-401-2A-101217	SA_124-150um	EPA6010	4	mg/kg	Beryllium	0.83	crm rl ht
IC2-401-2A-101217	SA_124-150um	EPA6010	4	mg/kg	Cadmium	25.64	ht
IC2-401-2A-101217	SA_124-2mm	EPA6010	5	mg/kg	Cadmium	12.95	ht
IC2-401-2A-101217	SA_124-150um	EPA6010	4	mg/kg	Calcium	3587.16	ht
IC2-401-2A-101217	SA_124-2mm	EPA6010	5	mg/kg	Calcium	3417.34	ht
IC2-401-2A-101217	SA_124-2mm	EPA6010	5	mg/kg	Chromium	33.65	dup ht
IC2-401-2A-101217	SA_124-150um	EPA6010	4	mg/kg	Chromium	30.96	ht
IC2-401-2A-101217	SA_124-150um	EPA6010	4	mg/kg	Cobalt	8.63	ht
IC2-401-2A-101217	SA_124-2mm	EPA6010	5	mg/kg	Cobalt	6.06	ht
IC2-401-2A-101217	SA_124-150um	EPA6010	4	mg/kg	Copper	82.37	ht
IC2-401-2A-101217	SA_124-2mm	EPA6010	5	mg/kg	Copper	38.90	ht
IC2-401-2A-101217	SA_124-150um	EPA6010	4	mg/kg	Iron	26701.99	ht
IC2-401-2A-101217	SA_124-2mm	EPA6010	5	mg/kg	Iron	23644.37	ht
IC2-401-2A-101217	SA_124-150um	EPA6010	4	mg/kg	Lead	1530.51	ht
IC2-401-2A-101217	SA_124-2mm	EPA6010	5	mg/kg	Lead	794.96	ht
IC2-401-2A-101217	SA_124-150um	EPA6010	4	mg/kg	Magnesium	2914.15	ht
IC2-401-2A-101217	SA_124-2mm	EPA6010	5	mg/kg	Magnesium	2812.28	crm ht
IC2-401-2A-101217	SA_124-150um	EPA6010	4	mg/kg	Manganese	1082.39	ht
IC2-401-2A-101217	SA_124-2mm	EPA6010	5	mg/kg	Manganese	613.66	ht
IC2-401-2A-101217	SA_124-150um	EPA6010	4	mg/kg	Nickel	16.51	ht
IC2-401-2A-101217	SA_124-2mm	EPA6010	5	mg/kg	Nickel	13.00	ht
IC2-401-2A-101217	SA_124-150um	EPA6010	4	mg/kg	Phosphorus	2449.15	ht
IC2-401-2A-101217	SA_124-2mm	EPA6010	5	mg/kg	Phosphorus	1438.87	ht



**Appendix C**

**SWEL – Soil Water Environmental Lab**

**Detailed Incremental Composite Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC2-401-2A-101217	SA_124-150um	EPA6010	4	mg/kg	Potassium	1918.53	crm ht
IC2-401-2A-101217	SA_124-2mm	EPA6010	5	mg/kg	Potassium	1607.69	ht
IC2-401-2A-101217	SA_124-150um	EPA6010	4	mg/kg	Selenium	3.68	rl ht
IC2-401-2A-101217	SA_124-2mm	EPA6010	5	mg/kg	Selenium	0.99	rl ht
IC2-401-2A-101217	SA_124-150um	EPA6010	4	mg/kg	Silver	0.20	MDL ht
IC2-401-2A-101217	SA_124-2mm	EPA6010	5	mg/kg	Silver	0.20	MDL ht
IC2-401-2A-101217	SA_124-150um	EPA6010	4	mg/kg	Sodium	490.88	ht
IC2-401-2A-101217	SA_124-2mm	EPA6010	5	mg/kg	Sodium	251.49	ht
IC2-401-2A-101217	SA_124-150um	EPA6010	4	mg/kg	Thallium	1.10	blk rl ht
IC2-401-2A-101217	SA_124-2mm	EPA6010	5	mg/kg	Thallium	0.91	rl ht
IC2-401-2A-101217	SA_124-150um	EPA6010	4	mg/kg	Vanadium	65.01	ht
IC2-401-2A-101217	SA_124-2mm	EPA6010	5	mg/kg	Vanadium	58.14	ht
IC2-401-2A-101217	SA_124-150um	EPA6010	4	mg/kg	Zinc	746.11	ht
IC2-401-2A-101217	SA_124-2mm	EPA6010	5	mg/kg	Zinc	419.61	ht
IC2-401-2A-101217	SA_124-2mm	EPA_300.0	1	mg/kg	Chloride	17.74	ht
IC2-401-2A-101217	SA_124-2mm	EPA_300.0	1	mg/kg	Sulfate	66.20	ht
IC2-401-2A-101217	SA_124-bulk	D422	1	%	Fines	4.40	
IC2-401-2A-101217	SA_124-bulk	D422	1	%	Gravel	24.80	
IC2-401-2A-101217	SA_124-bulk	D422	1	%	Sand	75.10	
IC2-401-2A-101217	SA_124-bulk	D422	1	%	Silt	20.50	
IC2-401-2A-101217	SA_124-150um	Bioaccess2.5pH	2	%	Arsenic	9.82	
IC2-401-2A-101217	SA_124-150um	Bioaccess2.5pH	2	%	Lead	40.67	
IC2-401-2A-101217	SA_124-150um	Bioaccess1.5pH	2	%	Arsenic	21.63	
IC2-401-2A-101217	SA_124-150um	Bioaccess1.5pH	2	%	Lead	75.85	
IC2-401-2A-101217	SA_124-2mm	NELSON82	2	%	Carbon_total	5.02	ht
IC2-401-2A-101217	SA_124-2mm	BREMNER82	2	%	Nitrogen_total	0.22	ht
IC3-401-2A-101217	SA_125-bulk	SM2510B	1	mS/m	Conductivity	5.20	ht
IC3-401-2A-101217	SA_125-bulk	pH	1		pH	4.72	ht



**Appendix C**

**SWEL – Soil Water Environmental Lab**

**Detailed Incremental Composite Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC3-401-2A-101217	SA_125-150um	EPA6010_MEHLICH3	10	mg/kg	Lead	364.14	
IC3-401-2A-101217	SA_125-150um	EPA6010_MEHLICH3	10	mg/kg	Phosphorus	99.38	
IC3-401-2A-101217	SA_125-150um	EPA6010_9200Bio2.5	2	mg/kg	Arsenic	10.94	
IC3-401-2A-101217	SA_125-150um	EPA6010_9200Bio2.5	2	mg/kg	Lead	598.44	
IC3-401-2A-101217	SA_125-150um	EPA6010_9200Bio1.5	2	mg/kg	Arsenic	24.01	
IC3-401-2A-101217	SA_125-150um	EPA6010_9200Bio1.5	2	mg/kg	Lead	1093.74	
IC3-401-2A-101217	SA_125-150um	EPA6010	4	mg/kg	Aluminum	23964.97	ht
IC3-401-2A-101217	SA_125-2mm	EPA6010	5	mg/kg	Aluminum	15276.07	crm ht
IC3-401-2A-101217	SA_125-150um	EPA6010	4	mg/kg	Antimony	48.15	ht
IC3-401-2A-101217	SA_125-2mm	EPA6010	5	mg/kg	Antimony	32.96	ht
IC3-401-2A-101217	SA_125-150um	EPA6010	4	mg/kg	Arsenic	111.20	ht
IC3-401-2A-101217	SA_125-2mm	EPA6010	5	mg/kg	Arsenic	52.85	ht
IC3-401-2A-101217	SA_125-150um	EPA6010	4	mg/kg	Barium	237.00	ht
IC3-401-2A-101217	SA_125-2mm	EPA6010	5	mg/kg	Barium	107.81	ht
IC3-401-2A-101217	SA_125-2mm	EPA6010	5	mg/kg	Beryllium	0.00	MDL crm ht
IC3-401-2A-101217	SA_125-150um	EPA6010	4	mg/kg	Beryllium	0.84	crm rl ht
IC3-401-2A-101217	SA_125-150um	EPA6010	4	mg/kg	Cadmium	29.64	ht
IC3-401-2A-101217	SA_125-2mm	EPA6010	5	mg/kg	Cadmium	13.44	ht
IC3-401-2A-101217	SA_125-2mm	EPA6010	5	mg/kg	Calcium	3946.37	ht
IC3-401-2A-101217	SA_125-150um	EPA6010	4	mg/kg	Calcium	3751.81	ht
IC3-401-2A-101217	SA_125-2mm	EPA6010	5	mg/kg	Chromium	46.19	dup ht
IC3-401-2A-101217	SA_125-150um	EPA6010	4	mg/kg	Chromium	34.78	ht
IC3-401-2A-101217	SA_125-150um	EPA6010	4	mg/kg	Cobalt	8.75	ht
IC3-401-2A-101217	SA_125-2mm	EPA6010	5	mg/kg	Cobalt	6.27	ht
IC3-401-2A-101217	SA_125-150um	EPA6010	4	mg/kg	Copper	79.58	ht
IC3-401-2A-101217	SA_125-2mm	EPA6010	5	mg/kg	Copper	37.14	ht
IC3-401-2A-101217	SA_125-150um	EPA6010	4	mg/kg	Iron	29035.93	ht
IC3-401-2A-101217	SA_125-2mm	EPA6010	5	mg/kg	Iron	24077.11	ht



**Appendix C**

**SWEL – Soil Water Environmental Lab**

**Detailed Incremental Composite Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC3-401-2A-101217	SA_125-150um	EPA6010	4	mg/kg	Lead	1439.92	ht
IC3-401-2A-101217	SA_125-2mm	EPA6010	5	mg/kg	Lead	767.44	ht
IC3-401-2A-101217	SA_125-150um	EPA6010	4	mg/kg	Magnesium	2920.53	ht
IC3-401-2A-101217	SA_125-2mm	EPA6010	5	mg/kg	Magnesium	2859.17	crm ht
IC3-401-2A-101217	SA_125-150um	EPA6010	4	mg/kg	Manganese	1124.46	ht
IC3-401-2A-101217	SA_125-2mm	EPA6010	5	mg/kg	Manganese	588.66	ht
IC3-401-2A-101217	SA_125-150um	EPA6010	4	mg/kg	Nickel	16.91	ht
IC3-401-2A-101217	SA_125-2mm	EPA6010	5	mg/kg	Nickel	12.75	ht
IC3-401-2A-101217	SA_125-150um	EPA6010	4	mg/kg	Phosphorus	2395.65	ht
IC3-401-2A-101217	SA_125-2mm	EPA6010	5	mg/kg	Phosphorus	1342.21	ht
IC3-401-2A-101217	SA_125-150um	EPA6010	4	mg/kg	Potassium	1950.62	crm ht
IC3-401-2A-101217	SA_125-2mm	EPA6010	5	mg/kg	Potassium	1510.51	ht
IC3-401-2A-101217	SA_125-150um	EPA6010	4	mg/kg	Selenium	3.99	rl ht
IC3-401-2A-101217	SA_125-2mm	EPA6010	5	mg/kg	Selenium	0.81	rl ht
IC3-401-2A-101217	SA_125-150um	EPA6010	4	mg/kg	Silver	0.20	MDL ht
IC3-401-2A-101217	SA_125-2mm	EPA6010	5	mg/kg	Silver	0.20	MDL ht
IC3-401-2A-101217	SA_125-150um	EPA6010	4	mg/kg	Sodium	489.94	ht
IC3-401-2A-101217	SA_125-2mm	EPA6010	5	mg/kg	Sodium	227.33	ht
IC3-401-2A-101217	SA_125-150um	EPA6010	4	mg/kg	Thallium	1.55	blk rl ht
IC3-401-2A-101217	SA_125-2mm	EPA6010	5	mg/kg	Thallium	0.63	rl ht
IC3-401-2A-101217	SA_125-150um	EPA6010	4	mg/kg	Vanadium	72.07	ht
IC3-401-2A-101217	SA_125-2mm	EPA6010	5	mg/kg	Vanadium	62.20	ht
IC3-401-2A-101217	SA_125-150um	EPA6010	4	mg/kg	Zinc	841.79	ht
IC3-401-2A-101217	SA_125-2mm	EPA6010	5	mg/kg	Zinc	414.96	ht
IC3-401-2A-101217	SA_125-2mm	EPA_300.0	1	mg/kg	Chloride	17.96	ht
IC3-401-2A-101217	SA_125-2mm	EPA_300.0	1	mg/kg	Sulfate	66.27	ht
IC3-401-2A-101217	SA_125-bulk	D422	1	%	Fines	4.21	

**Appendix C**
**SWEL – Soil Water Environmental Lab**
**Detailed Incremental Composite Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC3-401-2A-101217	SA_125-bulk	D422	1	%	Gravel	33.52	
IC3-401-2A-101217	SA_125-bulk	D422	1	%	Sand	76.50	
IC3-401-2A-101217	SA_125-bulk	D422	1	%	Silt	19.29	
IC3-401-2A-101217	SA_125-150um	Bioaccess2.5pH	2	%	Arsenic	9.84	
IC3-401-2A-101217	SA_125-150um	Bioaccess2.5pH	2	%	Lead	41.56	
IC3-401-2A-101217	SA_125-150um	Bioaccess1.5pH	2	%	Arsenic	21.59	
IC3-401-2A-101217	SA_125-150um	Bioaccess1.5pH	2	%	Lead	75.96	
IC3-401-2A-101217	SA_125-2mm	NELSON82	2	%	Carbon_total	5.75	ht
IC3-401-2A-101217	SA_125-2mm	BREMNER82	2	%	Nitrogen_total	0.25	ht
IC-401-2C-101217	SA_126-bulk	SM2510B	1	mS/m	Conductivity	5.13	ht
IC-401-2C-101217	SA_126-bulk	pH	1		pH	4.86	ht
IC-401-2C-101217	SA_126-150um	EPA6010_MEHLICH3	10	mg/kg	Lead	294.13	
IC-401-2C-101217	SA_126-150um	EPA6010_MEHLICH3	10	mg/kg	Phosphorus	72.92	
IC-401-2C-101217	SA_126-150um	EPA6010_9200Bio2.5	2	mg/kg	Arsenic	6.78	
IC-401-2C-101217	SA_126-150um	EPA6010_9200Bio2.5	2	mg/kg	Lead	486.53	
IC-401-2C-101217	SA_126-150um	EPA6010_9200Bio1.5	2	mg/kg	Arsenic	16.59	
IC-401-2C-101217	SA_126-150um	EPA6010_9200Bio1.5	2	mg/kg	Lead	929.86	
IC-401-2C-101217	SA_126-150um	EPA6010	4	mg/kg	Aluminum	24667.37	ht
IC-401-2C-101217	SA_126-2mm	EPA6010	5	mg/kg	Aluminum	16902.33	crm ht
IC-401-2C-101217	SA_126-150um	EPA6010	4	mg/kg	Antimony	39.97	ht
IC-401-2C-101217	SA_126-2mm	EPA6010	5	mg/kg	Antimony	27.21	ht
IC-401-2C-101217	SA_126-150um	EPA6010	4	mg/kg	Arsenic	99.24	ht
IC-401-2C-101217	SA_126-2mm	EPA6010	5	mg/kg	Arsenic	48.92	ht
IC-401-2C-101217	SA_126-150um	EPA6010	4	mg/kg	Barium	254.41	ht
IC-401-2C-101217	SA_126-2mm	EPA6010	5	mg/kg	Barium	142.89	ht
IC-401-2C-101217	SA_126-2mm	EPA6010	5	mg/kg	Beryllium	0.00	MDL crm ht
IC-401-2C-101217	SA_126-150um	EPA6010	4	mg/kg	Beryllium	0.86	crm rl ht
IC-401-2C-101217	SA_126-150um	EPA6010	4	mg/kg	Cadmium	23.64	ht
IC-401-2C-101217	SA_126-2mm	EPA6010	5	mg/kg	Cadmium	11.91	ht

**Appendix C**
**SWEL – Soil Water Environmental Lab**
**Detailed Incremental Composite Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC-401-2C-101217	SA_126-150um	EPA6010	4	mg/kg	Calcium	4006.63	ht
IC-401-2C-101217	SA_126-2mm	EPA6010	5	mg/kg	Calcium	3800.96	ht
IC-401-2C-101217	SA_126-2mm	EPA6010	5	mg/kg	Chromium	36.17	dup ht
IC-401-2C-101217	SA_126-150um	EPA6010	4	mg/kg	Chromium	35.96	ht
IC-401-2C-101217	SA_126-150um	EPA6010	4	mg/kg	Cobalt	9.19	ht
IC-401-2C-101217	SA_126-2mm	EPA6010	5	mg/kg	Cobalt	6.65	ht
IC-401-2C-101217	SA_126-150um	EPA6010	4	mg/kg	Copper	73.29	ht
IC-401-2C-101217	SA_126-2mm	EPA6010	5	mg/kg	Copper	36.44	ht
IC-401-2C-101217	SA_126-150um	EPA6010	4	mg/kg	Iron	27024.37	ht
IC-401-2C-101217	SA_126-2mm	EPA6010	5	mg/kg	Iron	25779.72	ht
IC-401-2C-101217	SA_126-150um	EPA6010	4	mg/kg	Lead	1349.04	ht
IC-401-2C-101217	SA_126-2mm	EPA6010	5	mg/kg	Lead	696.26	ht
IC-401-2C-101217	SA_126-2mm	EPA6010	5	mg/kg	Magnesium	3076.50	crm ht
IC-401-2C-101217	SA_126-150um	EPA6010	4	mg/kg	Magnesium	2986.11	ht
IC-401-2C-101217	SA_126-150um	EPA6010	4	mg/kg	Manganese	1022.83	ht
IC-401-2C-101217	SA_126-2mm	EPA6010	5	mg/kg	Manganese	598.78	ht
IC-401-2C-101217	SA_126-150um	EPA6010	4	mg/kg	Nickel	16.72	ht
IC-401-2C-101217	SA_126-2mm	EPA6010	5	mg/kg	Nickel	14.25	ht
IC-401-2C-101217	SA_126-150um	EPA6010	4	mg/kg	Phosphorus	2193.05	ht
IC-401-2C-101217	SA_126-2mm	EPA6010	5	mg/kg	Phosphorus	1317.35	ht
IC-401-2C-101217	SA_126-150um	EPA6010	4	mg/kg	Potassium	1915.06	crm ht
IC-401-2C-101217	SA_126-2mm	EPA6010	5	mg/kg	Potassium	1516.58	ht
IC-401-2C-101217	SA_126-150um	EPA6010	4	mg/kg	Selenium	4.01	rl ht
IC-401-2C-101217	SA_126-2mm	EPA6010	5	mg/kg	Selenium	1.16	rl ht
IC-401-2C-101217	SA_126-150um	EPA6010	4	mg/kg	Silver	0.20	MDL ht
IC-401-2C-101217	SA_126-2mm	EPA6010	5	mg/kg	Silver	0.20	MDL ht
IC-401-2C-101217	SA_126-150um	EPA6010	4	mg/kg	Sodium	511.94	ht



**Appendix C**

**SWEL – Soil Water Environmental Lab**

**Detailed Incremental Composite Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC-401-2C-101217	SA_126-2mm	EPA6010	5	mg/kg	Sodium	257.94	ht
IC-401-2C-101217	SA_126-150um	EPA6010	4	mg/kg	Thallium	1.20	blk rl ht
IC-401-2C-101217	SA_126-2mm	EPA6010	5	mg/kg	Thallium	0.87	rl ht
IC-401-2C-101217	SA_126-2mm	EPA6010	5	mg/kg	Vanadium	68.02	ht
IC-401-2C-101217	SA_126-150um	EPA6010	4	mg/kg	Vanadium	66.98	ht
IC-401-2C-101217	SA_126-150um	EPA6010	4	mg/kg	Zinc	820.04	ht
IC-401-2C-101217	SA_126-2mm	EPA6010	5	mg/kg	Zinc	450.76	ht
IC-401-2C-101217	SA_126-2mm	EPA_300.0	1	mg/kg	Chloride	29.10	ht
IC-401-2C-101217	SA_126-2mm	EPA_300.0	1	mg/kg	Sulfate	74.07	ht
IC-401-2C-101217	SA_126-bulk	D422	1	%	Fines	3.82	
IC-401-2C-101217	SA_126-bulk	D422	1	%	Gravel	42.72	
IC-401-2C-101217	SA_126-bulk	D422	1	%	Sand	75.70	
IC-401-2C-101217	SA_126-bulk	D422	1	%	Silt	20.48	
IC-401-2C-101217	SA_126-150um	Bioaccess2.5pH	2	%	Arsenic	6.83	
IC-401-2C-101217	SA_126-150um	Bioaccess2.5pH	2	%	Lead	36.06	
IC-401-2C-101217	SA_126-150um	Bioaccess1.5pH	2	%	Arsenic	16.72	
IC-401-2C-101217	SA_126-150um	Bioaccess1.5pH	2	%	Lead	68.93	
IC-401-2C-101217	SA_126-2mm	NELSON82	2	%	Carbon_total	6.59	ht
IC-401-2C-101217	SA_126-2mm	BREMNER82	2	%	Nitrogen_total	0.30	ht
IC-401-2D-101217	SA_127-bulk	SM2510B	1	mS/m	Conductivity	11.60	ht
IC-401-2D-101217	SA_127-bulk	pH	1		pH	4.55	ht
IC-401-2D-101217	SA_127-150um	EPA6010_MEHLICH3	10	mg/kg	Lead	300.26	
IC-401-2D-101217	SA_127-150um	EPA6010_MEHLICH3	10	mg/kg	Phosphorus	63.70	
IC-401-2D-101217	SA_127-150um	EPA6010_9200Bio2.5	2	mg/kg	Arsenic	6.45	
IC-401-2D-101217	SA_127-150um	EPA6010_9200Bio2.5	2	mg/kg	Lead	473.73	
IC-401-2D-101217	SA_127-150um	EPA6010_9200Bio1.5	2	mg/kg	Arsenic	16.40	
IC-401-2D-101217	SA_127-150um	EPA6010_9200Bio1.5	2	mg/kg	Lead	915.89	
IC-401-2D-101217	SA_127-150um	EPA6010	4	mg/kg	Aluminum	24989.18	ht
IC-401-2D-101217	SA_127-2mm	EPA6010	5	mg/kg	Aluminum	15541.75	crm ht
IC-401-2D-101217	SA_127-150um	EPA6010	4	mg/kg	Antimony	34.22	ht

**Appendix C**
**SWEL – Soil Water Environmental Lab**
**Detailed Incremental Composite Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC-401-2D-101217	SA_127-2mm	EPA6010	5	mg/kg	Antimony	29.69	ht
IC-401-2D-101217	SA_127-150um	EPA6010	4	mg/kg	Arsenic	87.80	ht
IC-401-2D-101217	SA_127-2mm	EPA6010	5	mg/kg	Arsenic	47.53	ht
IC-401-2D-101217	SA_127-150um	EPA6010	4	mg/kg	Barium	227.16	ht
IC-401-2D-101217	SA_127-2mm	EPA6010	5	mg/kg	Barium	116.04	ht
IC-401-2D-101217	SA_127-2mm	EPA6010	5	mg/kg	Beryllium	0.00	MDL crm ht
IC-401-2D-101217	SA_127-150um	EPA6010	4	mg/kg	Beryllium	0.81	crm rl ht
IC-401-2D-101217	SA_127-150um	EPA6010	4	mg/kg	Cadmium	22.36	ht
IC-401-2D-101217	SA_127-2mm	EPA6010	5	mg/kg	Cadmium	12.69	ht
IC-401-2D-101217	SA_127-150um	EPA6010	4	mg/kg	Calcium	4622.28	ht
IC-401-2D-101217	SA_127-2mm	EPA6010	5	mg/kg	Calcium	3730.48	ht
IC-401-2D-101217	SA_127-150um	EPA6010	4	mg/kg	Chromium	35.97	ht
IC-401-2D-101217	SA_127-2mm	EPA6010	5	mg/kg	Chromium	29.83	dup ht
IC-401-2D-101217	SA_127-150um	EPA6010	4	mg/kg	Cobalt	8.23	ht
IC-401-2D-101217	SA_127-2mm	EPA6010	5	mg/kg	Cobalt	5.76	ht
IC-401-2D-101217	SA_127-150um	EPA6010	4	mg/kg	Copper	67.99	ht
IC-401-2D-101217	SA_127-2mm	EPA6010	5	mg/kg	Copper	37.55	ht
IC-401-2D-101217	SA_127-150um	EPA6010	4	mg/kg	Iron	25628.83	ht
IC-401-2D-101217	SA_127-2mm	EPA6010	5	mg/kg	Iron	22982.84	ht
IC-401-2D-101217	SA_127-150um	EPA6010	4	mg/kg	Lead	1181.58	ht
IC-401-2D-101217	SA_127-2mm	EPA6010	5	mg/kg	Lead	779.81	ht
IC-401-2D-101217	SA_127-150um	EPA6010	4	mg/kg	Magnesium	2744.60	ht
IC-401-2D-101217	SA_127-2mm	EPA6010	5	mg/kg	Magnesium	2744.28	crm ht
IC-401-2D-101217	SA_127-150um	EPA6010	4	mg/kg	Manganese	979.26	ht
IC-401-2D-101217	SA_127-2mm	EPA6010	5	mg/kg	Manganese	557.00	ht
IC-401-2D-101217	SA_127-150um	EPA6010	4	mg/kg	Nickel	15.43	ht
IC-401-2D-101217	SA_127-2mm	EPA6010	5	mg/kg	Nickel	12.12	ht





**Appendix C**

**SWEL – Soil Water Environmental Lab**

**Detailed Incremental Composite Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC-401-2D-101217	SA_127-150um	EPA6010	4	mg/kg	Phosphorus	2152.11	ht
IC-401-2D-101217	SA_127-2mm	EPA6010	5	mg/kg	Phosphorus	1239.29	ht
IC-401-2D-101217	SA_127-150um	EPA6010	4	mg/kg	Potassium	1995.08	crm ht
IC-401-2D-101217	SA_127-2mm	EPA6010	5	mg/kg	Potassium	1606.72	ht
IC-401-2D-101217	SA_127-150um	EPA6010	4	mg/kg	Selenium	3.84	rl ht
IC-401-2D-101217	SA_127-2mm	EPA6010	5	mg/kg	Selenium	1.22	rl ht
IC-401-2D-101217	SA_127-150um	EPA6010	4	mg/kg	Silver	0.20	MDL ht
IC-401-2D-101217	SA_127-2mm	EPA6010	5	mg/kg	Silver	0.20	MDL ht
IC-401-2D-101217	SA_127-150um	EPA6010	4	mg/kg	Sodium	542.96	ht
IC-401-2D-101217	SA_127-2mm	EPA6010	5	mg/kg	Sodium	240.78	ht
IC-401-2D-101217	SA_127-150um	EPA6010	4	mg/kg	Thallium	1.32	blk rl ht
IC-401-2D-101217	SA_127-2mm	EPA6010	5	mg/kg	Thallium	0.60	rl ht
IC-401-2D-101217	SA_127-150um	EPA6010	4	mg/kg	Vanadium	62.99	ht
IC-401-2D-101217	SA_127-2mm	EPA6010	5	mg/kg	Vanadium	57.74	ht
IC-401-2D-101217	SA_127-150um	EPA6010	4	mg/kg	Zinc	799.94	ht
IC-401-2D-101217	SA_127-2mm	EPA6010	5	mg/kg	Zinc	511.18	ht
IC-401-2D-101217	SA_127-2mm	EPA_300.0	1	mg/kg	Chloride	18.09	ht
IC-401-2D-101217	SA_127-2mm	EPA_300.0	1	mg/kg	Sulfate	57.92	ht
IC-401-2D-101217	SA_127-bulk	D422	1	%	Fines	4.52	
IC-401-2D-101217	SA_127-bulk	D422	1	%	Gravel	44.30	
IC-401-2D-101217	SA_127-bulk	D422	1	%	Sand	70.40	
IC-401-2D-101217	SA_127-bulk	D422	1	%	Silt	25.08	
IC-401-2D-101217	SA_127-150um	Bioaccess2.5pH	2	%	Arsenic	7.35	
IC-401-2D-101217	SA_127-150um	Bioaccess2.5pH	2	%	Lead	40.09	
IC-401-2D-101217	SA_127-150um	Bioaccess1.5pH	2	%	Arsenic	18.68	
IC-401-2D-101217	SA_127-150um	Bioaccess1.5pH	2	%	Lead	77.51	
IC-401-2D-101217	SA_127-2mm	NELSON82	2	%	Carbon_total	8.02	ht
IC-401-2D-101217	SA_127-2mm	BREMNER82	2	%	Nitrogen_total	0.37	ht

**Appendix C**
**SWEL – Soil Water Environmental Lab**
**Detailed Incremental Composite Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC-258-3A-101717	SA_128-bulk	SM2510B	1	mS/m	Conductivity	7.90	ht
IC-258-3A-101717	SA_128-bulk	pH	1		pH	5.40	ht
IC-258-3A-101717	SA_128-150um	EPA6010_MEHLICH3	10	mg/kg	Lead	106.44	
IC-258-3A-101717	SA_128-150um	EPA6010_MEHLICH3	10	mg/kg	Phosphorus	28.68	
IC-258-3A-101717	SA_128-150um	EPA6010_9200Bio2.5	2	mg/kg	Arsenic	0.74	rl
IC-258-3A-101717	SA_128-150um	EPA6010_9200Bio2.5	2	mg/kg	Lead	111.03	
IC-258-3A-101717	SA_128-150um	EPA6010_9200Bio1.5	2	mg/kg	Arsenic	3.22	
IC-258-3A-101717	SA_128-150um	EPA6010_9200Bio1.5	2	mg/kg	Lead	289.86	
IC-258-3A-101717	SA_128-150um	EPA6010	4	mg/kg	Aluminum	25920.09	ht
IC-258-3A-101717	SA_128-2mm	EPA6010	5	mg/kg	Aluminum	14559.18	crm ht
IC-258-3A-101717	SA_128-150um	EPA6010	4	mg/kg	Antimony	14.03	ht
IC-258-3A-101717	SA_128-2mm	EPA6010	5	mg/kg	Antimony	4.92	rl ht
IC-258-3A-101717	SA_128-150um	EPA6010	4	mg/kg	Arsenic	37.29	ht
IC-258-3A-101717	SA_128-2mm	EPA6010	5	mg/kg	Arsenic	12.69	ht
IC-258-3A-101717	SA_128-150um	EPA6010	4	mg/kg	Barium	275.94	ht
IC-258-3A-101717	SA_128-2mm	EPA6010	5	mg/kg	Barium	113.38	ht
IC-258-3A-101717	SA_128-150um	EPA6010	4	mg/kg	Beryllium	0.86	crm rl ht
IC-258-3A-101717	SA_128-2mm	EPA6010	5	mg/kg	Beryllium	0.17	crm rl ht
IC-258-3A-101717	SA_128-150um	EPA6010	4	mg/kg	Cadmium	12.23	ht
IC-258-3A-101717	SA_128-2mm	EPA6010	5	mg/kg	Cadmium	3.58	ht
IC-258-3A-101717	SA_128-150um	EPA6010	4	mg/kg	Calcium	6185.25	ht
IC-258-3A-101717	SA_128-2mm	EPA6010	5	mg/kg	Calcium	3988.51	ht
IC-258-3A-101717	SA_128-2mm	EPA6010	5	mg/kg	Chromium	31.93	dup ht
IC-258-3A-101717	SA_128-150um	EPA6010	4	mg/kg	Chromium	20.92	ht
IC-258-3A-101717	SA_128-150um	EPA6010	4	mg/kg	Cobalt	7.95	ht
IC-258-3A-101717	SA_128-2mm	EPA6010	5	mg/kg	Cobalt	4.86	ht
IC-258-3A-101717	SA_128-150um	EPA6010	4	mg/kg	Copper	48.07	ht
IC-258-3A-101717	SA_128-2mm	EPA6010	5	mg/kg	Copper	16.63	ht

**Appendix C**
**SWEL – Soil Water Environmental Lab**
**Detailed Incremental Composite Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC-258-3A-101717	SA_128-150um	EPA6010	4	mg/kg	Iron	19617.15	ht
IC-258-3A-101717	SA_128-2mm	EPA6010	5	mg/kg	Iron	12784.47	ht
IC-258-3A-101717	SA_128-150um	EPA6010	4	mg/kg	Lead	419.36	ht
IC-258-3A-101717	SA_128-2mm	EPA6010	5	mg/kg	Lead	132.65	ht
IC-258-3A-101717	SA_128-2mm	EPA6010	5	mg/kg	Magnesium	2850.48	crm ht
IC-258-3A-101717	SA_128-150um	EPA6010	4	mg/kg	Magnesium	2501.69	ht
IC-258-3A-101717	SA_128-150um	EPA6010	4	mg/kg	Manganese	858.58	ht
IC-258-3A-101717	SA_128-2mm	EPA6010	5	mg/kg	Manganese	383.97	ht
IC-258-3A-101717	SA_128-150um	EPA6010	4	mg/kg	Nickel	13.73	ht
IC-258-3A-101717	SA_128-2mm	EPA6010	5	mg/kg	Nickel	9.52	ht
IC-258-3A-101717	SA_128-150um	EPA6010	4	mg/kg	Phosphorus	2006.84	ht
IC-258-3A-101717	SA_128-2mm	EPA6010	5	mg/kg	Phosphorus	1010.52	ht
IC-258-3A-101717	SA_128-150um	EPA6010	4	mg/kg	Potassium	1977.33	crm ht
IC-258-3A-101717	SA_128-2mm	EPA6010	5	mg/kg	Potassium	1362.21	ht
IC-258-3A-101717	SA_128-2mm	EPA6010	5	mg/kg	Selenium	0.70	ht
IC-258-3A-101717	SA_128-150um	EPA6010	4	mg/kg	Selenium	2.81	rl ht
IC-258-3A-101717	SA_128-150um	EPA6010	4	mg/kg	Silver	0.20	MDL ht
IC-258-3A-101717	SA_128-2mm	EPA6010	5	mg/kg	Silver	0.20	MDL ht
IC-258-3A-101717	SA_128-150um	EPA6010	4	mg/kg	Sodium	602.62	ht
IC-258-3A-101717	SA_128-2mm	EPA6010	5	mg/kg	Sodium	264.71	ht
IC-258-3A-101717	SA_128-150um	EPA6010	4	mg/kg	Thallium	0.83	blk rl ht
IC-258-3A-101717	SA_128-2mm	EPA6010	5	mg/kg	Thallium	0.47	rl ht
IC-258-3A-101717	SA_128-150um	EPA6010	4	mg/kg	Vanadium	45.87	ht
IC-258-3A-101717	SA_128-2mm	EPA6010	5	mg/kg	Vanadium	29.95	ht
IC-258-3A-101717	SA_128-150um	EPA6010	4	mg/kg	Zinc	474.32	ht
IC-258-3A-101717	SA_128-2mm	EPA6010	5	mg/kg	Zinc	173.57	ht
IC-258-3A-101717	SA_128-2mm	EPA_300.0	1	mg/kg	Chloride	16.85	ht



**Appendix C**

**SWEL – Soil Water Environmental Lab**

**Detailed Incremental Composite Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC-258-3A-101717	SA_128-2mm	EPA_300.0	1	mg/kg	Sulfate	49.00	ht
IC-258-3A-101717	SA_128-bulk	D422	1	%	Fines	2.93	
IC-258-3A-101717	SA_128-bulk	D422	1	%	Gravel	3.30	
IC-258-3A-101717	SA_128-bulk	D422	1	%	Sand	81.30	
IC-258-3A-101717	SA_128-bulk	D422	1	%	Silt	15.77	
IC-258-3A-101717	SA_128-150um	Bioaccess2.5pH	2	%	Arsenic	1.99	
IC-258-3A-101717	SA_128-150um	Bioaccess2.5pH	2	%	Lead	26.48	
IC-258-3A-101717	SA_128-150um	Bioaccess1.5pH	2	%	Arsenic	8.63	rl
IC-258-3A-101717	SA_128-150um	Bioaccess1.5pH	2	%	Lead	69.12	
IC-258-3A-101717	SA_128-2mm	NELSON82	2	%	Carbon_total	2.83	ht
IC-258-3A-101717	SA_128-2mm	BREMNER82	2	%	Nitrogen_total	0.18	ht
IC-258-3B-101717	SA_129-bulk	SM2510B	1	mS/m	Conductivity	9.62	ht
IC-258-3B-101717	SA_129-bulk	pH	1		pH	5.31	ht
IC-258-3B-101717	SA_129-150um	EPA6010_MEHLICH3	11	mg/kg	Lead	127.57	
IC-258-3B-101717	SA_129-150um	EPA6010_MEHLICH3	11	mg/kg	Phosphorus	90.48	
IC-258-3B-101717	SA_129-150um	EPA6010_9200Bio2.5	2	mg/kg	Arsenic	1.04	
IC-258-3B-101717	SA_129-150um	EPA6010_9200Bio2.5	2	mg/kg	Lead	134.17	
IC-258-3B-101717	SA_129-150um	EPA6010_9200Bio1.5	2	mg/kg	Arsenic	3.26	
IC-258-3B-101717	SA_129-150um	EPA6010_9200Bio1.5	2	mg/kg	Lead	345.74	
IC-258-3B-101717	SA_129-150um	EPA6010	4	mg/kg	Aluminum	22668.90	ht
IC-258-3B-101717	SA_129-2mm	EPA6010	5	mg/kg	Aluminum	10649.40	crm ht
IC-258-3B-101717	SA_129-150um	EPA6010	4	mg/kg	Antimony	15.12	ht
IC-258-3B-101717	SA_129-2mm	EPA6010	5	mg/kg	Antimony	5.40	ht
IC-258-3B-101717	SA_129-150um	EPA6010	4	mg/kg	Arsenic	36.73	ht
IC-258-3B-101717	SA_129-2mm	EPA6010	5	mg/kg	Arsenic	12.55	ht
IC-258-3B-101717	SA_129-150um	EPA6010	4	mg/kg	Barium	261.43	ht
IC-258-3B-101717	SA_129-2mm	EPA6010	5	mg/kg	Barium	82.40	ht
IC-258-3B-101717	SA_129-150um	EPA6010	4	mg/kg	Beryllium	0.79	crm rl ht
IC-258-3B-101717	SA_129-2mm	EPA6010	5	mg/kg	Beryllium	0.18	crm rl ht



**Appendix C**

**SWEL – Soil Water Environmental Lab**

**Detailed Incremental Composite Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC-258-3B-101717	SA_129-150um	EPA6010	4	mg/kg	Cadmium	13.98	ht
IC-258-3B-101717	SA_129-2mm	EPA6010	5	mg/kg	Cadmium	3.90	ht
IC-258-3B-101717	SA_129-150um	EPA6010	4	mg/kg	Calcium	6650.16	ht
IC-258-3B-101717	SA_129-2mm	EPA6010	5	mg/kg	Calcium	3338.13	ht
IC-258-3B-101717	SA_129-150um	EPA6010	4	mg/kg	Chromium	22.85	ht
IC-258-3B-101717	SA_129-2mm	EPA6010	5	mg/kg	Chromium	15.40	dup ht
IC-258-3B-101717	SA_129-150um	EPA6010	4	mg/kg	Cobalt	7.52	ht
IC-258-3B-101717	SA_129-2mm	EPA6010	5	mg/kg	Cobalt	3.95	ht
IC-258-3B-101717	SA_129-150um	EPA6010	4	mg/kg	Copper	50.18	ht
IC-258-3B-101717	SA_129-2mm	EPA6010	5	mg/kg	Copper	14.97	ht
IC-258-3B-101717	SA_129-150um	EPA6010	4	mg/kg	Iron	19745.76	ht
IC-258-3B-101717	SA_129-2mm	EPA6010	5	mg/kg	Iron	11358.58	ht
IC-258-3B-101717	SA_129-150um	EPA6010	4	mg/kg	Lead	546.84	ht
IC-258-3B-101717	SA_129-2mm	EPA6010	5	mg/kg	Lead	153.60	ht
IC-258-3B-101717	SA_129-150um	EPA6010	4	mg/kg	Magnesium	2843.34	ht
IC-258-3B-101717	SA_129-2mm	EPA6010	5	mg/kg	Magnesium	2420.35	crm ht
IC-258-3B-101717	SA_129-150um	EPA6010	4	mg/kg	Manganese	906.80	ht
IC-258-3B-101717	SA_129-2mm	EPA6010	5	mg/kg	Manganese	322.42	ht
IC-258-3B-101717	SA_129-150um	EPA6010	4	mg/kg	Nickel	13.19	ht
IC-258-3B-101717	SA_129-2mm	EPA6010	5	mg/kg	Nickel	8.63	ht
IC-258-3B-101717	SA_129-150um	EPA6010	4	mg/kg	Phosphorus	2433.40	ht
IC-258-3B-101717	SA_129-2mm	EPA6010	5	mg/kg	Phosphorus	962.15	ht
IC-258-3B-101717	SA_129-150um	EPA6010	4	mg/kg	Potassium	2010.44	crm ht
IC-258-3B-101717	SA_129-2mm	EPA6010	5	mg/kg	Potassium	1126.48	ht
IC-258-3B-101717	SA_129-2mm	EPA6010	5	mg/kg	Selenium	0.70	ht
IC-258-3B-101717	SA_129-150um	EPA6010	4	mg/kg	Selenium	3.20	rl ht
IC-258-3B-101717	SA_129-150um	EPA6010	4	mg/kg	Silver	0.20	MDL ht

**Appendix C**
**SWEL – Soil Water Environmental Lab**
**Detailed Incremental Composite Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC-258-3B-101717	SA_129-2mm	EPA6010	5	mg/kg	Silver	0.20	MDL ht
IC-258-3B-101717	SA_129-150um	EPA6010	4	mg/kg	Sodium	503.19	ht
IC-258-3B-101717	SA_129-2mm	EPA6010	5	mg/kg	Sodium	165.61	ht
IC-258-3B-101717	SA_129-150um	EPA6010	4	mg/kg	Thallium	0.99	blk rl ht
IC-258-3B-101717	SA_129-2mm	EPA6010	5	mg/kg	Thallium	0.37	rl ht
IC-258-3B-101717	SA_129-150um	EPA6010	4	mg/kg	Vanadium	46.70	ht
IC-258-3B-101717	SA_129-2mm	EPA6010	5	mg/kg	Vanadium	25.42	ht
IC-258-3B-101717	SA_129-150um	EPA6010	4	mg/kg	Zinc	620.22	ht
IC-258-3B-101717	SA_129-2mm	EPA6010	5	mg/kg	Zinc	194.03	ht
IC-258-3B-101717	SA_129-2mm	EPA_300.0	1	mg/kg	Chloride	17.49	ht
IC-258-3B-101717	SA_129-2mm	EPA_300.0	1	mg/kg	Sulfate	56.99	ht
IC-258-3B-101717	SA_129-bulk	D422	1	%	Fines	2.93	
IC-258-3B-101717	SA_129-bulk	D422	1	%	Gravel	1.34	
IC-258-3B-101717	SA_129-bulk	D422	1	%	Sand	84.20	
IC-258-3B-101717	SA_129-bulk	D422	1	%	Silt	12.87	
IC-258-3B-101717	SA_129-150um	Bioaccess2.5pH	2	%	Arsenic	2.82	
IC-258-3B-101717	SA_129-150um	Bioaccess2.5pH	2	%	Lead	24.54	
IC-258-3B-101717	SA_129-150um	Bioaccess1.5pH	2	%	Arsenic	8.88	
IC-258-3B-101717	SA_129-150um	Bioaccess1.5pH	2	%	Lead	63.22	
IC-258-3B-101717	SA_129-2mm	NELSON82	2	%	Carbon_total	2.32	ht
IC-258-3B-101717	SA_129-2mm	BREMNER82	2	%	Nitrogen_total	0.14	ht
IC-258-3C-101717	SA_130-bulk	SM2510B	1	mS/m	Conductivity	15.03	ht
IC-258-3C-101717	SA_130-bulk	pH	1		pH	5.00	ht
IC-258-3C-101717	SA_130-150um	EPA6010_MEHLICH3	11	mg/kg	Lead	214.73	
IC-258-3C-101717	SA_130-150um	EPA6010_MEHLICH3	11	mg/kg	Phosphorus	128.52	
IC-258-3C-101717	SA_130-150um	EPA6010_9200Bio2.5	2	mg/kg	Arsenic	1.29	
IC-258-3C-101717	SA_130-150um	EPA6010_9200Bio2.5	2	mg/kg	Lead	203.00	
IC-258-3C-101717	SA_130-150um	EPA6010_9200Bio1.5	2	mg/kg	Arsenic	4.33	
IC-258-3C-101717	SA_130-150um	EPA6010_9200Bio1.5	2	mg/kg	Lead	480.49	



**Appendix C**

**SWEL – Soil Water Environmental Lab**

**Detailed Incremental Composite Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC-258-3C-101717	SA_130-150um	EPA6010	4	mg/kg	Aluminum	19802.80	ht
IC-258-3C-101717	SA_130-2mm	EPA6010	5	mg/kg	Aluminum	11328.32	crm ht
IC-258-3C-101717	SA_130-150um	EPA6010	4	mg/kg	Antimony	14.02	ht
IC-258-3C-101717	SA_130-2mm	EPA6010	5	mg/kg	Antimony	7.00	ht
IC-258-3C-101717	SA_130-150um	EPA6010	4	mg/kg	Arsenic	33.26	ht
IC-258-3C-101717	SA_130-2mm	EPA6010	5	mg/kg	Arsenic	14.95	ht
IC-258-3C-101717	SA_130-150um	EPA6010	4	mg/kg	Barium	255.46	ht
IC-258-3C-101717	SA_130-2mm	EPA6010	5	mg/kg	Barium	109.59	ht
IC-258-3C-101717	SA_130-150um	EPA6010	4	mg/kg	Beryllium	0.66	crm rl ht
IC-258-3C-101717	SA_130-2mm	EPA6010	5	mg/kg	Beryllium	0.05	crm rl ht
IC-258-3C-101717	SA_130-150um	EPA6010	4	mg/kg	Cadmium	14.70	ht
IC-258-3C-101717	SA_130-2mm	EPA6010	5	mg/kg	Cadmium	6.42	ht
IC-258-3C-101717	SA_130-150um	EPA6010	4	mg/kg	Calcium	7502.99	ht
IC-258-3C-101717	SA_130-2mm	EPA6010	5	mg/kg	Calcium	4379.77	ht
IC-258-3C-101717	SA_130-2mm	EPA6010	5	mg/kg	Chromium	22.04	dup ht
IC-258-3C-101717	SA_130-150um	EPA6010	4	mg/kg	Chromium	19.12	ht
IC-258-3C-101717	SA_130-150um	EPA6010	4	mg/kg	Cobalt	7.00	ht
IC-258-3C-101717	SA_130-2mm	EPA6010	5	mg/kg	Cobalt	4.42	ht
IC-258-3C-101717	SA_130-150um	EPA6010	4	mg/kg	Copper	47.37	ht
IC-258-3C-101717	SA_130-2mm	EPA6010	5	mg/kg	Copper	19.13	ht
IC-258-3C-101717	SA_130-150um	EPA6010	4	mg/kg	Iron	17126.13	ht
IC-258-3C-101717	SA_130-2mm	EPA6010	5	mg/kg	Iron	12784.53	ht
IC-258-3C-101717	SA_130-150um	EPA6010	4	mg/kg	Lead	650.83	ht
IC-258-3C-101717	SA_130-2mm	EPA6010	5	mg/kg	Lead	284.03	ht
IC-258-3C-101717	SA_130-150um	EPA6010	4	mg/kg	Magnesium	3068.66	ht
IC-258-3C-101717	SA_130-2mm	EPA6010	5	mg/kg	Magnesium	2488.46	crm ht
IC-258-3C-101717	SA_130-150um	EPA6010	4	mg/kg	Manganese	827.26	ht



**Appendix C**

**SWEL – Soil Water Environmental Lab**

**Detailed Incremental Composite Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC-258-3C-101717	SA_130-2mm	EPA6010	5	mg/kg	Manganese	397.27	ht
IC-258-3C-101717	SA_130-150um	EPA6010	4	mg/kg	Nickel	12.30	ht
IC-258-3C-101717	SA_130-2mm	EPA6010	5	mg/kg	Nickel	9.02	ht
IC-258-3C-101717	SA_130-150um	EPA6010	4	mg/kg	Phosphorus	2317.25	ht
IC-258-3C-101717	SA_130-2mm	EPA6010	5	mg/kg	Phosphorus	1108.29	ht
IC-258-3C-101717	SA_130-150um	EPA6010	4	mg/kg	Potassium	1920.70	crm ht
IC-258-3C-101717	SA_130-2mm	EPA6010	5	mg/kg	Potassium	1302.82	ht
IC-258-3C-101717	SA_130-150um	EPA6010	4	mg/kg	Selenium	2.72	rl ht
IC-258-3C-101717	SA_130-2mm	EPA6010	5	mg/kg	Selenium	0.84	rl ht
IC-258-3C-101717	SA_130-150um	EPA6010	4	mg/kg	Silver	0.20	MDL ht
IC-258-3C-101717	SA_130-2mm	EPA6010	5	mg/kg	Silver	0.20	MDL ht
IC-258-3C-101717	SA_130-150um	EPA6010	4	mg/kg	Sodium	486.68	ht
IC-258-3C-101717	SA_130-2mm	EPA6010	5	mg/kg	Sodium	208.87	ht
IC-258-3C-101717	SA_130-150um	EPA6010	4	mg/kg	Thallium	1.23	blk rl ht
IC-258-3C-101717	SA_130-2mm	EPA6010	5	mg/kg	Thallium	0.39	rl ht
IC-258-3C-101717	SA_130-150um	EPA6010	4	mg/kg	Vanadium	39.70	ht
IC-258-3C-101717	SA_130-2mm	EPA6010	5	mg/kg	Vanadium	29.09	ht
IC-258-3C-101717	SA_130-150um	EPA6010	4	mg/kg	Zinc	643.45	ht
IC-258-3C-101717	SA_130-2mm	EPA6010	5	mg/kg	Zinc	293.31	ht
IC-258-3C-101717	SA_130-2mm	EPA_300.0	1	mg/kg	Chloride	17.91	ht
IC-258-3C-101717	SA_130-2mm	EPA_300.0	1	mg/kg	Sulfate	56.93	ht
IC-258-3C-101717	SA_130-bulk	D422	1	%	Fines	2.87	
IC-258-3C-101717	SA_130-bulk	D422	1	%	Gravel	2.81	
IC-258-3C-101717	SA_130-bulk	D422	1	%	Sand	79.50	
IC-258-3C-101717	SA_130-bulk	D422	1	%	Silt	17.63	
IC-258-3C-101717	SA_130-150um	Bioaccess2.5pH	2	%	Arsenic	3.87	
IC-258-3C-101717	SA_130-150um	Bioaccess2.5pH	2	%	Lead	31.19	
IC-258-3C-101717	SA_130-150um	Bioaccess1.5pH	2	%	Arsenic	13.01	



**Appendix C**
**SWEL – Soil Water Environmental Lab**
**Detailed Incremental Composite Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC-258-3C-101717	SA_130-150um	Bioaccess1.5pH	2	%	Lead	73.83	
IC-258-3C-101717	SA_130-2mm	NELSON82	2	%	Carbon_total	4.72	ht
IC-258-3C-101717	SA_130-2mm	BREMNER82	2	%	Nitrogen_total	0.26	ht
IC-258-3D-101717	SA_131-bulk	SM2510B	1	mS/m	Conductivity	11.26	ht
IC-258-3D-101717	SA_131-bulk	pH	1		pH	5.35	ht
IC-258-3D-101717	SA_131-150um	EPA6010_MEHLICH3	11	mg/kg	Lead	181.85	
IC-258-3D-101717	SA_131-150um	EPA6010_MEHLICH3	11	mg/kg	Phosphorus	117.18	
IC-258-3D-101717	SA_131-150um	EPA6010_9200Bio2.5	3	mg/kg	Arsenic	1.51	
IC-258-3D-101717	SA_131-150um	EPA6010_9200Bio2.5	3	mg/kg	Lead	190.14	
IC-258-3D-101717	SA_131-150um	EPA6010_9200Bio1.5	3	mg/kg	Arsenic	5.29	
IC-258-3D-101717	SA_131-150um	EPA6010_9200Bio1.5	3	mg/kg	Lead	465.66	
IC-258-3D-101717	SA_131-150um	EPA6010	4	mg/kg	Aluminum	20042.64	ht
IC-258-3D-101717	SA_131-2mm	EPA6010	5	mg/kg	Aluminum	11122.62	crm ht
IC-258-3D-101717	SA_131-150um	EPA6010	4	mg/kg	Antimony	16.60	ht
IC-258-3D-101717	SA_131-2mm	EPA6010	5	mg/kg	Antimony	7.18	ht
IC-258-3D-101717	SA_131-150um	EPA6010	4	mg/kg	Arsenic	42.18	ht
IC-258-3D-101717	SA_131-2mm	EPA6010	5	mg/kg	Arsenic	17.40	ht
IC-258-3D-101717	SA_131-150um	EPA6010	4	mg/kg	Barium	252.31	ht
IC-258-3D-101717	SA_131-2mm	EPA6010	5	mg/kg	Barium	97.19	ht
IC-258-3D-101717	SA_131-2mm	EPA6010	5	mg/kg	Beryllium	0.00	MDL crm ht
IC-258-3D-101717	SA_131-150um	EPA6010	4	mg/kg	Beryllium	0.73	crm rl ht
IC-258-3D-101717	SA_131-150um	EPA6010	4	mg/kg	Cadmium	15.71	ht
IC-258-3D-101717	SA_131-2mm	EPA6010	5	mg/kg	Cadmium	5.88	ht
IC-258-3D-101717	SA_131-150um	EPA6010	4	mg/kg	Calcium	6673.17	ht
IC-258-3D-101717	SA_131-2mm	EPA6010	5	mg/kg	Calcium	3887.79	ht
IC-258-3D-101717	SA_131-150um	EPA6010	4	mg/kg	Chromium	21.93	ht
IC-258-3D-101717	SA_131-2mm	EPA6010	5	mg/kg	Chromium	16.28	dup ht
IC-258-3D-101717	SA_131-150um	EPA6010	4	mg/kg	Cobalt	7.18	ht

**Appendix C**
**SWEL – Soil Water Environmental Lab**
**Detailed Incremental Composite Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC-258-3D-101717	SA_131-2mm	EPA6010	5	mg/kg	Cobalt	4.38	ht
IC-258-3D-101717	SA_131-150um	EPA6010	4	mg/kg	Copper	53.97	ht
IC-258-3D-101717	SA_131-2mm	EPA6010	5	mg/kg	Copper	19.15	ht
IC-258-3D-101717	SA_131-150um	EPA6010	4	mg/kg	Iron	19788.72	ht
IC-258-3D-101717	SA_131-2mm	EPA6010	5	mg/kg	Iron	12420.92	ht
IC-258-3D-101717	SA_131-150um	EPA6010	4	mg/kg	Lead	672.23	ht
IC-258-3D-101717	SA_131-2mm	EPA6010	5	mg/kg	Lead	262.00	ht
IC-258-3D-101717	SA_131-150um	EPA6010	4	mg/kg	Magnesium	2809.15	ht
IC-258-3D-101717	SA_131-2mm	EPA6010	5	mg/kg	Magnesium	2302.96	crm ht
IC-258-3D-101717	SA_131-150um	EPA6010	4	mg/kg	Manganese	828.53	ht
IC-258-3D-101717	SA_131-2mm	EPA6010	5	mg/kg	Manganese	364.80	ht
IC-258-3D-101717	SA_131-150um	EPA6010	4	mg/kg	Nickel	12.76	ht
IC-258-3D-101717	SA_131-2mm	EPA6010	5	mg/kg	Nickel	8.33	ht
IC-258-3D-101717	SA_131-150um	EPA6010	4	mg/kg	Phosphorus	2281.59	ht
IC-258-3D-101717	SA_131-2mm	EPA6010	5	mg/kg	Phosphorus	1062.92	ht
IC-258-3D-101717	SA_131-150um	EPA6010	4	mg/kg	Potassium	1837.92	crm ht
IC-258-3D-101717	SA_131-2mm	EPA6010	5	mg/kg	Potassium	1252.08	ht
IC-258-3D-101717	SA_131-150um	EPA6010	4	mg/kg	Selenium	3.18	rl ht
IC-258-3D-101717	SA_131-2mm	EPA6010	5	mg/kg	Selenium	0.96	rl ht
IC-258-3D-101717	SA_131-150um	EPA6010	4	mg/kg	Silver	0.20	MDL ht
IC-258-3D-101717	SA_131-2mm	EPA6010	5	mg/kg	Silver	0.20	MDL ht
IC-258-3D-101717	SA_131-150um	EPA6010	4	mg/kg	Sodium	428.93	ht
IC-258-3D-101717	SA_131-2mm	EPA6010	5	mg/kg	Sodium	198.37	ht
IC-258-3D-101717	SA_131-150um	EPA6010	4	mg/kg	Thallium	0.65	blk rl ht
IC-258-3D-101717	SA_131-2mm	EPA6010	5	mg/kg	Thallium	0.59	rl ht
IC-258-3D-101717	SA_131-150um	EPA6010	4	mg/kg	Vanadium	46.53	ht
IC-258-3D-101717	SA_131-2mm	EPA6010	5	mg/kg	Vanadium	29.12	ht



**Appendix C**

**SWEL – Soil Water Environmental Lab**

**Detailed Incremental Composite Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC-258-3D-101717	SA_131-150um	EPA6010	4	mg/kg	Zinc	616.91	ht
IC-258-3D-101717	SA_131-2mm	EPA6010	5	mg/kg	Zinc	252.05	ht
IC-258-3D-101717	SA_131-2mm	EPA_300.0	1	mg/kg	Chloride	18.52	ht
IC-258-3D-101717	SA_131-2mm	EPA_300.0	1	mg/kg	Sulfate	49.73	ht
IC-258-3D-101717	SA_131-bulk	D422	1	%	Fines	2.49	
IC-258-3D-101717	SA_131-bulk	D422	1	%	Gravel	2.03	
IC-258-3D-101717	SA_131-bulk	D422	1	%	Sand	84.70	
IC-258-3D-101717	SA_131-bulk	D422	1	%	Silt	12.81	
IC-258-3D-101717	SA_131-150um	Bioaccess2.5pH	3	%	Arsenic	3.59	
IC-258-3D-101717	SA_131-150um	Bioaccess2.5pH	3	%	Lead	28.29	
IC-258-3D-101717	SA_131-150um	Bioaccess1.5pH	3	%	Arsenic	12.53	
IC-258-3D-101717	SA_131-150um	Bioaccess1.5pH	3	%	Lead	69.27	
IC-258-3D-101717	SA_131-2mm	NELSON82	2	%	Carbon_total	3.65	ht
IC-258-3D-101717	SA_131-2mm	BREMNER82	2	%	Nitrogen_total	0.21	ht
IC-441-1A-101617	SA_132-bulk	SM2510B	1	mS/m	Conductivity	12.60	ht
IC-441-1A-101617	SA_132-bulk	pH	1		pH	5.85	ht
IC-441-1A-101617	SA_132-150um	EPA6010_MEHLICH3	11	mg/kg	Lead	186.45	
IC-441-1A-101617	SA_132-150um	EPA6010_MEHLICH3	11	mg/kg	Phosphorus	205.88	
IC-441-1A-101617	SA_132-150um	EPA6010_9200Bio2.5	3	mg/kg	Arsenic	3.10	
IC-441-1A-101617	SA_132-150um	EPA6010_9200Bio2.5	3	mg/kg	Lead	159.94	
IC-441-1A-101617	SA_132-150um	EPA6010_9200Bio1.5	3	mg/kg	Arsenic	8.21	
IC-441-1A-101617	SA_132-150um	EPA6010_9200Bio1.5	3	mg/kg	Lead	424.34	
IC-441-1A-101617	SA_132-150um	EPA6010	4	mg/kg	Aluminum	25266.55	ht
IC-441-1A-101617	SA_132-2mm	EPA6010	5	mg/kg	Aluminum	22504.51	crm ht
IC-441-1A-101617	SA_132-150um	EPA6010	4	mg/kg	Antimony	10.47	ht
IC-441-1A-101617	SA_132-2mm	EPA6010	5	mg/kg	Antimony	6.75	ht
IC-441-1A-101617	SA_132-150um	EPA6010	4	mg/kg	Arsenic	33.32	ht
IC-441-1A-101617	SA_132-2mm	EPA6010	5	mg/kg	Arsenic	17.58	ht
IC-441-1A-101617	SA_132-150um	EPA6010	4	mg/kg	Barium	337.87	ht
IC-441-1A-101617	SA_132-2mm	EPA6010	5	mg/kg	Barium	209.30	ht

**Appendix C**
**SWEL – Soil Water Environmental Lab**
**Detailed Incremental Composite Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC-441-1A-101617	SA_132-2mm	EPA6010	5	mg/kg	Beryllium	0.00	MDL crm ht
IC-441-1A-101617	SA_132-150um	EPA6010	4	mg/kg	Beryllium	0.87	crm rl ht
IC-441-1A-101617	SA_132-150um	EPA6010	4	mg/kg	Cadmium	12.74	ht
IC-441-1A-101617	SA_132-2mm	EPA6010	5	mg/kg	Cadmium	6.75	ht
IC-441-1A-101617	SA_132-150um	EPA6010	4	mg/kg	Calcium	10586.38	ht
IC-441-1A-101617	SA_132-2mm	EPA6010	5	mg/kg	Calcium	8850.87	ht
IC-441-1A-101617	SA_132-2mm	EPA6010	5	mg/kg	Chromium	43.08	dup ht
IC-441-1A-101617	SA_132-150um	EPA6010	4	mg/kg	Chromium	35.77	ht
IC-441-1A-101617	SA_132-150um	EPA6010	4	mg/kg	Cobalt	11.14	ht
IC-441-1A-101617	SA_132-2mm	EPA6010	5	mg/kg	Cobalt	9.63	ht
IC-441-1A-101617	SA_132-150um	EPA6010	4	mg/kg	Copper	67.32	ht
IC-441-1A-101617	SA_132-2mm	EPA6010	5	mg/kg	Copper	37.30	ht
IC-441-1A-101617	SA_132-150um	EPA6010	4	mg/kg	Iron	22190.81	ht
IC-441-1A-101617	SA_132-2mm	EPA6010	5	mg/kg	Iron	21831.20	ht
IC-441-1A-101617	SA_132-150um	EPA6010	4	mg/kg	Lead	552.04	ht
IC-441-1A-101617	SA_132-2mm	EPA6010	5	mg/kg	Lead	275.73	ht
IC-441-1A-101617	SA_132-2mm	EPA6010	5	mg/kg	Magnesium	6122.65	crm ht
IC-441-1A-101617	SA_132-150um	EPA6010	4	mg/kg	Magnesium	4239.54	ht
IC-441-1A-101617	SA_132-150um	EPA6010	4	mg/kg	Manganese	1243.85	ht
IC-441-1A-101617	SA_132-2mm	EPA6010	5	mg/kg	Manganese	757.37	ht
IC-441-1A-101617	SA_132-2mm	EPA6010	5	mg/kg	Nickel	24.31	ht
IC-441-1A-101617	SA_132-150um	EPA6010	4	mg/kg	Nickel	23.29	ht
IC-441-1A-101617	SA_132-150um	EPA6010	4	mg/kg	Phosphorus	2843.38	ht
IC-441-1A-101617	SA_132-2mm	EPA6010	5	mg/kg	Phosphorus	1977.74	ht
IC-441-1A-101617	SA_132-2mm	EPA6010	5	mg/kg	Potassium	3790.10	ht
IC-441-1A-101617	SA_132-150um	EPA6010	4	mg/kg	Potassium	3474.77	crm ht
IC-441-1A-101617	SA_132-150um	EPA6010	4	mg/kg	Selenium	4.29	rl ht



**Appendix C**

**SWEL – Soil Water Environmental Lab**

**Detailed Incremental Composite Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC-441-1A-101617	SA_132-2mm	EPA6010	5	mg/kg	Selenium	1.53	rl ht
IC-441-1A-101617	SA_132-150um	EPA6010	4	mg/kg	Silver	0.20	MDL ht
IC-441-1A-101617	SA_132-2mm	EPA6010	5	mg/kg	Silver	0.20	MDL ht
IC-441-1A-101617	SA_132-150um	EPA6010	4	mg/kg	Sodium	572.41	ht
IC-441-1A-101617	SA_132-2mm	EPA6010	5	mg/kg	Sodium	408.21	ht
IC-441-1A-101617	SA_132-150um	EPA6010	4	mg/kg	Thallium	1.13	blk rl ht
IC-441-1A-101617	SA_132-2mm	EPA6010	5	mg/kg	Thallium	0.39	rl ht
IC-441-1A-101617	SA_132-150um	EPA6010	4	mg/kg	Vanadium	56.48	ht
IC-441-1A-101617	SA_132-2mm	EPA6010	5	mg/kg	Vanadium	56.25	ht
IC-441-1A-101617	SA_132-150um	EPA6010	4	mg/kg	Zinc	597.70	ht
IC-441-1A-101617	SA_132-2mm	EPA6010	5	mg/kg	Zinc	321.77	ht
IC-441-1A-101617	SA_132-2mm	EPA_300.0	1	mg/kg	Chloride	16.15	ht
IC-441-1A-101617	SA_132-2mm	EPA_300.0	1	mg/kg	Sulfate	30.00	RL ht
IC-441-1A-101617	SA_132-bulk	D422	1	%	Fines	3.95	
IC-441-1A-101617	SA_132-bulk	D422	1	%	Gravel	36.47	
IC-441-1A-101617	SA_132-bulk	D422	1	%	Sand	61.90	
IC-441-1A-101617	SA_132-bulk	D422	1	%	Silt	34.15	
IC-441-1A-101617	SA_132-150um	Bioaccess2.5pH	3	%	Arsenic	9.30	
IC-441-1A-101617	SA_132-150um	Bioaccess2.5pH	3	%	Lead	28.97	
IC-441-1A-101617	SA_132-150um	Bioaccess1.5pH	3	%	Arsenic	24.65	
IC-441-1A-101617	SA_132-150um	Bioaccess1.5pH	3	%	Lead	76.87	
IC-441-1A-101617	SA_132-2mm	NELSON82	2	%	Carbon_total	5.65	ht
IC-441-1A-101617	SA_132-2mm	BREMNER82	2	%	Nitrogen_total	0.31	ht
IC-441-1B-101617	SA_133-bulk	SM2510B	1	mS/m	Conductivity	9.28	ht
IC-441-1B-101617	SA_133-bulk	pH	1		pH	5.92	ht
IC-441-1B-101617	SA_133-150um	EPA6010_MEHLICH3	12	mg/kg	Lead	158.37	
IC-441-1B-101617	SA_133-150um	EPA6010_MEHLICH3	12	mg/kg	Phosphorus	124.89	
IC-441-1B-101617	SA_133-150um	EPA6010_9200Bio2.5	3	mg/kg	Arsenic	3.78	



**Appendix C**

**SWEL – Soil Water Environmental Lab**

**Detailed Incremental Composite Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC-441-1B-101617	SA_133-150um	EPA6010_9200Bio2.5	3	mg/kg	Lead	160.05	
IC-441-1B-101617	SA_133-150um	EPA6010_9200Bio1.5	3	mg/kg	Arsenic	9.74	
IC-441-1B-101617	SA_133-150um	EPA6010_9200Bio1.5	3	mg/kg	Lead	437.57	
IC-441-1B-101617	SA_133-150um	EPA6010	4	mg/kg	Aluminum	26893.41	ht
IC-441-1B-101617	SA_133-2mm	EPA6010	5	mg/kg	Aluminum	25983.35	crm ht
IC-441-1B-101617	SA_133-2mm	EPA6010	5	mg/kg	Antimony	12.81	ht
IC-441-1B-101617	SA_133-150um	EPA6010	4	mg/kg	Antimony	12.26	ht
IC-441-1B-101617	SA_133-150um	EPA6010	4	mg/kg	Arsenic	40.76	ht
IC-441-1B-101617	SA_133-2mm	EPA6010	5	mg/kg	Arsenic	36.90	ht
IC-441-1B-101617	SA_133-150um	EPA6010	4	mg/kg	Barium	308.28	ht
IC-441-1B-101617	SA_133-2mm	EPA6010	5	mg/kg	Barium	222.05	ht
IC-441-1B-101617	SA_133-2mm	EPA6010	5	mg/kg	Beryllium	0.00	MDL crm ht
IC-441-1B-101617	SA_133-150um	EPA6010	4	mg/kg	Beryllium	0.85	crm rl ht
IC-441-1B-101617	SA_133-150um	EPA6010	4	mg/kg	Cadmium	13.82	ht
IC-441-1B-101617	SA_133-2mm	EPA6010	5	mg/kg	Cadmium	13.16	ht
IC-441-1B-101617	SA_133-150um	EPA6010	4	mg/kg	Calcium	10439.35	ht
IC-441-1B-101617	SA_133-2mm	EPA6010	5	mg/kg	Calcium	9720.75	ht
IC-441-1B-101617	SA_133-2mm	EPA6010	5	mg/kg	Chromium	36.12	dup ht
IC-441-1B-101617	SA_133-150um	EPA6010	4	mg/kg	Chromium	32.71	ht
IC-441-1B-101617	SA_133-2mm	EPA6010	5	mg/kg	Cobalt	11.01	ht
IC-441-1B-101617	SA_133-150um	EPA6010	4	mg/kg	Cobalt	10.67	ht
IC-441-1B-101617	SA_133-150um	EPA6010	4	mg/kg	Copper	69.43	ht
IC-441-1B-101617	SA_133-2mm	EPA6010	5	mg/kg	Copper	59.37	ht
IC-441-1B-101617	SA_133-2mm	EPA6010	5	mg/kg	Iron	21382.75	ht
IC-441-1B-101617	SA_133-150um	EPA6010	4	mg/kg	Iron	20867.69	ht
IC-441-1B-101617	SA_133-150um	EPA6010	4	mg/kg	Lead	556.40	ht
IC-441-1B-101617	SA_133-2mm	EPA6010	5	mg/kg	Lead	485.07	ht

**Appendix C**
**SWEL – Soil Water Environmental Lab**
**Detailed Incremental Composite Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC-441-1B-101617	SA_133-2mm	EPA6010	5	mg/kg	Magnesium	5472.95	crm ht
IC-441-1B-101617	SA_133-150um	EPA6010	4	mg/kg	Magnesium	3969.84	ht
IC-441-1B-101617	SA_133-150um	EPA6010	4	mg/kg	Manganese	1127.03	ht
IC-441-1B-101617	SA_133-2mm	EPA6010	5	mg/kg	Manganese	870.49	ht
IC-441-1B-101617	SA_133-2mm	EPA6010	5	mg/kg	Nickel	21.92	ht
IC-441-1B-101617	SA_133-150um	EPA6010	4	mg/kg	Nickel	20.84	ht
IC-441-1B-101617	SA_133-150um	EPA6010	4	mg/kg	Phosphorus	3372.99	ht
IC-441-1B-101617	SA_133-2mm	EPA6010	5	mg/kg	Phosphorus	2950.90	ht
IC-441-1B-101617	SA_133-2mm	EPA6010	5	mg/kg	Potassium	3361.37	ht
IC-441-1B-101617	SA_133-150um	EPA6010	4	mg/kg	Potassium	3122.08	crm ht
IC-441-1B-101617	SA_133-150um	EPA6010	4	mg/kg	Selenium	4.93	rl ht
IC-441-1B-101617	SA_133-2mm	EPA6010	5	mg/kg	Selenium	1.36	rl ht
IC-441-1B-101617	SA_133-150um	EPA6010	4	mg/kg	Silver	0.20	MDL ht
IC-441-1B-101617	SA_133-2mm	EPA6010	5	mg/kg	Silver	0.20	MDL ht
IC-441-1B-101617	SA_133-150um	EPA6010	4	mg/kg	Sodium	697.85	ht
IC-441-1B-101617	SA_133-2mm	EPA6010	5	mg/kg	Sodium	540.95	ht
IC-441-1B-101617	SA_133-2mm	EPA6010	5	mg/kg	Thallium	0.77	rl ht
IC-441-1B-101617	SA_133-150um	EPA6010	4	mg/kg	Thallium	0.65	blk rl ht
IC-441-1B-101617	SA_133-2mm	EPA6010	5	mg/kg	Vanadium	53.06	ht
IC-441-1B-101617	SA_133-150um	EPA6010	4	mg/kg	Vanadium	51.84	ht
IC-441-1B-101617	SA_133-150um	EPA6010	4	mg/kg	Zinc	738.48	ht
IC-441-1B-101617	SA_133-2mm	EPA6010	5	mg/kg	Zinc	719.37	ht
IC-441-1B-101617	SA_133-2mm	EPA_300.0	1	mg/kg	Chloride	15.93	ht
IC-441-1B-101617	SA_133-2mm	EPA_300.0	1	mg/kg	Sulfate	30.00	RL ht
IC-441-1B-101617	SA_133-bulk	D422	1	%	Fines	3.12	
IC-441-1B-101617	SA_133-bulk	D422	1	%	Gravel	38.09	
IC-441-1B-101617	SA_133-bulk	D422	1	%	Sand	57.60	



**Appendix C**

**SWEL – Soil Water Environmental Lab**

**Detailed Incremental Composite Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC-441-1B-101617	SA_133-bulk	D422	1	%	Silt	39.28	
IC-441-1B-101617	SA_133-150um	Bioaccess2.5pH	3	%	Arsenic	9.26	
IC-441-1B-101617	SA_133-150um	Bioaccess2.5pH	3	%	Lead	28.76	
IC-441-1B-101617	SA_133-150um	Bioaccess1.5pH	3	%	Arsenic	23.90	
IC-441-1B-101617	SA_133-150um	Bioaccess1.5pH	3	%	Lead	78.64	
IC-441-1B-101617	SA_133-2mm	NELSON82	2	%	Carbon_total	7.90	ht
IC-441-1B-101617	SA_133-2mm	BREMNER82	2	%	Nitrogen_total	0.47	ht
IC-441-1C-101617	SA_134-bulk	SM2510B	1	mS/m	Conductivity	12.75	ht
IC-441-1C-101617	SA_134-bulk	pH	1		pH	6.16	ht
IC-441-1C-101617	SA_134-150um	EPA6010_MEHLICH3	12	mg/kg	Lead	190.99	
IC-441-1C-101617	SA_134-150um	EPA6010_MEHLICH3	12	mg/kg	Phosphorus	205.20	
IC-441-1C-101617	SA_134-150um	EPA6010_9200Bio2.5	3	mg/kg	Arsenic	4.14	
IC-441-1C-101617	SA_134-150um	EPA6010_9200Bio2.5	3	mg/kg	Lead	215.69	
IC-441-1C-101617	SA_134-150um	EPA6010_9200Bio1.5	3	mg/kg	Arsenic	9.33	
IC-441-1C-101617	SA_134-150um	EPA6010_9200Bio1.5	3	mg/kg	Lead	494.41	
IC-441-1C-101617	SA_134-150um	EPA6010	4	mg/kg	Aluminum	24794.57	ht
IC-441-1C-101617	SA_134-2mm	EPA6010	5	mg/kg	Aluminum	21009.14	crm ht
IC-441-1C-101617	SA_134-150um	EPA6010	4	mg/kg	Antimony	11.66	ht
IC-441-1C-101617	SA_134-2mm	EPA6010	5	mg/kg	Antimony	10.01	ht
IC-441-1C-101617	SA_134-150um	EPA6010	4	mg/kg	Arsenic	37.80	ht
IC-441-1C-101617	SA_134-2mm	EPA6010	5	mg/kg	Arsenic	26.88	ht
IC-441-1C-101617	SA_134-150um	EPA6010	4	mg/kg	Barium	302.90	ht
IC-441-1C-101617	SA_134-2mm	EPA6010	5	mg/kg	Barium	208.18	ht
IC-441-1C-101617	SA_134-2mm	EPA6010	5	mg/kg	Beryllium	0.00	MDL crm ht
IC-441-1C-101617	SA_134-150um	EPA6010	4	mg/kg	Beryllium	0.79	crm rl ht
IC-441-1C-101617	SA_134-150um	EPA6010	4	mg/kg	Cadmium	16.24	ht
IC-441-1C-101617	SA_134-2mm	EPA6010	5	mg/kg	Cadmium	12.34	ht
IC-441-1C-101617	SA_134-150um	EPA6010	4	mg/kg	Calcium	9939.94	ht
IC-441-1C-101617	SA_134-2mm	EPA6010	5	mg/kg	Calcium	8550.92	ht



**Appendix C**
**SWEL – Soil Water Environmental Lab**
**Detailed Incremental Composite Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC-441-1C-101617	SA_134-150um	EPA6010	4	mg/kg	Chromium	34.90	ht
IC-441-1C-101617	SA_134-2mm	EPA6010	5	mg/kg	Chromium	33.62	dup ht
IC-441-1C-101617	SA_134-150um	EPA6010	4	mg/kg	Cobalt	9.88	ht
IC-441-1C-101617	SA_134-2mm	EPA6010	5	mg/kg	Cobalt	9.00	ht
IC-441-1C-101617	SA_134-150um	EPA6010	4	mg/kg	Copper	59.44	ht
IC-441-1C-101617	SA_134-2mm	EPA6010	5	mg/kg	Copper	41.81	ht
IC-441-1C-101617	SA_134-150um	EPA6010	4	mg/kg	Iron	20408.85	ht
IC-441-1C-101617	SA_134-2mm	EPA6010	5	mg/kg	Iron	19279.07	ht
IC-441-1C-101617	SA_134-150um	EPA6010	4	mg/kg	Lead	612.29	ht
IC-441-1C-101617	SA_134-2mm	EPA6010	5	mg/kg	Lead	462.21	ht
IC-441-1C-101617	SA_134-2mm	EPA6010	5	mg/kg	Magnesium	4596.00	crm ht
IC-441-1C-101617	SA_134-150um	EPA6010	4	mg/kg	Magnesium	3991.38	ht
IC-441-1C-101617	SA_134-150um	EPA6010	4	mg/kg	Manganese	936.51	ht
IC-441-1C-101617	SA_134-2mm	EPA6010	5	mg/kg	Manganese	704.30	ht
IC-441-1C-101617	SA_134-150um	EPA6010	4	mg/kg	Nickel	19.63	ht
IC-441-1C-101617	SA_134-2mm	EPA6010	5	mg/kg	Nickel	19.27	ht
IC-441-1C-101617	SA_134-150um	EPA6010	4	mg/kg	Phosphorus	2580.52	ht
IC-441-1C-101617	SA_134-2mm	EPA6010	5	mg/kg	Phosphorus	2000.57	ht
IC-441-1C-101617	SA_134-150um	EPA6010	4	mg/kg	Potassium	3382.44	crm ht
IC-441-1C-101617	SA_134-2mm	EPA6010	5	mg/kg	Potassium	3081.92	ht
IC-441-1C-101617	SA_134-150um	EPA6010	4	mg/kg	Selenium	3.83	rl ht
IC-441-1C-101617	SA_134-2mm	EPA6010	5	mg/kg	Selenium	1.01	rl ht
IC-441-1C-101617	SA_134-150um	EPA6010	4	mg/kg	Silver	0.20	MDL ht
IC-441-1C-101617	SA_134-2mm	EPA6010	5	mg/kg	Silver	0.20	MDL ht
IC-441-1C-101617	SA_134-150um	EPA6010	4	mg/kg	Sodium	752.80	ht
IC-441-1C-101617	SA_134-2mm	EPA6010	5	mg/kg	Sodium	437.39	ht
IC-441-1C-101617	SA_134-150um	EPA6010	4	mg/kg	Thallium	1.37	blk rl ht



**Appendix C**

**SWEL – Soil Water Environmental Lab**

**Detailed Incremental Composite Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC-441-1C-101617	SA_134-2mm	EPA6010	5	mg/kg	Thallium	0.86	rl ht
IC-441-1C-101617	SA_134-150um	EPA6010	4	mg/kg	Vanadium	51.47	ht
IC-441-1C-101617	SA_134-2mm	EPA6010	5	mg/kg	Vanadium	48.62	ht
IC-441-1C-101617	SA_134-150um	EPA6010	4	mg/kg	Zinc	882.42	ht
IC-441-1C-101617	SA_134-2mm	EPA6010	5	mg/kg	Zinc	678.64	ht
IC-441-1C-101617	SA_134-2mm	EPA_300.0	1	mg/kg	Chloride	16.26	ht
IC-441-1C-101617	SA_134-2mm	EPA_300.0	1	mg/kg	Sulfate	47.12	ht
IC-441-1C-101617	SA_134-bulk	D422	1	%	Fines	4.01	
IC-441-1C-101617	SA_134-bulk	D422	1	%	Gravel	34.05	
IC-441-1C-101617	SA_134-bulk	D422	1	%	Sand	63.30	
IC-441-1C-101617	SA_134-bulk	D422	1	%	Silt	32.69	
IC-441-1C-101617	SA_134-150um	Bioaccess2.5pH	3	%	Arsenic	10.94	
IC-441-1C-101617	SA_134-150um	Bioaccess2.5pH	3	%	Lead	35.23	
IC-441-1C-101617	SA_134-150um	Bioaccess1.5pH	3	%	Arsenic	24.68	
IC-441-1C-101617	SA_134-150um	Bioaccess1.5pH	3	%	Lead	80.75	
IC-441-1C-101617	SA_134-2mm	NELSON82	2	%	Carbon_total	5.61	ht
IC-441-1C-101617	SA_134-2mm	BREMNER82	2	%	Nitrogen_total	0.35	ht
IC-441-1D-101617	SA_135-bulk	SM2510B	1	mS/m	Conductivity	11.23	ht
IC-441-1D-101617	SA_135-bulk	pH	1		pH	6.01	ht
IC-441-1D-101617	SA_135-150um	EPA6010_MEHLICH3	12	mg/kg	Lead	158.29	
IC-441-1D-101617	SA_135-150um	EPA6010_MEHLICH3	12	mg/kg	Phosphorus	144.25	
IC-441-1D-101617	SA_135-150um	EPA6010_9200Bio2.5	3	mg/kg	Arsenic	2.83	
IC-441-1D-101617	SA_135-150um	EPA6010_9200Bio2.5	3	mg/kg	Lead	150.12	
IC-441-1D-101617	SA_135-150um	EPA6010_9200Bio1.5	3	mg/kg	Arsenic	8.37	
IC-441-1D-101617	SA_135-150um	EPA6010_9200Bio1.5	3	mg/kg	Lead	358.62	
IC-441-1D-101617	SA_135-150um	EPA6010	4	mg/kg	Aluminum	24904.57	ht
IC-441-1D-101617	SA_135-2mm	EPA6010	5	mg/kg	Aluminum	22188.91	crm ht
IC-441-1D-101617	SA_135-2mm	EPA6010	5	mg/kg	Antimony	10.07	ht
IC-441-1D-101617	SA_135-150um	EPA6010	4	mg/kg	Antimony	8.61	ht
IC-441-1D-101617	SA_135-150um	EPA6010	4	mg/kg	Arsenic	38.72	ht

**Appendix C**
**SWEL – Soil Water Environmental Lab**
**Detailed Incremental Composite Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC-441-1D-101617	SA_135-2mm	EPA6010	5	mg/kg	Arsenic	30.37	ht
IC-441-1D-101617	SA_135-150um	EPA6010	4	mg/kg	Barium	281.31	ht
IC-441-1D-101617	SA_135-2mm	EPA6010	5	mg/kg	Barium	217.78	ht
IC-441-1D-101617	SA_135-2mm	EPA6010	5	mg/kg	Beryllium	0.00	MDL crm ht
IC-441-1D-101617	SA_135-150um	EPA6010	4	mg/kg	Beryllium	0.77	crm rl ht
IC-441-1D-101617	SA_135-150um	EPA6010	4	mg/kg	Cadmium	10.44	ht
IC-441-1D-101617	SA_135-2mm	EPA6010	5	mg/kg	Cadmium	9.74	ht
IC-441-1D-101617	SA_135-150um	EPA6010	4	mg/kg	Calcium	8708.25	ht
IC-441-1D-101617	SA_135-2mm	EPA6010	5	mg/kg	Calcium	8221.31	ht
IC-441-1D-101617	SA_135-2mm	EPA6010	5	mg/kg	Chromium	53.15	dup ht
IC-441-1D-101617	SA_135-150um	EPA6010	4	mg/kg	Chromium	38.18	ht
IC-441-1D-101617	SA_135-150um	EPA6010	4	mg/kg	Cobalt	9.46	ht
IC-441-1D-101617	SA_135-2mm	EPA6010	5	mg/kg	Cobalt	8.77	ht
IC-441-1D-101617	SA_135-150um	EPA6010	4	mg/kg	Copper	56.04	ht
IC-441-1D-101617	SA_135-2mm	EPA6010	5	mg/kg	Copper	44.29	ht
IC-441-1D-101617	SA_135-150um	EPA6010	4	mg/kg	Iron	21447.43	ht
IC-441-1D-101617	SA_135-2mm	EPA6010	5	mg/kg	Iron	20327.70	ht
IC-441-1D-101617	SA_135-150um	EPA6010	4	mg/kg	Lead	440.53	ht
IC-441-1D-101617	SA_135-2mm	EPA6010	5	mg/kg	Lead	405.63	ht
IC-441-1D-101617	SA_135-2mm	EPA6010	5	mg/kg	Magnesium	4860.95	crm ht
IC-441-1D-101617	SA_135-150um	EPA6010	4	mg/kg	Magnesium	3854.05	ht
IC-441-1D-101617	SA_135-150um	EPA6010	4	mg/kg	Manganese	840.14	ht
IC-441-1D-101617	SA_135-2mm	EPA6010	5	mg/kg	Manganese	686.51	ht
IC-441-1D-101617	SA_135-150um	EPA6010	4	mg/kg	Nickel	20.06	ht
IC-441-1D-101617	SA_135-2mm	EPA6010	5	mg/kg	Nickel	20.02	ht
IC-441-1D-101617	SA_135-150um	EPA6010	4	mg/kg	Phosphorus	2583.56	ht
IC-441-1D-101617	SA_135-2mm	EPA6010	5	mg/kg	Phosphorus	2051.42	ht



**Appendix C**

**SWEL – Soil Water Environmental Lab**

**Detailed Incremental Composite Sample Results**

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC-441-1D-101617	SA_135-150um	EPA6010	4	mg/kg	Potassium	3006.31	crm ht
IC-441-1D-101617	SA_135-2mm	EPA6010	5	mg/kg	Potassium	2931.15	ht
IC-441-1D-101617	SA_135-150um	EPA6010	4	mg/kg	Selenium	3.95	rl ht
IC-441-1D-101617	SA_135-2mm	EPA6010	5	mg/kg	Selenium	1.90	rl ht
IC-441-1D-101617	SA_135-150um	EPA6010	4	mg/kg	Silver	0.20	MDL ht
IC-441-1D-101617	SA_135-2mm	EPA6010	5	mg/kg	Silver	0.20	MDL ht
IC-441-1D-101617	SA_135-150um	EPA6010	4	mg/kg	Sodium	674.57	ht
IC-441-1D-101617	SA_135-2mm	EPA6010	5	mg/kg	Sodium	424.73	ht
IC-441-1D-101617	SA_135-150um	EPA6010	4	mg/kg	Thallium	0.90	blk rl ht
IC-441-1D-101617	SA_135-2mm	EPA6010	5	mg/kg	Thallium	0.58	rl ht
IC-441-1D-101617	SA_135-150um	EPA6010	4	mg/kg	Vanadium	55.53	ht
IC-441-1D-101617	SA_135-2mm	EPA6010	5	mg/kg	Vanadium	51.25	ht
IC-441-1D-101617	SA_135-150um	EPA6010	4	mg/kg	Zinc	510.69	ht
IC-441-1D-101617	SA_135-2mm	EPA6010	5	mg/kg	Zinc	470.79	ht
IC-441-1D-101617	SA_135-2mm	EPA_300.0	1	mg/kg	Chloride	16.20	ht
IC-441-1D-101617	SA_135-2mm	EPA_300.0	1	mg/kg	Sulfate	30.00	RL ht
IC-441-1D-101617	SA_135-bulk	D422	1	%	Fines	2.99	
IC-441-1D-101617	SA_135-bulk	D422	1	%	Gravel	32.60	
IC-441-1D-101617	SA_135-bulk	D422	1	%	Sand	57.80	
IC-441-1D-101617	SA_135-bulk	D422	1	%	Silt	39.21	
IC-441-1D-101617	SA_135-150um	Bioaccess2.5pH	3	%	Arsenic	7.31	
IC-441-1D-101617	SA_135-150um	Bioaccess2.5pH	3	%	Lead	34.08	
IC-441-1D-101617	SA_135-150um	Bioaccess1.5pH	3	%	Arsenic	21.63	
IC-441-1D-101617	SA_135-150um	Bioaccess1.5pH	3	%	Lead	81.41	
IC-441-1D-101617	SA_135-2mm	NELSON82	2	%	Carbon_total	4.95	ht
IC-441-1D-101617	SA_135-2mm	BREMNER82	2	%	Nitrogen_total	0.32	ht



**SWEL – Soil Water Environmental Lab**

**RLs and MDLs by Method and Analyte**

d_labresult.method_code	d_labresult.units	d_labresult.analyte	RL	MDL
EPA6010_MEHLICH3	mg/kg	Lead	0.1	0.02412
EPA6010_MEHLICH3	mg/kg	Phosphorus	0.5	0.05796
EPA6010_9200Bio2.5	mg/kg	Arsenic	1	0.3861
EPA6010_9200Bio2.5	mg/kg	Lead	1	0.3252
EPA6010_9200Bio1.5	mg/kg	Arsenic	1	0.3861
EPA6010_9200Bio1.5	mg/kg	Lead	1	0.3252
EPA6010	mg/kg	Aluminum	5	0.183
EPA6010	mg/kg	Antimony	5	0.4602
EPA6010	mg/kg	Arsenic	1	0.3861
EPA6010	mg/kg	Barium	1	0.0033
EPA6010	mg/kg	Beryllium	1	0.0036
EPA6010	mg/kg	Cadmium	1	0.0153
EPA6010	mg/kg	Calcium	10	0.372
EPA6010	mg/kg	Chromium	1	0.0345
EPA6010	mg/kg	Cobalt	1	0.0405
EPA6010	mg/kg	Copper	1	0.0573
EPA6010	mg/kg	Iron	5	0.1119
EPA6010	mg/kg	Lead	1	0.3252
EPA6010	mg/kg	Magnesium	5	0.003
EPA6010	mg/kg	Manganese	1	0.0255
EPA6010	mg/kg	Nickel	1	0.0888
EPA6010	mg/kg	Phosphorus	1	0.3135
EPA6010	mg/kg	Potassium	10	0.6984
EPA6010	mg/kg	Selenium	50	0.6978
EPA6010	mg/kg	Silver	5	0.2
EPA6010	mg/kg	Sodium	1	0.0705
EPA6010	mg/kg	Thallium	5	0.2619
EPA6010	mg/kg	Vanadium	5	0.027
EPA6010	mg/kg	Zinc	1	0.0339
EPA_300.0	mg/kg	Chloride	10	
EPA_300.0	mg/kg	Sulfate	30	
SM2510B	mS/m	Conductivity		
pH		pH		
D422	%	Fines		
D422	%	Gravel		
D422	%	Sand		
D422	%	Silt		
Bioaccess2.5pH	%	Arsenic		
Bioaccess2.5pH	%	Lead		
Bioaccess1.5pH	%	Arsenic		
Bioaccess1.5pH	%	Lead		