

# UPPER COLUMBIA RIVER

---

## Quality Assurance Project Plan for the 2009 Beach Sediment Study Amendment No. 1

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

*Prepared by*



7900 SE 28<sup>th</sup> Street, Suite 410  
Mercer Island, WA 98040

**Parametrix**

411 108<sup>th</sup> Avenue NE, Suite 1800  
Bellevue, WA 98004

April 2010

---

## **SECTION A: PROJECT MANAGEMENT**

---

### **A1 TITLE AND APPROVAL SHEET**

---

**QUALITY ASSURANCE PROJECT PLAN  
FOR THE 2009 BEACH SEDIMENT STUDY  
AMENDMENT NO. 1**

#### **Approvals**

EPA Project Coordinator:        Helen Bottcher \_\_\_\_\_ Date: \_\_\_\_\_

EPA Quality Assurance  
(QA) Manager:                Gina Grepco-Grove \_\_\_\_\_ Date: \_\_\_\_\_

Teck Project Coordinator:        Marko Adzic \_\_\_\_\_ Date: \_\_\_\_\_

Task QA Coordinator:            Craig Hutchings \_\_\_\_\_ Date: \_\_\_\_\_

**A2 TABLE OF CONTENTS**

---

**SECTION A: PROJECT MANAGEMENT .....iii**

**A1 TITLE AND APPROVAL SHEET.....iii**

**A2 TABLE OF CONTENTS ..... v**

**A3 DISTRIBUTION LIST ..... ix**

**A4 INTRODUCTION ..... A-1**

        A4.1 Introduction ..... A-1

        A4.2 Modifications ..... A-1

**SECTION B: REFERENCES.....B-1**

## **LIST OF FIGURES**

- Figure A-1. China Bend – Beach Sediment Sampling Stations
- Figure A-2. Summer Island – Beach Sediment Sampling Stations
- Figure A-3. Barnaby Island – Beach Sediment Sampling Stations
- Figure A-4. Dalles Orchard – Beach Sediment Sampling Stations
- Figure A-5. Northport Boat Launch – Beach Sediment Sampling Stations

## **A3 DISTRIBUTION LIST**

---

EPA Project Coordinator:	Helen Bottcher
EPA QA Manager:	Gina Grepo-Grove
Teck Project Coordinator:	Marko Adzic
Task Manager:	Joss Moore
Task QA Coordinator:	Craig Hutchings
Task Field Supervisor:	Ian Stupakoff

---

## **A4 INTRODUCTION**

---

### **A4.1 Introduction**

This amendment outlines proposed sampling plan modifications to five beaches as outlined within the March 2009 beach sediment study quality assurance project plan (QAPP). The modifications outlined herein are limited to targeting suitable fine-grain sediment substrate at five beaches outlined and approved per the March 2009 QAPP. The five beaches include: 1) Dalles Orchard, 2) China Bend, 3) Summer Island, 4) Barnaby Island, and 5) Northport Boat Launch.

All other aspects associated with field sampling and handling procedures, laboratory analysis, Quality Assurance/Quality Control (QA/QC) measures, and data validation activities remain unchanged from the approved QAPP (March 2009).

### **A4.2 Modifications**

With the exception of Dalles Orchard and the Northport Boat Launch where the sampling design for surface samples will be modified from five composites of 12 samples per composite (5×12) to three composites of 12 samples per composite (3×12), the sampling design remains unchanged from the March 2009 QAPP for China Bend, Summer Island, and Barnaby Island. The only required modification at China Bend, Summer Island, and Barnaby Island is to refine the sampling area (i.e., polygon) to encompass fine-grained sediments as illustrated within Figures A-1, A-2, and A-3, respectively. Due to their relatively small size the sampling grid at Dalles Orchard and the Northport Boat Launch was redesigned to 3×12 and as illustrated within Figures A-4 and A-5, respectively.

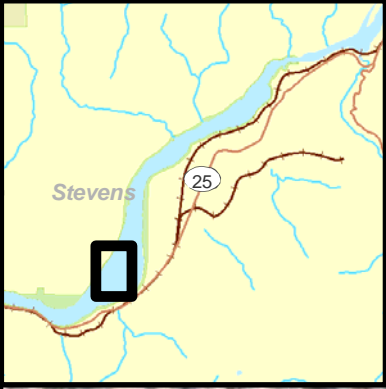
## **SECTION B: REFERENCES**

---

Teck American Incorporated. 2008. Upper Columbia River: Quality Assurance Project Plan for the 2009 Beach Sediment Study. Prepared for Teck American Incorporated. March, 2008. Integral Consulting Inc., Seattle, WA, and Parametrix, Bellevue, WA.

## FIGURES

---



The sample grid spacing is 10 meters.

The total area of the Sampling Area is 111239.8 square meters or 1197375.2 square feet.

- Sample Locations**
- Surface
  - Reserved
- Expected Exposed Beach**
- Bathymetry Elevation (1949 Survey)**
- 1250 ft AMSL

Q}c^\*!æ|ÁÁÁÁÁÚæ:æ { ^ciãø

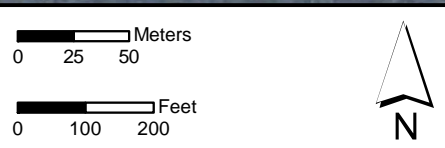
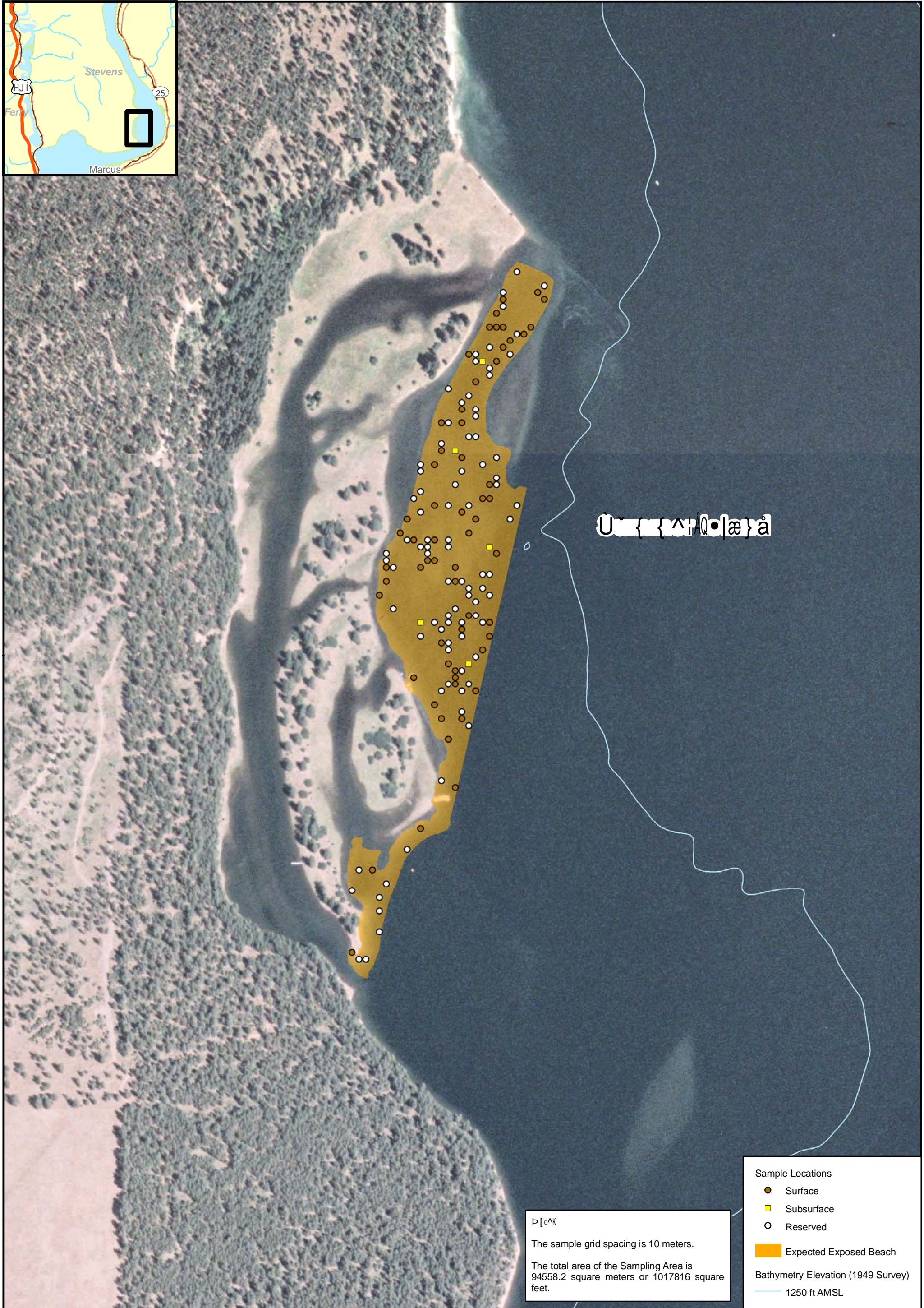


Figure A-1. Ô@ã}æÁÓ^} áÁ. ÁÓ^æ&@ÁÚ^ää { ^}cÁÚæ { ]|ã} \*ÁÚæcã [ ] •



Upper Columbia River

The sample grid spacing is 10 meters.  
 The total area of the Sampling Area is 94558.2 square meters or 1017816 square feet.

- Sample Locations
- Surface
  - Subsurface
  - Reserved
- Expected Exposed Beach
- Bathymetry Elevation (1949 Survey)  
 1250 ft AMSL

Figure A-2. Upper Columbia River, WA

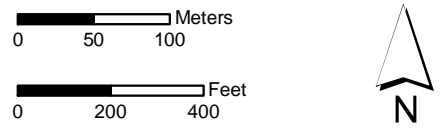
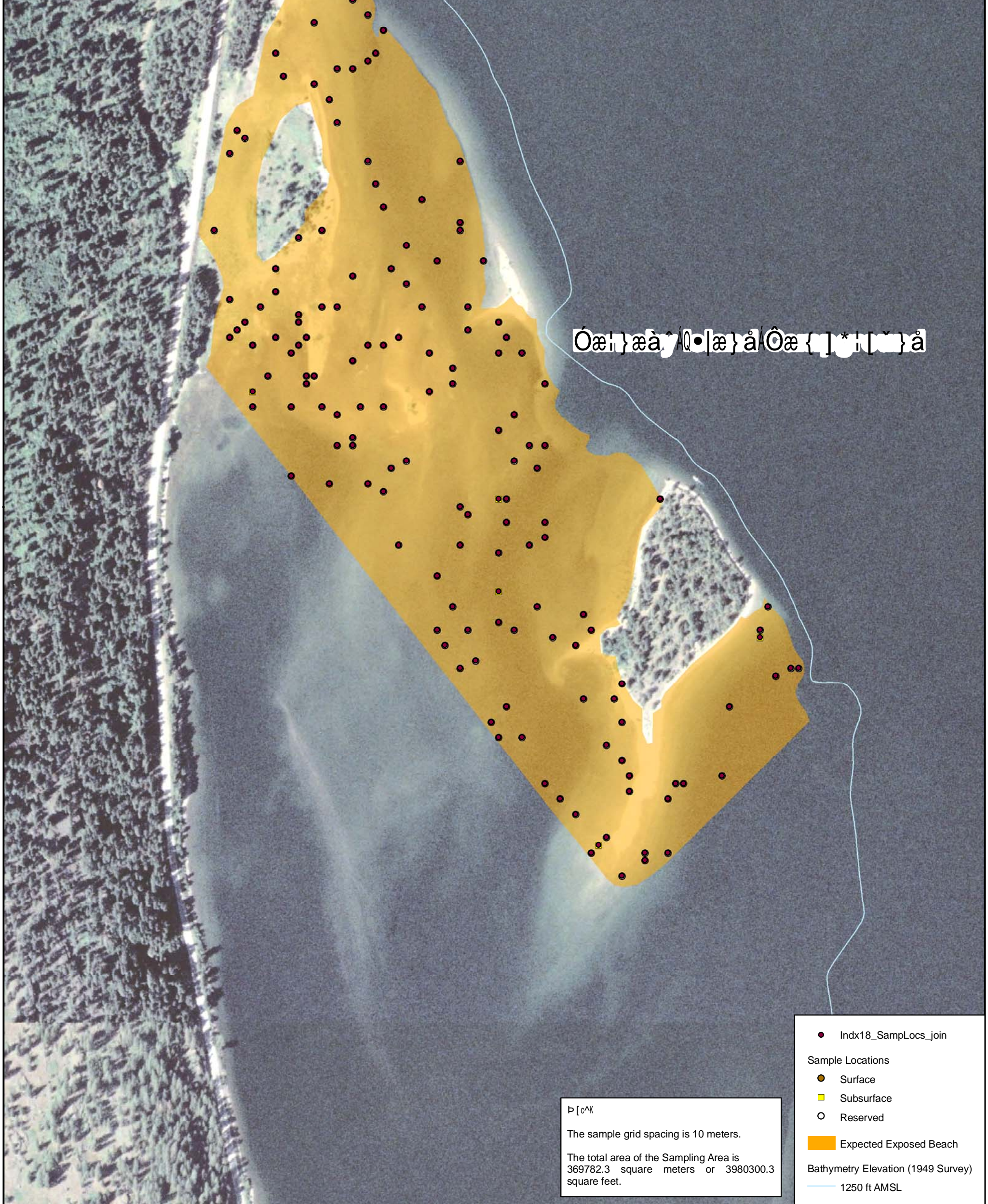


Figure A-2.



Q}c^\*!æ|ÁÁÁÁÁÚæ!æ { ^ciãø

0 25 50 Meters

0 100 200 Feet

N

Figure A-3.

Óæ!}æà^ÁQ•|æ}áÁ. ÁÓ^æ&@ÁÙ^ãã { ^}cÁÙæ { ]|ã} \*ÁÙæcã[ ] •

Upper Columbia River, WA

