

LOCKHEED WEST SEATTLE SUPERFUND SITE

CLAM TISSUE AND SEDIMENT DATA REPORT ADDENDUM

Revision 0

Prepared for



Prepared by



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1. INTRODUCTION

This Data Report Addendum is a supplement to the Remedial Investigation Data Report (Tetra Tech 2007) and is a component of the Remedial Investigation/Feasibility Study (RI/FS) Work Plan (Tetra Tech 2008a) for the Lockheed West (LW) Seattle Superfund Site (Site) (Figure 1-1). This Data Report Addendum is submitted on behalf of Lockheed Martin Corporation (LMC) and presents data resulting from the sampling and analysis activities described in the Clam Reconnaissance Survey Tissue and Sediment Quality Assurance Project Plan (QAPP) (Tetra Tech 2008b).

1.1 BACKGROUND

The reconnaissance survey was designed to provide data to evaluate the presence/absence and relative abundance of populations of deposit-feeding clams (i.e., *Macoma* sp.) at the LW site. The data obtained from the reconnaissance survey was used to determine if sufficient clam populations were present at the site to conduct representative tissue collection and chemical analysis. An adequate abundance of clams was identified by the reconnaissance survey of LW, which resulted in a sampling and analysis program used for collecting clam tissue data. Specific objectives included the following:

- Characterize the clam population at the LW site, and determine if there is a sufficient population of deposit-feeding clams;
- Collect site-specific clam tissue and collocated sediment samples from the one intertidal and five sub-tidal areas for subsequent chemical analysis;
- Derive a site-specific shellfish biota-sediment accumulation factor (BSAF) from the analytical results generated from the clam tissue and collocated sediment samples; and
- Compare the site-specific BASF results with the literature-derived BASF values.

These site-specific BSAFs will be compared to literature-derived BSAFs, as modified from the Lower Duwamish Waterway (LDW) QAPP for sediment and tissue collection, to verify that the values were sufficiently conservative for use in modeling tissue concentrations for the ecological and human health risk assessments. It is understood that a decision on whether to use the site-specific or the literature-derived BSAF values is a future management decision for the U.S. Environmental Protection Agency (EPA). This rationale is based on the understanding that deposit-feeder clams will more closely reflect sediment contaminant levels

than filter-feeder clams or other benthic organisms that may contain a significant part of their body burdens from non-sediment sources.

1.2 PURPOSE AND ORGANIZATION OF THIS DOCUMENT

The purpose of this Data Report Addendum is to supplement the Data Report and document the field data collection activities and results from additional sampling, including clam tissue and co-located sediment samples, and analysis activities. Intertidal clam tissue and co-located sediment sampling was conducted on April 8, 2008, during low tide. Subtidal clam reconnaissance survey was performed April 9–11, 2008. Subtidal clam collection and co-located sediment sampling was conducted on May 13–14, 2008. This report presents the chemical analysis results of the clam tissue and co-located sediment samples.

This Data Report Addendum summarizes the results of field sampling activities and identifies any deviations from the QAPP. This report consists of a sample identification matrix that relates sample identification numbers to sample locations, a map of sample locations, and tables of chemical analysis data. These data were validated by a third-party validator in accordance with the Clam Reconnaissance Survey and Tissue QAPP (Tetra Tech 2008b). Field notes, log sheets, photos, laboratory data reports, and data validation reports are included as appendices. This report does not interpret these data. Instead, the data will be evaluated as part of the RI/FS report.

This Data Report Addendum is organized into the following sections:

- Section 2 – Methods used to conduct the field investigations and laboratory methods of analysis.
- Section 3 – Discussion of the data quality and summary of sample results.
- Section 4 – References.
- Figures and tables are provided at the end of the Data Report Addendum text.
- Appendix A includes the photos documenting the intertidal and subtidal tissue and sediment sample collection.
- Appendix B includes all field notes, log sheets, and chain-of-custody forms documenting the intertidal and subtidal tissue and sediment sampling.
- Appendix C includes data validation reports for the results reported herein.
- Appendix D includes the chemistry laboratory data reports for the results reported herein.

- Appendix E includes the updated project database including historical and 2007 sample results, and the 2008 clam tissue and sediment sampling data.

2. FIELD ACTIVITIES AND METHODS

Field activities included the intertidal clam reconnaissance survey and tissue and sediment sampling performed April 8, 2008, the sub-tidal clam reconnaissance survey performed April 9–11, 2008, and the subtidal tissue and sediment sampling performed May 13–14, 2008, at the LW project site. EPA authorized the implementation of the RI field work described in the Work Plan. The field work was conducted in two phases: Phase 1, the clam reconnaissance survey of the intertidal and sub-tidal areas of the LW site, which was to determine the presence or absence and relative abundance of clam populations (i.e., deposit feeding clams) at the LW site, and Phase 2, clam tissue and sediment sampling and analysis. Phases 1 and 2 of the intertidal clam reconnaissance survey and tissue and sediment sampling were performed simultaneously.

2.1 CLAM RECONNAISSANCE SURVEY AND TISSUE AND SEDIMENT SAMPLING PROCEDURES

The clam reconnaissance survey and tissue and sediment sampling and analysis efforts were performed according to the QAPP (Tetra Tech 2008b), and a synopsis of these activities is provided below. The LW site was divided into six areas for the reconnaissance survey (Figure 2-1) based on the summary of existing information, knowledge of historical site uses, current site-use plans, and recent high-resolution site bathymetry. Area 1 represents the intertidal habitat, and Areas 2 through 6 represent the sub-tidal habitat of the LW site.

The intertidal area clam reconnaissance survey and tissue and sediment sampling were performed simultaneously on April 8, 2008. The actual sample locations within the intertidal study area were determined in the field by using clam shows or digging success to guide the sampling. The Phase 1 component of the intertidal survey consisted of surveying for all deposit-feeder type clams (i.e., *Macoma* sp.) over one low tide cycle.

The intertidal clam reconnaissance survey methods were generally based on the Washington Department of Fish and Wildlife guidance (Campbell 1996). At each sampling point, approximately 0.028 cubic meters (m³) (1.0 cubic foot [ft³]) of substrate were removed and sorted. All clams present within the substrate were removed, identified, measured, and non-deposit-feeder clams were replaced with the removed substrate in the original hole. All deposit-feeding clams were retained. All observations of other invertebrate species identified during the intertidal survey are recorded in Tables 2-1 and 2-2.

Per the QAPP, at each Phase 1 sub-tidal clam reconnaissance survey area, three clam reconnaissance sampling locations were evaluated for adequate clam abundance for each of the five sub-tidal areas. From each clam reconnaissance sample location, three sediment grabs were collected, sediment sieved, and all observed clams were identified, counted, and weighed. The field results and summary tables are shown in Tables 2-3 and 2-4.

Based on the results of the Reconnaissance surveys, tissue and co-located sediment sampling and analysis were conducted in the intertidal and sub-tidal Areas 3, 4, and 5 of the LW site. The sample locations selected contained adequate numbers of deposit-feeding clam populations as specified in the QAPP for clam tissue and co-located sampling. Tissue and co-located sediment sampling was not conducted at Areas 2 and 6 due to an inadequate number of deposit-feeding clams present during the reconnaissance survey. The basis for evaluating whether to proceed with tissue analyses is defined in the QAPP.

The clam reconnaissance and tissue and co-located sediment sampling and analysis were performed in accordance with the QAPP. Clam tissue and sediment samples were submitted to Columbia Analytical Services, Inc. (CAS) for analysis.

2.1.1 Horizontal Control

Intertidal clam tissue and co-located sediment sampling locations were collected using a hand-held Trimble® GEO-XT GPS unit. Actual locations where samples were collected were recorded at the time of collection using Integrated WAAS correction in the field. Horizontal positioning was recorded in State Plane Washington North, North American Datum (NAD) 1983 coordinate system.

Subtidal sampling locations were collected using a Trimble Ag 132 DGPS and a computer running HYPACK® hydrographic survey software. Actual locations where samples were collected were recorded at the time of collection. Horizontal positioning was recorded in State Plane Washington North, NAD 1983 coordinate system to the nearest 0.1 foot.

2.1.2 Intertidal Sample Collection

Intertidal tissue and co-located sediment sampling were conducted concurrently with the intertidal clam reconnaissance survey on April 8, 2008. All *Macoma* sp. clams found in the intertidal area were collected, weighed, and depurated for tissue sample A1-IT. A 1-foot-long by 2-inch diameter surface sediment core was collected from each location where *Macoma* sp. clams were present and composited to form sediment sample A1-IT. The tissue and co-located sediment samples are composite samples of the intertidal area. The sample locations

are identified on Figure 2-2. The sample locations are included in Table 2-5. Copies of the field logs are included in Appendix B of this report.

2.1.3 Subtidal Sample Collection

Three subtidal areas (3a, 4b, and 5a) were sampled for tissue and co-located sediment samples at the LW Site on May 13–14, 2008, as shown in Figure 2-1 and Table 2-5. The sediment samples were representative of the upper 20 centimeters of sediment. All tissue and sediment sampling were conducted as described in the QAPP (Tetra Tech 2008b). A minimum of 10 sediment grabs (2 square meters [m²] of sediment) were collect at each location to achieve the minimum tissue mass goal for the *Macoma* sp. clams. At location 3a, 16 sediment grabs were collected in efforts to locate more clams for a greater tissue mass.

Equipment decontamination procedures and sample handling procedures detailed in the QAPP (Tetra Tech 2008b) were followed closely to prevent cross-contamination of the samples. Quality Assurance (QA)/Quality Control (QC) samples were collected to evaluate the effectiveness of these QC measures.

Subtidal sampling was conducted from a vessel using a modified, single 0.2 m² Power grab sampler deployed from an A-frame provided and operated by Research Support Services, Inc. The sampler was lowered to the bottom, retrieved and placed in a stable position on the boat deck. The top covers were opened and the sample was checked for acceptability using Puget Sound Estuary Program (PSEP) criteria (e.g., relatively clear overlying water present and no significant winnowing or other disturbance). The overlying water was siphoned off the top of the sampler, and then surface sediment was collected by hand pushing three, 1-foot-long by 2-inch diameter poly-liner cores from the center of the undisturbed sampler. The cores were held in a temporary stainless steel bowl until it was determined if *Macoma* sp. clams were present; if so, the sediment was thoroughly homogenized in a separate stainless steel bowl with the sediment from the location's other acceptable grabs. The sediment was portioned into sampling jars provided by the laboratory. These samples were placed into coolers and covered with ice to maintain the temperature at 4 degrees Celsius (°C) during transport to CAS in Kelso, Washington, for chemical analysis.

Clams collected from each sample location were weighed, counted, and allowed to depurate for 24 hours in site water in separate sample buckets. After depuration, clams were place in glass sampling jars provided by the laboratory. The samples were placed into coolers and covered with ice to maintain the temperature at 4°C during transport to the laboratory.

Field sampling logs and chain of custody forms are included in Appendix B. Results of the chemical analyses are presented in Section 3 of this report.

2.1.4 Quality Assurance/ Quality Sampling Activities

The objective of the QA/QC sampling was to ensure that acceptable sampling practices were followed during field activities. Laboratory QC analyzes were performed on the abundant tissue from tissue sample A1-IT (see Section 2.1.5, Sample Identification). One sediment duplicate sample (3D-S) was collected to determine the variability in chemical concentrations between samples of the same sediment. One equipment rinsate blank (RB-S) was taken to document the effectiveness of decontamination procedures.

The chemistry results, analysis methods, reporting limits, and detection limits for the laboratory QC samples are included in Appendix D; the rinsate blank sample results are provided in Table 3-2.

QA/QC samples were handled and transported in the same manner as the regular samples.

2.1.5 Sample Identification

Samples are listed in Tables 2-2, 2-3, 3-1, and 3-2. The samples were coded by sample type. Intertidal samples were identified as Area 1-Intertidal (A1-IT) and designated tissue or sediment on the chain of custody. Subtidal samples were labeled by their area and location of collection (3A, 4A, or 5A), then designated as tissue (C) or sediment (S) sample (i.e., 3A-C). The rinsate blank was identified as RB-1.

2.1.6 Deviations from the QAPP

There were no deviations from the QAPP (Tetra Tech 2008b).

2.2 LABORATORY ANALYSIS

This section includes an overview of laboratory methods used for analysis of intertidal and subtidal tissue and sediment samples.

2.2.1 Tissue Chemistry Methods

Tissue samples were analyzed for COPCs by the methods listed in Table 2-6. The required detection limits were intended to be consistent with risk-based-low-level detection limits of the Lower Duwamish project.

2.2.2 Sediment Chemistry Methods

Co-located sediment samples were analyzed for COPCs by the methods listed in Table 2-7. The required detection limits were intended to be consistent with risk-based-low-level detection limits of the Lower Duwamish project.

2.2.3 Deviations from Approved Plans

Methods followed the approved plans except the following:

- The laboratory reported additional parameters: Total Hepta-Dioxins/Furans, Total Hexa-Dioxins/Furans, Total Penta-Dioxins/Furans, Total Tetra-Dioxins/Furans, Tetrabutyltin, Endrin aldehyde, and Hexachlorobutadiene.

3. SAMPLE RESULTS

This section discusses the results of the chemical analyses for tissue and co-located sediment samples collected at the Site during the April and May 2008 sampling events. Results for all these analyses are summarized below.

3.1 DATA QUALITY EVALUATION

Two data packages, corresponding to individual sample delivery groups, were generated by CAS. The CAS facility located in Kelso, Washington, performed the requested analyses, with the exception of dioxin-furan analyses, which were analyzed by the CAS facility located in Houston, Texas. The data packages were validated by Laboratory Data Consultants, Inc. (LDC), an independent validation firm. The validation is summarized by LDC in two data validation reports. Based on review of sediment and tissue data, the overall data quality objectives specified in the QAPP were met (Tetra Tech 2008b). The data validation reports are provided in Appendix C and are summarized below.

3.1.1 Validation Levels and Criteria

Level 3 data validation was performed on the two data packages. Level 3 data validation consists of an evaluation of the following items, as summarized in the data packages: holding time, calibration, blank, surrogate spike, matrix spike/matrix spike duplicate, laboratory control sample, and some method-specific requirements. Data validation was performed using the guidance as described in EPA's *National Functional Guidelines for Inorganic Data Review* (EPA 2004), *National Functional Guidelines for Organic Data Review* (EPA 1999), and *National Functional Guidelines for Polychlorinated Dioxins/Dibenzofurans Data Review* (EPA 2005). Data were validated in accordance with criteria specified in the EPA validation guidance and the analytical methods. Validated data are qualified in cases when the criteria were not met or as deemed appropriate, based on the professional judgment of the validator.

3.1.2 Qualified Data

The majority of analytical data are within control limits; however, there were several cases when control limits are not met. Data qualifiers were applied when control limits were not met.

Qualified data are summarized in Appendix D. Qualifiers were assigned due to the following issues: calibration outliers, blank contaminants, laboratory control sample or matrix spike recovery outliers, matrix duplicate outliers, and differences between results obtained on two gas chromatograph columns. Some of the reported results represent approximate

concentrations due to these issues and are qualified as estimated (J/UJ). Some results are qualified as not detected (U) due to the likelihood of trace contamination, as demonstrated in analytical blanks. No data were rejected.

Control limit exceedances such as those encountered for this project are typical. The number and severity of exceedances for this project are considered to be within the expected range, and associated data have been appropriately qualified as indicated above. Overall, project objectives were met and the laboratory analyses are considered usable for the intended purpose.

3.1.3 Field Duplicate Samples

One field duplicate set, consisting of sediment samples 3A-S and 3D-S, was collected and analyzed. With the exception of dioxins/furans, the field duplicate set exhibited very good agreement, with relative percent difference values for detected analytes ranging from 0 to 34 percent. For dioxin/furans, the concentrations of detected analytes for Sample 3A-D were approximately three times greater than the concentrations for Sample 3A-S. The reason for the discrepancy is unknown.

3.2 TISSUE CHEMISTRY RESULTS

Three tissue samples (A1-IT, 4B-C, and 5A-C) were analyzed for the full list of COPCs described in the QAPP 2008, such as lipids, PCB Aroclors (PCBs), individual PAHs, dioxins, furans, TBT, metals, and pesticides. Tissue sample 3A-C contained insufficient tissue mass for the full list of COPCs to be analyzed, which, as a result, 3A-C was analyzed for lipids, PCBs, and metals only. The tissue sample analysis results and methods, reporting limits, and detection limits are detailed in Table 3-1. The list of COPCs was determined based on ranking of preliminary screening risk estimates for human health and ecological receptors, and based on the risk drivers identified for the LDW site for both human health and ecological receptors. Lipid data are essential for BSAF development for PCBs, so lipids are also listed as a higher priority over other COPC analyte groups. The limited COPC analysis for tissue sample 3A-C was based on this priority ranking of COPCs.

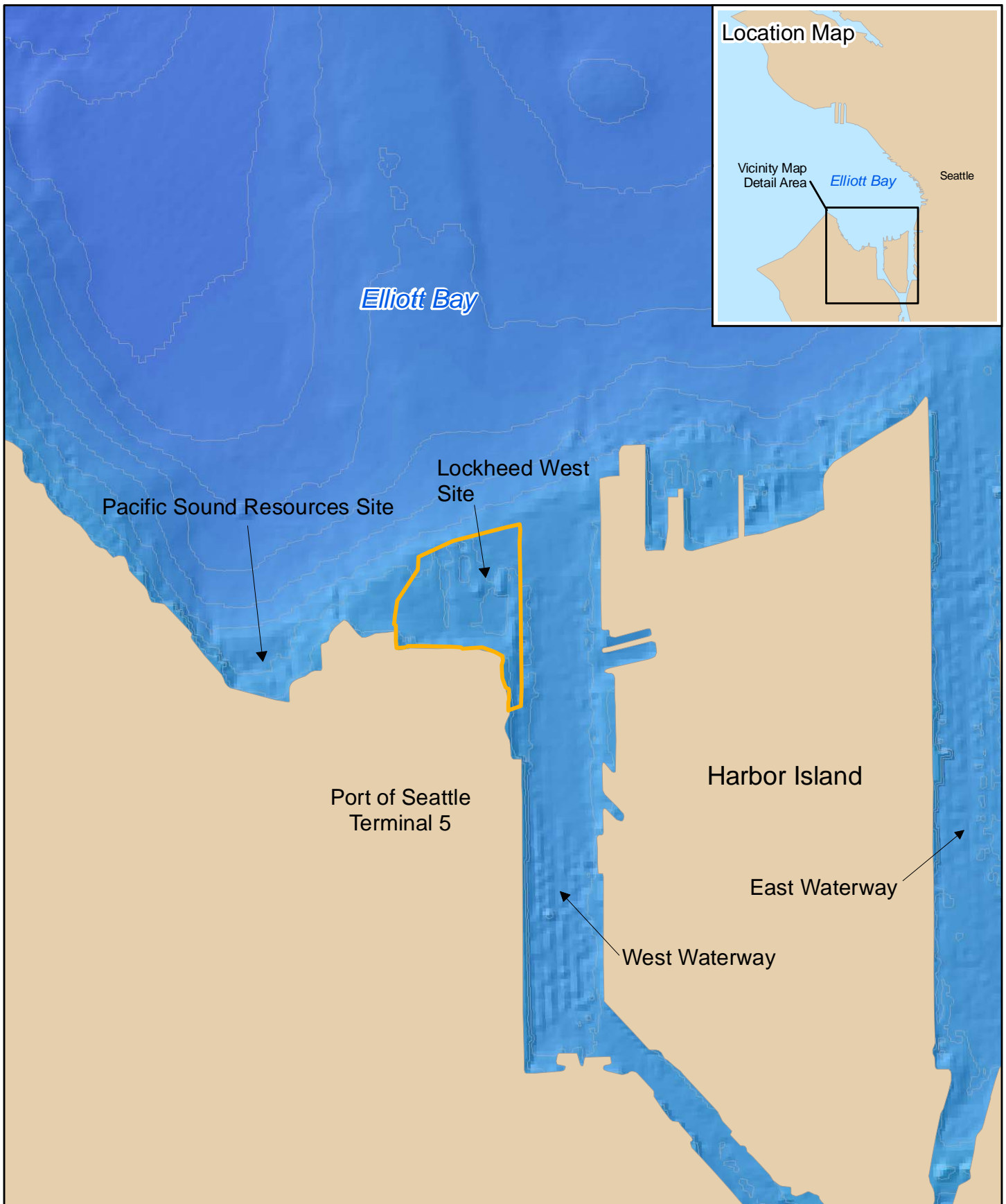
3.3 SEDIMENT CHEMISTRY RESULTS

The co-located sediment samples included surface (0 to upper 20 centimeters] grab samples. The sediment samples were analyzed for the COPCs listed in the QAPP, which reflect the tissue sample COPCs. Although tissue sample 3A-C was analyzed for a limited COPC list, the co-located sediment sample was analyzed for all listed COPCs. The sediment analysis results and methods, reporting limits, and detection limits are provide in Table 3-2.

4. REFERENCES

- Campbell, W.W. 1996. Procedures to determine intertidal populations of *Protothaca staminea*, *Tapes philippinarum*, and *Crassostrea gigas* in Hood Canal and Puget Sound, Washington. MRD96-01. Point Whitney Shellfish Laboratory, Washington Department of Fish and Wildlife, Brinnon, Washington.
- EPA (U.S. Environmental Protection Agency). 1999. National Functional Guidelines for Organic Data Review. Office of Emergency and Remedial Response. U.S. Environmental Protection Agency. OSWER 9240.1-05A-P. EPA 540/R-99-008. October 1999.
- EPA. 2004. National Functional Guidelines for Inorganic Data Review. Office of Superfund Remediation and Technology Innovation. U.S. Environmental Protection Agency. OSWER 9240.1-4. EPA 540-R-04-004. October 2004.
- EPA. 2005. National Functional Guidelines for Chlorinated Dibenzo-p-Dioxins (CDDs) and Chlorinated Dibenzofurans (CDFs) Data Review. Office of Superfund Remediation and Technology Innovation. U.S. Environmental Protection Agency. OSWER 9240.1-51. EPA 540-R-05-001. September 2005.
- Krone, C.A., D.W. Brown, D.G. Burrows, R.G. Bogar, S.L. Chan, and U. Varanasi. 1989. A Method for the Analysis of Butyltin Species and the Measurement of Butyltins in Sediment and English Sole Livers from Puget Sound. *Marine Environmental Research* 27:1-18.
- Tetra Tech. 2007. Remedial Investigation Data Report and Data Report Addendum for Lockheed West Seattle Superfund Site. Final prepared June 2007.
- Tetra Tech. 2008a. Remedial Investigation/Feasibility Study Work Plan for Lockheed West Seattle Superfund Site. Final prepared June 2008.
- Tetra Tech. 2008b. Clam Reconnaissance Survey and Tissue Quality Assurance Project Plan. Final Prepared June 2008.

FIGURES



Legend

- Contours (40 ft. interval)
- Property Boundary

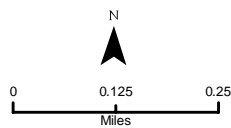


Figure 1-1 Site Vicinity Map

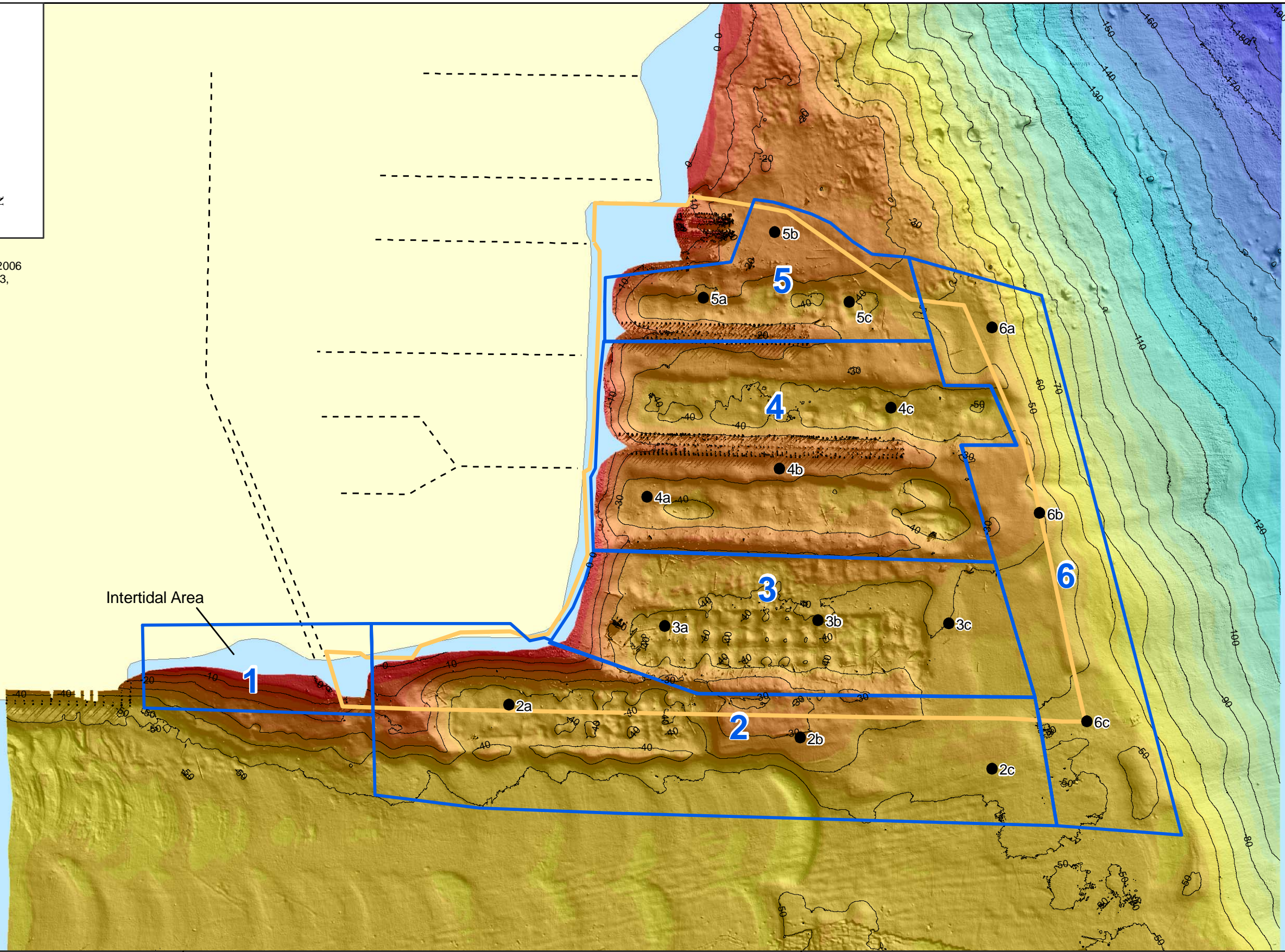


Legend

- Clam Sample Locations
- ▭ Survey Sub Areas (Based on Historical Site Use)
- Property Boundary
- - - Abandoned Storm Drains
- 10 Foot Contours



Notes:
1. Multibeam Bathymetry Survey conducted by TtEC on May 20, 2006 using a RESON SeaBat 8125 system. Datum: State Plane NAD 83, Projection: WA-4601 Washington North, Units: US Survey Feet



**Lockheed West
Shipyard No. 2
Seattle, WA**

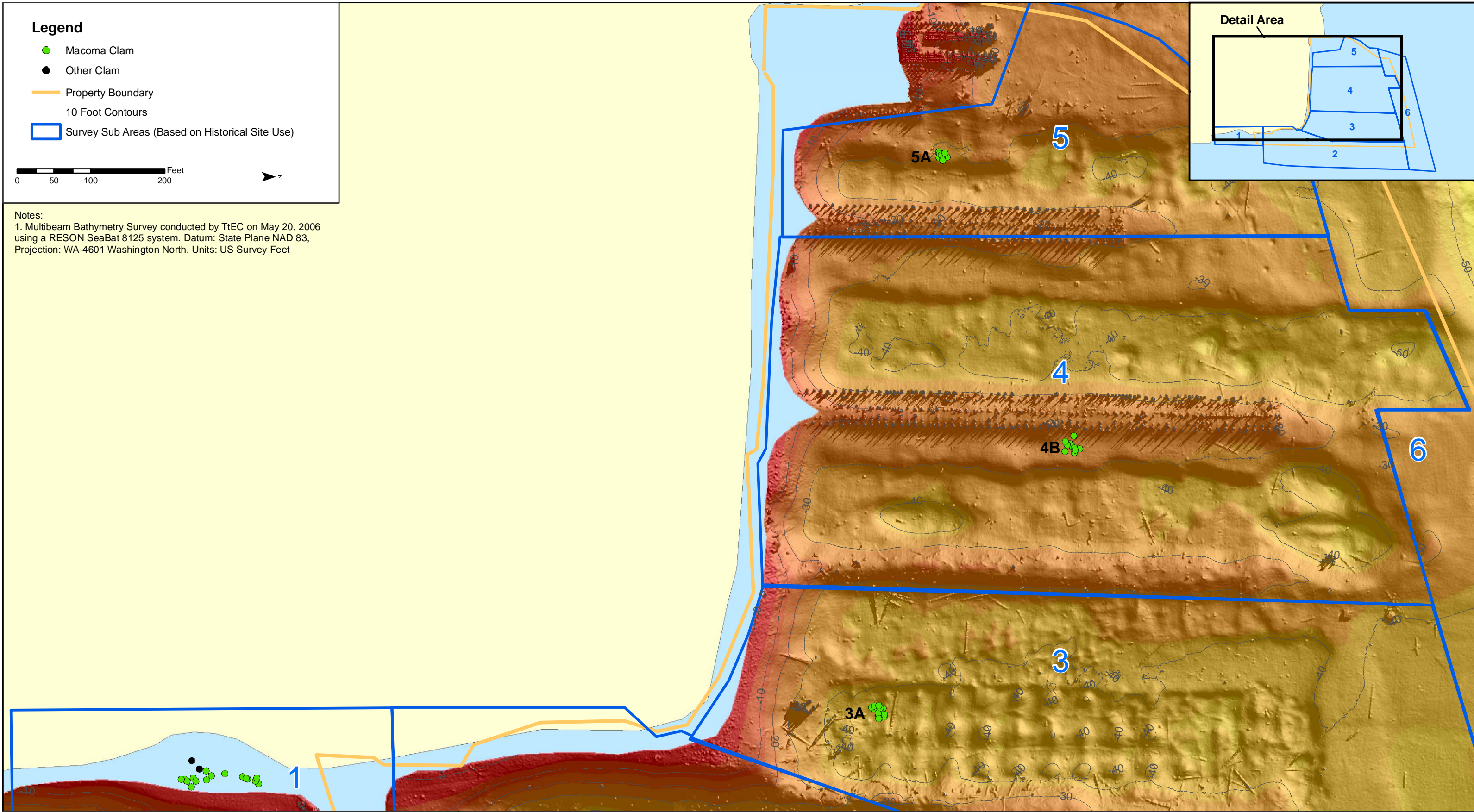
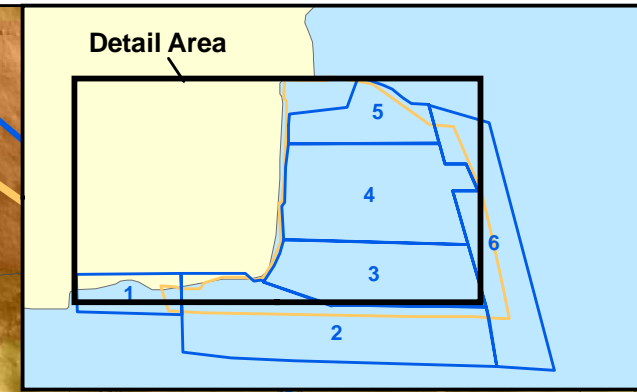
**Figure 2-1
Clam Reconnaissance Survey Areas
and Proposed Sample Locations**

Legend

- Macoma Clam
- Other Clam
- Property Boundary
- 10 Foot Contours
- ▭ Survey Sub Areas (Based on Historical Site Use)



Notes:
1. Multibeam Bathymetry Survey conducted by TtEC on May 20, 2006 using a RESON SeaBat 8125 system. Datum: State Plane NAD 83, Projection: WA-4601 Washington North, Units: US Survey Feet



Lockheed West Shipyard No. 2
Seattle, WA

Figure 2-2
2008 Subtidal and Intertidal Clam Tissue
and Co-Located Sediment Sampling Locations

TABLES

Table 2-1. 2008 Intertidal Clam Reconnaissance Survey Field Results

Location	Date	Northing	Easting	Species	Length of Shell	Unit	Total Wet Weight	Unit	Comment	Substrate
Intertidal	4/8/2008	216161	1263194	Manilla	4.0	cm	7.6	g	Broken	Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216172	1263205	Littleneck	6.1	cm	81.2	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216172	1263205	Littleneck	2.4	cm	3.1	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216230	1263216	Macoma	3.4	cm	7.8	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216230	1263216	Macoma	3.0	cm	4.3	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216230	1263216	Macoma	2.8	cm	3.6	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216230	1263216	Macoma	2.8	cm	4.3	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216230	1263216	Macoma	3.2	cm	5.3	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216230	1263216	Macoma	3.4	cm	6.3	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216230	1263216	Macoma	3.2	cm	6.2	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216230	1263216	Macoma	2.2	cm	2.2	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216230	1263216	Macoma	2.6	cm	3.6	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216230	1263216	Macoma	2.8	cm	3.9	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216230	1263216	Macoma	3.0	cm	5.0	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216230	1263216	Macoma	3.0	cm	4.6	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216230	1263216	Macoma	2.6	cm	3.1	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216230	1263216	Macoma	3.2	cm	4.8	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216230	1263216	Macoma	1.2	cm	0.7	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216230	1263216	Macoma	2.0	cm	1.4	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216230	1263216	Macoma	3.6	cm	7.3	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216230	1263216	Macoma	2.4	cm	3.6	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216230	1263216	Macoma	2.6	cm	3.2	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216230	1263216	Macoma	3.0	cm	4.6	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216188	1263215	Macoma	3.5	cm	5.0	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216188	1263215	Macoma	3.5	cm	6.6	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216188	1263215	Cockle	2.5	cm	4.4	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216236	1263219	Butter	8.5	cm	146.9	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216236	1263219	Littleneck	6.0	cm	97.1	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216236	1263219	Macoma	4.1	cm	11.7	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216236	1263219	Macoma	4.1	cm	12.1	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216236	1263219	Macoma	4.2	cm	12.4	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216236	1263219	Macoma	2.8	cm	3.8	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216236	1263219	Macoma	3.2	cm	5.0	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216236	1263219	Macoma	3.8	cm	8.5	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216236	1263219	Macoma	3.2	cm	4.8	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216236	1263219	Macoma	4.2	cm	10.8	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216236	1263219	Macoma	4.0	cm	10.1	g		Fine Sand with gravel > 1/4 inch

Table 2-1. 2008 Intertidal Clam Reconnaissance Survey Field Results

Location	Date	Northing	Easting	Species	Length of Shell	Unit	Total Wet Weight	Unit	Comment	Substrate
Intertidal	4/8/2008	216236	1263219	Macoma	2.4	cm	1.8	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216236	1263219	Macoma	4.8	cm	11.7	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216236	1263219	Macoma	2.0	cm	1.2	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216151	1263220	Macoma	4.6	cm	18.5	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216151	1263220	Macoma	3.0	cm	5.0	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216147	1263219	Macoma					Clam Lost	Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216154	1263222	Macoma	4.0	cm	12.9	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216180/ 216181	1263208/ 1263220	Butter	7.5	cm	88.1	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216180/ 216181	1263208/ 1263220	Littleneck	2.8	cm	8.4	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216180/ 216181	1263208/ 1263220	Littleneck	3.0	cm	6.9	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216180/ 216181	1263208/ 1263220	Macoma		cm			5 Broken	Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216180/ 216181	1263208/ 1263220	Macoma	4.0	cm	8.8	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216180/ 216181	1263208/ 1263220	Macoma	3.6	cm	6.9	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216180/ 216181	1263208/ 1263220	Macoma	3.4	cm	6.2	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216180/ 216181	1263208/ 1263220	Macoma	3.6	cm	9.1	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216180/ 216181	1263208/ 1263220	Macoma	4.4	cm	15.9	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216180/ 216181	1263208/ 1263220	Macoma	3.6	cm	7.1	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216180/ 216181	1263208/ 1263220	Macoma	4.0	cm	10.5	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216180/ 216181	1263208/ 1263220	Macoma	3.2	cm	6.2	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216180/ 216181	1263208/ 1263220	Macoma	2.8	cm	2.7	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216180/ 216181	1263208/ 1263220	Macoma	3.0	cm	5.1	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216180/ 216181	1263208/ 1263220	Macoma	3.4	cm	6.8	g		Fine Sand with gravel > 1/4 inch

Table 2-1. 2008 Intertidal Clam Reconnaissance Survey Field Results

Location	Date	Northing	Easting	Species	Length of Shell	Unit	Total Wet Weight	Unit	Comment	Substrate
Intertidal	4/8/2008	216180/ 216181	1263208/ 1263220	Macoma	3.4	cm	6.7	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216180/ 216181	1263208/ 1263220	Macoma	3.2	cm	6.7	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216180/ 216181	1263208/ 1263220	Macoma	3.0	cm	4.1	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216180/ 216181	1263208/ 1263220	Macoma	3.0	cm	3.5	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216180/ 216181	1263208/ 1263220	Macoma	3.8	cm	10.0	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216180/ 216181	1263208/ 1263220	Macoma	3.4	cm	5.6	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216180/ 216181	1263208/ 1263220	Macoma	2.4	cm	1.6	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216180/ 216181	1263208/ 1263220	Macoma	3.0	cm	4.0	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216180/ 216181	1263208/ 1263220	Macoma	2.8	cm	3.7	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216180/ 216181	1263208/ 1263220	Macoma	2.2	cm	2.5	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216180/ 216181	1263208/ 1263220	Macoma	3.0	cm	5.3	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216180/ 216181	1263208/ 1263220	Macoma	2.8	cm	3.7	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216180/ 216181	1263208/ 1263220	Macoma	3.0	cm	3.9	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216180/ 216181	1263208/ 1263220	Macoma	1.0	cm	0.1	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216180/ 216181	1263208/ 1263220	Littleneck	4.0	cm	12.3	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216163	1263217	Macoma	3.8	cm	10.1	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216163	1263217	Macoma	2.8	cm	3.4	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216163	1263217	Macoma	3.5	cm	5.2	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216163	1263217	Macoma					4 Broken	Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216161	1263229	Macoma	3.5	cm	5.2	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216161	1263229	Macoma	1.0	cm	0.1	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216161	1263229	Macoma	4.5	cm	11.7	g		Fine Sand with gravel > 1/4 inch

Table 2-1. 2008 Intertidal Clam Reconnaissance Survey Field Results

Location	Date	Northing	Easting	Species	Length of Shell	Unit	Total Wet Weight	Unit	Comment	Substrate
Intertidal	4/8/2008	216161	1263229	Macoma	4.0	cm	8.9	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216161	1263229	Macoma	2.8	cm	3.2	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216161	1263229	Macoma	1.0	cm	0.2	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216252	1263225	Butter	8.0	cm	121.8	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216252	1263225	Butter	8.8	cm	>150	g	Scale maximum	Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216252	1263225	Cockle	6.4	cm	84.8	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216252	1263225	Littleneck	4.0	cm	29.0	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216252	1263225	Macoma	4.2	cm	16.0	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216252	1263225	Macoma	3.4	cm	6.4	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216252	1263225	Macoma	4.0	cm	11.2	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216252	1263225	Macoma	3.4	cm	7.1	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216252	1263225	Macoma	2.8	cm	3.3	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216252	1263225	Macoma	2.8	cm	2.9	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216252	1263225	Macoma	2.8	cm	2.7	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216252	1263225	Macoma	3.4	cm	9.0	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216252	1263225	Macoma	3.0	cm	4.4	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216252	1263225	Macoma	3.2	cm	5.4	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216252	1263225	Macoma	3.2	cm	7.0	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216252	1263225	Macoma	2.4	cm	1.8	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216252	1263225	Macoma	3.4	cm	5.8	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216252	1263225	Macoma	3.6	cm	7.7	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216252	1263225	Macoma	3.2	cm	5.0	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216252	1263225	Macoma	2.0	cm	1.0	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216252	1263225	Macoma	1.8	cm	0.6	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216247	1263222	Macoma	4.0	cm	11.8	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216247	1263222	Macoma	3.0	cm	5.5	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216247	1263222	Macoma	3.0	cm	6.1	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216247	1263222	Macoma	4.0	cm	11.6	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216247	1263222	Macoma	3.2	cm	5.9	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216247	1263222	Macoma	3.4	cm	8.7	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216247	1263222	Macoma	4.0	cm	11.0	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216247	1263222	Macoma	3.6	cm	8.3	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216247	1263222	Macoma	4.0	cm	11.8	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216247	1263222	Macoma	3.0	cm	6.6	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216247	1263222	Macoma	4.0	cm	10.1	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216247	1263222	Macoma	3.0	cm	5.8	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216247	1263222	Macoma	3.0	cm	5.0	g		Fine Sand with gravel > 1/4 inch

Table 2-1. 2008 Intertidal Clam Reconnaissance Survey Field Results

Location	Date	Northing	Easting	Species	Length of Shell	Unit	Total Wet Weight	Unit	Comment	Substrate
Intertidal	4/8/2008	216247	1263222	Macoma	3.0	cm	5.0	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216247	1263222	Macoma	3.4	cm	7.9	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216247	1263222	Macoma	3.0	cm	4.6	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216247	1263222	Macoma	3.0	cm	4.7	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216247	1263222	Macoma	3.0	cm	5.0	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216247	1263222	Macoma	3.2	cm	6.4	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216247	1263222	Macoma	3.4	cm	7.1	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216247	1263222	Macoma	2.4	cm	3.7	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216247	1263222	Macoma	2.4	cm	2.6	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216247	1263222	Macoma	2.2	cm	2.4	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216247	1263222	Macoma	3.4	cm	9.0	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216247	1263222	Macoma	3.4	cm	8.2	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216247	1263222	Macoma	3.0	cm	4.8	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216247	1263222	Macoma	3.4	cm	9.3	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216247	1263222	Macoma	2.2	cm	2.8	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216247	1263222	Macoma	2.0	cm	0.1	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216247	1263222	Macoma	2.4	cm	0.4	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216247	1263222	Macoma					4 Broken	Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216249	1263218	Macoma	3.6	cm	7.6	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216249	1263218	Macoma	3.8	cm	8.5	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216249	1263218	Macoma	4.0	cm	12.2	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216249	1263218	Macoma	4.0	cm	9.2	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216249	1263218	Macoma	4.4	cm	11.6	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216249	1263218	Macoma	4.2	cm	13.0	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216249	1263218	Macoma	3.8	cm	7.9	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216249	1263218	Macoma	3.4	cm	6.5	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216249	1263218	Macoma	3.2	cm	4.6	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216249	1263218	Macoma	3.0	cm	3.4	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216249	1263218	Macoma	2.8	cm	3.8	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216249	1263218	Macoma	3.4	cm	6.6	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216249	1263218	Macoma	3.4	cm	6.0	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216249	1263218	Macoma	2.8	cm	3.5	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216249	1263218	Macoma	2.6	cm	3.1	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216249	1263218	Macoma	2.8	cm	3.2	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216249	1263218	Macoma	2.6	cm	2.6	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216249	1263218	Macoma	2.0	cm	0.5	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216249	1263218	Macoma	2.6	cm	2.4	g		Fine Sand with gravel > 1/4 inch

Table 2-1. 2008 Intertidal Clam Reconnaissance Survey Field Results

Location	Date	Northing	Easting	Species	Length of Shell	Unit	Total Wet Weight	Unit	Comment	Substrate
Intertidal	4/8/2008	216249	1263218	Macoma	2.4	cm	1.7	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216249	1263218	Macoma	2.8	cm	2.6	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216235	12663218	Macoma	4.8	cm	15.4	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216235	12663218	Macoma	3.5	cm	7.5	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216235	12663218	Macoma	4.0	cm	9.2	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216235	12663218	Macoma	3.5	cm	7.2	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216235	12663218	Macoma	2.8	cm	2.9	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216235	12663218	Macoma	2.7	cm	2.9	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216167	1263222	Macoma	4.0	cm	10.9	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216167	1263222	Macoma	3.2	cm	7.7	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216167	1263222	Macoma	3.5	cm	5.0	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216167	1263222	Macoma	2.7	cm	2.7	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216167	1263222	Macoma	3.5	cm	5.4	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216167	1263222	Macoma	3.3	cm	5.8	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216167	1263222	Macoma	3.4	cm	6.2	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216167	1263222	Macoma	3	cm	3.5	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216167	1263222	Macoma	2.6	cm	1.5	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216167	1263222	Macoma	2.4	cm	1.9	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216205	1263211	Macoma	5.0	cm	21.2	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216205	1263211	Macoma	2.0	cm	1.3	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216205	1263211	Butter	8.0	cm	119.6	g		Fine Sand with gravel > 1/4 inch
Intertidal	4/8/2008	216205	1263211	Butter	3.0	cm	6.0	g		Fine Sand with gravel > 1/4 inch

Table 2-2. 2008 Intertidal Clam Reconnaissance Survey Summary Table

Location	Northing	Easting	Species	Total Number of Individuals/Species	Total Wet Weight (g) ^a of Each Species per m ²	Mean (MIN, MAX) Wet Weight (g) ^a per Species	Comment	Tissue/Sed Sample ID	Sample Date	Sample Time
Intertidal	216161	1263194	Manilla	1	7.6	7.6	Broken	NA	NA	NA
Intertidal	216172	1263205	Littleneck	2	84.3	42.2 (3.1, 81.2)		NA	NA	NA
Intertidal	216230	1263216	Macoma	20	85.8	4.3 (0.7, 7.8)		A1-IT	4/8/2008	14:00
Intertidal	216188	1263215	Macoma	2	11.6	5.8 (5.0, 6.6)		A1-IT	4/8/2008	14:00
Intertidal	216188	1263215	Cockle	1	4.4	4.4		NA	NA	NA
Intertidal	216236	1263219	Butter	1	146.9	146.9		NA	NA	NA
Intertidal	216236	1263219	Littleneck	1	97.1	97.1		NA	NA	NA
Intertidal	216236	1263219	Macoma	12	93.9	7.8 (1.2, 12.4)		A1-IT	4/8/2008	14:00
Intertidal	216151	1263220	Macoma	2	23.5	11.8		A1-IT	4/8/2008	14:00
Intertidal	216147	1263219	Macoma	0	0	0	Clam Lost	NA	NA	NA
Intertidal	216154	1263222	Macoma	1	12.9	12.9		A1-IT	4/8/2008	14:00
Intertidal	216180/ 216181	1263208/ 1263220	Butter	1	88.1	88.1		NA	NA	NA
Intertidal	216180/ 216181	1263208/ 1263220	Littleneck	3	27.6	9.2(6.9, 12.3)		NA	NA	NA
Intertidal	216180/ 216181	1263208/ 1263220	Macoma	30	146.7	5.9 (0.1,15.9)	5 Broken (not measured)	A1-IT	4/8/2008	14:00
Intertidal	216163	1263217	Macoma	8	18.7	6.2 (3.4, 10.1)	4 Broken (not measured)	A1-IT	4/8/2008	14:00
Intertidal	216161	1263229	Macoma	6	29.3	4.9 (0.1, 11.7)		A1-IT	4/8/2008	14:00
Intertidal	216252	1263225	Butter	2	271.8*	135.9* (121.8, >150)		NA	NA	NA
Intertidal	216252	1263225	Cockle	1	84.8	84.8		NA	NA	NA
Intertidal	216252	1263225	Littleneck	1	29.0	29.0		NA	NA	NA
Intertidal	216252	1263225	Macoma	17	97.3	5.7 (0.6, 16.0)		A1-IT	4/8/2008	14:00
Intertidal	216247	1263222	Macoma	34	192.2	6.4 (0.1, 11.8)	4 Broken (not measured)	A1-IT	4/8/2008	14:00
Intertidal	216249	1263218	Macoma	21	120.5	5.7 (0.5, 13.0)		A1-IT	4/8/2008	14:00
Intertidal	216235	12663218	Macoma	6	45.1	7.5 (2.9, 15.4)		A1-IT	4/8/2008	14:00
Intertidal	216167	1263222	Macoma	10	50.6	5.1 (1.5, 10.9)		A1-IT	4/8/2008	14:00
Intertidal	216205	1263211	Macoma	2	22.5	11.3 (1.3, 21.2)		A1-IT	4/8/2008	14:00
Intertidal	216205	1263211	Butter	2	125.6	62.8 (6, 119.6)		NA	NA	NA

^a All wet weights are whole clam wet weights including shells.

Table 2-3. 2008 Subtidal Clam Reconnaissance Survey Field Results

Area	Location	Grab	Date	Northing	Easting	Species	Total Count	Wet Weight with Shell (grams)	Substrate
2	a	1	4/10/08	216767.2	1263318.0	Macoma	3	2.9	Dark Brown Sandy Clay
2	a	2	4/10/08	216753.2	1263288.1	N/a	0	0	Dark Brown Sandy Clay
2	a	3	4/10/08	216771.9	1263288.4	Macoma	1	0.9	Dark Brown Sandy Clay
2	b	1	4/10/08	217399.1	1263387.8	Macoma	3	3.1	Brown Sandy Clay
2	b	1	4/10/08	217399.1	1263387.8	Bodega Tellin	1	0.3	Brown Sandy Clay
2	b	2	4/10/08	217393.8	1263333.3	N/a	0	0	Dark Brown Sandy Clay
2	b	3	4/11/08	217421.5	1263342.3	Macoma	4	1.3	Dark Brown Sandy Clay
2	b	3	4/11/08	217421.5	1263342.3	Bodega Tellin	0	0.1	Dark Brown Sandy Clay
2	c	1	4/11/08	217826.8	1263367.1	Macoma	4	1.4	Dark Brown Clayey Sand
2	c	1	4/11/08	217826.8	1263367.1	Bodega Tellin	2	0.7	Dark Brown Clayey Sand
2	c	2	4/11/08	217918.8	1263387.6	Macoma	4	2.0	Dark Brown Clayey Sand
2	c	2	4/11/08	217918.8	1263387.6	Bodega Tellin	3	0.5	Dark Brown Clayey Sand
2	c	3	4/11/08	217758.6	1263478.6	Macoma	2	0.6	Dark Brown Clayey Sand
3	a	1	4/11/08	217084.7	1263132.9	Macoma	2	13.1	Black Sandy Clay
3	a	2	4/11/08	217049.6	1263115.6	Macoma	2	0.7	Black Sandy Clay
3	a	3	4/11/08	217144.9	1263125.1	Macoma	3	2.6	Black Sandy Clay
3	a	3	4/11/08	217144.9	1263125.1	Bodega Tellin	4	3.6	Black Sandy Clay
3	b	1	4/11/08	217411.6	1263136.9	Macoma	2	1.6	Black Gritty Sand
3	b	1	4/11/08	217411.6	1263136.9	Unknown	1	0.1	Black Gritty Sand
3	b	2	4/11/08	217452.8	1263115.3	Macoma	4	3.8	DarkBrown-Black Gritty Sand with some Clay
3	b	2	4/11/08	217452.8	1263115.3	Unknown	1	0.4	DarkBrown-Black Gritty Sand with some Clay
3	b	3	4/11/08	217466.0	1263068.5	Unknown	2	0.2	Black Gritty Sand with some Clay
3	c	1	4/11/08	217711.0	1263120.4	N/a	0	0	Black Gritty Sandy Clay
3	c	2	4/11/08	217772.1	1263077.1	Macoma	2	0.7	Black Gritty Sandy Clay
3	c	2	4/11/08	217772.1	1263077.1	Bodega Tellin	1	0.6	Black Gritty Sandy Clay
3	c	3	4/11/08	217784.1	1263153.3	Macoma	3	1.0	Black-Dark Brown Gritty Sandy Clay
3	c	3	4/11/08	217784.1	1263153.3	Bodega Tellin	1	0.5	Black-Dark Brown Gritty Sandy Clay
4	a	1	4/9/08	217046.4	1262842.8	Macoma	1	5.7	Dark Grey Sandy Clay
4	a	2	4/9/08	217064.6	1262839.8	Macoma	3	2.5	Dark Grey Sandy Clay
4	a	3	4/9/08	217040.6	1262840.2	Macoma	4	2.9	Dark Grey Sandy Clay
4	a	3	4/9/08	217040.6	1262840.2	Bodega Tellin	1	0.1	Dark Grey Sandy Clay
4	b	1	4/9/08	217349.6	1262779.8	Macoma	5	5.4	Dark Brown-Grey Sandy Clay
4	b	2	4/9/08	217345.0	1262769.1	Macoma	6	11.6	Dark Brown-Grey Sandy Clay
4	b	3	4/9/08	217333.2	1262780.7	Macoma	3	12.6	Dark Brown-Grey Sandy Clay
4	c	1	4/9/08	217603.2	1262629.6	Macoma	1	5.7	Dark Brown Sandy Clay
4	c	1	4/9/08	217603.2	1262629.6	Razor	3	2.5	Dark Brown Sandy Clay
4	c	2	4/9/08	217627.1	1262643.4	Macoma	4	2.9	Dark Brown Sandy Clay
4	c	3	4/9/08	217653.0	1262638.7	Macoma	1	0.1	Sand
5	a	1	4/9/08	217149.1	1262407.9	Macoma	4	16.7	Dark Grey-Olive Brown Sandy Clay
5	a	2	4/9/08	217131.9	1262392.6	Macoma	3	10.8	Dark Grey-Olive Brown Sandy Clay
5	a	3	4/9/08	217170.3	1262403.1	Macoma	5	22.6	Dark Grey-Olive Brown Sandy Clay
5	b	1	4/9/08	217343.2	1262238.5	Macoma	6	12.0	Dark Grey-Olive Brown Sandy Clay
5	b	2	4/9/08	217355.4	1262241.3	Macoma	9	2.9	Dark Grey-Olive Brown Sandy Clay
5	b	3	4/9/08	217361.9	1262240.9	Macoma	13	32	Dark Grey-Olive Brown Sandy Clay
5	b	3	4/9/08	217361.9	1262240.9	Razor	1	8.2	Dark Grey-Olive Brown Sandy Clay
5	c	1	4/9/08	217518.8	1262383.7	Macoma	3	8	Dark Grey-Olive Brown Sandy Clay
5	c	1	4/9/08	217518.8	1262383.7	Unknown	2	0.4	Dark Grey-Olive Brown Sandy Clay
5	c	2	4/9/08	217496.8	1262421.6	Macoma	6	2.5	Dark Grey-Olive Brown Sandy Clay
5	c	3	4/9/08	217536.2	1262379.2	Macoma	15	21.9	Dark Grey-Olive Brown Sandy Clay
6	a	1	4/11/08	217830.6	1262450.9	Littleneck	2	0.2	Dark Brown Sandy Clay
6	a	1	4/11/08	217830.6	1262450.9	Bodega Tellin	2	0.3	Dark Brown Sandy Clay
6	a	2	4/11/08	217874.0	1262513.8	Macoma	2	0.4	Dark Brown Sandy Clay
6	a	2	4/11/08	217874.0	1262513.8	Unknown	1	0.1	Dark Brown Sandy Clay
6	a	2	4/11/08	217874.0	1262513.8	Bodega Tellin	1	0.3	Dark Brown Sandy Clay
6	a	3	4/11/08	217799.8	1262509.0	Bodega Tellin	2	1.4	Dark Brown Sandy Clay
6	b	1	4/11/08	217986.9	1262891.5	Unknown	2	0.1	Dark Brown Sand
6	b	2	4/11/08	218049.4	1262854.8	Macoma	1	2.2	Brown Sand
6	b	2	4/11/08	218049.4	1262854.8	Unknown	1	0.1	Brown Sand
6	b	2	4/11/08	218049.4	1262854.8	Bodega Tellin	1	0.2	Brown Sand
6	b	2	4/11/08	218049.4	1262854.8	Razor	1	1.4	Brown Sand
6	b	3	4/11/08	217947.0	1262822.8	N/a	0	0	Brown Sand
6	c	1	4/11/08	218048.0	1263344.8	Bodega Tellin	7	2.6	Dark Brown Sandy Clay
6	c	1	4/11/08	218048.0	1263344.8	Unknown	1	0.1	Dark Brown Sandy Clay
6	c	2	4/11/08	218067.0	1263329.4	Macoma	1	0.8	Dark Brown Sandy Clay
6	c	2	4/11/08	218067.0	1263329.4	Bodega Tellin	3	1.1	Dark Brown Sandy Clay
6	c	2	4/11/08	218067.0	1263329.4	Unknown	3	0.6	Dark Brown Sandy Clay
6	c	2	4/11/08	218067.0	1263329.4	Razor	1	1.6	Dark Brown Sandy Clay
6	c	3	4/11/08	218037.3	1263356.3	Bodega Tellin	1	0.8	Dark Brown Sandy Clay
6	c	3	4/11/08	218037.3	1263356.3	Razor	1	0.1	Dark Brown Sandy Clay

Table 2-4. 2008 Subtidal Clam Reconnaissance Survey Summary Table

Area	Location	Northing	Easting	Date	Species	Grab 1		Grab 2		Grab 3		Total Count	Total Wet Weight w/ Shell (g)	Est. # 2 m ² (TWW X 3.33) (g)	Est. Tissue Weight (0.5 X Est # 2 m ²) (g)	Min Weight (20 g) met?	Substrate
						Weight (g)	Count	Weight (g)	Count	Weight (g)	Count						
2	a	216743.7	216743.7	4/10/08	Macoma	2.9	3	0.0	0	0.9	1	4	3.8	12.7	6.3	No	Dark Brown Sandy Clay
2	b	217403.0	1263380.1	4/10-11/08	Macoma	3.1	3	0.0	0	1.3	4	7	4.4	14.7	7.3	No	Dark Brown Sandy Clay
2	c	217836.9	1263450.7	4/11/08	Macoma	1.4	4	2.0	4	0.6	2	10	4	13.3	6.7	No	Dark Brown Clayey Sand
3	a	217096.9	1263127.8	4/11/08	Macoma	13.1	2	0.7	2	2.6	3	7	16.4	54.6	27.3	Yes	Black Sandy Clay
3	b	217443.4	1263114.4	4/11/08	Macoma	1.6	2	3.8	4	0.0	0	6	5.4	18.0	9.0	No	Dark Brown-Black Gritty Sand
3	c	217739.4	1263121.1	4/11/08	Macoma	0.0	0	0.7	2	1.0	3	5	1.7	5.7	2.8	No	Black Gritty Sand with some Clay
4	a	217608.2	1262633.3	4/9/08	Macoma	35.0	4	7.1	5	1.3	3	12 *	43.4	144.5	72.3	Yes *	Dark Grey Sandy Clay
4	b	217355.9	1262771.3	4/9/08	Macoma	5.4	5	11.6	6	12.6	3	14	29.6	98.6	49.3	Yes	Dark Brown-Grey Sandy Clay
4	c	217056.5	1262835.2	4/9/08	Macoma	2.7	1	2.9	4	0.1	1	6	5.7	19.0	9.5	No	Dark Brown Sandy Clay
5	a	217184.4	1262384.4	4/9/08	Macoma	16.7	4	10.8	3	22.6	5	12	50.1	166.8	83.4	Yes	Dark Grey-Olive Brown Sandy Clay
5	b	217345.8	1262236.4	4/9/08	Macoma	12.0	6	2.9	9	32.0	13	28	46.9	156.2	78.1	Yes	Sandy Clay
5	c	217514.0	1262394.5	4/9/08	Macoma	8.0	3	2.5	6	21.9	15	24	32.4	107.9	53.9	Yes	Dark Brown Sandy Clay
6	a	217836.9	1262451.7	4/11/08	Macoma	0.0	0	0.4	2	0.0	0	2	0.4	1.3	0.7	No	Dark Brown Sandy Clay
6	b	217944.6	1262872.2	4/11/08	Macoma	0.0	0	2.2	1	0.0	0	1	2.2	7.3	3.7	No	Dark Brown Sand
6	c	218052.2	1263343.1	4/11/08	Macoma	2.6	7	0.8	1	0.0	0	8	3.4	11.3	5.7	No	Dark Brown Sandy Clay

Notes:

* Area 4a tissue weight is believed to be misrepresented due to two uncommonly large Macoma clams collected for the location.
 NAD83 State Plane WA North, ft.

Table 2-5. 2008 Intertidal and Subtidal Clam Tissue and Sediment Sampling IDs and Locations

Location	Grab	Tissue Sample ID	Sediment Sample ID	Northing	Easting	Date	Sample Time
Intertidal	1	A1-IT	A1-IT	216230	1263216	4/8/2008	14:00
Intertidal	2	A1-IT	A1-IT	216188	1263215	4/8/2008	14:00
Intertidal	3	A1-IT	A1-IT	216236	1263219	4/8/2008	14:00
Intertidal	4	A1-IT	A1-IT	216151	1263220	4/8/2008	14:00
Intertidal	5	A1-IT	A1-IT	216154	1263222	4/8/2008	14:00
Intertidal	6	A1-IT	A1-IT	216180	1263208	4/8/2008	14:00
Intertidal	7	A1-IT	A1-IT	216163	1263217	4/8/2008	14:00
Intertidal	8	A1-IT	A1-IT	216161	1263229	4/8/2008	14:00
Intertidal	9	A1-IT	A1-IT	216252	1263225	4/8/2008	14:00
Intertidal	10	A1-IT	A1-IT	216247	1263222	4/8/2008	14:00
Intertidal	11	A1-IT	A1-IT	216249	1263218	4/8/2008	14:00
Intertidal	12	A1-IT	A1-IT	216235	12663218	4/8/2008	14:00
Intertidal	13	A1-IT	A1-IT	216167	1263222	4/8/2008	14:00
Intertidal	14	A1-IT	A1-IT	216205	1263211	4/8/2008	14:00
5a	1	5A-C	5A-S	217173.7	1262368.2	5/13/08	13:25
5a	2	5A-C	5A-S	217173.2	1262374.1	5/13/08	13:25
5a	3	5A-C	5A-S	217174.9	1262371.0	5/13/08	13:25
5a	4	5A-C	5A-S	217174.6	1262376.1	5/13/08	13:25
5a	5	5A-C	5A-S	217178.5	1262377.4	5/13/08	13:25
5a	6	5A-C	5A-S	217185.2	1262375.9	5/13/08	13:25
5a	7	5A-C	5A-S	217178.7	1262376.7	5/13/08	13:25
5a	8	5A-C	5A-S	217177.5	1262372.6	5/13/08	13:25
5a	9	5A-C	5A-S	217179.4	1262379.7	5/13/08	13:25
5a	10	5A-C	5A-S	217182.2	1262370.0	5/13/08	13:25
4b	1	4B-C	4B-S	217351.5	1262764.6	5/13/08	17:00
4b	2	4B-C	4B-S	217352.0	1262766.2	5/13/08	17:00
4b	3	4B-C	4B-S	217354.7	1262768.0	5/13/08	17:00
4b	4	4B-C	4B-S	217364.7	1262771.2	5/13/08	17:00
4b	5	4B-C	4B-S	217347.9	1262765.6	5/13/08	17:00
4b	6	4B-C	4B-S	217345.9	1262761.2	5/13/08	17:00
4b	7	4B-C	4B-S	217357.6	1262769.6	5/13/08	17:00
4b	8	4B-C	4B-S	217345.1	1262774.7	5/13/08	17:00
4b	9	4B-C	4B-S	217357.5	1262776.6	5/13/08	17:00
4b	10	4B-C	4B-S	217358.7	1262772.8	5/13/08	17:00
4b	11	4B-C	4B-S	217357.1	1262753.8	5/13/08	17:00
3a	1	3A-C	3A-S (3D-S)	217097.5	1263128.5	5/14/08	14:10
3a	2	3A-C	3A-S (3D-S)	217097.4	1263129.2	5/14/08	14:10
3a	3	3A-C	3A-S (3D-S)	217085.9	1263123.7	5/14/08	14:10
3a	4	3A-C	3A-S (3D-S)	217082.9	1263121.9	5/14/08	14:10
3a	5	3A-C	3A-S (3D-S)	217086.6	1263119.9	5/14/08	14:10
3a	6	3A-C	3A-S (3D-S)	217097.3	1263124.8	5/14/08	14:10
3a	7	3A-C	3A-S (3D-S)	217100.3	1263134.6	5/14/08	14:10
3a	8	3A-C	3A-S (3D-S)	217095.3	1263130.5	5/14/08	14:10
3a	9	3A-C	3A-S (3D-S)	217098.6	1263123.3	5/14/08	14:10
3a	10	3A-C	3A-S (3D-S)	217092.2	1263133.3	5/14/08	14:10
3a	11	3A-C	3A-S (3D-S)	217091.6	1263129.6	5/14/08	14:10
3a	12	3A-C	3A-S (3D-S)	217100.5	1263131.3	5/14/08	14:10
3a	13	3A-C	3A-S (3D-S)	217095.0	1263122.4	5/14/08	14:10
3a	14	3A-C	3A-S (3D-S)	217092.5	1263136.7	5/14/08	14:10
3a	15	3A-C	3A-S (3D-S)	217092.6	1263119.6	5/14/08	14:10

Coordinate System: US State Planes 1983, Washington North, NAD83

Table 2-6. COPCs Reporting Limits and Detection Limits Comparison for Tissue Analyzes

Sample ID								3A-C		4B-C		5A-C		A1-IT Tissue	
Sample Matrix								Tissue		Tissue		Tissue		Tissue	
COPC Analyte Group	Units	QAPP Approved		Sample RL Range		Sample MDL Range		RL	MDL	RL	MDL	RL	MDL	RL	MDL
		RL ^a	MDL ^a	Min	Max	Min	Max								
Lipids	Percent Wet Wt	n/a	n/a	0.049	0.05	0	0	0.049	n/a	0.049	n/a	0.049	n/a	0.05	n/a
PCB Aroclors (8082)															
Aroclor 1016	ug/kg Wet Wt	5.0	2.4	9.8	9.9	2.4	2.4	9.8	2.4	9.9	2.4	9.9	2.4	9.8	2.4
Aroclor 1221	ug/kg Wet Wt	10	2.6	20	20	2.6	2.6	20	2.6	20	2.6	20	2.6	20	2.6
Aroclor 1232	ug/kg Wet Wt	5.0	2.3	9.8	9.9	2.3	2.3	9.8	2.3	9.9	2.3	9.9	2.3	9.8	2.3
Aroclor 1242	ug/kg Wet Wt	5.0	2.2	9.8	9.9	2.2	2.2	9.8	2.2	9.9	2.2	9.9	2.2	9.8	2.2
Aroclor 1248	ug/kg Wet Wt	5.0	0.51	9.8	9.9	0.51	0.51	9.8	0.51	9.9	0.51	9.9	0.51	9.8	0.51
Aroclor 1254	ug/kg Wet Wt	5.0	1.8	9.8	9.9	1.8	1.8	9.8	1.8	9.9	1.8	9.9	1.8	9.8	1.8
Aroclor 1260	ug/kg Wet Wt	5.0	1.9	9.8	9.9	1.9	1.9	9.8	1.9	9.9	1.9	9.9	1.9	9.8	1.9
PAHs (8270C-Low Level)															
Acenaphthylene	ug/kg Wet Wt	0.5	0.069	0.48	0.5	0.069	0.069	n/a	n/a	0.5	0.069	0.5	0.069	0.48	0.069
Benzo(a)anthracene	ug/kg Wet Wt	0.5	0.066	0.48	0.5	0.066	0.066	n/a	n/a	0.5	0.066	0.5	0.066	0.48	0.066
Benzo(a)pyrene	ug/kg Wet Wt	0.5	0.081	0.48	0.5	0.081	0.081	n/a	n/a	0.5	0.081	0.5	0.081	0.48	0.081
Benzo(b)fluoranthene	ug/kg Wet Wt	0.5	0.07	0.48	0.5	0.07	0.07	n/a	n/a	0.5	0.07	0.5	0.07	0.48	0.07
Benzo(k)fluoranthene	ug/kg Wet Wt	0.5	0.056	0.48	0.5	0.056	0.056	n/a	n/a	0.5	0.056	0.5	0.056	0.48	0.056
Benzo(g,h,i)perylene	ug/kg Wet Wt	0.5	0.073	0.48	0.5	0.073	0.073	n/a	n/a	0.5	0.073	0.5	0.073	0.48	0.073
Chrysene	ug/kg Wet Wt	0.5	0.076	0.48	0.5	0.076	0.076	n/a	n/a	0.5	0.076	0.5	0.076	0.48	0.076
Dibenzo(a,h)anthracene	ug/kg Wet Wt	0.5	0.059	0.48	0.5	0.059	0.059	n/a	n/a	0.5	0.059	0.5	0.059	0.48	0.059
Fluoranthene	ug/kg Wet Wt	0.5	0.09	0.48	5	0.09	0.9	n/a	n/a	5	0.9	0.5	0.09	0.48	0.09
Indeno(1,2,3-cd)pyrene	ug/kg Wet Wt	0.5	0.064	0.48	0.5	0.064	0.064	n/a	n/a	0.5	0.064	0.5	0.064	0.48	0.064
Phenanthrene	ug/kg Wet Wt	0.5	0.36	0.48	0.5	0.36	0.36	n/a	n/a	0.5	0.36	0.5	0.36	0.48	0.36
Pyrene	ug/kg Wet Wt	0.5	0.098	0.48	5	0.098	0.98	n/a	n/a	5	0.98	0.5	0.098	0.48	0.098
Acenaphthene	ug/kg Wet Wt	0.5	0.11	0.48	0.5	0.11	0.11	n/a	n/a	0.5	0.11	0.5	0.11	0.48	0.11
Anthracene	ug/kg Wet Wt	0.5	0.065	0.48	0.5	0.065	0.065	n/a	n/a	0.5	0.065	0.5	0.065	0.48	0.065
Fluorene	ug/kg Wet Wt	0.5	0.15	0.48	0.5	0.15	0.15	n/a	n/a	0.5	0.15	0.5	0.15	0.48	0.15
Naphthalene	ug/kg Wet Wt	1.0	0.4	0.96	0.99	0.4	0.4	n/a	n/a	0.99	0.4	0.99	0.4	0.96	0.4
2-Methylnaphthalene	ug/kg Wet Wt	1.0	0.44	0.96	0.99	0.44	0.44	n/a	n/a	0.99	0.44	0.99	0.44	0.96	0.44
Dibenzofuran	ug/kg Wet Wt	0.5	0.13	0.48	0.5	0.13	0.13	n/a	n/a	0.5	0.13	0.5	0.13	0.48	0.13
Dioxin/Furans (8290)															
2,3,7,8-TCDD	ng/kg Wet Wt ^d	0.5	0.051	0.558	0.894	0.025	0.0343	n/a	n/a	0.894	0.025	0.558	0.0275	0.626	0.0343
1,2,3,7,8-PeCDD ^b	ng/kg Wet Wt ^d	2.5	0.050	2.79	4.47	0.051	0.0624	n/a	n/a	4.47	0.051	2.79	0.0607	3.13	0.0624
1,2,3,4,7,8-HxCDD ^b	ng/kg Wet Wt ^d	2.5	0.049	2.79	4.47	0.076	0.253	n/a	n/a	4.47	0.076	2.79	0.12	3.13	0.253
1,2,3,6,7,8-HxCDD ^b	ng/kg Wet Wt ^d	2.5	0.048	2.79	4.47	0.0758	0.252	n/a	n/a	4.47	0.0758	2.79	0.12	3.13	0.252
1,2,3,7,8,9-HxCDD ^b	ng/kg Wet Wt ^d	2.5	0.048	2.79	4.47	0.0762	0.254	n/a	n/a	4.47	0.0762	2.79	0.121	3.13	0.254
1,2,3,4,6,7,8-HpCDD ^b	ng/kg Wet Wt ^d	2.5	0.059	2.79	4.47	0.14	0.352	n/a	n/a	4.47	0.14	2.79	0.352	3.13	0.312
OCDD ^b	ng/kg Wet Wt ^d	5.0	0.164	5.58	8.94	0.0862	0.133	n/a	n/a	8.94	0.0862	5.58	0.133	6.26	0.115
2,3,7,8-TCDF ^b	ng/kg Wet Wt ^d	0.5	0.048	0.558	0.894	0.0225	0.0363	n/a	n/a	0.894	0.0363	0.558	0.0315	0.626	0.0225
1,2,3,7,8-PeCDF ^b	ng/kg Wet Wt ^d	2.5	0.038	2.79	4.47	0.0326	0.0383	n/a	n/a	4.47	0.0383	2.79	0.0326	3.13	0.0372
2,3,4,7,8-PeCDF ^b	ng/kg Wet Wt ^d	2.5	0.036	2.79	4.47	0.0316	0.037	n/a	n/a	4.47	0.037	2.79	0.0316	3.13	0.0359
1,2,3,4,7,8-HxCDF ^b	ng/kg Wet Wt ^d	2.5	0.041	2.79	4.47	0.0454	0.136	n/a	n/a	4.47	0.0454	2.79	0.11	3.13	0.136
1,2,3,6,7,8-HxCDF ^b	ng/kg Wet Wt ^d	2.5	0.041	2.79	4.47	0.0465	0.138	n/a	n/a	4.47	0.0465	2.79	0.112	3.13	0.138
1,2,3,7,8,9-HxCDF ^b	ng/kg Wet Wt ^d	2.5	0.050	2.79	4.47	0.0544	0.162	n/a	n/a	4.47	0.0544	2.79	0.131	3.13	0.162
2,3,4,6,7,8-HxCDF ^b	ng/kg Wet Wt ^d	2.5	0.044	2.79	4.47	0.0492	0.146	n/a	n/a	4.47	0.0492	2.79	0.119	3.13	0.146
1,2,3,4,6,7,8-HpCDF ^b	ng/kg Wet Wt ^d	2.5	0.064	2.79	4.47	0.101	0.163	n/a	n/a	4.47	0.101	2.79	0.163	3.13	0.137
1,2,3,4,7,8,9-HpCDF ^b	ng/kg Wet Wt ^d	2.5	0.083	2.79	4.47	0.125	0.201	n/a	n/a	4.47	0.125	2.79	0.201	3.13	0.169
OCDF ^b	ng/kg Wet Wt ^d	5.0	0.104	5.58	8.94	0.0849	0.209	n/a	n/a	8.94	0.0849	5.58	0.209	6.26	0.152
Total Hepta-Dioxins (Sample A1-IT)	ng/kg Wet Wt	n/a	n/a	(3.13)	(3.13)	(0.312)	(0.312)	n/a	n/a	4.47	0.14	2.79	0.352	3.13	0.312
Total Hepta-Furans (Sample A1-IT)	ng/kg Wet Wt	n/a	n/a	(3.13)	(3.13)	(0.137)	(0.137)	n/a	n/a	4.47	0.101	2.79	0.163	3.13	0.137
Total Hexa-Dioxins (Sample A1-IT)	ng/kg Wet Wt	n/a	n/a	(3.13)	(3.13)	(0.252)	(0.252)	n/a	n/a	4.47	0.0758	2.79	0.12	3.13	0.252
Total Hexa-Furans (Sample A1-IT)	ng/kg Wet Wt	n/a	n/a	(3.13)	(3.13)	(0.138)	(0.138)	n/a	n/a	4.47	0.0465	2.79	0.112	3.13	0.138
Total Penta-Dioxins (Sample A1-IT)	ng/kg Wet Wt	n/a	n/a	(3.13)	(3.13)	(0.0624)	(0.0624)	n/a	n/a	4.47	0.051	2.79	0.0607	3.13	0.0624
Total Penta-Furans (Sample A1-IT)	ng/kg Wet Wt	n/a	n/a	(3.13)	(3.13)	(0.0359)	(0.0359)	n/a	n/a	4.47	0.037	2.79	0.0316	3.13	0.0359
Total Tetra-Dioxins (Sample A1-IT)	ng/kg Wet Wt	n/a	n/a	(0.626)	(0.626)	(0.0343)	(0.0343)	n/a	n/a	0.894	0.025	0.558	0.0275	0.626	0.0343
Total Tetra-Furans (Sample A1-IT)	ng/kg Wet Wt	n/a	n/a	(0.626)	(0.626)	(0.0225)	(0.0225)	n/a	n/a	0.894	0.0363	0.558	0.0315	0.626	0.0225

Table 2-6. COPCs Reporting Limits and Detection Limits Comparison for Tissue Analyzes

								Sample ID		3A-C		4B-C		5A-C		A1-IT Tissue	
								Sample Matrix		Tissue		Tissue		Tissue		Tissue	
COPC Analyte Group	Units	QAPP Approved		Sample RL Range		Sample MDL Range		RL	MDL	RL	MDL	RL	MDL	RL	MDL	RL	MDL
		RL ^a	MDL ^a	Min	Max	Min	Max										
TBT (Organotin)																	
Di-n-butyltin	ug/kg Wet Wt	1.0	0.17	1.1	1.1	0.18	0.19	n/a	n/a	1.1	0.19	1.1	0.19	1.1	0.19	1.1	0.18
n-Butyltin	ug/kg Wet Wt	1.0	0.11	1.1	1.1	0.12	0.12	n/a	n/a	1.1	0.12	1.1	0.12	1.1	0.12	1.1	0.12
Tri-n-butyltin	ug/kg Wet Wt	1.0	0.35	1.1	1.1	0.36	0.39	n/a	n/a	1.1	0.38	1.1	0.39	1.1	0.39	1.1	0.36
Tetrabutyltin	ug/kg Wet Wt	n/a	n/a	1.1	1.1	0.44	0.47	n/a	n/a	1.1	0.47	1.1	0.47	1.1	0.47	1.1	0.44
Metals 6020 (except as noted)																	
Antimony	mg/kg Dry Wt	0.05	0.02	0.047	0.05	0.007	0.008	0.049	0.008	0.047	0.007	0.05	0.008	0.049	0.008	0.049	0.008
Arsenic	mg/kg Dry Wt	0.5	0.05	0.47	0.5	0.08	0.08	0.49	0.08	0.47	0.08	0.5	0.08	0.49	0.08	0.49	0.08
Cadmium	mg/kg Dry Wt	0.02	0.01	0.02	0.02	0.01	0.01	0.02	0.01	0.02	0.01	0.02	0.01	0.02	0.01	0.02	0.01
Chromium (EPA 6010B)	mg/kg Dry Wt	1.0	0.6	0.19	0.2	0.07	0.07	0.2	0.07	0.19	0.07	0.2	0.07	0.2	0.07	0.2	0.07
Cobalt	mg/kg Dry Wt	0.02	0.0006	0.019	0.02	0.003	0.003	0.02	0.003	0.019	0.003	0.02	0.003	0.02	0.003	0.02	0.003
Copper (EPA 6010B)	mg/kg Dry Wt	0.1	0.03	0.9	1	0.3	0.3	1	0.3	0.9	0.3	1	0.3	1	0.3	1	0.3
Lead	mg/kg Dry Wt	0.02	0.006	0.019	0.02	0.004	0.004	0.02	0.004	0.019	0.004	0.02	0.004	0.02	0.004	0.02	0.004
Molybdenum	mg/kg Dry Wt	0.05	0.02	0.047	0.05	0.007	0.008	0.049	0.008	0.047	0.007	0.05	0.008	0.049	0.008	0.049	0.008
Nickel	mg/kg Dry Wt	0.2	0.03	0.19	0.2	0.04	0.04	0.2	0.04	0.19	0.04	0.2	0.04	0.2	0.04	0.2	0.04
Selenium (7742)	mg/kg Dry Wt	0.1	0.02	0.09	0.1	0.05	0.05	0.1	0.05	0.09	0.05	0.1	0.05	0.1	0.05	0.1	0.05
Silver	mg/kg Dry Wt	0.02	0.006	0.019	0.02	0.007	0.007	0.02	0.007	0.019	0.007	0.02	0.007	0.02	0.007	0.02	0.007
Thallium	mg/kg Dry Wt	0.02	0.005	0.019	0.02	0.003	0.003	0.02	0.003	0.019	0.003	0.02	0.003	0.02	0.003	0.02	0.003
Vanadium (EPA 6010B)	mg/kg Dry Wt	1.0	0.4	0.28	0.3	0.08	0.09	0.3	0.09	0.28	0.08	0.3	0.09	0.3	0.09	0.3	0.09
Zinc (EPA 6010B)	mg/kg Dry Wt	0.5	0.4	0.19	0.2	0.04	0.04	0.2	0.04	0.19	0.04	0.2	0.04	0.2	0.04	0.2	0.04
Mercury (7471A)	mg/kg Dry Wt	0.02	0.003	0.02	0.05	0.004	0.01	0.049	0.01	0.046	0.009	0.05	0.01	0.02	0.02	0.04	0.004
Pesticides (8081A)																	
4,4'-DDD	ug/kg Wet Wt	0.5	0.11	0.97	1	0.11	0.36	n/a	n/a	1	0.36	1	0.11	0.97	0.11	0.97	0.11
4,4'-DDE	ug/kg Wet Wt	0.5	0.16	0.97	1	0.16	0.24	n/a	n/a	1	0.16	1	0.16	0.97	0.16	0.97	0.24
4,4'-DDT	ug/kg Wet Wt	0.5	0.43	1.5	3	1.5	3	n/a	n/a	3	3	2	2	1.5	1.5	1.5	3
2,4'-DDD	ug/kg Wet Wt	0.5	0.38	0.97	1.7	0.97	1.7	n/a	n/a	1.7	1.7	1.2	1.2	0.97	0.97	0.97	1.7
2,4'-DDE	ug/kg Wet Wt	0.5	0.21	0.97	1	0.21	1	n/a	n/a	1	1	1	0.21	0.97	0.21	0.97	1
2,4'-DDT	ug/kg Wet Wt	0.5	0.21	0.97	1.7	0.97	1.7	n/a	n/a	1.7	1.7	1	1	0.97	0.97	0.97	1.7
Aldrin	ug/kg Wet Wt	0.5	0.23	0.97	1	0.23	0.51	n/a	n/a	1	0.23	1	0.23	0.97	0.23	0.97	0.51
alpha-BHC	ug/kg Wet Wt	0.5	0.27	0.97	1	0.27	0.27	n/a	n/a	1	0.27	1	0.27	0.97	0.27	0.97	0.27
beta-BHC	ug/kg Wet Wt	0.5	0.49	1	1.7	0.98	1.7	n/a	n/a	1.2	1.2	1	0.98	1.7	0.98	1.7	1.7
delta-BHC	ug/kg Wet Wt	0.5	0.16	0.97	1	0.16	1	n/a	n/a	1	0.16	1	1	0.97	0.16	0.97	1
alpha-Chlordane	ug/kg Wet Wt	0.5	0.15	0.97	1	0.15	1	n/a	n/a	1	1	1	0.22	0.97	0.15	0.97	1
gamma-Chlordane	ug/kg Wet Wt	0.5	0.26	0.97	1	0.26	0.75	n/a	n/a	1	0.26	1	0.26	0.97	0.26	0.97	0.75
Total chlordane ^c	ug/kg Wet Wt	10	4.1					Tetra Tech Totaled									
Dieldrin	ug/kg Wet Wt	0.5	0.25	0.97	1	0.97	1	n/a	n/a	1	1	1	1	0.97	0.97	0.97	0.97
Endosulfan I	ug/kg Wet Wt	0.5	0.12	0.97	1	0.12	0.27	n/a	n/a	1	0.27	1	0.17	0.97	0.12	0.97	0.27
Endosulfan II	ug/kg Wet Wt	0.5	0.22	0.97	1	0.22	1	n/a	n/a	1	1	1	0.22	0.97	0.22	0.97	1
Endosulfan Sulfate	ug/kg Wet Wt	0.5	0.13	0.97	1	0.13	1	n/a	n/a	1	0.13	1	1	0.97	0.13	0.97	1
Endrin	ug/kg Wet Wt	0.5	0.22	0.97	1	0.22	0.22	n/a	n/a	1	0.22	1	0.22	0.97	0.22	0.97	0.22
Endrin aldehyde	ug/kg Wet Wt	n/a	n/a	0.97	1	0.25	0.25	n/a	n/a	1	0.25	1	0.25	0.97	0.25	0.97	0.25
gamma-BHC (Lindane)	ug/kg Wet Wt	0.5	0.24	0.97	1	0.24	0.24	n/a	n/a	1	0.24	1	0.24	0.97	0.24	0.97	0.24
Heptachlor	ug/kg Wet Wt	0.5	0.074	0.97	1	0.66	1	n/a	n/a	1	1	1	0.73	0.97	0.66	0.97	0.66
Heptachlor epoxide	ug/kg Wet Wt	0.5	0.38	0.97	1	0.38	0.86	n/a	n/a	1	0.86	1	0.38	0.97	0.38	0.97	0.86
Hexachlorobenzene	ug/kg Wet Wt	0.5	0.31	0.97	1	0.31	0.97	n/a	n/a	1	0.31	1	0.31	0.97	0.31	0.97	0.97
Hexachlorobutadiene	ug/kg Wet Wt	n/a	n/a	0.97	2.2	0.84	2.2	n/a	n/a	2.2	2.2	1	0.91	0.97	0.84	0.97	0.84
Oxy-chlordane	ug/kg Wet Wt	0.5	0.19	0.97	1	0.19	0.19	n/a	n/a	1	0.19	1	0.19	0.97	0.19	0.97	0.19
trans-Nonachlor	ug/kg Wet Wt	0.5	0.14	0.97	1	0.14	0.27	n/a	n/a	1	0.27	1	0.21	0.97	0.14	0.97	0.27
cis-Nonachlor	ug/kg Wet Wt	0.5	0.19	0.97	1.1	0.97	1.1	n/a	n/a	1	1	1.1	1.1	0.97	0.97	0.97	1.1
Methoxychlor	ug/kg Wet Wt	0.5	0.21	1	3.3	1	3.3	n/a	n/a	3.3	3.3	1	1	1	1	1	3.3
Mirex	ug/kg Wet Wt	0.5	0.4	0.97	1	0.4	0.4	n/a	n/a	1	0.4	1	0.4	0.97	0.4	0.97	0.4
Toxaphene	ug/kg Wet Wt	50	21	49	50	21	50	n/a	n/a	50	50	25	49	21	49	21	50

Notes:

- a) RLs and MDLs from Columbia Analytical Services Laboratory.
- b) Dioxin-like PCB and dioxin/furan congeners will be evaluated as toxic equivalents (TEQs) in the risk assessments, rather than as individual congeners. However, because TEQs are calculated, rather than measured by the laboratory, RBCs for individual con
- c) Total chlordane is the sum of oxychlordane, alpha- and gamma-chlordane, and cis- and trans-nonachlor. RL and MDL are the highest RL and MDL for the chlordane-related compounds. Lab reports as individual analytes.
- d) Dioxin/furan MRL's are based on EN 1948 calibration standards. MDL's are based on 30 gram samples size.
Note: Samples with high moisture contents or matrix interference may have detection limits higher than those listed.

Dry WT- Dry Weight
Wet Wt- Wet Weight
n/a- not available

Table 2-7. COPCs Reporting Limits and Detection Limits Comparison for Sediment Analyzes

		Sample ID						3A-S		3D-S		4B-S		5A-S		A1-IT Sed	
		Sample Matrix						Sediment		Sediment		Sediment		Sediment		Sediment	
COPC Analyte Group	Units	QAPP Approved		Sample RL Range		Sample MDL Range		RL	MDL	RL	MDL	RL	MDL	RL	MDL	RL	MDL
		RL ^a	MDL ^a	Min	Max	Min	Max										
PCB Aroclors (8082)																	
Aroclor 1016	ug/kg Dry Wt	2.5	1.3	9.4	10	1.7	1.7	10	1.7	10	1.7	10	1.7	10	1.7	9.4	1.7
Aroclor 1221	ug/kg Dry Wt	5.0	1.3	19	20	1.7	1.7	20	1.7	20	1.7	20	1.7	20	1.7	19	1.7
Aroclor 1232	ug/kg Dry Wt	2.5	1.3	9.4	10	1.7	1.7	10	1.7	10	1.7	10	1.7	10	1.7	9.4	1.7
Aroclor 1242	ug/kg Dry Wt	2.5	1.3	9.4	10	1.7	1.7	10	1.7	10	1.7	10	1.7	10	1.7	9.4	1.7
Aroclor 1248	ug/kg Dry Wt	2.5	1.3	9.4	10	1.7	1.7	10	1.7	10	1.7	10	1.7	10	1.7	9.4	1.7
Aroclor 1254	ug/kg Dry Wt	2.5	1.3	9.4	10	1.7	1.7	10	1.7	10	1.7	10	1.7	10	1.7	9.4	1.7
Aroclor 1260	ug/kg Dry Wt	2.5	1.3	9.4	10	1.7	1.7	10	1.7	10	1.7	10	1.7	10	1.7	9.4	1.7
PAHs (8270C-Low Level)																	
Acenaphthylene	ug/kg Dry Wt	5.0	0.23	4.6	48	0.24	6	48	6	48	6	39	6	39	6	4.6	0.24
Benzo(a)anthracene	ug/kg Dry Wt	5.0	0.48	4.6	48	0.48	8.5	48	8.5	48	8.5	39	8.5	39	8.5	4.6	0.48
Benzo(a)pyrene	ug/kg Dry Wt	5.0	0.14	4.6	48	0.14	8.5	48	8.5	48	8.5	39	8.5	39	8.5	4.6	0.14
Benzo(b)fluoranthene	ug/kg Dry Wt	5.0	0.25	4.6	48	0.25	6	48	6	48	6	39	6	39	6	4.6	0.25
Benzo(k)fluoranthene	ug/kg Dry Wt	5.0	0.15	4.6	48	0.15	7	48	7	48	7	39	7	39	7	4.6	0.15
Benzo(g,h,i)perylene	ug/kg Dry Wt	5.0	0.64	4.6	48	0.64	7.5	48	7.5	48	7.5	39	7.5	39	7.5	4.6	0.64
Chrysene	ug/kg Dry Wt	5.0	0.25	4.6	48	0.25	7.5	48	7.5	48	7.5	39	7.5	39	7.5	4.6	0.25
Dibenzo(a,h)anthracene	ug/kg Dry Wt	5.0	0.28	4.6	48	0.28	7.5	48	7.5	48	7.5	39	7.5	39	7.5	4.6	0.28
Fluoranthene	ug/kg Dry Wt	5.0	0.61	4.6	390	0.61	80	48	8	48	8	390	80	39	8	4.6	0.61
Indeno(1,2,3-cd)pyrene	ug/kg Dry Wt	5.0	0.16	4.6	48	0.16	7.5	48	7.5	48	7.5	39	7.5	39	7.5	4.6	0.16
Phenanthrene	ug/kg Dry Wt	5.0	0.75	4.6	48	0.75	7	48	7	48	7	39	7	39	7	4.6	0.75
Pyrene	ug/kg Dry Wt	5.0	0.37	4.6	390	0.37	75	48	7.5	48	7.5	390	75	39	7.5	4.6	0.37
Acenaphthene	ug/kg Dry Wt	5.0	0.23	4.6	48	0.23	7	48	7	48	7	39	7	39	7	4.6	0.23
Anthracene	ug/kg Dry Wt	5.0	0.47	4.6	48	0.47	8	48	8	48	8	39	8	39	8	4.6	0.47
Fluorene	ug/kg Dry Wt	5.0	0.5	4.6	48	0.5	5.5	48	5.5	48	5.5	39	5.5	39	5.5	4.6	0.5
Naphthalene	ug/kg Dry Wt	5.0	0.37	4.6	48	0.37	12	48	12	48	12	39	12	39	12	4.6	0.37
2-Methylnaphthalene	ug/kg Dry Wt	5.0	0.39	4.6	48	0.39	11	48	11	48	11	39	11	39	11	4.6	0.39
Dibenzofuran	ug/kg Dry Wt	5.0	0.59	4.6	48	0.59	6	48	6	48	6	39	6	39	6	4.6	0.59
Dioxin/Furans (8290)																	
2,3,7,8-TCDD	ng/kg Dry Wt ^d	0.5	0.023	0.451	0.654	0.0158	0.0526	0.616	0.018	0.57	0.0158	0.496	0.0165	0.451	0.0233	0.654	0.0526
1,2,3,7,8-PeCDD ^b	ng/kg Dry Wt ^d	2.5	0.031	1.13	3.27	0.0256	0.0489	1.54	0.0471	1.42	0.0256	1.24	0.0356	1.13	0.0489	3.27	0.0391
1,2,3,4,7,8-HxCDD ^b	ng/kg Dry Wt ^d	2.5	0.032	1.13	3.27	0.0353	0.166	1.54	0.166	1.42	0.117	1.24	0.123	1.13	0.141	3.27	0.0353
1,2,3,6,7,8-HxCDD ^b	ng/kg Dry Wt ^d	2.5	0.036	1.13	3.27	0.0342	0.165	1.54	0.165	1.42	0.116	1.24	0.122	1.13	0.14	3.27	0.0342
1,2,3,7,8,9-HxCDD ^b	ng/kg Dry Wt ^d	2.5	0.034	1.13	3.27	0.037	0.167	1.54	0.167	1.42	0.118	1.24	0.124	1.13	0.141	3.27	0.037
1,2,3,4,6,7,8-HpCDD ^b	ng/kg Dry Wt ^d	2.5	0.077	1.13	3.27	0.0983	0.674	1.54	0.58	1.42	0.616	1.24	0.674	1.13	0.326	3.27	0.0983
OCDD ^b	ng/kg Dry Wt ^d	5.0	0.087	2.25	6.54	0.0839	1.64	3.08	1.64	2.85	0.186	2.48	0.0839	2.25	0.0868	6.54	0.218
2,3,7,8-TCDF ^b	ng/kg Dry Wt ^d	0.5	0.019	0.451	0.654	0.163	0.254	0.616	0.184	0.57	0.163	0.496	0.254	0.451	0.177	0.654	0.176
1,2,3,7,8-PeCDF ^b	ng/kg Dry Wt ^d	2.5	0.017	1.13	3.27	0.0291	0.0406	1.54	0.0345	1.42	0.0291	1.24	0.0352	1.13	0.0406	3.27	0.0357
2,3,4,7,8-PeCDF ^b	ng/kg Dry Wt ^d	2.5	0.017	1.13	3.27	0.0285	0.0399	1.54	0.0339	1.42	0.0285	1.24	0.0346	1.13	0.0399	3.27	0.0344
1,2,3,4,7,8-HxCDF ^b	ng/kg Dry Wt ^d	2.5	0.029	1.13	3.27	0.0629	0.173	1.54	0.083	1.42	0.173	1.24	0.0843	1.13	0.109	3.27	0.0629
1,2,3,6,7,8-HxCDF ^b	ng/kg Dry Wt ^d	2.5	0.036	1.13	3.27	0.0642	0.181	1.54	0.0866	1.42	0.181	1.24	0.0879	1.13	0.114	3.27	0.0642
1,2,3,7,8,9-HxCDF ^b	ng/kg Dry Wt ^d	2.5	0.044	1.13	3.27	0.0851	0.223	1.54	0.107	1.42	0.223	1.24	0.109	1.13	0.141	3.27	0.0851
2,3,4,6,7,8-HxCDF ^b	ng/kg Dry Wt ^d	2.5	0.039	1.13	3.27	0.0711	0.191	1.54	0.0916	1.42	0.191	1.24	0.093	1.13	0.121	3.27	0.0711
1,2,3,4,6,7,8-HpCDF ^b	ng/kg Dry Wt ^d	2.5	0.059	1.13	3.27	0.0478	0.164	1.54	0.162	1.42	0.131	1.24	0.164	1.13	0.106	3.27	0.0478
1,2,3,4,7,8,9-HpCDF ^b	ng/kg Dry Wt ^d	2.5	0.076	1.13	3.27	0.0638	0.215	1.54	0.212	1.42	0.172	1.24	0.215	1.13	0.139	3.27	0.0638

Table 2-7. COPCs Reporting Limits and Detection Limits Comparison for Sediment Analyzes

Sample ID		3A-S		3D-S		4B-S		5A-S		A1-IT Sed							
Sample Matrix		Sediment		Sediment		Sediment		Sediment		Sediment							
COPC Analyte Group	Units	QAPP Approved		Sample RL Range		Sample MDL Range		RL	MDL	RL	MDL	RL	MDL	RL	MDL	RL	MDL
		RL ^a	MDL ^a	Min	Max	Min	Max										
PCB Aroclors (8082)	ng/kg Dry Wt ^d	5.0	0.062	2.25	6.54	0.0377	0.478	3.08	0.478	2.85	0.0589	2.48	0.0377	2.25	0.0519	6.54	0.0946
OCDF ^b	ng/kg Dry Wt ^d	5.0	0.062	2.25	6.54	0.0377	0.478	3.08	0.478	2.85	0.0589	2.48	0.0377	2.25	0.0519	6.54	0.0946
Total Hepta-Dioxins (Sample A1-IT)	ng/kg Dry Wt	n/a	n/a	1.13 (3.27)	1.54 (3.27)	0.326 (0.0983)	0.674 (0.0983)	1.54	0.58	1.42	0.616	1.24	0.674	1.13	0.326	3.27	0.0983
Total Hepta-Furans (Sample A1-IT)	ng/kg Dry Wt	n/a	n/a	1.13 (3.27)	1.54 (3.27)	0.106 (0.0478)	0.164 (0.0478)	1.54	0.162	1.42	0.131	1.24	0.164	1.13	0.106	3.27	0.0478
Total Hexa-Dioxins (Sample A1-IT)	ng/kg Dry Wt	n/a	n/a	1.13 (3.27)	1.54 (3.27)	0.116 (0.0342)	0.165 (0.0342)	1.54	0.165	1.42	0.116	1.24	0.122	1.13	0.14	3.27	0.0342
Total Hexa-Furans (Sample A1-IT)	ng/kg Dry Wt	n/a	n/a	1.13 (3.27)	1.54 (3.27)	0.0866 (0.0642)	0.181 (0.0642)	1.54	0.0866	1.42	0.181	1.24	0.0879	1.13	0.114	3.27	0.0642
Total Penta-Dioxins (Sample A1-IT)	ng/kg Dry Wt	n/a	n/a	1.13 (3.27)	1.54 (3.27)	0.0256 (0.0391)	0.0489 (0.0391)	1.54	0.0471	1.42	0.0256	1.24	0.0356	1.13	0.0489	3.27	0.0391
Total Penta-Furans (Sample A1-IT)	ng/kg Dry Wt	n/a	n/a	1.13 (3.27)	1.54 (3.27)	0.0285 (0.0344)	0.0399 (0.0344)	1.54	0.0339	1.42	0.0285	1.24	0.0346	1.13	0.0399	3.27	0.0344
Total Tetra-Dioxins (Sample A1-IT)	ng/kg Dry Wt	n/a	n/a	0.451 (0.654)	0.616 (0.654)	0.0158 (0.0526)	0.0233 (0.0526)	0.616	0.018	0.57	0.0158	0.496	0.0165	0.451	0.0233	0.654	0.0526
Total Tetra-Furans (Sample A1-IT)	ng/kg Dry Wt	n/a	n/a	0.451 (0.654)	0.616 (0.654)	0.0161 (0.0431)	0.0235 (0.0431)	0.616	0.0161	0.57	0.0235	0.496	0.0162	0.451	0.0175	0.654	0.0431
TBT (Krone 1989)																	
Di-n-butyltin	ug/kg Dry Wt	1.0	0.028	1.3	19	0.036	4.6	19	4.6	19	4.6	1.6	0.38	1.6	0.37	1.3	0.036
n-Butyltin	ug/kg Dry Wt	1.0	0.03	1.3	19	0.039	0.4	1.9	0.4	1.9	0.4	1.6	0.33	1.6	0.33	1.3	0.039
Tri-n-butyltin	ug/kg Dry Wt	1.0	0.056	1.3	19	0.071	5.7	19	5.7	19	5.7	1.6	0.47	1.6	0.46	1.3	0.071
Tetrabutyltin	ug/kg Dry Wt	n/a	n/a	1.3	19	0.089	0.89	1.9	0.89	1.9	0.89	1.6	0.73	1.6	0.72	1.3	0.089
Metals (6020, unless noted)																	
Antimony	mg/kg Dry Wt	0.05	0.03	0.05	0.06	0.03	0.04	0.05	0.04	0.05	0.04	0.06	0.04	0.06	0.04	0.05	0.03
Arsenic	mg/kg Dry Wt	0.5	0.1	0.55	1.1	0.11	0.44	1.05	0.42	1.06	0.43	1.1	0.44	1.1	0.44	0.55	0.11
Cadmium	mg/kg Dry Wt	0.02	0.008	0.022	0.044	0.009	0.02	0.042	0.019	0.042	0.019	0.044	0.02	0.044	0.02	0.022	0.009
Chromium	mg/kg Dry Wt	0.2	0.04	0.22	2.2	0.04	0.8	2.1	0.7	2.1	0.7	2.2	0.8	2.2	0.8	0.22	0.04
Cobalt	mg/kg Dry Wt	0.02	0.003	0.033	0.044	0.003	0.009	0.042	0.008	0.042	0.008	0.044	0.009	0.044	0.009	0.033	0.003
Copper	mg/kg Dry Wt	0.1	0.1	0.11	2.2	0.02	1	2.1	1	2.1	1	2.2	1	2.2	1	0.11	0.02
Lead	mg/kg Dry Wt	0.05	0.02	0.06	0.11	0.02	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.06	0.02
Molybdenum	mg/kg Dry Wt	0.05	0.05	0.21	0.22	0.02	0.09	0.21	0.08	0.21	0.09	0.22	0.09	0.22	0.09	0.22	0.02
Nickel	mg/kg Dry Wt	0.2	0.05	0.22	0.44	0.04	0.07	0.42	0.06	0.43	0.06	0.44	0.07	0.44	0.07	0.22	0.04
Selenium	mg/kg Dry Wt	1.0	0.4	1.1	2.2	0.3	0.9	2.1	0.8	2.1	0.9	2.2	0.9	2.2	0.9	1.1	0.3
Silver	mg/kg Dry Wt	0.02	0.02	0.021	0.022	0.009	0.022	0.021	0.021	0.021	0.021	0.022	0.022	0.022	0.022	0.022	0.009
Thallium	mg/kg Dry Wt	0.02	0.003	0.022	0.044	0.003	0.007	0.042	0.006	0.042	0.006	0.044	0.007	0.044	0.007	0.022	0.003
Vanadium	mg/kg Dry Wt	0.2	0.04	0.22	2.19	0.03	0.77	2.12	0.74	2.11	0.74	2.19	0.77	2.19	0.77	0.22	0.03
Zinc	mg/kg Dry Wt	0.5	0.2	0.55	2.2	0.1	0.4	2.1	0.4	2.1	0.4	2.2	0.4	2.2	0.4	0.55	0.1
Mercury (7471A)	mg/kg Dry Wt	0.02	0.006	0.02	0.04	0.002	0.006	0.04	0.004	0.04	0.004	0.022	0.002	0.021	0.002	0.02	0.006
Pesticides (8081A)																	
4,4'-DDD	ug/kg Dry Wt	0.2	0.073	0.94	1.5	0.12	1.5	1	0.12	1	0.12	1	0.12	1.5	1.5	0.94	0.12
4,4'-DDE	ug/kg Dry Wt	0.2	0.027	0.94	1	0.1	1	1	1	1	1	1	0.95	1	0.1	0.94	0.1
4,4'-DDT	ug/kg Dry Wt	0.2	0.18	1	27	0.064	27	27	27	1	0.064	1	0.064	1	0.064	1.8	1.8
2,4'-DDD	ug/kg Dry Wt	0.2	0.032	0.94	7.5	0.94	7.5	7.5	7.5	6.2	6.2	2.1	2.1	2.6	2.6	0.94	0.94
2,4'-DDE	ug/kg Dry Wt	0.2	0.03	0.94	4.6	0.23	4.6	4.6	4.6	1	1	1.7	1.7	1	1	0.94	0.23
2,4'-DDT	ug/kg Dry Wt	0.2	0.03	0.94	6.1	0.14	6.1	1	0.14	1	0.14	6.1	6.1	1	0.14	0.94	0.14
Aldrin	ug/kg Dry Wt	0.2	0.12	0.94	1	0.15	1	1	0.15	1	0.15	1	1	1	0.15	0.94	0.15

Table 2-7. COPCs Reporting Limits and Detection Limits Comparison for Sediment Analyzes

		Sample ID						3A-S		3D-S		4B-S		5A-S		A1-IT Sed	
		Sample Matrix						Sediment		Sediment		Sediment		Sediment		Sediment	
COPC Analyte Group		QAPP Approved		Sample RL Range		Sample MDL Range											
PCB Aroclors (8082)	Units	RL ^a	MDL ^a	Min	Max	Min	Max	RL	MDL	RL	MDL	RL	MDL	RL	MDL	RL	MDL
alpha-BHC	ug/kg Dry Wt	0.2	0.097	0.94	1	0.26	1	1	0.26	1	0.26	1	1	1	0.26	0.94	0.26
beta-BHC	ug/kg Dry Wt	0.2	0.14	0.94	1.9	0.3	1.9	1.9	1.9	1.4	1.4	1	1	1	1	0.94	0.3
delta-BHC	ug/kg Dry Wt	0.2	0.110	0.94	1.8	0.055	1.8	1.8	1.8	1	0.055	1.2	1.2	1.8	1.8	0.94	0.38
alpha-Chlordane	ug/kg Dry Wt	0.2	0.031	0.94	1	0.23	0.23	1	0.23	1	0.23	1	0.23	1	0.23	0.94	0.23
gamma-Chlordane	ug/kg Dry Wt	0.2	0.027	0.94	11	0.064	11	1	0.064	11	11	3.9	3.9	2.7	2.7	0.94	0.064
Dieldrin	ug/kg Dry Wt	0.2	0.03	0.94	16	0.29	16	16	16	1	0.29	6.3	6.3	4	4	0.94	0.29
Endosulfan I	ug/kg Dry Wt	0.2	0.037	0.94	1.2	0.17	1.2	1.2	1.2	1.2	1.2	1	0.17	1	0.17	0.94	0.2
Endosulfan II	ug/kg Dry Wt	0.2	0.031	0.94	1	0.19	1	1	1	1	1	1	1	1	1	0.94	0.19
Endosulfan Sulfate	ug/kg Dry Wt	0.2	0.058	0.94	1	0.079	1	1	1	1	1	1	0.079	1	1	0.94	0.079
Endrin	ug/kg Dry Wt	0.2	0.071	0.94	1	0.2	0.2	1	0.2	1	0.2	1	0.2	1	0.2	0.94	0.2
Endrin aldehyde	ug/kg Dry Wt	n/a	n/a	0.94	1.4	0.063	1.4	1.4	1.4	1.3	1.3	1	1	1	1	0.94	0.063
gamma-BHC (Lindane)	ug/kg Dry Wt	0.2	0.062	0.94	4.5	0.15	4.5	3.1	3.1	4.5	4.5	1	0.15	4.4	4.4	0.94	0.15
Heptachlor	ug/kg Dry Wt	0.2	0.076	0.94	1	0.08	0.85	1	0.08	1	0.22	1	0.08	1	0.85	0.94	0.08
Heptachlor epoxide	ug/kg Dry Wt	0.2	0.068	0.94	2	0.76	2	1.9	1.9	2	2	1	1	1.2	1.2	0.94	0.76
Hexachlorobenzene	ug/kg Dry Wt	0.2	0.068	0.94	1	0.079	1	1	1	1	0.079	1	1	1	0.14	0.94	0.079
Hexachlorobutadiene	ug/kg Dry Wt	n/a	n/a	0.94	2	0.13	2	1.5	1.5	2	2	1	0.94	1	0.55	0.94	0.13
Oxy-chlordane	ug/kg Dry Wt	0.2	0.054	0.94	3.5	0.058	3.5	1	1	1	1	1.5	1.5	3.5	3.5	0.94	0.058
trans-Nonachlor	ug/kg Dry Wt	0.2	0.036	0.94	1.2	0.066	1.2	1	1	1.2	1.2	1	0.066	1	0.066	0.94	0.22
cis-Nonachlor	ug/kg Dry Wt	0.2	0.053	0.94	2.8	0.79	2.8	2.8	2.8	2.4	2.4	1.3	1.3	1.3	1.3	0.94	0.79
Methoxychlor	ug/kg Dry Wt	0.2	0.075	0.94	1.6	0.46	1.6	1.4	1.4	1.6	1.6	1	0.74	1	0.93	0.94	0.46
Mirex	ug/kg Dry Wt	0.2	0.12	0.94	1	0.063	1	1	0.063	1	1	1	0.063	1	0.063	0.94	0.063
Toxaphene	ug/kg Dry Wt	50	8.9	47	430	18	430	110	110	430	430	66	66	76	76	47	18
Total Organic Carbon	Percent Dry Wt	n/a	n/a	0.05	0.05	0.02	0.02	0.05	0.02	0.05	0.02	0.05	0.02	0.05	0.02	0.05	0.02

Notes:

- a) RLs and MDLs from Columbia Analytical Services Laboratory.
- b) Dioxin-like PCB and dioxin/furan congeners will be evaluated as toxic equivalents (TEQs) in the risk assessments, rather than as individual congeners. However, because TEQs are calculated, rather than measured by the laboratory, RBCs for individual con
- c) Total chlordane is the sum of oxychlordane, alpha- and gamma-chlordane, and cis- and trans-nonachlor. RL and MDL are the highest RL and MDL for the chlordane-related compounds. Lab reports as individual analytes.
- d) Dioxin/furan MRL's are based on EN 1948 calibration standards. MDL's are based on 30 gram samples size.

Note: Samples with high moisture contents or matrix interference may have detection limits higher than those listed.

Dry WT- Dry Weight

n/a- not available

Table 3-1. Clam Tissue Sample Chemistry Results

Location			Intertidal			3A			4B			5A		
Matrix			Tissue			Tissue			Tissue			Tissue		
Sample ID			A1-IT			3A-C			4B-C			5A-C		
Sample Date			4/8/2008			5/14/2008			5/13/2008			5/13/2008		
Parameter	Method	Units	Result	Lab Q	Val Q	Result	Lab Q	Val Q	Result	Lab Q	Val Q	Result	Lab Q	Val Q
Lipids	NOAA LIPID	Percent	0.92			1.1			1.2			1		
Total Solids	Freeze Dry	Percent	12.4			13.9			14.1			13.3		
PCB Aroclors														
Aroclor 1016	EPA 8082	µg/kg (ww)	2.4	U		2.4	U		2.4	U		2.4	U	
Aroclor 1221	EPA 8082	µg/kg (ww)	2.6	U		2.6	U		2.6	U		2.6	U	
Aroclor 1232	EPA 8082	µg/kg (ww)	2.3	U		2.3	U		2.3	U		2.3	U	
Aroclor 1242	EPA 8082	µg/kg (ww)	2.2	U		2.2	U		2.2	U		2.2	U	
Aroclor 1248	EPA 8082	µg/kg (ww)	0.51	U		18			13			7.5	J	
Aroclor 1254	EPA 8082	µg/kg (ww)	17			48			42			21		
Aroclor 1260	EPA 8082	µg/kg (ww)	1.9	U		1.9	U		1.9	U		1.9	U	
Total PCBs	TtEC Calculated	µg/kg (ww)	17			66			55			28.5		
PAHs														
Acenaphthene	EPA 8270C	µg/kg (ww)	0.91			n/a			13			7.5		
Anthracene	EPA 8270C	µg/kg (ww)	4			n/a			35			40		
Acenaphthylene	EPA 8270C	µg/kg (ww)	0.96			n/a			2.5			3.1		
Fluorene	EPA 8270C	µg/kg (ww)	1.6			n/a			23			11		
Naphthalene	EPA 8270C	µg/kg (ww)	0.74	J		n/a			1.6			6.2		
Phenanthrene	EPA 8270C	µg/kg (ww)	17			n/a			180			88		
Total LPAH	TtEC Calculated	µg/kg (ww)	25.21			n/a			255.1			155.8		
Benzo(a)anthracene	EPA 8270C	µg/kg (ww)	17			n/a			170			120		
Benzo(a)pyrene	EPA 8270C	µg/kg (ww)	12			n/a			99			140		
Benzo(b)fluoranthene	EPA 8270C	µg/kg (ww)	20			n/a			170			210		
Benzo(k)fluoranthene	EPA 8270C	µg/kg (ww)	7			n/a			54			65		
Total Benzofluoranthenes	TtEC Calculated	µg/kg (ww)	27			n/a			224			275		
Benzo(g,h,i)perylene	EPA 8270C	µg/kg (ww)	7.1			n/a			24			29		
Chrysene	EPA 8270C	µg/kg (ww)	30			n/a			190			170		
Dibenzo(a,h)anthracene	EPA 8270C	µg/kg (ww)	1.5			n/a			8.7			11		
Fluoranthene	EPA 8270C	µg/kg (ww)	78			n/a			590	D		300		
Indeno(1,2,3-cd)pyrene	EPA 8270C	µg/kg (ww)	7.7			n/a			32			36		
Pyrene	EPA 8270C	µg/kg (ww)	58			n/a			440			230		
2-Methylnaphthalene	EPA 8270C	µg/kg (ww)	0.61	J		n/a			2.4			2.7		
Dibenzofuran	EPA 8270C	µg/kg (ww)	0.7			n/a			11	D		5.8		
Total HPAH	TtEC Calculated	µg/kg (ww)	238.3			n/a			1777.7			1311		
Total PAH	TtEC Calculated	µg/kg (ww)	263.51			n/a			2032.8			1466.8		
Dioxin/Furans^d														
2,3,7,8-TCDD	EPA 8290	ng/kg (ww)	0.0343	U		n/a			0.025	U		0.0275	U	
1,2,3,7,8-PeCDD ^b	EPA 8290	ng/kg (ww)	0.0624	U		n/a			0.051	U		0.0607	U	
1,2,3,4,7,8-HxCDD ^b	EPA 8290	ng/kg (ww)	0.253	U		n/a			0.076	U		0.12	U	
1,2,3,6,7,8-HxCDD ^b	EPA 8290	ng/kg (ww)	0.252	U		n/a			0.335	J		0.24	J	
1,2,3,7,8,9-HxCDD ^b	EPA 8290	ng/kg (ww)	0.254	U		n/a			0.143	JK		0.121	U	
1,2,3,4,6,7,8-HpCDD ^b	EPA 8290	ng/kg (ww)	4.67	BJ	U	n/a			7.83	B	U	8.26	B	U
OCDD ^b	EPA 8290	ng/kg (ww)	38.4	UJ		n/a			58.2	B	UJ	68.4	B	UJ
2,3,7,8-TCDF ^b	EPA 8290	ng/kg (ww)	0.0225	U		n/a			0.0363	U		0.0315	U	
1,2,3,7,8-PeCDF ^b	EPA 8290	ng/kg (ww)	0.0372	U		n/a			0.0383	U		0.0326	U	
2,3,4,7,8-PeCDF ^b	EPA 8290	ng/kg (ww)	0.0359	U		n/a			0.037	U		0.0316	U	
1,2,3,4,7,8-HxCDF ^b	EPA 8290	ng/kg (ww)	0.136	U		n/a			0.0454	U		0.11	U	
1,2,3,6,7,8-HxCDF ^b	EPA 8290	ng/kg (ww)	0.138	U		n/a			0.0465	U		0.112	U	
1,2,3,7,8,9-HxCDF ^b	EPA 8290	ng/kg (ww)	0.162	U		n/a			0.0544	U		0.131	U	
2,3,4,6,7,8-HxCDF ^b	EPA 8290	ng/kg (ww)	0.146	U		n/a			0.0492	U		0.119	U	
1,2,3,4,6,7,8-HpCDF ^b	EPA 8290	ng/kg (ww)	3.13	BJ	U	n/a			4.47	BJ	U	2.79	BJ	U
1,2,3,4,7,8,9-HpCDF ^b	EPA 8290	ng/kg (ww)	0.169	U		n/a			0.125	U		0.201	U	
OCDF ^b	EPA 8290	ng/kg (ww)	6.26	BJ	UJ	n/a			8.94	BJ	UJ	0.209	U	UJ
Total Hepta-Dioxins	EPA 8291	ng/kg (ww)	12.1		U	n/a			34.6		U	36.3		U
Total Hepta-Furans	EPA 8292	ng/kg (ww)	3.73		U	n/a			4.47	J	U	4.4		U
Total Hexa-Dioxins	EPA 8293	ng/kg (ww)	0.64	J		n/a			3.22	J		2.52	J	
Total Hexa-Furans	EPA 8294	ng/kg (ww)	1.34	J		n/a			1.72	J		2.23	J	
Total Penta-Dioxins	EPA 8295	ng/kg (ww)	0.0624	U		n/a			0.051	U		0.0607	U	
Total Penta-Furans	EPA 8296	ng/kg (ww)	3.13	J	U	n/a			4.47	J	U	2.79	J	U

Table 3-1. Clam Tissue Sample Chemistry Results

Location			Intertidal			3A			4B			5A		
Matrix			Tissue			Tissue			Tissue			Tissue		
Sample ID			A1-IT			3A-C			4B-C			5A-C		
Sample Date			4/8/2008			5/14/2008			5/13/2008			5/13/2008		
Parameter	Method	Units	Result	Lab Q	Val Q	Result	Lab Q	Val Q	Result	Lab Q	Val Q	Result	Lab Q	Val Q
Total Tetra-Dioxins	EPA 8297	ng/kg (ww)	0.0343	U		n/a			0.025	U		0.0275	U	
Total Tetra-Furans	EPA 8298	ng/kg (ww)	0.0225	U		n/a			0.0363	U		0.0315	U	
TBT														
Di-n-butyltin	GC-FPD	µg/kg (ww)	9.9			n/a			20			15		
n-Butyltin	GC-FPD	µg/kg (ww)	1.8			n/a			4.6			3.4		
Tri-n-butyltin	GC-FPD	µg/kg (ww)	71			n/a			72			49		
Tetrabutyltin	GC-FPD	µg/kg (ww)	0.44	U		n/a			0.47	U		0.47	U	
Metals														
Antimony	EPA 6020	mg/kg (dw)	0.771	N	J	0.433	N	J	0.33	N	J	0.423	N	J
Arsenic	EPA 6020	mg/kg (dw)	17			21			18.2			22.7		
Cadmium	EPA 6020	mg/kg (dw)	0.37			1.2			0.25			0.17		
Chromium	EPA 6010B	mg/kg (dw)	7.71			4.32			4.79			6.72		
Cobalt	EPA 6020	mg/kg (dw)	1.93			2.18			2.11			2.34		
Copper	EPA 6010B	mg/kg (dw)	252			264			171			122		
Lead	EPA 6020	mg/kg (dw)	27			15.8			13.5			17.2		
Molybdenum	EPA 6020	mg/kg (dw)	2.53			5.92			2.56			3.77		
Nickel	EPA 6020	mg/kg (dw)	6			3.52			6.14			8.66		
Selenium	EPA 7742	mg/kg (dw)	3.35			3.4			3.47			4.2		
Silver	EPA 6020	mg/kg (dw)	0.946	N	J	1.3	N	J	1.1	N	J	0.518	N	J
Thallium	EPA 6020	mg/kg (dw)	0.027			0.081			0.016	B		0.07		
Vanadium	EPA 6010B	mg/kg (dw)	7.4			5.11			5.39			6.9		
Zinc	EPA 6010B	mg/kg (dw)	324			423			419			198		
Mercury	EPA 7471A	mg/kg (dw)	0.076	N	J	0.027	BN	J	0.116	N	J	0.151	N	J
Pesticides														
4,4'-DDD	EPA 8081A	µg/kg (ww)	0.13	JP	J	n/a			0.36	Ui		0.5	JP	J
4,4'-DDE	EPA 8081A	µg/kg (ww)	0.24	Ui		n/a			0.69	J		0.4	JP	J
4,4'-DDT	EPA 8081A	µg/kg (ww)	1.5	Ui		n/a			3	Ui		2	Ui	
2,4'-DDD	EPA 8081A	µg/kg (ww)	0.97	Ui		n/a			1.7	Ui		1.2	Ui	
2,4'-DDE	EPA 8081A	µg/kg (ww)	0.21	U		n/a			1	Ui		0.21	U	
2,4'-DDT	EPA 8081A	µg/kg (ww)	0.97	Ui		n/a			1.7	Ui		1	Ui	
Total DDT	TtEC Calculated	µg/kg (ww)	0.13	JN		n/a			0.69	JN		0.9	JN	
Aldrin	EPA 8081A	µg/kg (ww)	0.51	Ui		n/a			0.23	U		0.23	U	
alpha-BHC	EPA 8081A	µg/kg (ww)	0.27	U		n/a			0.27	U		0.27	U	
beta-BHC	EPA 8081A	µg/kg (ww)	1.7	Ui		n/a			1.2	Ui		0.98	Ui	
delta-BHC	EPA 8081A	µg/kg (ww)	0.16	U		n/a			0.16	U		1	Ui	
alpha-Chlordane	EPA 8081A	µg/kg (ww)	0.15	U		n/a			1	Ui		0.22	Ui	
gamma-Chlordane	EPA 8081A	µg/kg (ww)	0.75	Ui		n/a			2.1	P	J	1.4	P	J
Total chlordane ^c	TtEC Calculated	µg/kg (ww)	0.97	U		n/a			2.1			1.4	U	
Dieldrin	EPA 8081A	µg/kg (ww)	0.97	Ui		n/a			1	Ui		1	Ui	
Endosulfan I	EPA 8081A	µg/kg (ww)	0.12	U		n/a			0.27	Ui		0.17	Ui	
Endosulfan II	EPA 8081A	µg/kg (ww)	0.22	U		n/a			1	Ui		0.22	U	
Endosulfan Sulfate	EPA 8081A	µg/kg (ww)	0.97	Ui	UJ	n/a			0.13	U	UJ	1	Ui	UJ
Endrin	EPA 8081A	µg/kg (ww)	0.22	U		n/a			0.22	U		0.22	U	
Endrin aldehyde	EPA 8081A	µg/kg (ww)	0.25	U		n/a			0.25	U		0.25	U	
gamma-BHC (Lindane)	EPA 8081A	µg/kg (ww)	0.55	J		n/a			0.24	U		0.24	U	
Heptachlor	EPA 8081A	µg/kg (ww)	0.66	U		n/a			1	Ui		0.73	Ui	
Heptachlor epoxide	EPA 8081A	µg/kg (ww)	0.78	J		n/a			0.86	Ui		0.88	J	
Hexachlorobenzene	EPA 8081A	µg/kg (ww)	0.97	Ui		n/a			0.31	U		0.31	U	
Hexachlorobutadiene	EPA 8081A	µg/kg (ww)	0.84	Ui		n/a			2.2	Ui		0.91	Ui	
Oxy-chlordane	EPA 8081A	µg/kg (ww)	0.19	U		n/a			0.19	U		0.19	U	
Nonachlor (trans)	EPA 8081A	µg/kg (ww)	0.14	U		n/a			0.27	Ui		0.21	Ui	
Nonachlor (cis)	EPA 8081A	µg/kg (ww)	0.97	Ui	UJ	n/a			1	Ui	UJ	1.1	Ui	UJ
Methoxychlor	EPA 8081A	µg/kg (ww)	1	U		n/a			3.3	Ui		1	U	
Mirex	EPA 8081A	µg/kg (ww)	0.4	U	UJ	n/a			0.4	U	UJ	0.4	U	UJ
Toxaphene	EPA 8081A	µg/kg (ww)	21	U		n/a			50	Ui		25	Ui	

Footnotes:

a) RLS and MDLs from Columbia Analytical Services Laboratory

Table 3-1. Clam Tissue Sample Chemistry Results

Location			Intertidal			3A			4B			5A		
Matrix			Tissue			Tissue			Tissue			Tissue		
Sample ID			A1-IT			3A-C			4B-C			5A-C		
Sample Date			4/8/2008			5/14/2008			5/13/2008			5/13/2008		
Parameter	Method	Units	Result	Lab Q	Val Q	Result	Lab Q	Val Q	Result	Lab Q	Val Q	Result	Lab Q	Val Q

b) Dioxin-like PCB and dioxin/furan congeners will be evaluated as toxic equivalents (TEQs) in the risk assessments, rather than as individual congeners. However, because TEQs are calculated, rather than measured by the laboratory, RBCs for individual congeners are presented to facilitate comparison with RLs for those congeners. In reality, risks will be assessed based on sums of these congeners (normalized per their relative toxicity to TCDD), and thus comparison to RLs on a congener-specific basis is somewhat uncertain.

c) Total Chlordane calculated by TiEC. Total chlordane is the sum of oxychlordane, alpha- and gamma-chlordane, and cis- and trans-nonachlor. RL and MDL are the highest RL and MDL for the chlordane-related compounds. Lab reports as individual analytes.

d) Dixon/furans MRL's are based on En a948 calibration standards. MDL's are based on 10 gram sample size.

Notes:

- IT - Intertidal tissue sample
- mg/kg= milligrams per kilogram
- µg/kg= microgram per kilogram
- ww= wet weight
- dw= dry weight
- n/a= not available

Laboratory Qualifiers (Lab Q):

For Metals:

N- The Matrix Spike sample recovery is not within control limits. See case narrative.

For Organics:

B - The analyte was found in the associated method blank at a level that is significant relative to the sample result.

D - Result reported from a dilution.

J - Result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

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 - Result was not detected at or above the MRL/MDL.

i - The MRL/MDL has been elevated due to a chromatographic interference.

For Dioxins/Furans:

B- Indicates the associated analyte is found in the method blank, as well as in the sample.

J- Indicated an estimated value that is less than the MRL but greater than or equal to the EDL.

K- Indicates an estimated maximum possible concentration for the associated compounds.

U- Indicates the compound was analyzed and not detected.

Data Validation Qualifiers (Val Q):

U - Result should be considered not detected at the quantitation limit shown.

J - Result is an estimated concentration.

UJ - The compound was not detected and the sample detection limit should be considered an estimated value.

Table 3-2. Co-Located Sediment Sample Chemistry Results

Location			Intertidal			3A			3A (Duplicate)			4B			5A			Rinse Blank			
Matrix			Sediment			Sediment			Sediment			Sediment			Sediment			Water			
Sample ID			A1-IT			3A-S			3D-S			4B-S			5A-S			RB-S			
Sample Date			4/8/2008			5/14/2008			5/14/2008			5/13/2008			5/13/2008			5/14/2008			
Parameter	Method	Units	Result	Lab Q	Val Q	Result	Lab Q	Val Q	Result	Lab Q	Val Q	Result	Lab Q	Val Q	Result	Lab Q	Val Q	Result	Unit	Lab Q	Val Q
PCB Aroclors																					
Aroclor 1016	EPA 8082	µg/kg (dw)	1.7	U		1.7	U		1.7	U		1.7	U		1.7	U		0.0064	ug/L	U	
Aroclor 1221	EPA 8082	µg/kg (dw)	1.7	U		1.7	U		1.7	U		1.7	U		1.7	U		0.001	ug/L	U	
Aroclor 1232	EPA 8082	µg/kg (dw)	1.7	U		1.7	U		1.7	U		1.7	U		1.7	U		0.012	ug/L	U	
Aroclor 1242	EPA 8082	µg/kg (dw)	1.7	U		1.7	U		1.7	U		1.7	U		1.7	U		0.0078	ug/L	U	UJ
Aroclor 1248	EPA 8082	µg/kg (dw)	1.7	U		130			140			58			60			0.0076	ug/L	U	UJ
Aroclor 1254	EPA 8082	µg/kg (dw)	17			360			330			130			97			0.001	ug/L	U	UJ
Aroclor 1260	EPA 8082	µg/kg (dw)	13			120			110			77			69			0.001	ug/L	U	UJ
Total PCBs	TtEC Calculated	µg/kg (dw)	30			610			580			265			226			0.012	ug/L	U	
PAHs																					
Acenaphthylene	EPA 8270C	µg/kg (dw)	1.7	J		100	D		110	D		160	D		83	D		0.02	ug/L	U	
Acenaphthene	EPA 8270C	µg/kg (dw)	1.6	J		140	D		160	D		53	D		81	D		0.034	ug/L	U	
Anthracene	EPA 8270C	µg/kg (dw)	5.2			320	D		380	D		410	D		280	D		0.031	ug/L	U	
Fluorene	EPA 8270C	µg/kg (dw)	2.1	J		160	D		170	D		88	D		120	D		0.035	ug/L	U	
Naphthalene	EPA 8270C	µg/kg (dw)	4.9			55	D		57	D		21	JD		96	D		0.029	ug/L	U	
Phenanthrene	EPA 8270C	µg/kg (dw)	17			1200	D		1200	D		620	D		540	D		0.029	ug/L	U	
Total LPAH	TtEC Calculated	µg/kg (dw)	32.5			1975			2077			1352			1200			0.035	ug/L	U	
Benzo(a)anthracene	EPA 8270C	µg/kg (dw)	21			930	D		970	D		1700	D		540	D		0.024	ug/L	U	
Benzo(a)pyrene	EPA 8270C	µg/kg (dw)	24			1200	D		1200	D		1100	D		680	D		0.04	ug/L	U	
Benzo(b)fluoranthene	EPA 8270C	µg/kg (dw)	38			1700	D		1700	D		2300	D		1100	D		0.022	ug/L	U	
Benzo(k)fluoranthene	EPA 8270C	µg/kg (dw)	12			610	D		560	D		750	D		390	D		0.031	ug/L	U	
Total Benzofluoranthenes	TtEC Calculated	µg/kg (dw)	50			2310			2260			3050			1490			0.031	ug/L	U	
Benzo(g,h,i)perylene	EPA 8270C	µg/kg (dw)	18			660	D		680	D		450	D		340	D		0.025	ug/L	U	
Chrysene	EPA 8270C	µg/kg (dw)	21			1500	D		1500	D		2600	D		1000	D		0.036	ug/L	U	
Dibenzo(a,h)anthracene	EPA 8270C	µg/kg (dw)	4.2	J		190	D		200	D		150	D		110	D		0.022	ug/L	U	
Fluoranthene	EPA 8270C	µg/kg (dw)	49			2000	D		2000	D		12000	D		920	D		0.026	ug/L	U	
Indeno(1,2,3-cd)pyrene	EPA 8270C	µg/kg (dw)	17			760	D		780	D		580	D		400	D		0.027	ug/L	U	
Pyrene	EPA 8270C	µg/kg (dw)	79			2100	D		2000	D		6800	D		970	D		0.025	ug/L	U	
2-Methylnaphthalene	EPA 8270C	µg/kg (dw)	1.8	J		34	JD		37	JD		14	JD		35	JD		0.034	ug/L	U	
Dibenzofuran	EPA 8270C	µg/kg (dw)	1.7	J		76	D		79	D		36	JD		68	D		0.024	ug/L	U	
Total HPAH	TtEC Calculated	µg/kg (dw)	283.2			11650			11590			28430			6450			0.04	ug/L	U	
Total PAH	TtEC Calculated	µg/kg (dw)	315.7			13625			13667			29782			7650			0.04	ug/L	U	
Dioxin/Furans																					
2,3,7,8-TCDD	EPA 8290	ng/kg (dw)	0.053	U		0.0742	JK		0.15	JK		0.264	J		0.0572	J		0.65	pg/L	U	
1,2,3,7,8-PeCDD ^b	EPA 8290	ng/kg (dw)	0.1	J		0.297	J		0.692	J		0.86	J		0.169	J		0.534	pg/L	U	
1,2,3,4,7,8-HxCDD ^b	EPA 8290	ng/kg (dw)	0.134	J		0.416	J		1.2	J		1.85			0.192	J		0.231	pg/L	U	
1,2,3,6,7,8-HxCDD ^b	EPA 8290	ng/kg (dw)	0.583	J		4.29	B	J	12.5	B	J	14.9	B	J	2.58	B	J	0.257	pg/L	U	
1,2,3,7,8,9-HxCDD ^b	EPA 8290	ng/kg (dw)	0.495	J		1.19	J		3.36			3.96			1.37			0.23	pg/L	U	
1,2,3,4,6,7,8-HpCDD ^b	EPA 8290	ng/kg (dw)	18.4	B		231	B		655	BE	J	698	BE	J	106	B		0.617	pg/L	U	
OCDD ^b	EPA 8290	ng/kg (dw)	192	B		1960	BE	J	6300	BE	J	4840	BE	J	872	BE	J	104	pg/L	BJ	U
2,3,7,8-TCDF ^b	EPA 8290	ng/kg (dw)	0.176	U		0.184	U		0.645	K		1.3			0.177	U		0.754	pg/L	U	
1,2,3,7,8-PeCDF ^b	EPA 8290	ng/kg (dw)	0.163	J		0.225	J		0.683	J		1.19	J		0.236	J		0.361	pg/L	U	
2,3,4,7,8-PeCDF ^b	EPA 8290	ng/kg (dw)	0.229	J		1.54	BJ	U	0.968	BJ		1.68	B		1.13	BJ	U	0.343	pg/L	U	
1,2,3,4,7,8-HxCDF ^b	EPA 8290	ng/kg (dw)	0.576	J		1.54	BJ	U	3.41	B		4.9	B		1.13	BJ	U	0.294	pg/L	U	
1,2,3,6,7,8-HxCDF ^b	EPA 8290	ng/kg (dw)	0.256	J		0.371	JK		1.1	J		1.74			0.392	J		0.318	pg/L	U	
1,2,3,7,8,9-HxCDF ^b	EPA 8290	ng/kg (dw)	0.085	U		0.107	U		0.223	U		0.178	J		0.141	U		0.31	pg/L	U	
2,3,4,6,7,8-HxCDF ^b	EPA 8290	ng/kg (dw)	0.223	J		0.0916	U		0.891	J		1.48			0.628	J		0.313	pg/L	U	
1,2,3,4,6,7,8-HpCDF ^b	EPA 8290	ng/kg (dw)	3.71			20	B	J	55.9	B	J	59.7	B	J	12.7	B	J	0.446	pg/L	U	
1,2,3,4,7,8,9-HpCDF ^b	EPA 8290	ng/kg (dw)	0.34	J		1.84			6.04			5.09			0.83	J		0.599	pg/L	U	
OCDF ^b	EPA 8290	ng/kg (dw)	15.6			94.1	B		337	B		186	B		35.8	B		0.886	pg/L	U	
Total Hepta-Dioxins	EPA 8291	ng/kg (dw)	44.5			697			1810			3430			453			0.617	pg/L	U	
Total Hepta-Furans	EPA 8292	ng/kg (dw)	13.6			103			293			267			51.8			0.446	pg/L	U	
Total Hexa-Dioxins	EPA 8293	ng/kg (dw)	4.35			50.8			138			237			37.8			0.231	pg/L	U	

Table 3-2. Co-Located Sediment Sample Chemistry Results

Location			Intertidal			3A			3A (Duplicate)			4B			5A			Rinse Blank				
Matrix			Sediment			Sediment			Sediment			Sediment			Sediment			Water				
Sample ID			A1-IT			3A-S			3D-S			4B-S			5A-S			RB-S				
Sample Date			4/8/2008			5/14/2008			5/14/2008			5/13/2008			5/13/2008			5/14/2008				
Parameter	Method	Units	Result	Lab Q	Val Q	Result	Lab Q	Val Q	Result	Lab Q	Val Q	Result	Lab Q	Val Q	Result	Lab Q	Val Q	Result	Unit	Lab Q	Val Q	
Total Hexa-Furans	EPA 8294	ng/kg (dw)	6.38			22.9			69.2			101			22.4			0.294	pg/L	U		
Total Penta-Dioxins	EPA 8295	ng/kg (dw)	0.158	J		1.8			8.66			13			1.17			U	0.534	pg/L	U	
Total Penta-Furans	EPA 8296	ng/kg (dw)	1.85	J		4.65			15.1			26.4			4.85				0.343	pg/L	U	
Total Tetra-Dioxins	EPA 8297	ng/kg (dw)	0.0526	U		0.821			2.12			4.78			1.53				0.65	pg/L	U	
Total Tetra-Furans	EPA 8298	ng/kg (dw)	2			3.55			10.2			17.6			1.71				0.754	pg/L	U	
TBT																						
Di-n-butyltin	Krone	µg/kg (dw)	3.4			630	D		600	D		91			88				0.0081	ug/L	U	
n-Butyltin	Krone	µg/kg (dw)	0.36	J		110		J	140		J	22		J	36		J		0.029	ug/L	U	UJ
Tri-n-butyltin	Krone	µg/kg (dw)	15			1800	D		2000	D		180			170				0.012	ug/L	U	U
Tetrabutyltin	Krone	µg/kg (dw)	0.089	U		23			29			3.3	P	J	3.6				0.038	ug/L	U	
Metals																						
Antimony	EPA 6020	mg/kg (dw)	7.77			5.35	*	J	6.14	*	J	14.2	*	J	12.2	*	J		0.02	ug/L	U	
Arsenic	EPA 6020	mg/kg (dw)	7.92			30.6			29.5			31.6			44.3				0.07	ug/L	U	
Cadmium	EPA 6020	mg/kg (dw)	0.222			0.526			0.519			0.528			0.647				0.012	ug/L	B	U
Chromium	EPA 6010B	mg/kg (dw)	23.8			63			55.8			93			67				0.11	ug/L	B	U
Cobalt	EPA 6020	mg/kg (dw)	3.46			9.28		J	8.59		J	9.33		J	7.38		J		0.004	ug/L	U	
Copper	EPA 6010B	mg/kg (dw)	28.3	N	J	252			278			299			174				0.02	ug/L	B	
Lead	EPA 6020	mg/kg (dw)	48.6	*	J	133	*	J	115	*	J	135	*	J	121	*	J		0.01	ug/L	B	U
Molybdenum	EPA 6020	mg/kg (dw)	2.11			3.77			3.67			3.75			5.28				0.02	ug/L	U	
Nickel	EPA 6020	mg/kg (dw)	11.3			20.1	*	J	19	*	J	29.9	*	J	18.7	*	J		0.07	ug/L	U	
Selenium	EPA 7742	mg/kg (dw)	0.3	B		1	B		1.1	B		0.9	U		0.9	U			0.2	ug/L	U	
Silver	EPA 6020	mg/kg (dw)	0.072			0.397			0.38			0.502			0.3				0.003	ug/L	U	
Thallium	EPA 6020	mg/kg (dw)	0.041			0.159			0.151			0.144			0.267				0.003	ug/L	U	
Vanadium	EPA 6010B	mg/kg (dw)	24.5			65			64			57			56				0.06	ug/L	B	
Zinc	EPA 6010B	mg/kg (dw)	115	*	J	259			258			290			238				0.59	ug/L		U
Mercury	EPA 7471A	mg/kg (dw)	0.117			0.873			0.688			0.224			0.249				0.05	ug/L	U	
Pesticides																						
4,4'-DDD	EPA 8081A	µg/kg (dw)	0.12	U		3.4			4.2			1.4			1.5	Ui			0.21	ng/L	U	UJ
4,4'-DDE	EPA 8081A	µg/kg (dw)	0.1	U		1	Ui		1	Ui		0.95	Ui		0.51	JP	J		0.19	ng/L	U	UJ
4,4'-DDT	EPA 8081A	µg/kg (dw)	1.8	Ui		27	Ui		24			9.1			5.5				0.17	ng/L	U	
2,4'-DDD	EPA 8081A	µg/kg (dw)	0.94	Ui		7.5	Ui		6.2	Ui		2.1	Ui		2.6	Ui			0.068	ng/L	U	
2,4'-DDE	EPA 8081A	µg/kg (dw)	0.23	U		4.6	Ui		1	Ui		1.7	Ui		1	Ui			0.12	ng/L	U	UJ
2,4'-DDT	EPA 8081A	µg/kg (dw)	1.3			19			19			6.1	Ui		4.5				0.13	ng/L	U	UJ
Total DDT	TtEC Calculated	µg/kg (dw)	1.3	JN		22.4	JN		47.2	JN		10.5	JN		10.51	JN			0.21	ng/L	U	UJ
Aldrin	EPA 8081A	µg/kg (dw)	0.15	U		0.15	U		0.15	U		1	Ui		0.15	U			0.11	ng/L	U	UJ
alpha-BHC	EPA 8081A	µg/kg (dw)	0.26	U		0.26	U		0.26	U		1	Ui		0.26	U			0.21	ng/L	U	
beta-BHC	EPA 8081A	µg/kg (dw)	0.3	U		1.9	Ui		1.4	Ui		1	Ui		1	Ui			0.41	ng/L	U	
delta-BHC	EPA 8081A	µg/kg (dw)	0.38	Ui		1.8	Ui		1.8	P	J	1.2	Ui		1.8	Ui			0.14	ng/L	U	
alpha-Chlordane	EPA 8081A	µg/kg (dw)	0.23	U		0.48	J		0.68	J		0.23	U		0.32	JP	J		0.27	ng/L	U	
gamma-Chlordane	EPA 8081A	µg/kg (dw)	0.064	U		11	P	J	11	Ui		3.9	Ui		2.7	Ui			0.31	ng/L	U	
Total chlordane ^c	TtEC Calculated	µg/kg (dw)	0.79	U		11.48			0.68			3.9	U		0.32				0.31	ng/L	U	
Dieldrin	EPA 8081A	µg/kg (dw)	0.29	U		16	Ui		0.29	U		6.3	Ui		4	Ui			0.37	ng/L	U	
Endosulfan I	EPA 8081A	µg/kg (dw)	0.2	Ui		1.2	Ui		1.2	Ui		0.17	U		0.17	U			0.25	ng/L	U	
Endosulfan II	EPA 8081A	µg/kg (dw)	0.19	U		1	Ui		1	Ui		1	Ui		1	Ui			0.35	ng/L	U	
Endosulfan Sulfate	EPA 8081A	µg/kg (dw)	0.079	U		1	Ui		1	Ui		0.079	U		1	Ui			0.28	ng/L	U	
Endrin	EPA 8081A	µg/kg (dw)	0.2	U		1			1	P	J	0.39	JP	J	0.2	U			0.49	ng/L	U	
Endrin aldehyde	EPA 8081A	µg/kg (dw)	0.063	Ui		1.4	Ui		1.3	Ui		1	Ui		1	Ui		UJ	0.21	ng/L	U	
gamma-BHC (Lindane)	EPA 8081A	µg/kg (dw)	0.15	U		3.1	Ui		4.5	Ui		0.15	U		4.4	Ui			1.2	ng/L	U	
Heptachlor	EPA 8081A	µg/kg (dw)	0.08	U		0.08	U		0.22	Ui		0.08	U		0.85	Ui		UJ	0.18	ng/L	U	
Heptachlor epoxide	EPA 8081A	µg/kg (dw)	0.76	Ui		1.9	Ui		2	Ui		1	Ui		1.2	Ui			0.21	ng/L	U	
Hexachlorobenzene	EPA 8081A	µg/kg (dw)	0.64	J		1	Ui		0.079	U		1	Ui		0.14	Ui			0.27	ng/L	Ui	
Hexachlorobutadiene	EPA 8081A	µg/kg (dw)	2.8			1.5	Ui		2	Ui		0.94	Ui		0.55	Ui			0.095	ng/L	U	
Oxy-chlordane	EPA 8081A	µg/kg (dw)	0.058	U		1	Ui		1	Ui		1.5	Ui		3.5	Ui			0.069	ng/L	U	
Nonachlor (trans)	EPA 8081A	µg/kg (dw)	0.22	Ui		1	Ui		1.2	Ui		0.066	U		0.066	U			0.11	ng/L	U	
Nonachlor (cis)	EPA 8081A	µg/kg (dw)	0.79	Ui		2.8	Ui		2.4	Ui		1.3	Ui		1.3	Ui			0.14	ng/L	Ui	
Methoxychlor	EPA 8081A	µg/kg (dw)	0.46	Ui		1.4	Ui		1.6	Ui		0.74	Ui		0.93	Ui		UJ	0.28	ng/L	Ui	
Mirex	EPA 8081A	µg/kg (dw)	0.063	U		0.063	U		1	Ui		0.063	U		0.063	U			0.19	ng/L	U	

Table 3-2. Co-Located Sediment Sample Chemistry Results

Location			Intertidal			3A			3A (Duplicate)			4B			5A			Rinse Blank			
Matrix			Sediment			Sediment			Sediment			Sediment			Sediment			Water			
Sample ID			A1-IT			3A-S			3D-S			4B-S			5A-S			RB-S			
Sample Date			4/8/2008			5/14/2008			5/14/2008			5/13/2008			5/13/2008			5/14/2008			
Parameter	Method	Units	Result	Lab Q	Val Q	Result	Lab Q	Val Q	Result	Lab Q	Val Q	Result	Lab Q	Val Q	Result	Lab Q	Val Q	Result	Unit	Lab Q	Val Q
Toxaphene	EPA 8081A	µg/kg (dw)	18	Ui	UJ	110	Ui		430	Ui		66	Ui		76	Ui		9	ng/L	U	UJ
Total Solids	EPA 160.3	Percent (dw)	75.8			51.9			52			64.8			64.7			n/a			
Total Organic Carbon	EPA 9060M	Percent (dw)	0.2			1.96			2.07			1.41			1.82			n/a			
Grain Size																					
Fractional % phi >-1	PSEP	Percent (dw)	5.48			1.2			1.04			2.52			1.41			n/a			
Fractional % phi 0-1	PSEP	Percent (dw)	8.38			1.31			1.3			3.68			1.62			n/a			
Fractional % phi 1-2	PSEP	Percent (dw)	35.6			5.58			5.27			13.7			5.58			n/a			
Fractional % phi 2-3	PSEP	Percent (dw)	32			11.4			10.4			26.2			24			n/a			
Fractional % phi 3-4	PSEP	Percent (dw)	6.71			18.9			19.5			19.1			22.7			n/a			
Fractional % phi 4-5	PSEP	Percent (dw)	1.17			13.4			15.3			9.71			13.6			n/a			
Fractional % phi 5-6	PSEP	Percent (dw)	0.36			14.5			13.4			4.75			8.12			n/a			
Fractional % phi 6-7	PSEP	Percent (dw)	0.32			10.9			10.7			4.21			6.15			n/a			
Fractional % phi 7-8	PSEP	Percent (dw)	0.34			5.07			6.16			3.46			4.15			n/a			
Fractional % phi 8-9	PSEP	Percent (dw)	0.16			4.32			5.1			3.73			4.34			n/a			
Fractional % phi 9-10	PSEP	Percent (dw)	0.05			3.66			4.54			2.26			2.82			n/a			
Fractional % phi >10	PSEP	Percent (dw)	0.52			8.41			8.13			3.59			3.9			n/a			
Gravel	PSEP	Percent (dw)	15.5			0.84			0.91			8.24			1.46			n/a			

Footnotes:

- a) RLs and MDLs from Columbia Analytical Services Laboratory.
- b) Dioxin-like PCB and dioxin/furan congeners will be evaluated as toxic equivalents (TEQs) in the risk assessments, rather than as individual congeners. However, because TEQs are calculated, rather than measured by the laboratory, RBCs for individual congeners are presented to facilitate comparison with RLs for those congeners. In reality, risks will be assessed based on sums of these congeners (normalized per their relative toxicity to TCDD), and thus comparison to RLs on a congener-specific basis is somewhat uncertain.
- c) Total Chlordane calculated by TIEC. Total chlordane is the sum of oxychlordane, alpha- and gamma-chlordane, and cis- and trans-nonachlor. RL and MDL are the highest RL and MDL for the chlordane-related compounds. Lab reports as individual analytes.
- d) Dixon/furans MRL's are based on EN 1948 calibration standards. MDL's are based on a 30 gram sample size.

Notes:

IT - Intertidal sediment sample
 mg/kg= milligrams per kilogram
 µg/kg= microgram per kilogram
 ww= wet weight
 dw= dry weight

Laboratory Qualifiers (Lab Q):

For Metals:
 B - Result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
 N- The Matrix Spike sample recovery is not within control limits. See case narrative.
 U- The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 *- The duplicate was not within control limits. See case narrative.

For Organics:
 B - The analyte was found in the associated method blank at a level that is significant relative to the sample result.
 D - Result reported from a dilution.
 J - Result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
 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 - Result was not detected at or above the MRL/MDL.
 i - The MRL/MDL has been elevated due to a chromatographic interference.

For Dioxins/Furans:
 B- Indicates the associated analyte is found in the method blank, as well as in the sample.
 E- Indicates an estimated value-used when the analyte concentration exceeds the upper end of the linear calibration range.
 J- Indicated an estimated value that is less than the MRL but greater than or equal to the EDL.
 K- Indicates an estimated maximum possible concentration for the associated compounds.
 U- Indicates the compound was analyzed and not detected.

Data Validation Qualifiers (Val Q):

U - Result should be considered not detected at the quantitation limit shown.
 J - Result is an estimated concentration.
 UJ - The compound was not detected and the sample detection limit should be considered an estimated value.

APPENDIX A

**INTERTIDAL AND SUBTIDAL TISSUE AND CO-LOCATED
SEDIMENT SAMPLE COLLECTION PHOTOS**

(ALL PHOTOS AVAILABLE ON CD)

Clam Reconnaissance Survey and Sampling Photo Log

Photo ID	Description	Date
Clam Survey 001	Intertidal Area facing NE	4/8/2008
Clam Survey 002	Intertidal_Clam Collection	4/8/2008
Clam Survey 003	Intertidal_Clam Reconnaissance are:	4/8/2008
Clam Survey 004	Intertidal_Clam Survey Grid	4/8/2008
Clam Survey 005	Intertidal_Clams	4/8/2008
Clam Survey 006	Intertidal_Compositing sediment sai	4/8/2008
Clam Survey 007	Intertidal_Lon Sieving Clams	4/8/2008
Clam Survey 008	Intertidal_Macoma Clam Insitu	4/8/2008
Clam Survey 009	Intertidal_Macoma Clams Depuratio	4/8/2008
Clam Survey 010	Intertidal_Sediment Core	4/8/2008
Clam Survey 011	Intertidal_Sediment Sample Compo	4/8/2008
Clam Survey 012	Intertidal_Sieving Sediment	4/8/2008
Clam Survey 013	Intertidal_Burried Willow Trees	4/8/2008
Clam Survey 014	Subtidal_Reconnaissance Clam Re	4/9/2008
Clam Survey 015	Subtidal-Reconnaissance Deploying	4/9/2008
Clam Survey 016	Subtidal-Reconnaissance Lon Sievi	4/9/2008
Clam Survey 017	Subtidal-Reconnaissance Recovere	4/9/2008
Clam Survey 018	Subtidal-Reconnaissance Sieving fc	4/9/2008
Clam Survey 019	Subtidal-Reconnaissance Unknown	4/9/2008
Clam Survey 020	Subtidal Sampling- Fish in trap	5/14/2008
Clam Survey 021	Subtidal Sampling- Macoma Clams	5/13/2008
Clam Survey 022	Subtidal Sampling-Power grab colle	5/13/2008
Clam Survey 023	Subtidal Sampling- Rough Piddock	5/14/2008
Clam Survey 024	Subtidal Sampling- Sediment Core	5/13/2008
Clam Survey 025	Subtidal Sampling- Sediment Core	5/13/2008
Clam Survey 026	Subtidal Sampling- Sieving for Clarr	5/13/2008
Clam Survey 027	Subtidal Sampling- Sieving for Clarr	5/13/2008

APPENDIX B
FIELD LOGS

APPENDIX B.1
FIELD LOG BOOKS

4/8/08 Clam Reconnaissance Survey - Intertidal RC

0945 Arrive at Don Armeni Boat launch

1000 Dana Ramquist Conduct Health & Safety Meeting - Sign in Present: Dana Ramquist, K. Conlon, Gary Braun, John Kunnison, EPA - Lon Kissinger, DE Goulet, Terese Paul Williams

1030 Launch boat

1100 ARRIVE ON SITE OF LOCKHEADS

WEST INTERTIDAL SURVEY AREA -

IT Survey resulted in four

clam species: Macoma (2),

littleneck, Cockle, Manila,

Butter, horse clam (15");

Other observed: Polychaetes, Casere Gracilis,

Moan snail

Substrate: Sand dominated (fine grain)

w/ gravel (>0.25")

Numerous 1-2" diameter wood upland

Debris: Glass-broken

Macoma clams depurating for 24hr

1400 Collect Sediment Sample A1-I1

3- 8oz jars

Analysis:

25 Photos taken of survey & sampling process

Clam Reconnaissance Survey - Intertidal

1430 Depart Intertidal site

1520 Depart Boat Launch area

~~1600~~ Boat @ 4/8/08

VK
4/8/08

- 4/9/08 Clam Reconnaissance Survey-Subtidal
- 0830 Gary Braun, Dana Ramquist,
 & Katrina Conlon w/ TREC
 arrive on site
- LOW KIGANSTER w/ EPA arrive
 on side of Don Arneri Boat launch.
- 0900 Mob equipment onto Eric
 Parker's (Research Support Services)
 Vessel
- 0945 D. Ramquist conduct Health &
 Safety Meeting - all signs in
- 1000 Depart launch on vessel - Depart
 for Area 5 subtidal to begin
 Survey
- Subtidal areas 5(a,b,c) & 4(a,b,c)
 Survey for clam tissue (Macoma)
- 1600 Vessel returned to boat launch.
 Demob boat & people. Boat to
 gas up
- 1630 All field team depart site

4/9/08

10

- Clam Reconnaissance Survey-Subtidal 4/10/08
- 0830 ARRIVE ON SITE w/ TREC
 CREW: G. Braun, D. Ramquist,
 K. Conlon
- VESSEL CAPTAIN: E. PARKER,
 EPA: JOE SOULET
- 0845 H&S MEETING -
- 0900 Depart Boat launch
 Collected Sample location 2A &
 Grab 1 & 2 of 2B.
- 1045 Boat's hydraulics were shut down.
 Boat need servicing. Survey
 postponed for tomorrow.
- 1200 Vessel arrives at boat launch.
- 1230 TE team & EPA depart site.

4/10/08

11

4/11/08 Clam Reconnaissance Survey-Subtidal
0830 Arrive on site of Don
Armeni Boat launch
EPA arrives - Eric Parker
TREC - G. Braun, D. Ramquist,
K. Conlon.
EPA - J. Goulet
0845 H&S Briefing - Sign in
0900 Depart Boat launch to begin
Survey
~~Collect~~ Clam Reconnaissance
at crews 2c, 3, & 6
1440 Arrive at boat launch to
launch.
1530 Depart site

4/11/08
Kc

Clam Sampling 5/13/08
0745 K. Conlon arrives at boat launch
D. Ramquist arrives on site
0800 Eric Parker (RSS) arrives at boat
launch w/ Boat
0830 Gary Braun & Joe Goulet (EPA)
arrive on site
Mob boat
0930 H&S briefing
0945 Set up at station SA.
Silt on water
Collected 10 Grabs
Total Manna weight = 147.1g
1325 Collect Sediment sample 5A-S
3x 8oz glass jars for analysis
1400 Begin collection at 4B
Collected 11 Grabs, total weight = 152.5g
1700 Collect Sediment sample 4B-S
3x 8oz glass jar for analysis
Clams from SA & 4B dehydrate for
24 hr.
1730 Depart site.

W. Goulet

5/14/08

Locked Clam Sampling

0800

K. Conlon & J. Ranquist arrive
on site

Joe Gault (EPA) arrive on site

Mob boat - Eric Parker & Andrew

with (RSS) boat arrive at launch.

0845

G. Braun arrive on site

0900

Set up at location 3A for
clam sampling

Collected 15 grabs, total

weight = 35.5g

Collect sed sample 31-S @ 1410

Collect sed Duplicate 30-S @ 1415

1425

Collect Equipment Blank

RB-S @ 1425

1500 Process clams from

5A & 5B (Duplicate for 24 hr)

5A-C @ 1325 5/13/08

4B-C @ 1700 5/13/08

1530

Depart site

Process clam sample 3A-C tomorrow.

sample: 3AC @ 1400 5/14/08

5/14/08

KE

APPENDIX B.2
TISSUE AND SEDIMENT SAMPLE LOG FORMS

Clam Reconnaissance Survey of Lockheed West

AREA: 2

Location: 2A		Sampler: KL		Sample ID: NA		Date/Time: 4/10/08				
Northing Easting:		# Clams in 0.2 m ² Grab Sampler			Total	Est. # M ² (Total X 1.67)	Total Wet Wt (w/ Shell)	Est. Tis. Wt (0.5 X Wet Wt)	≥ 20 g Tissue Wt?(Y/N)	
		Grab 1	Grab 2	Grab 3						
		Macoma	2.9g (3)	0	0.9g (1)	4	12.7g	3.8g	6.3g	N
		Other (Specify)								
		Other (Specify)								
Substrate										
Grab 1:		D. Brown Sandy Clay								
Grab 2:		D. Brown Sandy Clay								
Grab 3:		D. Brown Sandy Clay								
Notes:										

Location: 2B		Sampler: KL		Sample ID: NA		Date/Time: 7/10/08 (6/16/08) 9/1/08 (63)				
Northing Easting:		# Clams in 0.2 m ² Grab Sampler			Total	Est. # M ² (Total X 1.67)	Total Wet Wt (w/ Shell)	Est. Tis. Wt (0.5 X Wet Wt)	≥ 20 g Tissue Wt?(Y/N)	
		Grab 1	Grab 2	Grab 3						
		Macoma	3.1g (5)	0	1.3 (4)	7	14.6	4.4g	7.3	N
		Other (Specify)	* 0.3g (1)	0	0.1 (1)	2		0.4g		N
		Other (Specify)								
Substrate										
Grab 1:		sandy clay w/ some clay - Brown (1 - Bodega Tellin)								
Grab 2:		Sandy Clay D. Brown								
Grab 3:		Mostly sand w/ some clay - Dark Brown - (1 - Bodega Tellin)								
Notes:										

Location: 3C		Sampler: KL		Sample ID: NONE		Date/Time: 4/11/08				
Northing Easting:		# Clams in 0.2 m ² Grab Sampler			Total	Est. # M ² (Total X 3.33)	Total Wet Wt (w/ Shell)	Est. Tis. Wt (0.5 X Wet Wt)	≥ 20 g Tissue Wt?(Y/N)	
		Grab 1	Grab 2	Grab 3						
		Macoma	1.4g (4)	2.6 (4)	0.6 (2)	10	13.3	7.0	6.6	N
		Other (Specify)	* 0.7g (2)	0.5 (3)	0	5	4.0	1.2	2.0	N
		Other (Specify)								
Substrate										
Grab 1:		Dark Brown Black Clayey Sand * (2) - Bodega Tellin								
Grab 2:		Dark Brown Clayey Sand * (5) - Bodega Tellin								
Grab 3:		0.3 - Clayey Sand								
Notes:										

Clam Reconnaissance Survey of Lockheed West

AREA: 3

(A)

Location: 1A	Sampler: KC	Sample ID: Na	Date/Time: 4/11/08					
Northing	# Clams in 0.2 m ² Grab Sampler			Total	Est. # M ² (Total X 1.67)	Wet Wt (w/ Shell)	Est. Tis. Wt (0.5 X Wet Wt)	≥ 20 g Tissue Wt?(Y/N)
	Grab 1	Grab 2	Grab 3					
Easting:								
Macoma	13/9 (2)	0.7 (2)	20 (3)	7	54.6	16.4	27.2	Y
Other (Specify)			* 3.6 (4)	4	12.0	3.6	5.0	N
Other (Specify)								
Substrate								
Grab 1:	Black Sandy clay							
Grab 2:	Black Sand Clay							
Grab 3:	* 3 - Bodega Tellen - Black Sandy Clay							
Notes:								

(Z)

Location: 2B	Sampler: KC	Sample ID: Na	Date/Time: 4/11/08					
Northing	# Clams in 0.2 m ² Grab Sampler			Total	Est. # M ² (Total X 1.67)	Wet Wt (w/ Shell)	Est. Tis. Wt (0.5 X Wet Wt)	≥ 20 g Tissue Wt?(Y/N)
	Grab 1	Grab 2	Grab 3					
Easting:								
Macoma	1.6 (2)	3.8 (4)	0	6	17.9	5.4	9.0	N
Other (Specify)	1.1 (1)	0.1 (1)	0.4 (1)	4	2.3	1.7	1.2	N
Other (Specify)								
Substrate								
Grab 1:	Gritty Sand - T.K. - Unknown Sp - Shell (Skinner)							
Grab 2:	D.B. - Black Sandy Clay - Some Unknown Sp (Skinner)							
Grab 3:	Black Gritty Sand w/ some clay							
Notes:								

(Z)

Location: 3	Sampler: KC	Sample ID: Na	Date/Time: 4/11/08					
Northing	# Clams in 0.2 m ² Grab Sampler			Total	Est. # M ² (Total X 1.67)	Wet Wt (w/ Shell)	Est. Tis. Wt (0.5 X Wet Wt)	≥ 20 g Tissue Wt?(Y/N)
	Grab 1	Grab 2	Grab 3					
Easting:								
Macoma	0	0.7 (2)	1.0 (3)	5	5.6	1.7	2.8	N
Other (Specify)	0	0.6 (1)	0.5 (1)	2	3.0	1.1	1.8	N
Other (Specify)								
Substrate								
Grab 1:	Black Gritty Sand w/ some clay							
Grab 2:	Black Gritty Sand w/ Shells / * Bodega Tellen (1)							
Grab 3:	Black to D. Brown Gritty Sandy Clay * Bodega Tellen (1)							
Notes:								

Clam Reconnaissance Survey of Lockheed West

AREA: 4

C

Location: VC		Sampler: KC		Sample ID: NONE		Date/Time: 4/9/08			
Northing		# Clams in 0.2 m ² Grab Sampler			Total	Est. # M ² (Total X 3.33)	Wet Wt (w/ Shell)	Est. Tis. Wt (0.5 X Wet Wt)	≥ 20 g Tissue Wt?(Y/N)
		Grab 1	Grab 2	Grab 3					
Easting:									
Macoma		2.7g (1)	2.9g (4)	0.1g (1)	6	28.6g	8.4g	14.3g	Y
Other (Specify)		2.5 (3)			3				N
Other (Specify)									
Substrate									
Grab 1:		Sandy clay - Dark Brown							
Grab 2:		Sandy clay - D. N. B. Brown							
Grab 3:		SANDY CLAY - NO CLAY							
Notes:		+ Unknown Shrimp Clams - Unknown Clam type of Razor?							

B

Location: 2/B		Sampler: KC		Sample ID: N/A		Date/Time: 4/9/08			
Northing		# Clams in 0.2 m ² Grab Sampler			Total	Est. # M ² (Total X 3.33)	Wet Wt (w/ Shell)	Est. Tis. Wt (0.5 X Wet Wt)	≥ 20 g Tissue Wt?(Y/N)
		Grab 1	Grab 2	Grab 3					
Easting:									
Macoma		5.4g (5)	11.6g (6)	12.6g (3)	14	98.6	29.6	49.2	Y
Other (Specify)									
Other (Specify)									
Substrate									
Grab 1:		Sandy Clay - Dark Brown/Grey - C. / Shrimp spot							
Grab 2:		Sandy Clay - Dark Brown/Grey - Shrimp - Wood debris							
Grab 3:		Sandy Clay - D. B. / Grey							
Notes:									

A

Location: 3 A		Sampler: KC		Sample ID: NONE		Date/Time: 4/9/08			
Northing		# Clams in 0.2 m ² Grab Sampler			Total	Est. # M ² (Total X 3.33)	Wet Wt (w/ Shell)	Est. Tis. Wt (0.5 X Wet Wt)	≥ 20 g Tissue Wt?(Y/N)
		Grab 1	Grab 2	Grab 3					
Easting:				13 (3)					
Macoma		35.0g (7)	7.1g (5)	2.8g (3)	11	144.5	43.4	72.3	Y
Other (Specify)		TE UN		0.5 (2)					N
Other (Specify)									
Substrate									
Grab 1:		Sandy Clay - Dark grey w/ sand (H)							
Grab 2:		Sandy Clay - D. Grey							
Grab 3:		Sandy clay - D. Grey (Bodega Tellin)							
Notes:									

Clam Reconnaissance Survey of Lockheed West

AREA: 5

Location: 2A		Sampler: FC		Sample ID: NA		Date/Time: 4/9/08			
		# Clams in 0.2 m ² Grab Sampler			Total	T.W.W X 3.33 Est. # M ² (Total X 1.67)	T.W.W Wet Wt (w/ Shell)	T.W.W X 3.33 x 0.5 Est. Tis. Wt (0.5 X Wet Wt)	≥ 20 g Tissue Wt? (Y/N)
		Grab 1	Grab 2	Grab 3					
Northing									
Easting:									
Macoma	16.7g (4)	10.8g (3)	22.6g (5)	12	166.8	50.1g	83.42	Y	
Other (Specify)									
Other (Specify)									
Substrate									
Grab 1:	Sandy Clay - Dark Grey - Olive Brown -								
Grab 2:	Clay/Sandy Clay Dark Grey - Olive Brown								
Grab 3:	Dark/Sandy Clay D. Grey to Olive Brown								
Notes:									

Location: 2B		Sampler: KC		Sample ID: NA		Date/Time: 4/9/08			
		# Clams in 0.2 m ² Grab Sampler			Total	T.W.W X 3.33 Est. # M ² (Total X 1.67)	f.w.w Wet Wt (w/ Shell)	T.W.W X 3.33 x 0.5 Est. Tis. Wt (0.5 X Wet Wt)	≥ 20 g Tissue Wt? (Y/N)
		Grab 1	Grab 2	Grab 3					
Northing									
Easting:									
Macoma	12.0g (6)	2.9g (4)	22.0g (13)	37	156.2	46.9	78.1	Y	
Other (Specify) *			8.7g (1)	1					
Other (Specify)									
Substrate									
Grab 1:	Sandy Clay								
Grab 2:	Sandy Clay								
Grab 3:	Sandy Clay								
Notes:	* UNKNOWN SPECIES - RAZOR CLAM SP?								

Location: 3A		Sampler: KC		Sample ID: NA		Date/Time: 4/9/08			
		# Clams in 0.2 m ² Grab Sampler			Total	T.W.W X 3.33 Est. # M ² (Total X 1.67)	T.W.W Wet Wt (w/ Shell)	T.W.W X 3.33 x 0.5 Est. Tis. Wt (0.5 X Wet Wt)	≥ 20 g Tissue Wt? (Y/N)
		Grab 1	Grab 2	Grab 3					
Northing									
Easting:									
Macoma	8.0 (3)	2.5g (6)	19 (15)	24	107.9	32.4	53.9	Y	
Other (Specify) *	17.4g (2)			2					
Other (Specify)									
Substrate									
Grab 1:	Sandy Clay *								
Grab 2:	Sandy Clay								
Grab 3:	Sand Clay								
Notes:	* UNKNOWN SPECIES - Short Skinny Clam								

Clam Reconnaissance Survey of Lockheed West

AREA: 10

Location: 7A		Sampler: KC		Sample ID: na		Date/Time: 4/11/08			
		# Clams in 0.2 m ² Grab Sampler			Total	(T.W.W X 33) Est. # M ² (Total X 1.67)	(T.W.W) Wet Wt (w/ Shell)	(T.W.W X 33 X 0.5) Est. Tls. Wt (0.5 X Wet Wt)	≥ 20 g Tissue Wt?(Y/N)
		Grab 1	Grab 2	Grab 3					
Northing	A	R		24					
Easting:	R	R							
Macoma	0	0.4 (2)	0	2	1.3	0.1	0.7	N	
Other (Specify)	0	0.2 (2)	0.1 (1)	3				N	
Other (Specify)	0	0.3 (1)	0.5 (1)	4	6.6	2.0	3.3	N	
Substrate									
Grab 1:	D. BROWN SANDY CLAY								
Grab 2:	D. BROWN SANDY CLAY								
Grab 3:	D. BROWN SANDY CLAY								
Notes:	① Little neck ② Podiceps T. L. A ③ R. P. rect. n/c Rocks only collected 2-3" corals								

Location: 7B		Sampler: KC		Sample ID: na		Date/Time: 4/11/08			
		# Clams in 0.2 m ² Grab Sampler			Total	(T.W.W X 33) Est. # M ² (Total X 1.67)	(T.W.W) Wet Wt (w/ Shell)	(T.W.W X 33 X 0.5) Est. Tls. Wt (0.5 X Wet Wt)	≥ 20 g Tissue Wt?(Y/N)
		Grab 1	Grab 2	Grab 3					
Northing									
Easting:									
Macoma	0	2.2 (1)	0	1	7.3	2.2	3.6	N	
Other (Specify)	0	0.1 (2)	0.1 (1)					N	
Other (Specify)	0	0.2 (1)	1.4 (1)					N	
Substrate									
Grab 1:	SAND - D. BROWN								
Grab 2:	SAND - BROWN								
Grab 3:	SAND - BROWN								
Notes:	① Unknown - long neck ② Podiceps T. L. A ③ 2020 sp.? (Short & Skinny)								

Location: 7C		Sampler: KC		Sample ID: na		Date/Time: 4/11/08			
		# Clams in 0.2 m ² Grab Sampler			Total	(T.W.W X 33) Est. # M ² (Total X 1.67)	(T.W.W) Wet Wt (w/ Shell)	(T.W.W X 33 X 0.5) Est. Tls. Wt (0.5 X Wet Wt)	≥ 20 g Tissue Wt?(Y/N)
		Grab 1	Grab 2	Grab 3					
Northing									
Easting:									
Macoma	0	0.5 (1)	0	1	2.6	0.8	1.3	N	
Other (Specify)	0	2.6 (7)	1.1 (3)	0.8 (1)	11	4.5	7.5	N	
Other (Specify)	0	0.1 (1)	0.6 (3)	0.1 (1)	5	2.6	1.5	N	
Substrate									
Grab 1:	D. BROWN SANDY CLAY								
Grab 2:	D. BROWN SANDY CLAY								
Grab 3:	D. BROWN CLAYEY SAND								
Notes:	① Podiceps tall ② Unknown - long neck, ③ 2020 sp.? (Short & Skinny)								

INTERTIDAL CLAM RECONNAISSANCE SURVEY OF LOCKHEED WEST

Sample Number	Date	Location	Species	Length	Weight	Substrate
A 1-IT	9/8/06	N: 216163.30	Macula (Broken)	40 mm	7.6g	Sand-fine (1/4" w/ Gravel) + 1/4" screen
		E: 263192.77				
		N: 216175.73	Littleneck	61 mm	81.2	
		E: 1263201.31				
		N: 1263201.31	Littleneck	24 mm	3.8g	
		E: 1263201.31				
		N: 216205.73	Macoma (Broken)	50 mm	21.2g	
		E: 1263211.65				
		N: 216205.73	Macoma	20 mm	1.3g	
		E: 1263211.65				
		N: 216205.73	Butterfly	50 mm	17.6g	
		E: 1263211.65				
		N: 1263205.73	Juv. Butterfly	30 mm	6.0g	
		E: 1263211.65				
		N: 216226.36	See Sheet #4 Sheet #4 (Clam 1)			
		E: 1263213.36				
		N: 216192.83	But Nose Macoma	35 mm	5.0g	
		E: 1263211.31				
		N: 1263211.31	Macoma	35 mm	6.6g	
		E: 1263211.31				
		N: 1263211.31	Cockle	25 mm	4.4g	
		E: 1263211.31				
		N: 216232.66	Butter	85 mm	146.9	
		E: 1263217.49				
		N: 1263217.49	Littleneck	60 mm	97.1	
		E: 1263217.49				
		N: 1263217.49	But Nose Macoma	41 mm	11.7	
		E: 1263217.49				
		N: 1263217.49	Macoma	41 mm	12.1	
		E: 1263217.49				
		N: 1263217.49		42 mm	12.4	
		E: 1263217.49				
		N: 1263217.49		28 mm	3.8	
		E: 1263217.49				
		N: 1263217.49		32 mm	5.0	
		E: 1263217.49				
		N: 1263217.49		38	8.5	
		E: 1263217.49				
		N: 1263217.49		32	4.8	
		E: 1263217.49				
		N: 1263217.49		42	10.8	
		E: 1263217.49				
		N: 1263217.49		40	10.1	
		E: 1263217.49				
		N: 1263217.49		24	1.8	
		E: 1263217.49				
		N: 1263217.49	B.N. Macoma	48 mm	11.7	
		E: 1263217.49				

PS 1-4
439.15

INTERTIDAL CLAM RECONNAISSANCE SURVEY OF LOCKHEED WEST

Sample Number	Date	Location	Species	Length	Weight	Substrate
	4/8/08	N: E:	Macoma	40 ²⁰ mm	1.2	
	Clam 4 ~	N: 216145.42 E: 1263218.30	Macoma	46 mm	18.5	
		N: E:	Macoma	30 mm	5.0	
	Clam 5	N: 216147.10 E: 1263219.66	NO SAMPLE		-LOST	CLAM
	Clam 6	N: 216156.89 E: 1263216.34	Macoma "Nazuda"	40 mm	12.9 g	
	Clam 7	N: 216176.11 E: 1263219.99	Butter	75 mm	88.1	
	Clam 8	N: 216177.76 E: 1263217.77	little neck	28 mm	8.4	
	Clam 9	N: E:	little neck	30 mm	6.9	
		N: E:	Macom -	5 BROKEN		
		N: E:	Macoma	40 mm	8.8	
		N: E:	Macoma	30 mm	6.9	
		N: E:	Macoma	34 mm	6.2	
		N: E:	Macoma	34 mm	9.1	
		N: E:	Macoma	44	15.9	
		N: E:	Macoma	36	7.1	
		N: E:	Macoma	40	10.5	
		N: E:	Macoma	32	6.2	
		N: E:	Macoma	28	2.7	
		N: E:	Macoma	30	5.1	
		N: E:	Macoma	34 mm	6.8 g	
		N: E:	Macoma	34 mm	6.7	
		N: E:	Macoma	32	6.7	

136.2 g

INTERTIDAL CLAM RECONNAISSANCE SURVEY OF LOCKHEED WEST

Sample Number	Date	Location	Species	Length	Weight	Substrate
	1/5/85	N: CLAM 9/8 E:	Macoma	30 mm	4.1 g	
		N: E:		30 mm	3.5	
		N: E:		38	10.0	
		N: E:		34	5.0	
		N: E:		24	1.6	
		N: E:		30	4.0	
		N: E:		28	3.7	
		N: E:		22	2.5	
		N: E:		30	5.3	
		N: E:		28	3.7	
		N: E:		30	3.9	
		N: E:	Macoma - "Baltica"	10 mm	0.1	
		N: E:	Littleneck	40 mm	12.3	
"Clam 9"		N: 216163.30 E: 1263217.50	Macoma - 4 BCR			
		N: E:	Macoma	38 mm	10.1 g	
		N: E:	Macoma	28 mm	3.4 g	
"Clam 10"		N: 216160.65 E: 1263279.47	Macoma	35	5.2	
		N: E:		10 mm	0.1 g	
		N: E:		45 mm	11.7 g	
		N: E:		40 mm	8.9 g	
		N: E:		28	3.2	
		N: E:		10 mm	0.2	

(Clam 1)

INTERTIDAL CLAM RECONNAISSANCE SURVEY OF LOCKHEED WEST

Sample Number	Date	Location	Species	Length	Weight	Substrate
	4/8/08	N: 11' 10" E: Clam 1	Macoma	34 mm	7.8	
		N:		30	4.3	
		E:		28	3.6	
		N:		28	4.3	
		E:		32	5.3	
		N:		34	6.3	
		E:		32	6.2	
		N:		22	2.2	
		E:		26	3.6	
		N:		28	3.9	
		E:		30	5.0	
		N:		30	4.6	
		E:		26	3.1	
		N:		32	4.8	
		E:		12	0.7	
		N:		20	1.4	
		E:		36	7.3	
		N:		24	3.6	
		E:		26	3.2	
		N:		30	4.6	
		E:				
		N:				
		E:				

85.8g

INTERTIDAL CLAM RECONNAISSANCE SURVEY OF LOCKHEED WEST

Sample Number	Date	Location	Species	Length	Weight	Substrate
	4/8/08	N: 216249.77 E: 1263226.97	Butter	80 mm	121.8	
		N: E:	Butter	88 mm	>150g	
		N: E:	Cockle	64 mm	84.8	
		N: E:	Littleneck	40 mm	29.0	
		N: E:	Macoma	42 mm	16.0	
		N: E:		34	13 6.4	
		N: E:		40	11.2	
		N: E:		34	7.1	
		N: E:		28	3.3	
		N: E:		28	2.9	
		N: E:		28	2.7	
		N: E:		34	9.0	
		N: E:		30	4.4	
		N: E:		32	5.4	
		N: E:		32	7.0	
		N: E:		24	1.8	
		N: E:		34	5.8	
		N: E:		36	7.7	
		N: E:		32	8.2 5.0	
		N: E:		20	1.0	
		N: E:		18	0.6	
		N: 216248.33 E: 1263221.16	Macoma	40	11.8	

"Clam 12"

93.1

INTERTIDAL CLAM RECONNAISSANCE SURVEY OF LOCKHEED WEST

Sample Number	Date	Location	Species	Length	Weight	Substrate
	4/8/08	N: Lockheed West E: Lockheed West	Macoma	30	5.5	
		N:		30	6.1	
		E:		40	11.6	
		N:		32	5.9	
		E:		34	8.7	
		N:		40	11.0	
		E:		36	8.3	
		N:		40	11.8	
		E:		30	6.6	
		N:		40	10.1	
		E:		30	5.8	
		N:		30	5.0	
		E:		30	5.0	
		N:		34	7.9	
		E:		30	4.6	
		N:		30	4.7	
		E:		30	5.0	
		N:		32	6.4	
		E:		34	7.1	
		N:		24	3.7	
		E:		24	2.6	
		N:		22	2.4	
		E:				

INTERTIDAL CLAM RECONNAISSANCE SURVEY OF LOCKHEED WEST

Sample Number	Date	Location	Species	Length	Weight	Substrate
	9/8/08	N: "Clump"	Macoma	34	9.0	
		E:				
		N:		34	8.2	
		E:				
		N:		30	4.6	
		E:				
		N:		34	9.3	
		E:				
		N:		22	2.8	
		E:				
		N:		20	0.1	
		E:				
		N:		24	0.4	
		E:				
		N:	Macoma	4 BROKEN		
		E:				
		N: "Clump"	Macoma	36	7.6	
		E:				
		N:		38	8.5	
		E:				
		N:		40	12.2	
		E:				
		N:		40	9.2	
		E:				
		N:		41	11.6	
		E:				
		N:		42	13.0	
		E:				
		N:		38	7.9	
		E:				
		N:		34	6.5	
		E:				
		N:		32	4.6	
		E:				
		N:		30	3.4	
		E:				
		N:		28	3.8	
		E:				
		N:		34	6.6	
		E:				
		N:		34	6.0	
		E:				
		N:		28	3.5	
		E:				

INTERTIDAL CLAM RECONNAISSANCE SURVEY OF LOCKHEED WEST

Sample Number	Date	Location	Species	Length	Weight	Substrate
		N: Clam 13"	MACOMA	26 mm	3.1	
		E:				
		N:		28	3.2	
		E:				
		N:		26	2.6	
		E:				
		N:		20	6.5	
		E:				
		N:		26	2.4	
		E:				
		N:		24	1.7	
		E:				
		N: 216217.11	757	28	2.6	
		E: 126327.85				
		N: 216240.69	MACOMA	48	15.4	
		E: 126321.70				
		N: Clam 14		35	7.5	
		E:				
		N:		40	9.2	
		E:				
		N:		35	7.2	
		E:				
		N:		28	2.9	
		E:				
		N:		27	2.9	
		E:				
	"Clam 15"	N: 216166.84	MACOMA	40	10.9	
		E: 1263221.98				
		N:		32	7.7	
		E:				
		N:		35	5.0	
		E:				
		N:		27	2.7	
		E:				
		N:		35	5.4	
		E:				
		N:		33	5.8	
		E:				
		N:		34	6.2	
		E:				
		N:		30	3.5	
		E:				
		N:		26	1.5	
		E:				
				24	1.9	

Grand Total = 928.8

111.8

Clam Reconnaissance Tissue Sampling of Lockheed West

Tissue Sample ID: 3A-C
 Sediment Sample ID: 3A-S (30-5)
 Date/Time: 5/14/08 @ 1410 (1418)
 Sampler: KC

Area: 3
 Location: A
 Date/Time: 5/14/08 @ 1410
 Sampler: KC

	# Clams in 0.2 m ² Grab Sampler					Total	Est. # 2 M ² (Total X 2)	Total Wet Wt (w/ Shell)	Est. Tis. Wt (0.5 X Wet Wt X 2)	≥ 20 g Tissue Wt? (Y/N)
	Grab 1	Grab 2	Grab 3	Grab 4	Grab 5					
Northing:										
Easting:										
Macoma Sp.	2.1g (2)	4	1	3K (2)	1.2 (1)					
Other (Specify)										
Other (Specify)										
Other (Specify)										
Other (Specify)										
Substrate:										
Odor:										
Debris:										
Penetration:										
Northing:										
Easting:										
Macoma Sp.	0	0	8.1 (22)	4.5 (2)	2.9 (2)	27.4				
Other (Specify)										
Other (Specify)										
Other (Specify)										
Other (Specify)										
Substrate:										
Odor:										
Debris:										
Penetration:										
Total Wet Wt (w/ Shell)										
≥ 20 g Tissue Wt? (Y/N)										

Bodger
Bodger
W. Bodger

Bodger
Patode

Sediment Analyses:

Tissue Analyses:

Clam Reconnaissance Tissue Sampling of Lockheed West

Sediment Sample ID: 3A-S (30-9)
 Date/Time: 5/14/08 @ 1410 (1415)
 Sampler: KC

Tissue Sample ID: 3A-C
 Date/Time: 5/14/08 @ 1410
 Sampler: KC

Area: _____
 Location: _____

	# Clams in 0.2 m ² Grab Sampler					Total	Est. # 2 M ² (Total X 2)	Total Wet Wt (w/ Shell)	Ept. Tia. Wt (0.5 X Wt X 2)	≥ 20 g Tissue Wt? (Y/N)
	Grab 1	Grab 2	Grab 3	Grab 4	Grab 5					
Northing:										
Easting:										
Macoma Sp.	0	2, 7 (1)	2, 1 (1)	2, 4 (3)	0, 9 (2)					
Other (Specify)	2	4	A	1						
Other (Specify)		2								
Other (Specify)		2								
Substrate:										
Odor:										
Debris:										
Penetration:										
	14					Total	Total Wet Wt (w/ Shell)	≥ 20 g Tissue Wt? (Y/N)		
Northing:										
Easting:										
Macoma Sp.	0									
Other (Specify)										
Other (Specify)										
Other (Specify)										
Other (Specify)										
Substrate:										
Odor:										
Debris:										
Penetration:										

35.5g

Bottles
 Sediment
 Vials

Sediment Analyses:

3A-S (30-S) / 3A-C

SURFACE SEDIMENT SAMPLE COLLECTION FORM

Sample No. ~~3A/3A~~
Project Name: LOCKHEED WEST SEATTLE
Project No.: 106-8945

Date: 5/14/08 Time: 0930 Sampled by: KC Checked by: _____

Equipment: POWER GRAB

Location Description: _____

Deployment: A Time: 0945 Northing: _____ Easting: _____

Accepted / Rejected Bio / Chem Water Depth 48.8 Penetration 21 RPD _____

Sediment (density, color, type): Dark Brown Silt

Sediment Odor (type and magnitude): _____

Biological (flora and fauna): Macoma

Sheen Small Sheen Spot Debris Shells

Comments: Composite - Grab 1

Deployment: B Time: 1000 Northing: _____ Easting: _____

Accepted / Rejected Bio / Chem Water Depth 48.7 Penetration 15 RPD _____

Sediment (density, color, type): P. Brown Silt

Sediment Odor (type and magnitude): _____

Biological (flora and fauna): 2 Bodega Tellin Clams

Sheen _____ Debris Shells

Comments: No Composite - No Macoma - Grab 2

Deployment: C Time: 1009 Northing: _____ Easting: _____

Accepted / Rejected Bio / Chem Water Depth _____ Penetration 18 RPD _____

Sediment (density, color, type): Dark Brown Silt

Sediment Odor (type and magnitude): _____

Biological (flora and fauna): 1 Butte Clam

Sheen none Debris Cardboard, Shell

Comments: No composite - no macoma - Grab 3

Deployment: D Time: 1019 Northing: _____ Easting: _____

Accepted / Rejected Bio / Chem Water Depth _____ Penetration _____ RPD _____

Sediment (density, color, type): _____

Sediment Odor (type and magnitude): _____

Biological (flora and fauna): _____

Sheen _____ Debris Debris in trap

Comments: _____

SURFACE SEDIMENT SAMPLE COLLECTION FORM				Sample No. <u>3A-S (3D-S) / 3A-C</u>	
<i>continued</i>				Project Name: <u>Lockheed West Seattle</u>	
Project No.: <u>106-8945</u>					
Deployment: <u>E</u>	Time: <u>1022</u>	Northing: _____	Easting: _____		
<input checked="" type="checkbox"/> Accepted / <input type="checkbox"/> Rejected	<input checked="" type="checkbox"/> Bio / <input type="checkbox"/> Chem	Water Depth <u>49.2</u>	Penetration <u>20</u>	RPD _____	
Sediment (density, color, type): <u>Dark Brown Silt</u>					
Sediment Odor (type and magnitude): _____					
Biological (flora and fauna): <u>Macoma, Bodega, Unknown Clams, Small Fish (EEL-like)</u>					
Sheen _____			Debris <u>Shells</u>		
Comments: <u>Grab 4 - Composite</u>					
Deployment: <u>F</u>	Time: <u>1033</u>	Northing: _____	Easting: _____		
<input checked="" type="checkbox"/> Accepted / <input type="checkbox"/> Rejected	<input checked="" type="checkbox"/> Bio / <input type="checkbox"/> Chem	Water Depth <u>51.6</u>	Penetration <u>22</u>	RPD _____	
Sediment (density, color, type): <u>Dark Brown Silt</u>					
Sediment Odor (type and magnitude): _____					
Biological (flora and fauna): <u>Macoma</u>					
Sheen <u>None</u>			Debris <u>Shell, Crab Claw</u>		
Comments: <u>Grab 5 - Composite</u>					
Deployment: <u>G</u>	Time: <u>1047</u>	Northing: _____	Easting: _____		
<input checked="" type="checkbox"/> Accepted / <input type="checkbox"/> Rejected	<input checked="" type="checkbox"/> Bio / <input type="checkbox"/> Chem	Water Depth <u>49.3</u>	Penetration <u>22</u>	RPD _____	
Sediment (density, color, type): <u>Dark Brown Silt</u>					
Sediment Odor (type and magnitude): _____					
Biological (flora and fauna): <u>Fish</u>					
Sheen _____			Debris <u>Shells</u>		
Comments: <u>Grab 6 - No composite = No Macoma</u>					
Deployment: <u>H</u>	Time: <u>1100</u>	Northing: _____	Easting: _____		
<input checked="" type="checkbox"/> Accepted / <input type="checkbox"/> Rejected	<input type="checkbox"/> Bio / <input type="checkbox"/> Chem	Water Depth <u>49.2</u>	Penetration <u>17</u>	RPD _____	
Sediment (density, color, type): <u>Dark Brown to Black Silt</u>					
Sediment Odor (type and magnitude): _____					
Biological (flora and fauna): <u>Rough Piddock Clam</u>					
Sheen _____			Debris _____		
Comments: <u>Grab 7 - Composite No Composite - No Macoma</u>					
Analyses:					

SURFACE SEDIMENT SAMPLE COLLECTION FORM		Sample No. <u>3A-S (30-S) / 3A-C</u>
Date: <u>5/14/08</u> Time: <u>1112</u> Sampled by: <u>EC</u> Checked by: _____		Project Name: <u>Lockheed West Seattle</u>
Equipment: <u>POWER Grab</u>		Project No.: <u>106-8945</u>
Location Description: <u>3A</u>		
Deployment: <u>I</u> Time: <u>1109</u> Northing: _____ Easting: _____	Accepted / <u>Rejected</u> <u>Bio / Chem</u> Water Depth _____ Penetration _____ RPD _____	
Sediment (density, color, type): _____		
Sediment Odor (type and magnitude): _____		
Biological (flora and fauna): _____		
Sheen _____	Debris _____	
Comments: _____		
Deployment: <u>J</u> Time: <u>1129</u> Northing: _____ Easting: _____	Accepted / <u>Rejected</u> <u>Bio / Chem</u> Water Depth <u>50.5</u> Penetration <u>17</u> RPD _____	
Sediment (density, color, type): <u>Dark Brown to Black Silt</u>		
Sediment Odor (type and magnitude): _____		
Biological (flora and fauna): <u>Macoma, Butter, Anemone</u>		
Sheen <u>None</u>	Debris <u>Shells</u>	
Comments: <u>Grab 8 - Composite</u>		
Deployment: <u>F</u> Time: <u>1141</u> Northing: _____ Easting: _____	Accepted / <u>Rejected</u> <u>Bio / Chem</u> Water Depth <u>52.5</u> Penetration <u>22</u> RPD _____	
Sediment (density, color, type): <u>Dark Brown to Black Silt</u>		
Sediment Odor (type and magnitude): _____		
Biological (flora and fauna): <u>Macoma</u>		
Sheen <u>None</u>	Debris <u>Card board, Shells</u>	
Comments: <u>Grab 9 - Composite</u>		
Deployment: <u>L</u> Time: <u>1159</u> Northing: _____ Easting: _____	Accepted / <u>Rejected</u> <u>Bio / Chem</u> Water Depth <u>52.0</u> Penetration <u>16</u> RPD _____	
Sediment (density, color, type): <u>Dark Brown Silt</u>		
Sediment Odor (type and magnitude): _____		
Biological (flora and fauna): <u>Flat worm, Macoma, Butter</u>		
Sheen <u>None</u>	Debris _____	
Comments: <u>Grab 10 - Composite</u>		

SURFACE SEDIMENT SAMPLE COLLECTION FORM		Sample No. <u>3A-S(30-S)/3A-0</u>	
<i>continued</i>		Project Name: <u>Lockheed West Seattle</u>	
		Project No.: <u>106-8945</u>	
Deployment: <u>M</u>	Time: <u>1207</u>	Northing: _____	Easting: _____
Accepted / Rejected <u>Accepted</u>	Bio / Chem <u>Chem</u>	Water Depth <u>52.0</u>	Penetration <u>21</u> RPD _____
Sediment (density, color, type): <u>Dark Brown Silt</u>			
Sediment Odor (type and magnitude): _____			
Biological (flora and fauna): <u>Butter Clams, Worm tubes</u>			
Sheen <u>None</u>	Debris <u>Wood, Shells</u>		
Comments: <u>Grab 11 - com No Composite = No Macoma</u>			
Deployment: <u>N/A</u>	Time: <u>1309</u>	Northing: _____	Easting: _____
Accepted / Rejected <u>Accepted</u>	Bio / Chem <u>Chem</u>	Water Depth <u>54.0</u>	Penetration <u>21</u> RPD _____
Sediment (density, color, type): <u>Dark Brown Silt</u>			
Sediment Odor (type and magnitude): _____			
Biological (flora and fauna): <u>Macoma, Butter, Bodega Tellin Clams, Fish</u>			
Sheen <u>None</u>	Debris <u>Shell</u>		
Comments: <u>Grab 12 - Composite</u>			
Deployment: <u>0</u>	Time: <u>1321</u>	Northing: _____	Easting: _____
Accepted / Rejected <u>Accepted</u>	Bio / Chem <u>Chem</u>	Water Depth <u>53.1</u>	Penetration <u>21</u> RPD _____
Sediment (density, color, type): <u>Dark Brown Silt</u>			
Sediment Odor (type and magnitude): _____			
Biological (flora and fauna): <u>Macoma & Butter Clams</u>			
Sheen _____	Debris _____		
Comments: <u>Grab 13 - Composite</u>			
Deployment: <u>R</u>	Time: <u>1331</u>	Northing: _____	Easting: _____
Accepted / Rejected <u>Accepted</u>	Bio / Chem <u>Chem</u>	Water Depth <u>52.6</u>	Penetration <u>21</u> RPD _____
Sediment (density, color, type): <u>Dark Brown Silt</u>			
Sediment Odor (type and magnitude): _____			
Biological (flora and fauna): <u>Macoma, Butter, Littleneck</u>			
Sheen _____	Debris <u>Wood & Sheet p in trap</u>		
Comments: <u>Grab 14 - Composite</u>			
Analyses: _____			

SURFACE SEDIMENT SAMPLE COLLECTION FORM		Sample No. <u>3A-S(3D-S) / 3A-C</u>
		Project Name: <u>Lockheed West Seattle</u>
		Project No.: <u>106-8945</u>
Date: <u>5/14/08</u> Time: <u>1348</u> Sampled by: <u>EC</u> Checked by: _____		
Equipment: <u>Power Grab</u>		
Location Description: <u>3A</u>		
Deployment : <u>Q</u> Time: <u>1348</u> Northing: _____ Easting: _____		
Accepted / Rejected <input checked="" type="checkbox"/> / <input type="checkbox"/> Bio / Chem <input checked="" type="checkbox"/> / <input type="checkbox"/> Water Depth <u>54.0</u> Penetration <u>21</u> RPD _____		
Sediment (density, color, type): <u>Dark Brown Silt</u>		
Sediment Odor (type and magnitude): _____		
Biological (flora and fauna): <u>Macoma</u>		
Sheen _____ Debris <u>Golf Ball, Shells</u>		
Comments: <u>Grab 15 - Composite</u>		
Deployment : <u>R</u> Time: <u>1401</u> Northing: _____ Easting: _____		
Accepted / Rejected <input checked="" type="checkbox"/> / <input type="checkbox"/> Bio / Chem <input type="checkbox"/> / <input type="checkbox"/> Water Depth <u>50.7</u> Penetration <u>21</u> RPD _____		
Sediment (density, color, type): <u>D. Brown Silt</u>		
Sediment Odor (type and magnitude): _____		
Biological (flora and fauna): <u>None</u>		
Sheen _____ Debris _____		
Comments: <u>Grab 16 - No Composite - No Macoma</u>		
Deployment : _____ Time: _____ Northing: _____ Easting: _____		
Accepted / Rejected <input type="checkbox"/> / <input type="checkbox"/> Bio / Chem <input type="checkbox"/> / <input type="checkbox"/> Water Depth _____ Penetration _____ RPD _____		
Sediment (density, color, type): _____		
Sediment Odor (type and magnitude): _____		
Biological (flora and fauna): _____		
Sheen _____ Debris _____		
Comments: _____		
Deployment : _____ Time: _____ Northing: _____ Easting: _____		
Accepted / Rejected <input type="checkbox"/> / <input type="checkbox"/> Bio / Chem <input type="checkbox"/> / <input type="checkbox"/> Water Depth _____ Penetration _____ RPD _____		
Sediment (density, color, type): _____		
Sediment Odor (type and magnitude): _____		
Biological (flora and fauna): _____		
Sheen _____ Debris _____		
Comments: _____		

Clam Reconnaissance Tissue Sampling of Lockheed West

Tissue Sample ID: 16-C Sediment Sample ID: 46-S
 Date/Time: 5/13/08 @ 1700 Date/Time: 5/13/08 @ 1700
 Sampler: KC Sampler: KC

Area: 4
 Location: B

	# Clams in 0.2 m ² Grab Sampler										Total	Est. # 2 M ² (Total X 2)	Total Wet Wt (w/ Shell)	Est. Tla. Wt (0.5 X Wet Wt X 2)	≥ 20 g Tissue Wt? (Y/N)	
	Grab 1	Grab 2	Grab 3	Grab 4	Grab 5	Grab 6	Grab 7	Grab 8	Grab 9	Grab 10						(Total)
Northling:																
Eastling:																
Macoma Sp.	249 (10)	19.6 (12)	5.0 ₂ (3)													
Other (Specify)		1.0	(2)													
Other (Specify)		1.0	(1)													
Other (Specify)																
Other (Specify)																
Substrate:																
Odor:																
Debris:																
Penetration:																
Northling:																
Eastling:																
Macoma Sp.	11.1 (7)	10.3 _g (5)	9.7 (6)	15.7 (7)	12.9 (5)											
Other (Specify)																
Other (Specify)																
Other (Specify)																
Other (Specify)																
Substrate:																
Odor:																
Debris:																
Penetration:																
Total Wet Wt (w/ Shell)																
Est. Tla. Wt (0.5 X Wet Wt X 2)																
≥ 20 g Tissue Wt? (Y/N)																

Reddy-7 Unknown

B. sp. Unknown

Sediment Analyses:

SURFACE SEDIMENT SAMPLE COLLECTION FORM		Sample No. <u>4B-3 / 4B-C</u>
Date: <u>5/13/08</u> Time: <u>1400</u> Sampled by: <u>kc</u> Checked by: _____		Project Name: <u>Lockheed West Seattle Clam Sampling</u>
Equipment: <u>Power Grab</u>		Project No.: <u>106-8975</u>
Location Description: <u>4B</u>		
Deployment: <u>A</u> Time: <u>1415</u> Northing: _____ Easting: _____	Accepted / Rejected <input checked="" type="checkbox"/> / <input type="checkbox"/> Bio / Chem <input checked="" type="checkbox"/> / <input type="checkbox"/> Water Depth _____ Penetration <u>21</u> RPD _____	
Sediment (density, color, type): <u>Dark brown silt (Sandier)</u>		
Sediment Odor (type and magnitude): _____		
Biological (flora and fauna): <u>Macoma</u>		
Sheen _____	Debris <u>Wood, shells</u>	
Comments: <u>Composite</u>		
<u>1434</u>		
Deployment: <u>B</u> Time: <u>1434</u> Northing: _____ Easting: _____	Accepted / Rejected <input checked="" type="checkbox"/> / <input type="checkbox"/> Bio / Chem <input checked="" type="checkbox"/> / <input type="checkbox"/> Water Depth _____ Penetration <u>18.5</u> RPD _____	
Sediment (density, color, type): <u>Dark Brown Sandier silt</u>		
Sediment Odor (type and magnitude): _____		
Biological (flora and fauna): <u>Macoma</u>		
Sheen _____	Debris <u>Shells, wood</u>	
Comments: <u>Composite</u>		
<u>1442</u>		
Deployment: <u>C</u> Time: <u>1445</u> Northing: _____ Easting: _____	Accepted / Rejected <input checked="" type="checkbox"/> / <input type="checkbox"/> Bio / Chem <input checked="" type="checkbox"/> / <input type="checkbox"/> Water Depth _____ Penetration <u>16</u> RPD _____	
Sediment (density, color, type): <u>D.B. gy. silt</u>		
Sediment Odor (type and magnitude): _____		
Biological (flora and fauna): <u>Macoma - 2 worms eating clay</u>		
Sheen _____	Debris <u>Metal, shells</u>	
Comments: _____		
<u>1453</u>		
Deployment: <u>D</u> Time: <u>1500</u> Northing: _____ Easting: _____	Accepted / Rejected <input checked="" type="checkbox"/> / <input type="checkbox"/> Bio / Chem <input checked="" type="checkbox"/> / <input type="checkbox"/> Water Depth _____ Penetration <u>10</u> RPD _____	
Sediment (density, color, type): _____		
Sediment Odor (type and magnitude): _____		
Biological (flora and fauna): <u>None</u>		
Sheen <u>heavy Sheen spots</u>	Debris <u>Clam shells, metal (Nuts/Bolts)</u>	
Comments: <u>Processed, no Macoma, no composite</u>		

SURFACE SEDIMENT SAMPLE COLLECTION FORM				Sample No. <u>4B-5</u>	
<i>continued</i>				Project Name: <u>Lochhead West Seattle</u>	
				Project No.: <u>106-8975</u>	
Deployment: <u>E</u>	Time: <u>1504</u>	Northing: _____	Easting: _____		
<input checked="" type="checkbox"/> Accepted / <input type="checkbox"/> Rejected	Bio / <input checked="" type="checkbox"/> Chem	Water Depth _____	Penetration <u>10</u>	RPD _____	
Sediment (density, color, type): <u>Dark brown sandy silt</u>					
Sediment Odor (type and magnitude): _____					
Biological (flora and fauna): <u>Macoma, worms</u>					
Sheen _____			Debris <u>Clam shells</u>		
Comments: <u>Composite</u>					
Mcom wt 78.5g					
Deployment: <u>F</u>	Time: <u>1519</u>	Northing: _____	Easting: _____		
<input checked="" type="checkbox"/> Accepted / <input type="checkbox"/> Rejected	Bio / Chem	Water Depth _____	Penetration <u>19</u>	RPD _____	
Sediment (density, color, type): <u>Dark brown / grey silt</u>					
Sediment Odor (type and magnitude): _____					
Biological (flora and fauna): <u>Macoma, crab, worm</u>					
Sheen <u>Small shear spot</u>			Debris <u>heavy shell fragments</u>		
Comments: <u>Composite</u>					
Deployment: <u>G</u>	Time: <u>1534</u>	Northing: _____	Easting: _____		
<input checked="" type="checkbox"/> Accepted / <input type="checkbox"/> Rejected	<input checked="" type="checkbox"/> Bio / <input checked="" type="checkbox"/> Chem	Water Depth _____	Penetration <u>18</u>	RPD _____	
Sediment (density, color, type): <u>Brown silt</u>					
Sediment Odor (type and magnitude): _____					
Biological (flora and fauna): <u>Macoma</u>					
Sheen <u>Small Sheen Spot</u>			Debris <u>Hose fitting, wood, shell frag</u>		
Comments: <u>Composite</u>					
Deployment: <u>H</u>	Time: <u>1549</u>	Northing: _____	Easting: _____		
<input checked="" type="checkbox"/> Accepted / <input type="checkbox"/> Rejected	Bio / Chem	Water Depth _____	Penetration <u>19</u>	RPD _____	
Sediment (density, color, type): <u>Dark Brown Sandy Silt</u>					
Sediment Odor (type and magnitude): _____					
Biological (flora and fauna): <u>Macoma</u>					
Sheen _____			Debris <u>pipe (metal) shell</u>		
Comments: <u>Composite</u>					
Analyses:					

SURFACE SEDIMENT SAMPLE COLLECTION FORM		Sample No. <u>AB-5</u>
		Project Name: <u>Locaned West Seattle</u>
		Project No.: <u>106-8945</u>
Date: <u>5/13/09</u>	Time: <u>1610</u>	Sampled by: <u>LC</u>
Equipment: <u>Power Grab</u>		Checked by: _____
Location Description: <u>AB</u>		
Deployment: <u>I</u>	Time: <u>1600</u>	Northing: _____ Easting: _____
<input checked="" type="checkbox"/> Accepted / <input type="checkbox"/> Rejected	<input checked="" type="checkbox"/> Bio / <input type="checkbox"/> Chem	Water Depth _____ Penetration <u>10</u> RPD _____
Sediment (density, color, type): <u>D. Brown Silt (Sand)</u>		
Sediment Odor (type and magnitude): _____		
Biological (flora and fauna): <u>Macoma</u>		
Sheen <u>small spur spot</u>	Debris <u>Rubber hose, PVC pipe, shells</u>	
Comments: <u>Composite</u>		
Deployment: <u>J</u>	Time: <u>1620</u>	Northing: _____ Easting: _____
<input checked="" type="checkbox"/> Accepted / <input type="checkbox"/> Rejected	<input checked="" type="checkbox"/> Bio / <input type="checkbox"/> Chem	Water Depth _____ Penetration <u>16</u> RPD _____
Sediment (density, color, type): <u>Dark Brown Sander Silt</u>		
Sediment Odor (type and magnitude): _____		
Biological (flora and fauna): <u>Macoma, gull</u>		
Sheen <u>Small Spot</u>	Debris <u>Gull</u>	
Comments: <u>Composite</u>		
Deployment: <u>K</u>	Time: <u>1630</u>	Northing: _____ Easting: _____
<input checked="" type="checkbox"/> Accepted / <input type="checkbox"/> Rejected	<input checked="" type="checkbox"/> Bio / <input type="checkbox"/> Chem	Water Depth _____ Penetration <u>20</u> RPD _____
Sediment (density, color, type): <u>Dark Brown Silt</u>		
Sediment Odor (type and magnitude): _____		
Biological (flora and fauna): <u>Macoma</u>		
Sheen _____	Debris <u>Shell hash</u>	
Comments: <u>Composite</u>		
<u>Macoma = 5-4g</u>		
Deployment: _____	Time: _____	Northing: _____ Easting: _____
<input type="checkbox"/> Accepted / <input type="checkbox"/> Rejected	<input type="checkbox"/> Bio / <input type="checkbox"/> Chem	Water Depth _____ Penetration _____ RPD _____
Sediment (density, color, type): _____		
Sediment Odor (type and magnitude): _____		
Biological (flora and fauna): _____		
Sheen _____	Debris _____	
Comments: _____		

Clam Reconnaissance Tissue Sampling of Lockheed West

Tissue Sample ID: 5A-C
 Sediment Sample ID: 5A-S
 Date/Time: 5/13/08 @ 1325
 Date/Time: 5/13/08 @ 1325
 Sampler: PC
 Sampler: PC

Area: 5
 Location: A

	# Clams in 0.2 m ² Grab Sampler					Total	Est. # 2 M ² (Total X 2)	Total Wet Wt (w/ Shell)	Est. Tib. Wt (0.5 X Wet Wt X 2)	≥ 20 g Tissue Wt? (Y/N)
	Grab 1	Grab 2	Grab 3	Grab 4	Grab 5					
Northing:										
Easting:										
Macoma Sp.	39.9g (5)	10.6g (3)	2.0g (2)	0.7g (1)	42.2g (3)					
Other (Specify)		6 clams	3							
Other (Specify)										
Other (Specify)										
Other (Specify)										
Substrate:										
Odor:										
Debris:										
Penetration:										
Northing:										
Easting:										
Macoma Sp.	0	21.0g (4)	9.1g (5)	6.4g (2)	15.3g (3)	47.1g (8)				
Other (Specify)										
Other (Specify)										
Other (Specify)										
Other (Specify)										
Substrate:										
Odor:										
Debris:										
Penetration:										

Tissue Analyses: 01325 Sediment Analyses: 01325 (3 Yrs)

Boydston

Boydston

SURFACE SEDIMENT SAMPLE COLLECTION FORM		Sample No. <u>5A-S / 5A-C</u>
Date: <u>5/13/08</u> Time: <u>1020</u> Sampled by: <u>ec</u> Checked by: _____		Project Name: <u>Lockwood West Seattle</u>
Equipment: <u>Power Grab</u>		Project No.: <u>106-8945</u>
Location Description: <u>5A</u>		
Deployment: <u>A</u> Time: <u>1020</u> Northing: _____ Easting: _____	Accepted / <input checked="" type="checkbox"/> Rejected	<input checked="" type="checkbox"/> Bio / Chem Water Depth _____ Penetration <u>100</u> RPD _____
Sediment (density, color, type): _____		
Sediment Odor (type and magnitude): _____		
Biological (flora and fauna): _____		
Sheen — <u>On water large</u> Debris _____		
Comments: _____		
Deployment: <u>B</u> Time: _____ Northing: _____ Easting: _____	Accepted / <input checked="" type="checkbox"/> Rejected	<input checked="" type="checkbox"/> Bio / Chem Water Depth _____ Penetration <u>100</u> RPD _____
Sediment (density, color, type): _____		
Sediment Odor (type and magnitude): _____		
Biological (flora and fauna): _____		
Sheen — <u>On water</u> Debris _____		
Comments: _____		
Deployment: <u>C</u> Time: _____ Northing: _____ Easting: _____	Accepted / <input checked="" type="checkbox"/> Rejected	<input type="checkbox"/> Bio / Chem Water Depth _____ Penetration <u>100</u> RPD _____
Sediment (density, color, type): _____		
Sediment Odor (type and magnitude): _____		
Biological (flora and fauna): <u>Anomy</u>		
Sheen _____ Debris <u>Plastic lid, wood debris</u>		
Comments: _____		
Deployment: <u>D</u> Time: <u>1037</u> Northing: _____ Easting: _____	<input checked="" type="checkbox"/> Accepted / Rejected	<input type="checkbox"/> Bio / Chem Water Depth _____ Penetration <u>100</u> RPD _____
Sediment (density, color, type): _____		
Sediment Odor (type and magnitude): _____		
Biological (flora and fauna): <u>Mussel clams</u>		
Sheen _____ Debris _____		
Comments: <u>Composite</u>		

SURFACE SEDIMENT SAMPLE COLLECTION FORM		Sample No. <u>5A-S</u>	
<i>continued</i>		Project Name: <u>Lockwood</u>	
		Project No.: <u>106-8945</u>	
Deployment: <u>E</u>	Time: <u>1059</u>	Northing: _____	Easting: _____
<u>Accepted</u> / Rejected	<u>Bio / Chem</u>	Water Depth _____	Penetration <u>20</u> RPD _____
Sediment (density, color, type): _____			
Sediment Odor (type and magnitude): _____			
Biological (flora and fauna): <u>Macoma, Worm</u>			
Sheen _____	Debris <u>Wood, Shells</u>		
Comments: <u>Composite</u>			
<hr/>			
Deployment: <u>F</u>	Time: <u>1111</u>	Northing: _____	Easting: _____
<u>Accepted</u> / Rejected	<u>Bio / Chem</u>	Water Depth _____	Penetration <u>16</u> RPD _____
Sediment (density, color, type): <u>Brown silt</u>			
Sediment Odor (type and magnitude): <u>1</u>			
Biological (flora and fauna): <u>Macoma</u>			
Sheen <u>Sheen on water</u>	Debris <u>Wood in Grab</u>		
Comments: <u>Composite</u>			
<hr/>			
Deployment: <u>G</u>	Time: <u>1119</u>	Northing: _____	Easting: _____
<u>Accepted</u> / Rejected	<u>Bio / Chem</u>	Water Depth _____	Penetration _____ RPD _____
Sediment (density, color, type): _____			
Sediment Odor (type and magnitude): _____			
Biological (flora and fauna): _____			
Sheen _____	Debris _____		
Comments: <u>Composite</u>			
<hr/>			
Deployment: <u>H</u>	Time: <u>1129</u>	Northing: _____	Easting: _____
<u>Accepted</u> / Rejected	<u>Bio / Chem</u>	Water Depth _____	Penetration <u>18</u> RPD _____
Sediment (density, color, type): _____			
Sediment Odor (type and magnitude): _____			
Biological (flora and fauna): <u>Macomella</u>			
Sheen _____	Debris _____		
Comments: <u>Composite</u>			
<hr/>			
Analyses:			

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SURFACE SEDIMENT SAMPLE COLLECTION FORM		Sample No. <u>5A-S / 5A C</u>
		Project Name: <u>Lockheed</u>
		Project No.: <u>106-8945</u>
Date: <u>5/13</u>	Time: <u>1145</u>	Sampled by: <u>KC</u> Checked by: _____
Equipment: <u>PowerGrab</u>		
Location Description: <u>5A</u>		
Deployment: <u>I</u>	Time: <u>1143</u>	Northing: _____ Easting: _____
<input checked="" type="checkbox"/> Accepted / <input type="checkbox"/> Rejected	Bio / Chem _____	Water Depth _____ Penetration <u>19</u> RPD _____
Sediment (density, color, type): _____		
Sediment Odor (type and magnitude): _____		
Biological (flora and fauna): <u>Macoma</u>		
Sheen _____	Debris <u>Shell Frag, Plastic, Wood,</u>	
Comments: <u>Composite</u>		
Deployment: <u>J</u>	Time: <u>1156</u>	Northing: _____ Easting: _____
<input checked="" type="checkbox"/> Accepted / <input checked="" type="checkbox"/> Rejected	Bio / Chem _____	Water Depth _____ Penetration <u>15</u> RPD _____
Sediment (density, color, type): _____		
Sediment Odor (type and magnitude): _____		
Biological (flora and fauna): <u>Shrimps, No macoma</u>		
Sheen _____	Debris _____	
Comments: <u>No macoma - Processed</u>		
Deployment: <u>K</u>	Time: <u>1210</u>	Northing: _____ Easting: _____
<input checked="" type="checkbox"/> Accepted / <input checked="" type="checkbox"/> Rejected	Bio / Chem _____	Water Depth _____ Penetration <u>21</u> RPD _____
Sediment (density, color, type): _____		
Sediment Odor (type and magnitude): _____		
Biological (flora and fauna): <u>Macoma, Crab</u>		
Sheen _____	Debris <u>Wood, plastic, shell</u>	
Comments: <u>Composite</u>		
Deployment: <u>L</u>	Time: <u>1232</u>	Northing: _____ Easting: _____
<input checked="" type="checkbox"/> Accepted / <input type="checkbox"/> Rejected	Bio / Chem _____	Water Depth _____ Penetration <u>19</u> RPD _____
Sediment (density, color, type): _____		
Sediment Odor (type and magnitude): _____		
Biological (flora and fauna): <u>Nereis</u>		
Sheen <u>Trace Heavy Green</u>	Debris <u>Wood, metal, shell, aluminum</u>	
Comments: <u>Collect only 1 core for composite</u>		

5

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8

SURFACE SEDIMENT SAMPLE COLLECTION FORM

continued

Sample No. 5A-S

Project Name: Lockheed

Project No.: 106-8945

Deployment: M Time: 1248 Northing: _____ Easting: _____

Accepted / Rejected Bio / Chem Water Depth _____ Penetration 11 RPD _____

Sediment (density, color, type): _____

Sediment Odor (type and magnitude): _____

Biological (flora and fauna): Macoma

Sheen _____ Debris Wood, rocks, shells

Comments: Composite

9

Deployment: N Time: 1255 Northing: _____ Easting: _____

Accepted / Rejected Bio / Chem Water Depth _____ Penetration 19 RPD _____

Sediment (density, color, type): _____

Sediment Odor (type and magnitude): _____

Biological (flora and fauna): Macoma, kelp

Sheen _____ Debris Shells, wood, plastic, metal

Comments: Composite

10

Deployment: _____ Time: _____ Northing: _____ Easting: _____

Accepted / Rejected Bio / Chem Water Depth _____ Penetration _____ RPD _____

Sediment (density, color, type): _____

Sediment Odor (type and magnitude): _____

Biological (flora and fauna): _____

Sheen _____ Debris _____

Comments: _____

Deployment: _____ Time: _____ Northing: _____ Easting: _____

Accepted / Rejected Bio / Chem Water Depth _____ Penetration _____ RPD _____

Sediment (density, color, type): _____

Sediment Odor (type and magnitude): _____

Biological (flora and fauna): _____

Sheen _____ Debris _____

Comments: _____

Analyses: _____

APPENDIX B.3
CHAIN-OF-CUSTODY FORMS



CHAIN OF CUSTODY

1317 South 13th Ave. • Kelso, WA 98626 • (360) 577-7222 • (800) 695-7222x07 • FAX (360) 636-1068

SR#: 10803139

PAGE 1 OF 1 COC #

PROJECT NAME LOCKHEED WEST	PROJECT NUMBER 106-8945	PROJECT MANAGER GARY BROWN	COMPANY/ADDRESS TECH TECH EC, INC.	CITY/STATE/ZIP BOHELL, WA 98011	E-MAIL ADDRESS KATRINA.CONIEN@TECEC.COM	PHONE # 425-483-7808	FAX # 425-482-7652	NUMBER OF CONTAINERS
SAMPLER'S SIGNATURE <i>[Signature]</i>								

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	REMARKS
AI-IT	4-8-08	1400	Sed	3	X
AI-IT	4-8-08	1400	Toss	4	X
<i>[Large diagonal line across the remaining rows]</i>					

REPORT REQUIREMENTS I. Routine Report: Method Blank, Surrogate, as required II. Report Dup., MS, MSD as required III. Data Validation Report (includes all raw data) IV. CLP Deliverable Report V. EDD	INVOICE INFORMATION P.O. # _____ Bill To: Mary Diesel Tech Tech Div
TURNAROUND REQUIREMENTS 24 hr. _____ 48 hr. _____ 5 Day _____ <input checked="" type="checkbox"/> Standard (10-15 working days) Provide FAX Results _____ Requested Report Date _____	
SPECIAL INSTRUCTIONS/COMMENTS: * CALL W/ TISSUE WEIGHT BEFORE ANALYSIS * 8270LL - PAHs ONLY * 90 LIPIDS - RUN FOR ORGANIC ANALYSIS	

REPORT REQUIREMENTS I. Routine Report: Method Blank, Surrogate, as required II. Report Dup., MS, MSD as required III. Data Validation Report (includes all raw data) IV. CLP Deliverable Report V. EDD	INVOICE INFORMATION P.O. # _____ Bill To: Mary Diesel Tech Tech Div	INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER: _____ (CIRCLE ONE) SPECIAL INSTRUCTIONS/COMMENTS: * CALL W/ TISSUE WEIGHT BEFORE ANALYSIS * 8270LL - PAHs ONLY * 90 LIPIDS - RUN FOR ORGANIC ANALYSIS
RELINQUISHED BY: Signature: <i>[Signature]</i> Printed Name: KATRINA CONIEN Date/Time: 4/10/08/1411 Firm: TECH TECH EC, INC.	RECEIVED BY: Signature: <i>[Signature]</i> Printed Name: _____ Date/Time: _____ Firm: _____	RELINQUISHED BY: Signature: _____ Printed Name: _____ Date/Time: _____ Firm: _____
RECEIVED BY: Signature: _____ Printed Name: _____ Date/Time: _____ Firm: _____	RECEIVED BY: Signature: _____ Printed Name: _____ Date/Time: _____ Firm: _____	RECEIVED BY: Signature: _____ Printed Name: _____ Date/Time: _____ Firm: _____

CHAIN OF CUSTODY



1317 South 13th Ave. • Kelso, WA 98626 • (360) 577-7222 • (800) 695-7222x07 • FAX (360) 636-1068

SR#: K0804288

PAGE 1 OF 1 COC #

PROJECT NAME: LOCKHEED WEST SEATTLE
 PROJECT NUMBER: 106-8945
 PROJECT MANAGER: GARY BRANA
 COMPANY ADDRESS: 19805 NorthCreek Parkway
 CITY/STATE/ZIP: BORWELL, WA 98011
 E-MAIL ADDRESS: KATRINA.CONNOR@TECH.COM
 PHONE # 425-482-7808 FAX # 425-482-7652
 SAMPLER'S SIGNATURE: [Signature]

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	REMARKS
5A-S	5/13/08	1325	S	S	3	Hold/Archive
5A-C	5/13/08	1325	T	T	1	Hold - Find Weight
4B-S	5/13/08	1700	S	S	3	Hold/Archive
4B-C	5/13/08	1700	T	T	1	Hold - Find Weight
3A-S	5/14/08	1410	S	S	3	Hold/Archive
3A-C	5/14/08	1410	T	T	1	Hold/Archive
3D-S	5/14/08	1415	S	S	3	Hold - Find Weight
3D-C	5/14/08	1415	T	T	1	Hold/Archive
4B-S	5/14/08	1415	W	W	4	Hold/Archive

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

INVOICE INFORMATION
 P.O. # _____
 Bill To: Tetra Tech Div.
Attn: Mary Diesel

TURNAROUND REQUIREMENTS
 24 hr. _____ 48 hr. _____
 5 Day _____
 Standard (10-15 working days)
 Provide FAX Results _____
 Requested Report Date: _____

REQUIREMENTS
 Circle which metals are to be analyzed:
 Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Ni K Ag Na Se Sr Ti Sn V Zn Hg
 Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Ni K Ag Na Se Sr Ti Sn V Zn Hg
 *INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER: _____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:
 • 8270LL - PAHs ONLY
 • Run 0p lipids
 • Tissue Samples = Hold after mass found
 • Sediment Samples: Hold/Archive

RELINQUISHED BY:
 Signature: [Signature] Date/Time: 5/15/08 @ 1000
 Printed Name: KATRINA CONNOR Firm: Tetra Tech

RECEIVED BY:
 Signature: [Signature] Date/Time: _____
 Printed Name: _____ Firm: _____

APPENDIX C
DATA VALIDATION REPORTS (ON CD)

APPENDIX D
CHEMISTRY LABORATORY DATA REPORTS
(ON CD)

APPENDIX E
PROJECT DATABASE (ON CD)