STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47775 • Olympia, Washington 98504-7775 • (360) 407-6300

August 18, 2008

To: Oakland Bay Stakeholder Group (Distribution List Attached)

From: Joyce Mercuri, Oakland Bay Project Coordinator

Subject: **CHANGES TO SAMPLING AND ANALYSIS PLAN: OAKLAND BAY SEDIMENT CHARACTERIZATION STUDY**

The Department of Ecology (Ecology) issued a Draft Sampling and Analysis Plan for the Oakland Bay Sediment Characterization Study for public comment in early June, 2008. In response to requests from stakeholders in the Mason County area for better communication from Ecology and opportunity to be more closely involved in the project, Ecology extended the public comment period to August 11, and hosted two stakeholder meetings (July 29 and August 11, 2008). A technical discussion session was also held with a subset of stakeholders to discuss specific details about the sampling design (August 6, 2008).

In response to verbal and written comments received, Ecology decided to make several changes that will be reflected in the final SAP. The changes were presented verbally to the stakeholders at the August 11 meeting. Ecology also made a commitment to stakeholders to provide a written description of the SAP changes to them, prior to issuing the final SAP.

In addition to the changes that we discussed at the stakeholder meetings, there will be language added to the SAP to ensure there is opportunity for the Squaxin Island Tribe to observe samples for artifacts or evidence of cultural resources. Ecology and the Squaxin Island Tribe are currently working out the best approach for this to occur.

As was discussed at the July 29 and August 11 stakeholder meetings, I am providing this memorandum to stakeholders to confirm the changes that Ecology intends to make, and give you an opportunity to review them to be sure they are accurately reflected. A full responsiveness summary explaining how each written comment has been addressed will be available with the final SAP.

Please reply by August 22 if you find these materials do not reflect what we have been discussing at the stakeholder meetings or technical discussion meeting.

1. Revised Objectives
The study objectives were revised and refined to reflect the idea that the objective for studying sediments in Shelton Harbor is to further characterize and prioritize areas for potential cleanup; compared to a different objective for Oakland Bay/Hammersley Inlet to assess the presence of chemicals and woodwaste. The revised study objectives are enclosed with this memorandum.

2. Removed Risk Assessments
At this time, Ecology has removed the Human Health and Ecological Risk Assessments from the study plan. Upon reviewing results of the work conducted under this SAP, Ecology will determine whether a Human Health and/or Ecological Risk Assessment would provide useful information for future efforts in Shelton Harbor/Oakland Bay.

3. Removed Collection and Analysis of Shellfish Tissue
The original study design included collection and analysis of shellfish tissue. The data from the shellfish tissue was intended to be used for the risk assessments. Since the risk assessments are not being conducted, no shellfish tissue samples are needed at this time. The sediment samples that were planned to be collected at the same locations as the tissue samples have also been eliminated. Some new sample locations have been added to 'replace' those locations (see #10 for more detail about new locations).

4. Removed Designation of Background Sample
The sample originally designated as "background" was located close to a stormwater outfall from Highway 3 and was close to a Washington Department of Transportation maintenance yard, therefore was unlikely to represent a true 'natural' background level. Since very little information is known about upper Oakland Bay, it does not make sense at this time to designate a specific sample as 'background'. The sample to be collected in Carr Inlet for the bioassay reference is from a designated 'reference' sediment area, where sediments are known to meet the state Sediment Quality Standards. The chemical and bioassay results from this study will be compared to the Carr Inlet sediment quality to evaluate whether the levels are elevated above Puget Sound "background". Also, results from the Oakland Bay samples will be evaluated to determine whether the values represent a 'background' value for the area.

6. Show Location of Reference Sediment Station in Carr Inlet
Figure 4-5 will be revised to show the specific area of Carr Inlet where reference sediment samples are obtained. For a description of the Puget Sound reference sample locations, refer to http://www.ecy.wa.gov/biblio/0609096.html.

7. Add Shellfish Closure/Approval Lines to Oakland Bay Figure 4-4
There was a request at the technical discussion meeting to show the shellfish classification lines on the Oakland Bay sampling map. The lines showing the areas that are conditionally approved, restricted and prohibited will be added to the map.

8. Added Bioassays for Surface Woodwaste Samples

The draft SAP included bioassays from sediments from beneath the accumulations of woodwaste at six of the 13 woodwaste locations. Ecology determined it will be more useful at this stage of the work in Oakland Bay to obtain bioassays of the surface woodwaste at all woodwaste sample locations, to better define areas that may need to be cleaned up.

9. Revise Bioassay Language from Section 2.1

The second paragraph of Section 2.1 (Previous Investigations) provides an overview of the Sediment Management Standards (SMS). This paragraph will be revised to clarify that conducting of bioassays is not dependent upon failing the Sediment Quality Standards (SQS), as is currently stated. Bioassays may be used to confirm toxicity of sediments whether the chemical results pass or fail the SQS, and bioassay testing may be conducted in cases where there is not a specific chemical standard in the SMS.

10. Revisions to Sample Locations (Maps Enclosed)

Shelton Harbor:

- Added three woodwaste sample locations (one each in areas 3, 6, and 7)
- Added four sediment sample locations (one each in areas 1, 9, and east of area 1);
- Moved sample SH-9 to the south
- Eliminated sample former SH-12

The additional locations will build upon existing data from the Reconnaissance Survey of Inner Shelton Harbor Sediments (Ecology, May, 2000), help evaluate whether contaminated sediments are migrating from Shelton Harbor, and begin to delineate areas that may need to be cleaned up. SH-9 was shifted to the south to provide better coverage of the nearshore area and capture possible inputs from historic activities. SH-12 was eliminated because it was very close to SH-22.

Oakland Bay/Hammersley Inlet:

- One sample was added near the mouth of Oakland Bay (next to OB-1), and samples in this area were shifted to a semi-circular pattern to provide a better transect across the mouth of the bay
- The number of samples in the upper bay was reduced from six samples to four samples (combined samples OB-7 and OB-8 into one location to represent extreme upper end of bay, and removed sediment sample that was planned to be co-located with the tissue sample).
- Sample location OB-9 in the upper bay was shifted to the southwest to a deep area which will better represent depositional sediments of the upper bay.
- Two samples were added near OB-2 to provide a transect across that part of the bay and to replace samples that were originally planned to be co-located with tissue samples.
- Sample OB-5 was eliminated because of the extreme disturbances and prior excavations in this area.

- Sample OB-22 was shifted slightly to the north to capture a reported area where logs were rafted in the past.
- Sample OB-3 was shifted slightly to the west to better capture circulation through this area.

In addition to the specific changes to sample locations, Ecology and our contractors were made aware that commercial shellfish beds have been manipulated through harrowing and addition of gravel from offsite sources. Care will be taken to provide accurate logs of the sediment cores in these areas to assist with interpreting study results.

Enclosures:
Oakland Bay Sediment Study Objectives
Distribution List
Shelton Harbor Sediment Sample Map
Oakland Bay Sediment Sample Map

OAKLAND BAY SEDIMENT CHARACTERIZATION STUDY
Section 2.2: REVISED STUDY OBJECTIVES

1. In Shelton Harbor, conduct a sampling and analysis effort based on previous investigations and existing data gaps to further characterize and prioritize areas for potential cleanup. This will be conducted through 1) determination of contaminant concentration trends across the Harbor, 2) sampling near known and suspected sources of contaminants, 3) evaluation of the distribution of wood waste through cores and chemical analysis, and 4) determination of the biological effects through toxicity testing in surface sample locations.

2. In Oakland Bay, conduct a sampling and analysis effort to assess presence of contaminants and wood waste. Chemical analysis of sediments, wood waste characterization through coring and chemical analysis, and toxicity testing to evaluate biological effects will be performed

3. Evaluate potential for transport of contaminated sediments and wood waste out of Shelton Harbor into Oakland Bay and Hammersly Inlet

4. Conduct a geophysical survey to determine the distribution of wood waste across Shelton Harbor and Oakland Bay for mapping and determining volume estimates.

5. Characterize horizontal and vertical extent of contamination in sediment across Shelton Harbor for effects from known and suspected sources, and characterize potential transport into Oakland Bay. Characterize Oakland Bay sediment for effects from tidal flushing, creek inputs, and potential near-shore use of hazardous substances.

6. Characterize wood waste using chemical and toxicity testing. In Shelton Harbor, sample locations are associated with a range of wood waste and quantities. In Oakland Bay, sample locations are associated with areas of known rafting and wood waste accumulations.

7. Estimate sedimentation rates in Oakland Bay and Shelton Harbor using radioisotope dating.

8. Conduct bioassays to determine extent of acute and chronic toxicity of sediment at all surface locations in Shelton Harbor and Oakland Bay

9. Conduct a screening-level "fingerprinting" evaluation of TPH, PAH, and dioxin/furan sediment data to provide a preliminary indication of the usefulness of the analytical data to differentiate between sources of contaminants.

10. Provide chemical and toxicity testing comparisons through analysis of sediments from reference location

Mercuri, Joyce (ECY)

Distribution List Name: Oakland Bay Stakeholders

Members:

Bob Simmons, WSU Extension	simmons@wsu.edu
Bob Woolrich, DOH	Bob.Woolrich@doh.wa.gov
Brad Murphy, Ecology	bmur461@ecy.wa.gov
Brandon Palmer, Port of Shelton	brandonp@portofshelton.com
Charlie Butros, Mason County Public Works	CharlesB@co.mason.wa.us
Christine Clark, Mason Environmental Health	ChrissyC@co.mason.wa.us
Dave McEntee, Simpson	dmcente@simpson.com
Debbie Riley, Mason Environmental Health	dlr@co.mason.wa.us
Dennis McDonald, City of Shelton	dennis@ci.shelton.wa.us
Diane Cooper, Taylor Shellfish	Dianec@taylorshellfish.com
Dick Taylor, Chamber of Commerce	exec@sheltonchamber.org
Donald Schwendiman, Rayonier	donald.schwendiman@rayonier.com
Duane Fagergren, PSP	Duane.fagergren@psp.wa.gov
Elmer Diaz, DOH	elmer.diaz@doh.wa.gov
Emily Sanford, WSU Extension	elpiper@wsu.edu
Emmett Dobey, Shelton Public Works	EmmettD@co.mason.wa.us
Heather Trim, People for Puget Sound	htrim@pugetsound.org
Janice Snoey	jsnoey@earthlink.net
Jason Ragan, Taylor Shellfish	JasonR@taylorshellfish.com
Jay Ebbeson, City of Shelton	Jebbeson@ci.shelton.wa.us
Jeff Dickison, Squaxin Tribe	jdickison@squaxin.nsn.us
John Bolender, Mason CD	Jbolender@masoncd.org
John Konovsky, Squaxin Tribe	jkonovsky@squaxin.nsn.us
John McBride, Manke Lumber	johnm@mankelumber.com
Karin Strelioff, Mason CD	karinls@masoncd.org
Lawrence Sullivan, DOH	Lawrence.Sullivan@doh.wa.gov
Lionel Klikoff, DNR	Lionel.klikoff@dnr.wa.gov
Lydia Wagner, ECY	lbla461@ecy.wa.gov
Matt Matayoshi, Economic Development Council	matt@masonedc.com
Nicole Hill, Cascade Land Conservancy	nicoleh@cascadeland.org
Patti Case, Green Diamond	pcase@greendiamond.com
Patti Miller-Crowley, Port of Shelton	pattimc@portofshelton.com
Robert M. Johnson	BobMJay@msn.com
Robin Downey, PCSGA	robindowney@pcsga.org
Ross Gallagher, Commissioner	RossG@co.mason.wa.us
Shannon Soto, DNR	shannon.soto@dnr.wa.gov
Stephanie Kenny, Mason Environmental Health	smk@co.mason.wa.us
Steve Bloomfield, PCSGA	clampirate@earthlink.net
Stuart Glasoe, DOH	stuart.glasoe@doh.wa.gov
Teri King, UW Sea Grant	guatemal@u.washington.edu
Tracy Farrell, City of Shelton	tracy@ci.shelton.wa.us
Vicki Kirkpatrick, Mason Environmental Health	VickiK@co.mason.wa.us
Warren Snyder, Rayonier	Warren.Snyder@rayonier.com

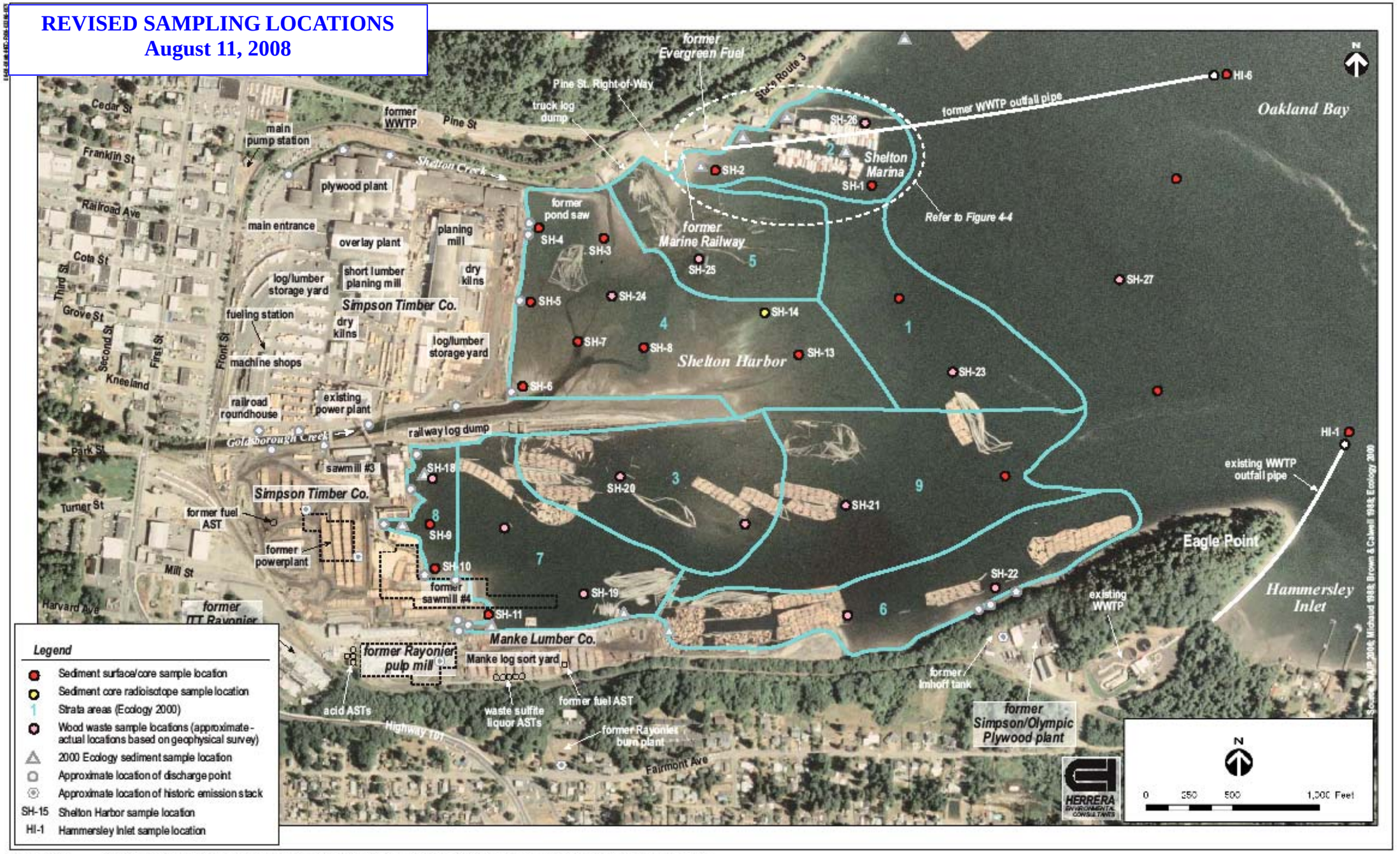

Figure 4-3. Sediment and wood waste sample locations (to be collected) in Shelton Harbor, Shelton, Washington.

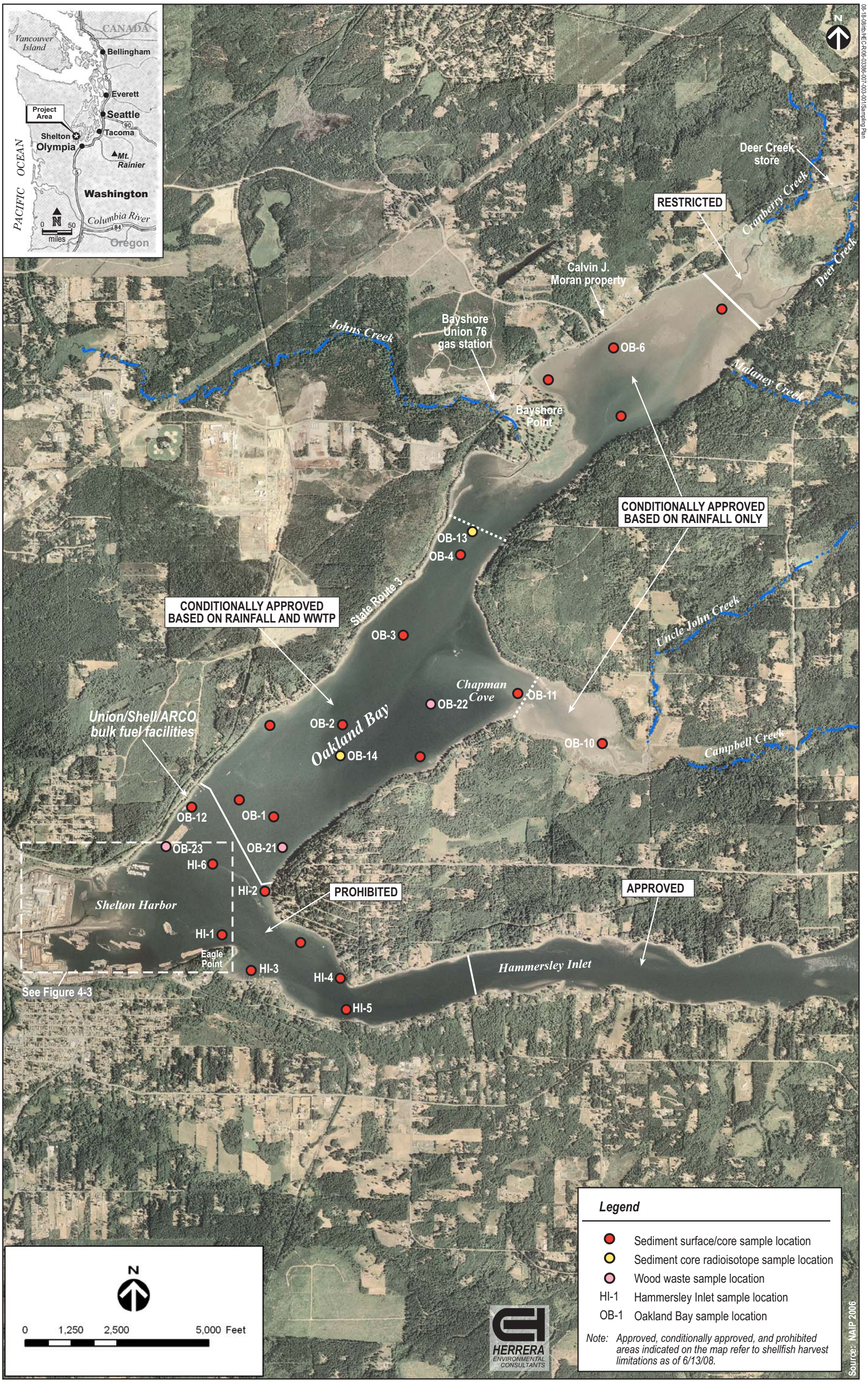

Figure 4-2. Sediment and wood waste sample locations (to be collected) in Oakland Bay and Hammersley Inlet in Mason County, Washington.