

**SECTION 00 01 01  
PROJECT TITLE PAGE  
PORT OF TACOMA  
TACOMA, WASHINGTON  
PIER 4 PHASE 2 RECONFIGURATION**

**PROJECT NO. 091251  
CONTRACT NO. 070136**

**VOLUME 3 OF 3 - PROJECT MANUAL (APPENDICIES)**

**Thais Howard, P.E.  
Director, Engineering**

**Trevor Thornsley  
Sr. Project Manager**

**END OF PROJECT TITLE PAGE**

**APPENDIX A**

**PIER 4 MARINE BUILDING AND  
SUBSTATION REGULATED  
BUILDING MATERIALS  
INSPECTION, DATED JUNE 8,  
2015**





June 8, 2015

Mr. Mark Larsen  
Principal Scientist/Partner  
Anchor QEA, LLC  
720 Olive Way, Suite 1900  
Seattle, Washington 98101

**RE: PIER 4 MARINE BUILDING AND SUBSTATION  
REGULATED BUILDING MATERIALS INSPECTION  
PORT OF TACOMA  
ON CALL ENVIRONMENTAL SUPPORT SERVICES  
PROFESSIONAL SERVICES AGREEMENT NO. 069731 – TASK ORDER 12**

EMB Consulting Project 1283

Dear Mr. Larsen,

This report presents the findings of the regulated building materials inspection conducted by EMB Consulting, LLC for the Port of Tacoma (POT) Pier 4 Marine Building and Substation. The pier and Marine Building will be demolished and the substation will be removed. The inspection was conducted to document the presence and location of regulated building materials to ensure proper handling and disposal. The inspection was conducted by Elisabeth Black, CIH of EMB Consulting under the Anchor QEA contract with the Port of Tacoma (No. 069731 – Task Order 12).

The inspection included asbestos-containing materials (ACM), Universal Wastes, and lead in building materials for disposal for the Marine Building. In addition, the concrete base of an exterior light post was tested for lead and polychlorinated biphenyls (PCBs) in paint. Finally, no samples were collected at the active substation included in the scope of this inspection. Most of the transformers in the substation are the property of Tacoma Public Utilities. EMB Consulting will not collect samples from active electrical equipment for safety reasons and to prevent damage to the equipment. Tacoma Public Utilities will remove the transformers prior to Pier 4 demolition. They also indicated that their transformer boxes do not have a lead paint coating and that all transformers contain less than one percent PCBs.

This report is organized to provide the regulations, methods, and results of the inspection. Figures are attached to provide approximate asbestos sample locations. Tables attached to the report provide a summary of results. Photographs of the inspected materials are also included. Finally, the laboratory analytical data are attached to this report.



## **Regulations**

### Asbestos

The Washington State Department of Labor and Industries Division of Occupational Safety and Health (DOSH) (WAC 296-62 and -155) and the Puget Sound Clean Air Agency (PSCAA, Regulation 3) require that building owners conduct a good faith survey for ACM prior to demolition or renovation activities. The survey must be conducted by a certified asbestos building inspector under the Federal Asbestos Hazard and Emergency Response Act (AHERA, 40 CFR Part 763). Building materials that contain more than one percent asbestos are regulated as ACM and require special handling and disposal if disturbed or removed during project activities.

### Lead in Paint

Prior to 1978, lead-containing pigment was sometimes added to paint. Old lead-based paint is the most significant source of lead exposure in the U.S. today. The Environmental Protection Agency (EPA) defines lead-based paint as paint containing 5,000 parts per million (ppm) of lead or more. That definition is used in this report to determine if painted materials may require special handling to avoid release of lead to the environment or worker exposure.

### PCBs in Paint

The EPA regulates paint containing PCBs at concentrations greater than or equal to 50 parts per million (ppm) as PCB bulk product waste (40 CFR 761.62). PCB bulk product waste means waste derived from manufactured products containing PCBs in a non-liquid state, at any concentration where the concentration at the time of designation for disposal is greater than or equal to 50 ppm PCBs.

### TCLP-Lead

Washington State requires generators of solid waste to determine whether their waste is a dangerous waste for the purpose of proper handling and disposal. For demolition debris-related waste that potentially contains lead, a representative sample(s) of the debris must be analyzed by the Toxicity Characteristic Leaching Procedure (TCLP) analysis in accordance with 40 CFR 261.24. Solid wastes containing leachable lead detected at a concentration of 5 milligrams per liter (mg/L) or higher must be managed and disposed of as a dangerous waste.

### Other Regulated Building Materials

The Washington State Department of Ecology regulates other building materials as Universal Wastes, as specified in WAC 173-303-572, to include fluorescent bulbs, ballasts, and High Intensity Discharge lamps (HID) (e.g., mercury vapor, metal halide, high pressure sodium).

## **Methods**

### Asbestos

EMB Consulting conducted the asbestos inspection of the Pier 4 Marine Building and Substation on May 14, 2015. Samples of suspect materials were collected in the field by Elisabeth Black, CIH, an AHERA-certified Building Inspector (expiration February 18, 2016). A



complete list of the samples collected, sample locations, and results is provided in Table 1 attached to this report. A simple one-line drawing was created for the building to include sample locations. The figures are attached to this report.

EMB Consulting marked each sample location on the site figure with a unique number corresponding to the sample number to identify the material from which the sample was collected. Sample containers were labeled at the time of sample collection with the Sample ID number. The labeled samples were then placed in a larger Ziploc™ type bag and sealed for additional protection during handling and transportation. Samples were recorded on a Chain of Custody for delivery to the laboratory for analysis.

Suspect asbestos samples and chain of custody were hand delivered to NVL Laboratories of Seattle, Washington for analysis. Suspect ACM bulk samples were analyzed using polarized light microscopy (PLM) by the Interim Method for Determination of Asbestos in Bulk Insulation Samples (EPA Method 600/M4 82 020). NVL Laboratories is accredited for asbestos analysis by the National Institute of Standards and Technology (NIST) under the National Voluntary Laboratory Accreditation Program (NVLAP). Materials were considered to be positive for asbestos if they contained more than one percent asbestos.

#### Lead and PCBs in Paint

Paint chip samples were collected from one exterior lamppost to evaluate concentrations of lead and PCBs. The lamppost is located directly south of the Marine Building.

The paint chip sample was analyzed for lead by NVL Laboratories using Flame Atomic Absorption in accordance with EPA Method 7000B. Results are provided in Table 2 of this report.

The paint chip sample was also analyzed for PCBs by NVL Laboratories using Gas Chromatography in accordance with EPA Method SW 8082A. Results are provided in Table 4.

#### TCLP-Lead

EMB Consulting collected one sample for TCLP Lead analysis from the Marine Building. Construction materials sampled for TCLP Lead analysis included gypsum wallboard, carpet, ceiling tile, and cove base. The TCLP Lead sample was hand-delivered to NVL Laboratories in Seattle, Washington, where it was analyzed by TCLP (EPA Method 1311/7000B). Certificates of analysis and laboratory certifications are attached to this report. The results of the TCLP Lead analysis are provided in Table 3.

#### Other Regulated Building Materials

EMB Consulting conducted a visual inventory for other regulated building materials in the Marine Building on Pier 4. The inventory is summarized in Table 5 included with this report.



## Results and Conclusions

### Asbestos

The results of the asbestos survey are summarized in this section. Table 1 provides the analytical results for the 10 suspect asbestos bulk samples collected by EMB Consulting for analysis. Laboratory certificates of analysis and custody forms are attached to this report. No ACM was identified during this inspection.

### Lead and PCBs in Paint

A summary of the paint chip sampling results for lead and PCBs is presented in Tables 2 and 4. Lead was detected at a very low concentration (69 mg/kg), as compared with the EPA criteria for lead in paint of 5,000 mg/kg. PCBs were not identified in the sample at or above the EPA criteria of 50 ppm for PCBs in paint. Based on this limited screening, paint waste from the light post will not be considered PCB bulk product waste during this project.

### TCLP-Lead

Based on the results of the limited survey for leachable lead in building materials, the materials that will be generated by demolition of the Marine Building do not contain leachable lead at detectable levels by the specified laboratory method. The laboratory detection limit is below the regulatory criteria for leachable lead.

### Other Regulated Building Materials

The EMB Consulting inventory documented the following Universal Wastes in the Pier 4 Marine Building:

- 36 fluorescent bulbs
- 18 ballasts
- The thermostats were inspected and do not appear to contain a mercury ampule
- The transformer on the NE wall of the building appears to be a “dry” transformer that does not contain PCBs

If these materials will be removed during the Pier 4 Marine Building and substation demolition project, they will require removal, handling, and disposal as Universal Waste in accordance with WAC 173-303-573(5).



## **Limitations**

Work for this project was performed, and this report prepared, in accordance with generally accepted professional practices for the nature and conditions of the work completed in the same or similar localities at the time the work was performed. It is intended for the exclusive use of Anchor QEA, LLC, the Port of Tacoma, and its contractors for specific application to the referenced property. No other warranty, express or implied, is made.

I appreciate the opportunity to be of service to you. Please contact me if you have questions regarding this report, or if you require additional information.

Sincerely,

A handwritten signature in blue ink, appearing to read 'E. Black'.

Elisabeth Black, CIH  
EMB Consulting LLC

## **Attachments:**

*Figures with Approximate Sample Locations*

*Site Photographs*

*Table 1 – Bulk Asbestos Sample Results, Pier 4 Marine Building, Port of Tacoma, Tacoma, Washington*

*Table 2 – Bulk Paint Results for Lead, Pier 4 Marine Building, Port of Tacoma, Tacoma, Washington*

*Table 3 – TCLP Results for Lead, Pier 4 Marine Building, Port of Tacoma, Tacoma, Washington*

*Table 4 – Bulk Paint Results for PCBs, Pier 4 Marine Building, Port of Tacoma, Tacoma, Washington*

*Table 5 – Universal Waste Inventory, Pier 4 Marine Building, Port of Tacoma, Tacoma, Washington*

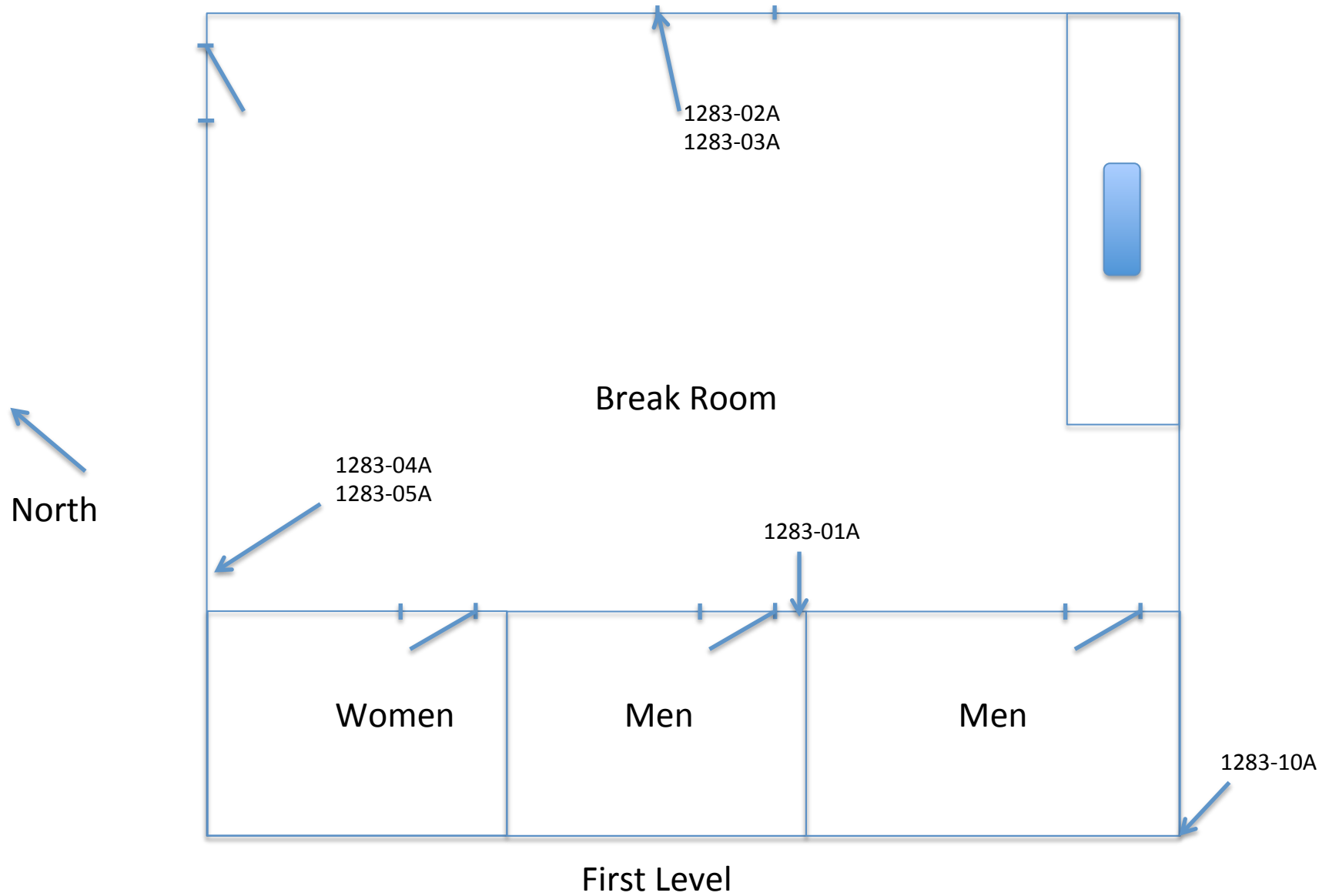
*NVL Laboratories, Bulk Asbestos Fiber Analysis, NVL Batch #1508845, May 21, 2015*

*NVL Laboratories, PCB Results, NVL Batch #1508850, May 20, 2015*

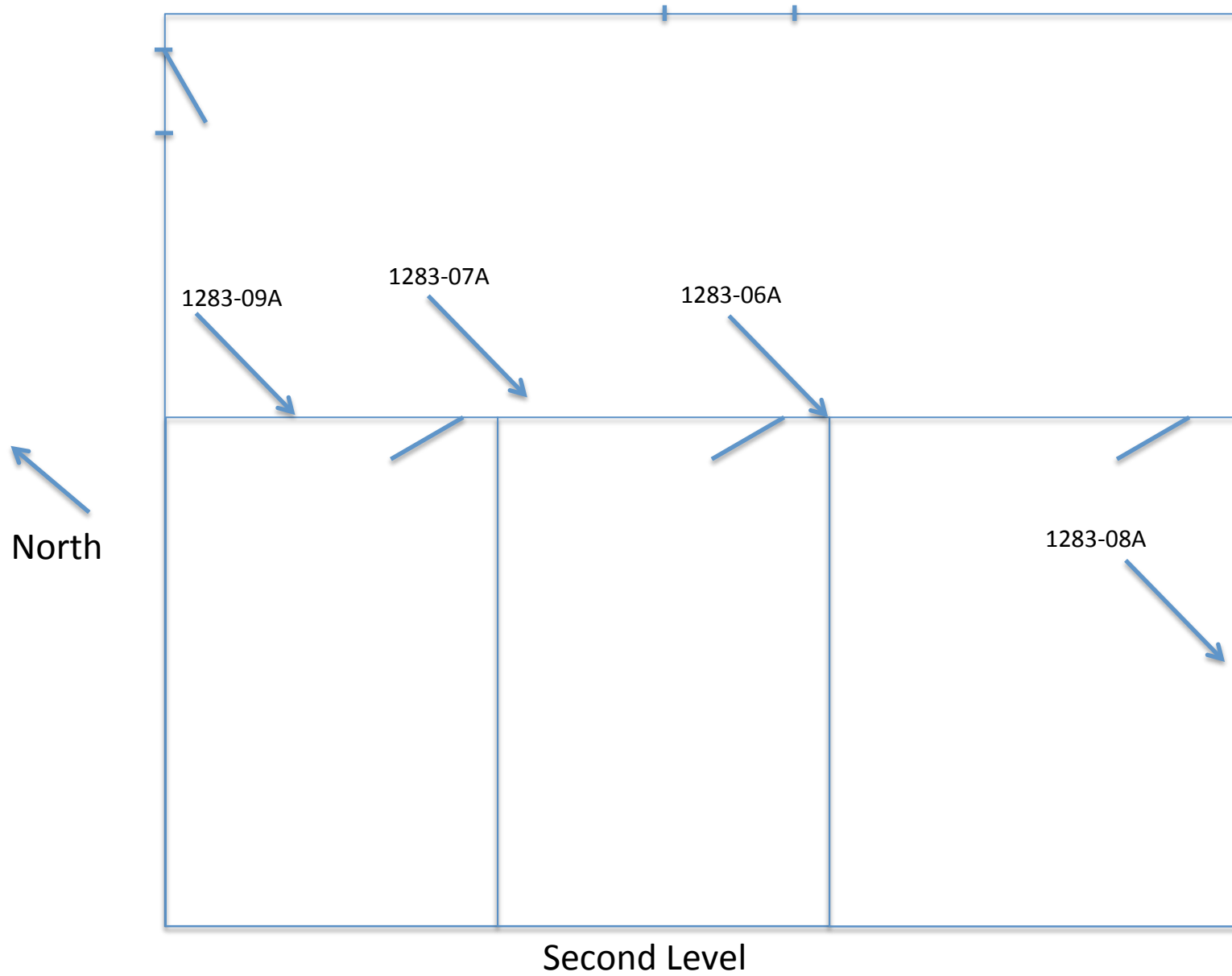
*NVL Laboratories, TCLP Results, NVL Batch #1508852, May 21, 2015*

*NVL Laboratories, Total Lead, NVL Batch #1508853, May 20, 2015*

Marine Building  
Asbestos Sample Locations



Marine Building  
Asbestos Sample Locations





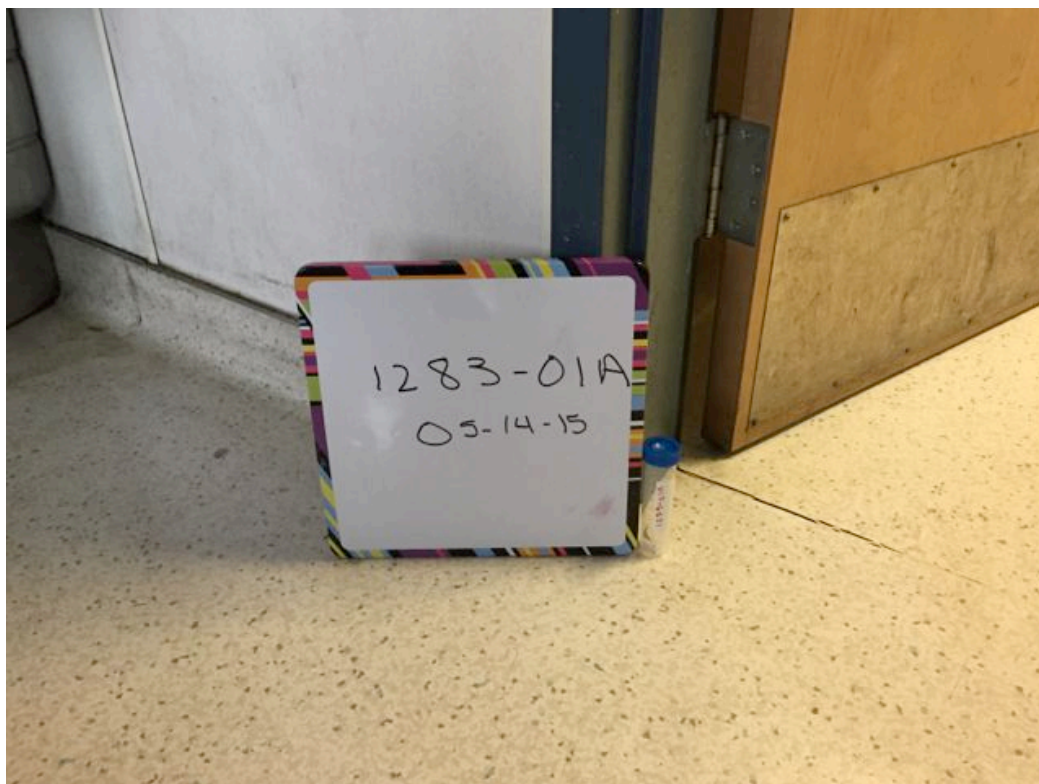


**Photograph 1: Pier 4 Marine Building**

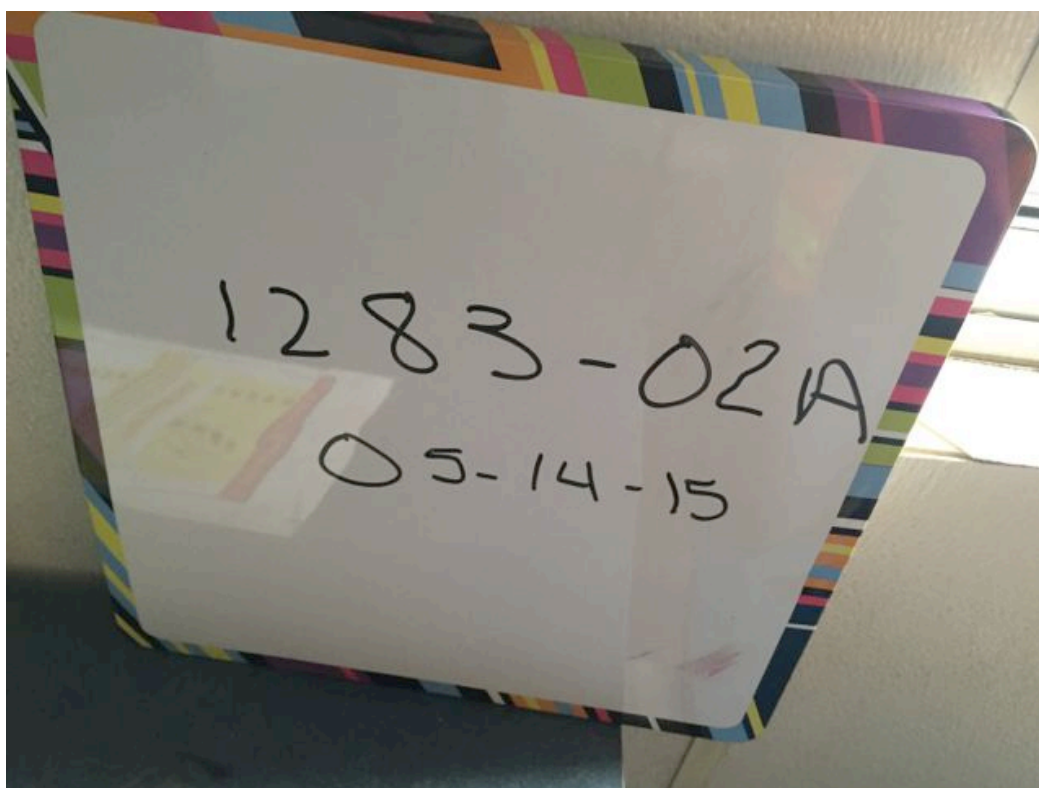


**Photograph 2: Pier 4 Substation**

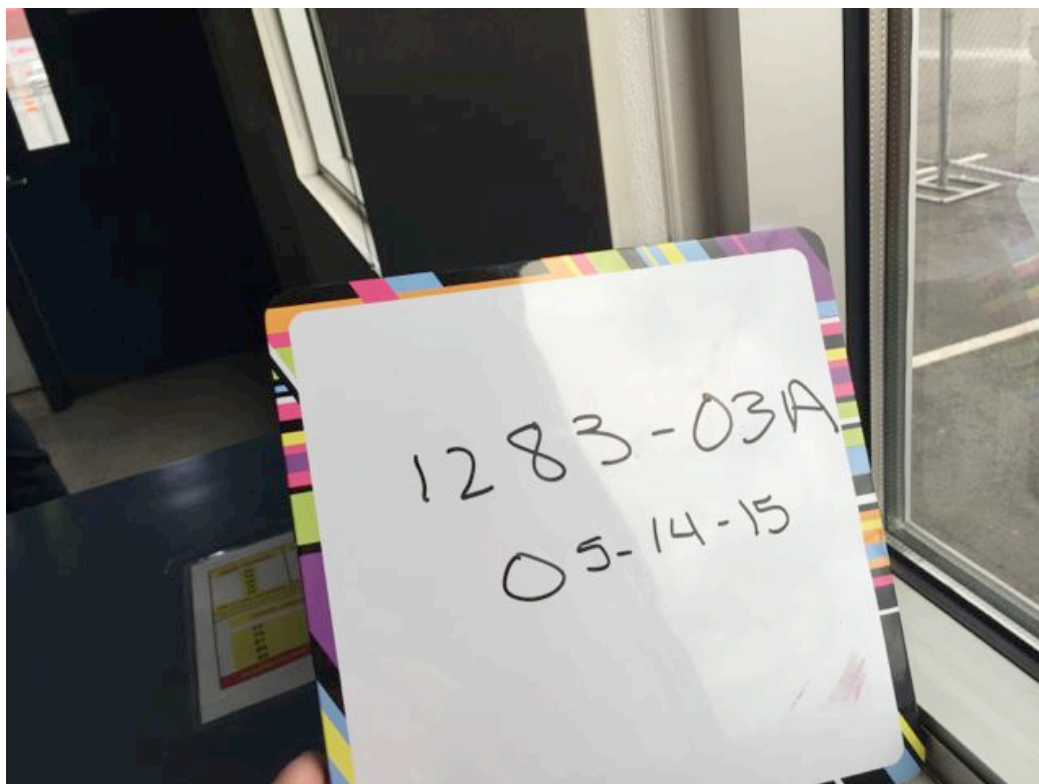




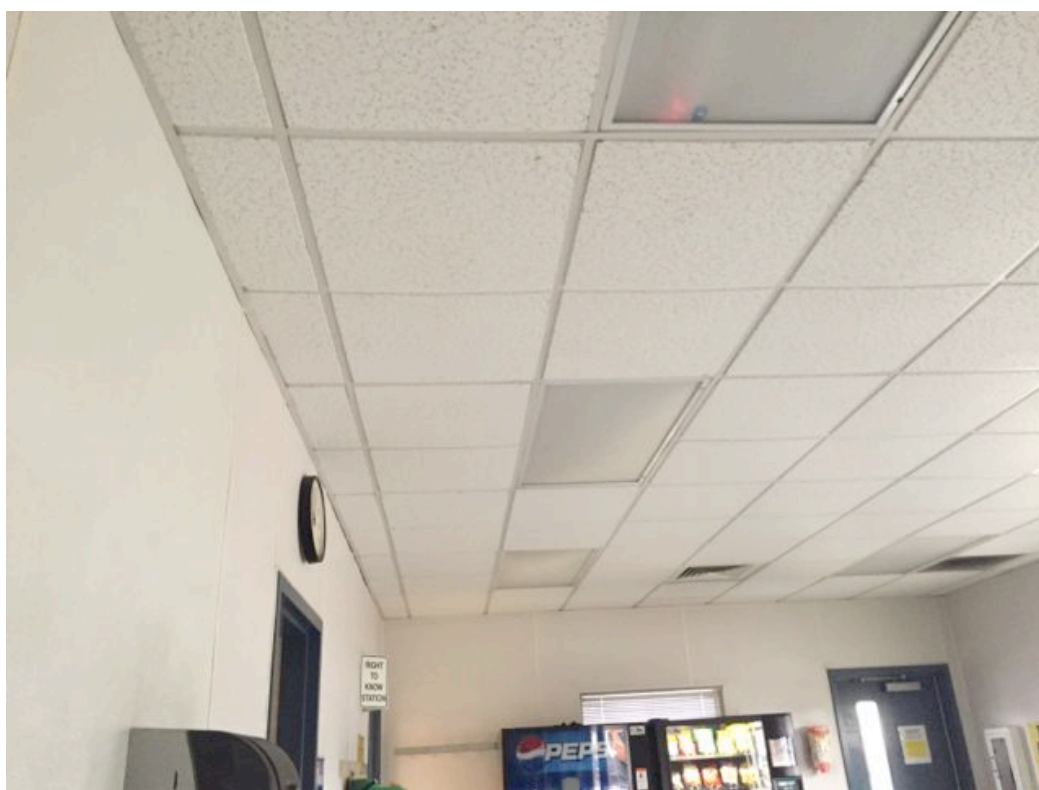
**Photograph 3: Marine Building – Sheet Vinyl (Sample 1283-01A)**



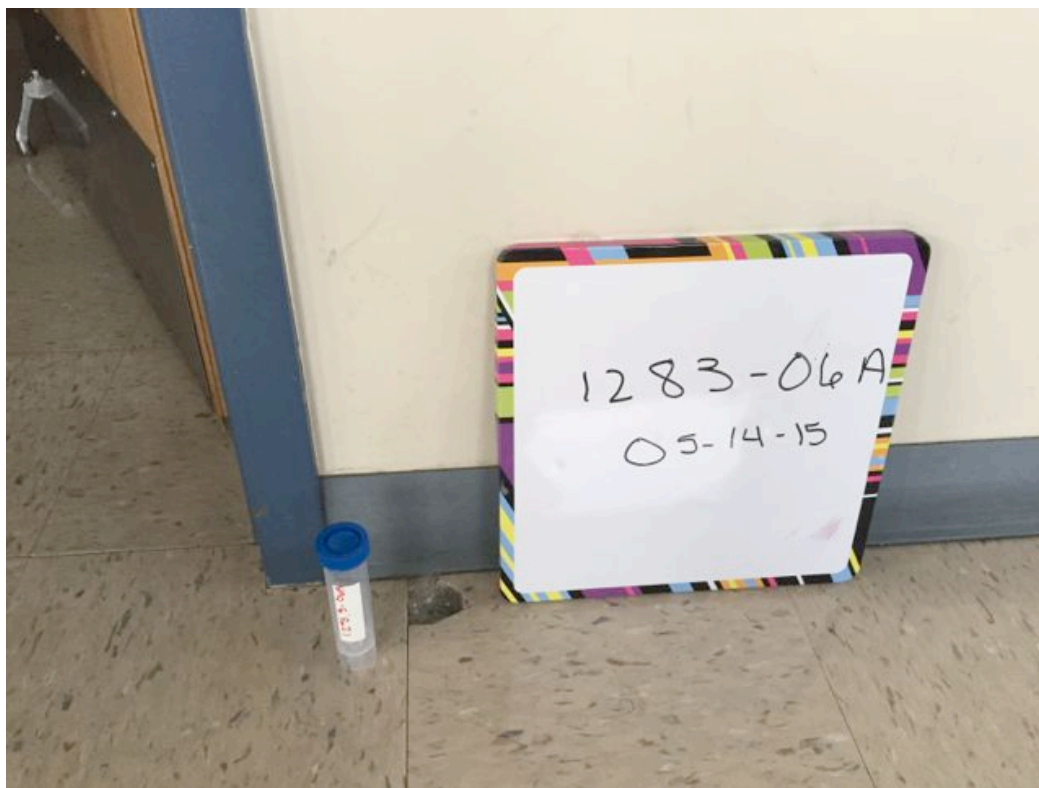
**Photograph 4: Marine Building - Laminate (Sample 1283-02A)**



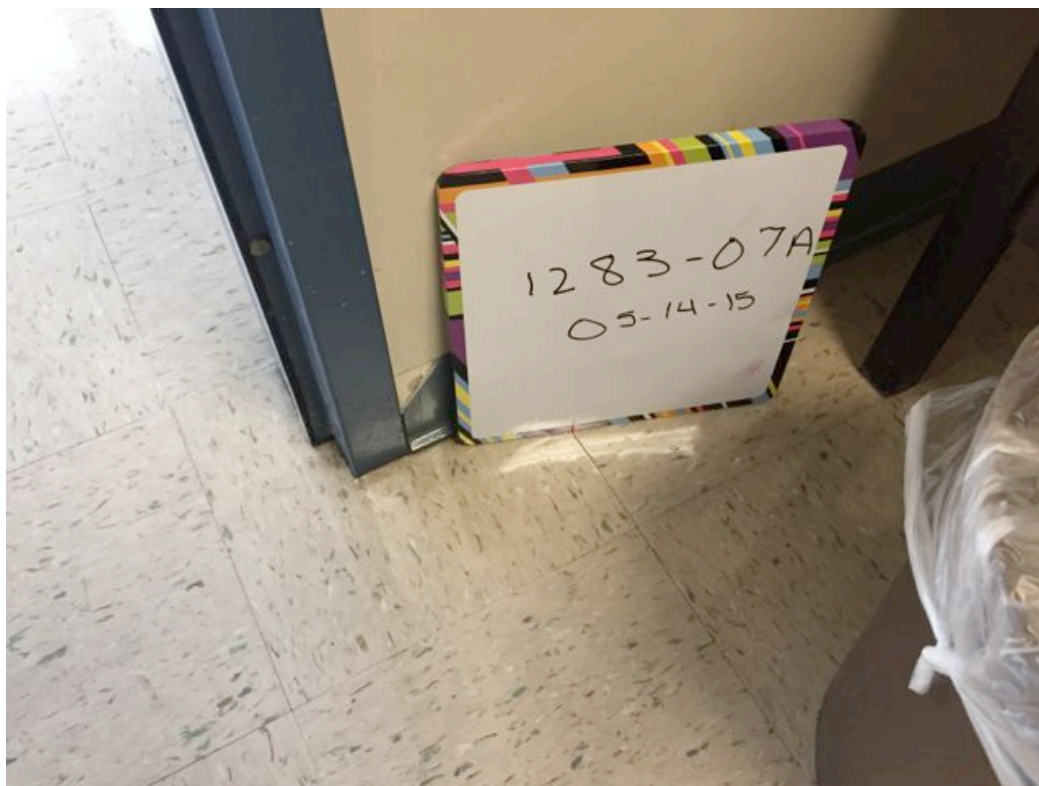
**Photograph 5: Marine Building – Window Sealant (Sample 1283-03A)**



**Photograph 6: Marine Building – Ceiling Tile and Wallboard (Samples 1283-04A and -05A)**

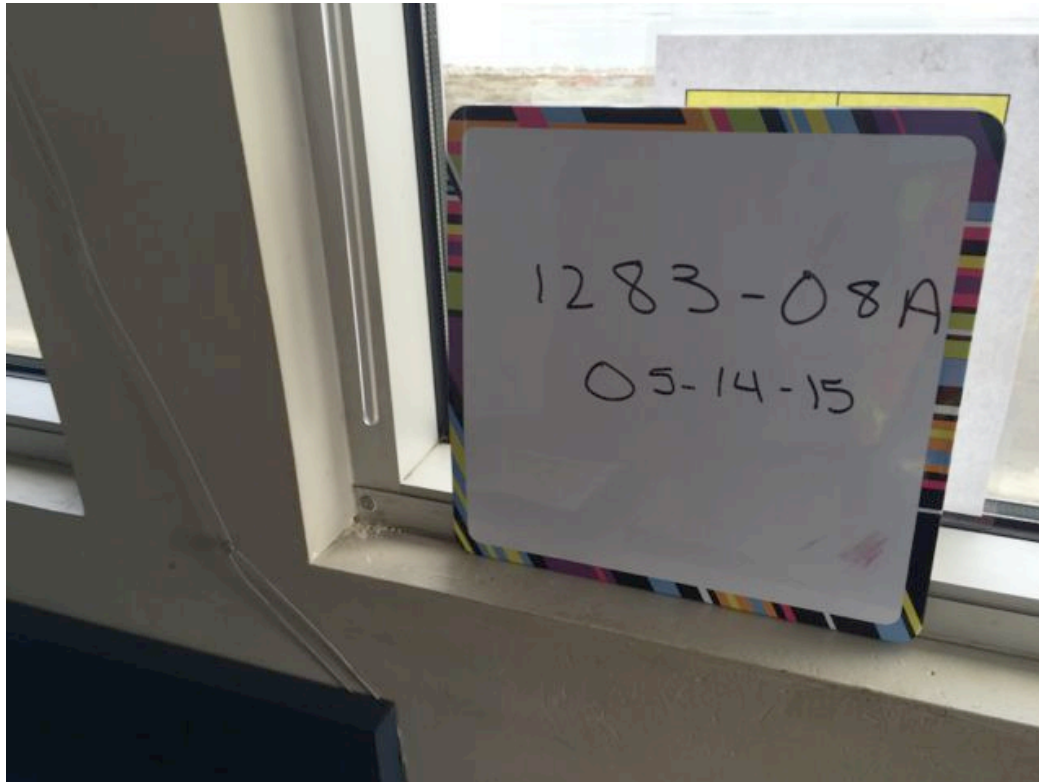


**Photograph 7: Marine Building – Vinyl Floor Tile (Sample 1283-06A)**

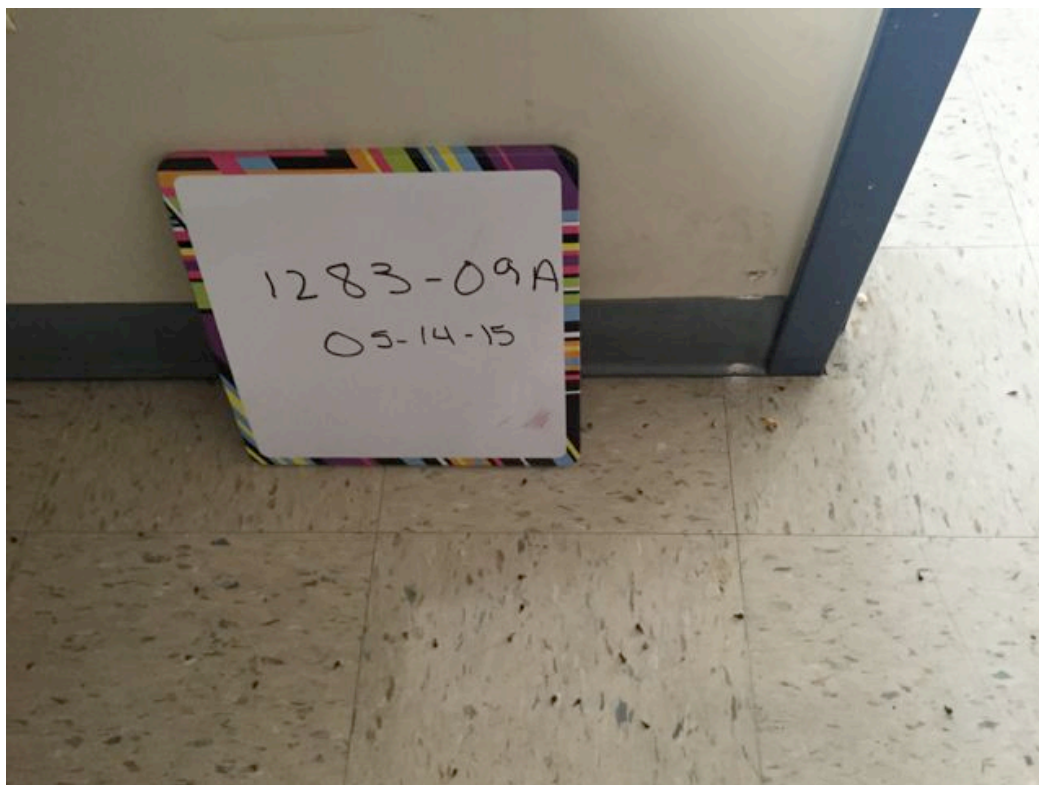


**Photograph 8: Marine Building – Covebase (Sample 1283-07A)**





**Photograph 9: Marine Building – Wallboard (Sample 1283-08A)**



**Photograph 10: Marine Building – Wallboard (Sample 1283-09A)**



**Photograph 11: Marine Building – Exterior Barrier under Metal Siding  
(Sample 1283-10A)**

**Table 1 - Bulk Asbestos Sample Results**  
**Pier 4 Marine Building and Substation**  
**Port of Tacoma**  
**Tacoma, Washington**

Sample ID	Material Description	Location	Asbestos (in Percent)
1283-01A	Sheet Vinyl Flooring L1: vinyl (off-white) L2: paper backing (grey) L3: mastic (grey)	First Level Men's Restroom E corner	L1: ND L2: ND L3: ND
1283-02A	Laminate L1: vinyl (white) L2: mastic (yellow)	First Level NE wall Center window well	L1: ND L2: ND
1283-03A	Window Sealant (black)	First Level NE wall Center window well	ND
1283-04A	Ceiling Tile (grey)	First Level Main Room NW end of ceiling	ND
1283-05A	Wallboard System (white)	First Level Main Room NW end at ceiling	ND
1283-06A	Vinyl Floor Tile L1: mastic (clear) L2: tile (grey)	Second Level Main Room Against SW wall	L1: ND L2: ND
1283-07A	Covebase L1: vinyl (blue) L2: mastic (off-white)	Second Level Main Room Against SW wall	L1: ND L2: ND
1283-08A	Wallboard System (white)	Second Level S Office SE wall	ND
1283-09A	Wallboard System (white)	Second Level Main Room Against SW wall	ND
1283-10A	Siding Barrier (white)	Exterior S corner @ 3' above ground	ND

*ND - Asbestos not detected*

**Table 2 - Bulk Paint Results for Lead**  
**Pier 4 Marine Building and Substation**  
**Port of Tacoma**  
**Tacoma, Washington**

Sample ID	Material Description	Location	Lead (in mg/kg)	EPA Lead-Based Paint Criteria (in mg/kg)
1283-01L	Yellow Paint Light Pole Concrete Base	15' S of Marine Building	69	5,000

*mg/kg - milligrams per kilogram*

**Table 3 - TCLP Results for Lead**  
**Pier 4 Marine Building and Substation**  
**Port of Tacoma**  
**Tacoma, Washington**

Sample ID	Material Description	Lead (in mg/L)	TCLP-Lead Regulatory Limit (in mg/L)
1283-TCLP	Metal Siding Celing Tile Gypsum Wallboard Covebase	<0.5	5

*mg/L - milligrams per liter*



**Table 4 - Bulk Paint Results for PCBs  
Pier 4 Marine Building and Substation  
Port of Tacoma  
Tacoma, Washington**

Sample ID	Material Description	Sample Location	PCB Results by Aroclor (in ppb)		EPA PCB Criteria (in ppb)
1283-01PCB	Yellow Paint	15' S of Marine Building	Aroclor 1016	<1,200	50,000
	Light Pole		Aroclor 1242	<1,200	
	Concrete Base		Aroclor 1248	<1,200	
			Aroclor 1254	<1,200	
			Aroclor 1260	<1,200	
			Aroclor 1221	<1,200	
			Aroclor 1232	<1,200	
				Total PCBs	

*PCBs - Polychlorinated Biphenyls*

*ppb - parts per billion*

*ND - Not detected at or above the laboratory limit of detection*

**Table 5 - Universal Wastes**  
**Pier 4 Marine Building and Substation**  
**Port of Tacoma**  
**Tacoma, Washington**

Material	Quantity
Fluorescent Bulbs	36
Ballasts	18
HID Lamps (exterior)	5

May 21, 2015

Elisabeth Black  
EMB Consulting, LLC  
PO Box 5171  
Lynnwood, WA 98046



Laboratory | Management | Training

**RE: Bulk Asbestos Fiber Analysis; NVL Batch # 1508845.00**

Client Project: 1283  
Location: N-A

Dear Ms. Black,

Enclosed please find test results for the 10 sample(s) submitted to our laboratory for analysis on 5/14/2015.

Examination of these samples was conducted for the presence of identifiable asbestos fibers using polarized light microscopy (PLM) with dispersion staining in accordance with both **EPA 600/M4-82-020**, Interim Method for the Determination of Asbestos in Bulk Insulation Samples and **EPA 600/R-93/116** Method for the Determination of Asbestos in Bulk Building Materials.

For samples containing more than one separable layer of materials, the report will include findings for each layer (labeled Layer 1 and Layer 2, etc. for each individual layer). The asbestos concentration in the sample is determined by calibrated visual estimation.

For those samples with asbestos concentrations between 1 and 10 percent based on visual estimation, the EPA recommends a procedure known as point counting (NESHAPS, 40 CFR Part 61). Point counting is a statistically more accurate means of quantification for samples with low concentrations of asbestos.

The detection limit for the calibrated visual estimation is <1%, 400 point counts is 0.25% and 1000 point counts is 0.1%

Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. Please do not hesitate to call if there is anything further we can assist you with.

Sincerely,

A handwritten signature in black ink, appearing to read "Nick Ly".

Nick Ly, Laboratory Technical Director



Lab Code: 102063-0

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: EMB Consulting, LLC  
Address: PO Box 5171  
Lynnwood, WA 98046

**Attention: Ms. Elisabeth Black**  
Project Location: N-A

**Batch #: 1508845.00**

Client Project #: 1283  
Date Received: 5/14/2015  
Samples Received: 10  
Samples Analyzed: 10  
Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

**Lab ID: 15048999 Client Sample #: 1283-01A**

Location: N-A

<b>Layer 1 of 3</b>	<b>Description:</b> Off-white patterned vinyl	Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
		Vinyl/Binder	None Detected ND	
<b>Layer 2 of 3</b>	<b>Description:</b> Light grey fibrous backing with crumbly yellow mastic	Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
		Mastic/Binder	Cellulose 74%	
			Glass fibers 3%	
<b>Layer 3 of 3</b>	<b>Description:</b> Soft grey crumbly cementitious material	Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
		Cement/Binder, Fine grains	Cellulose 5%	

**Lab ID: 15049000 Client Sample #: 1283-02A**

Location: N-A

<b>Layer 1 of 2</b>	<b>Description:</b> White textured vinyl	Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
		Vinyl/Binder	None Detected ND	
<b>Layer 2 of 2</b>	<b>Description:</b> Hardened yellow mastic	Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
		Mastic/Binder, Miscellaneous particles	Cellulose <1%	

**Lab ID: 15049001 Client Sample #: 1283-03A**

Location: N-A

<b>Layer 1 of 1</b>	<b>Description:</b> Black rubbery material with embedded brown fibers	Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
		Rubber/Binder	Glass fibers 14%	

**Sampled by:** Client

**Analyzed by:** Matt Macfarlane

**Reviewed by:** Nick Ly

**Date:** 05/21/2015

**Date:** 05/21/2015

Nick Ly, Laboratory Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: EMB Consulting, LLC

Address: PO Box 5171

Lynnwood, WA 98046

**Attention: Ms. Elisabeth Black**

Project Location: N-A

**Batch #: 1508845.00**

Client Project #: 1283

Date Received: 5/14/2015

Samples Received: 10

Samples Analyzed: 10

Method: EPA/600/R-93/116

& EPA/600/M4-82-020

**Lab ID: 15049002 Client Sample #: 1283-04A**

Location: N-A

**Layer 1 of 1 Description:** Compressed grey fibrous material with paint

Non-Fibrous Materials:	Other Fibrous Materials:%
Binder/Filler, Paint, Perlite	Cellulose 78%
Calcareous particles	Glass fibers 6%

**Asbestos Type: %**  
**None Detected ND**

**Lab ID: 15049003 Client Sample #: 1283-05A**

Location: N-A

**Layer 1 of 1 Description:** White chalky material with paper

Non-Fibrous Materials:	Other Fibrous Materials:%
Gypsum/Binder	Cellulose 12%
	Glass fibers 2%

**Asbestos Type: %**  
**None Detected ND**

**Lab ID: 15049004 Client Sample #: 1283-06A**

Location: N-A

Comments: Unsure of correct layer sequence.

**Layer 1 of 2 Description:** Hardened clear brittle adhesive

Non-Fibrous Materials:	Other Fibrous Materials:%
Adhesive/Binder, Miscellaneous particles, Fine particles	Cellulose <1%
	Hair <1%

**Asbestos Type: %**  
**None Detected ND**

**Layer 2 of 2 Description:** Light grey vinyl tile

Non-Fibrous Materials:	Other Fibrous Materials:%
Vinyl/Binder, Mineral grains	None Detected ND

**Asbestos Type: %**  
**None Detected ND**

**Lab ID: 15049005 Client Sample #: 1283-07A**

Location: N-A

**Sampled by:** Client

**Analyzed by:** Matt Macfarlane

**Reviewed by:** Nick Ly

**Date:** 05/21/2015

**Date:** 05/21/2015

Nick Ly, Laboratory Technical Director



Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: EMB Consulting, LLC  
Address: PO Box 5171  
Lynnwood, WA 98046

**Attention: Ms. Elisabeth Black**  
Project Location: N-A

**Batch #: 1508845.00**  
Client Project #: 1283  
Date Received: 5/14/2015  
Samples Received: 10  
Samples Analyzed: 10  
Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

Layer 1 of 2	Description: Rubbery blue material	Non-Fibrous Materials: Rubber/Binder	Other Fibrous Materials:% None Detected ND	Asbestos Type: % None Detected ND
Layer 2 of 2	Description: Hardened tacky off-white mastic with paint	Non-Fibrous Materials: Mastic/Binder, Paint, Calcareous particles	Other Fibrous Materials:% Cellulose 17%	Asbestos Type: % None Detected ND
<hr/>				
Lab ID: 15049006	Client Sample #: 1283-08A			
Location: N-A				
Layer 1 of 1	Description: White compacted powdery material with paper & paint	Non-Fibrous Materials: Calcareous binder, Paint	Other Fibrous Materials:% Cellulose 12%	Asbestos Type: % None Detected ND
<hr/>				
Lab ID: 15049007	Client Sample #: 1283-09A			
Location: N-A				
Layer 1 of 1	Description: White chalky material with paper & paint	Non-Fibrous Materials: Gypsum/Binder, Paint, Calcareous particles	Other Fibrous Materials:% Cellulose 13% Glass fibers 2%	Asbestos Type: % None Detected ND
<hr/>				
Lab ID: 15049008	Client Sample #: 1283-10A			
Location: N-A				
Layer 1 of 1	Description: White woven fibrous material	Non-Fibrous Materials: Binder/Filler	Other Fibrous Materials:% Polyethylene fibers 88% Cellulose <1%	Asbestos Type: % None Detected ND

**Sampled by:** Client

**Analyzed by:** Matt Macfarlane

**Reviewed by:** Nick Ly

**Date:** 05/21/2015

**Date:** 05/21/2015

Nick Ly, Laboratory Technical Director



Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

**Company** EMB Consulting, LLC  
**Address** PO Box 5171  
 Lynnwood, WA 98046  
**Project Manager** Ms. Elisabeth Black  
**Phone** (206) 915-2395  
**NVL Batch Number** 1508845.00  
**TAT** 5 Days **AH** No  
**Rush TAT**  
**Due Date** 5/21/2015 **Time** 4:00 PM  
**Email** emblackconsult@gmail.com  
**Fax**

**Project Name/Number:** 1283 **Project Location:** N-A

**Subcategory** PLM Bulk

**Item Code** ASB-02 EPA 600/R-93-116 Asbestos by PLM <bulk>

**Total Number of Samples** 10

**Rush Samples**

	Lab ID	Sample ID	Description	A/R
1	15048999	1283-01A		A
2	15049000	1283-02A		A
3	15049001	1283-03A		A
4	15049002	1283-04A		A
5	15049003	1283-05A		A
6	15049004	1283-06A		A
7	15049005	1283-07A		A
8	15049006	1283-08A		A
9	15049007	1283-09A		A
10	15049008	1283-10A		A

	Print Name	Signature	Company	Date	Time
<b>Sampled by</b>	Client				
<b>Relinquished by</b>	Client				

Office Use Only	Print Name	Signature	Company	Date	Time
<b>Received by</b>	Matt Macfarlane		NVL	5/14/15	1600
<b>Analyzed by</b>	Matt Macfarlane		NVL	5/21/15	2:48 PM
<b>Results Called by</b>					
<input type="checkbox"/> Faxed <input type="checkbox"/> Emailed					

**Special Instructions:**

Date: 5/14/2015

Time: 5:29 PM

Entered By: Matt Macfarlane



**NVL Laboratories, Inc.**

4708 Aurora Ave N, Seattle, WA 98103

Tel: 206.547.0100 Emerg. Cell: 206.914.4646

Fax: 206.634.1936 1.888.NVL.LABS (685.5227)

Client EMB Consulting, LLCStreet PO Box 5171Lynnwood, WA 98046Project Manager Ms. Elisabeth Black

Project Location \_\_\_\_\_

Phone: (206) 915-2395

Fax: \_\_\_\_\_

**CHAIN of CUSTODY  
SAMPLE LOG****1508845**

NVL Batch Number \_\_\_\_\_

Client Job Number 1283

Total Samples \_\_\_\_\_

Turn Around Time

☐ 1-Hr ☐ 8-Hrs ☐ 2 ☒ 5  
☐ 2-Hrs ☐ 12-Hrs ☐ 3 ☐ 6-10  
☐ 4-Hrs ☐ 24-Hrs ☐ 4

Please call for TAT less than 24 Hrs

Email address emblackconsult@gmail.com

<input type="checkbox"/> Asbestos Air	<input type="checkbox"/> PCM (NIOSH 7400)	<input type="checkbox"/> TEM (NIOSH 7402)	<input type="checkbox"/> TEM (AHERA)	<input type="checkbox"/> TEM (EPA Level II)	<input type="checkbox"/> Other
<input checked="" type="checkbox"/> Asbestos Bulk	<input type="checkbox"/> PLM (EPA/600/R-93/116)	<input type="checkbox"/> PLM (EPA Point Count)	<input type="checkbox"/> PLM (EPA Gravimetry)	<input type="checkbox"/> TEM BULK	
<input type="checkbox"/> Mold/Fungus	<input type="checkbox"/> Mold Air	<input type="checkbox"/> Mold Bulk	<input type="checkbox"/> Rotometer Calibration		
<b>METALS</b>	<b>Det. Limit</b>	<b>Matrix</b>	<b>RCRA Metals</b>	<input type="checkbox"/> All 8	<b>Other Metals</b>
<input type="checkbox"/> Total Metals	<input type="checkbox"/> FAA (ppm)	<input type="checkbox"/> Air Filter	<input type="checkbox"/> Arsenic (As)	<input type="checkbox"/> Chromium (C)	<input type="checkbox"/> All 3
<input type="checkbox"/> TCLP	<input type="checkbox"/> ICP (ppm)	<input type="checkbox"/> Drinking water	<input type="checkbox"/> Barium (Ba)	<input type="checkbox"/> Lead (Pb)	<input type="checkbox"/> Copper (Cu)
<input type="checkbox"/> Cr 6	<input type="checkbox"/> GFAA (ppb)	<input type="checkbox"/> Dust/wipe (Area)	<input type="checkbox"/> Cadmium (Cd)	<input type="checkbox"/> Mercury (Hg)	<input type="checkbox"/> Nickel (Ni)
<input type="checkbox"/> Other Types of Analysis	<input type="checkbox"/> Fiberglass	<input type="checkbox"/> Nuisance Dust	<input type="checkbox"/> Other (Specify) _____		<input type="checkbox"/> Zinc (Zn)
	<input type="checkbox"/> Silica	<input type="checkbox"/> Respirable Dust			

Condition of Package: ☐ Good ☐ Damaged (no spillage) ☐ Severe damage (spillage)

Seq. #	Lab ID	Client Sample Number	Comments (e.g Sample are, Sample Volume, etc)	A/R
1	1283-D1A			
2	1283-D2A			
3	1283-D3A			
4	1283-D4A			
5	1283-D5A			
6	1283-D6A			
7	1283-D7A			
8	1283-D8A			
9	1283-D9A			
10	1283-D10A			
11				
12				
13				
14				
15				

	Print Below	Sign Below	Company	Date	Time
Sampled by	<u>E. Black</u>	<u>E. Black</u>	<u>EMB Consulting</u>	<u>05-14-14</u>	<u>4:00</u>
Relinquished by	<u>E. Black</u>	<u>E. Black</u>	<u>EMB Consulting</u>	<u>05-14</u>	<u>4:00</u>
Received by	<u>MATIN</u>	<u>[Signature]</u>	<u>[Signature]</u>	<u>5/14/15</u>	<u>11:00</u>
Analyzed by					
Results Called by					
Results Faxed by					

**Special Instructions:** Unless requested in writing, all samples will be disposed of two (2) weeks after analysis.





Laboratory | Management | Training

May 20, 2015

Ms. Elisabeth Black  
EMB Consulting, LLC  
PO Box 5171  
Lynnwood, WA 98046

Re: **NVL Batch 1508850.00**

Project Name/Number: 1283

Project location: 1283

Dear Ms. Black,

Enclosed please find test results for samples submitted to our laboratory for analysis. Preparation and analysis of these samples were conducted in accordance with published industry standards and methods specified on the attached analytical report.

The content of this package consists of the following:

- Case Narrative & Definition of Data Qualifiers
- Analytical Test Results
- Applicable QC Summary
- Client Chain-of-Custody (CoC)
- NVL Receiving Record

The report is considered highly confidential and will not be released without your approval. Samples are archived for two weeks following analysis. Samples that are not retrieved by the client will be discarded after two weeks.

Thank you for using our laboratory services. If you need further assistance, please contact us at 206-547-0100 or 1-888-NVLLABS.

Sincerely,

A handwritten signature in black ink, appearing to read "Nick Ly".

Nick Ly, Technical Director

Enclosure: Sample Results

---

**Phone: 206.547.0100 | Fax: 206.634.1936 | Toll Free: 1.888.NVL.LABS (685.5227)**  
**4708 Aurora Avenue North | Seattle, WA 98103**

### **Case Narrative:**

The following summarizes samples received on date as shown on the accompanied Chain of custody by NVL Laboratories, Inc. from EMB Consulting, LLC for Project number: 1283. Samples were logged in for PCB analysis per client request using both customer sample ID's and laboratory assigned ID's as listed on the Chain-of-Custody (CoC). All samples as received were processed and analyzed within specified turnaround time without any abnormalities and deviations that may affect the analytical results. All quality control requirements were acceptable unless stated otherwise. The conditions of all samples were acceptable at time of receipt and all samples submitted with this batch were analyzed unless stated otherwise on the CoC.

Test Results are reported based on milligram per kilogram (mg/kg) for PCB samples as shown on the analytical reports.



## Definition Appendix

### Terms

% Rec	Percent recovery.
<	Below Reporting Limit(RL) or Limit of Quantitation(LoQ) of the instrument.
B	Blank contamination. The recorded results is associated with a contaminated blank.
DF	Dilution Factor
J	The reported concentration is an estimated value because something may be present in the sample that interfered with the analysis.
J1	The reported concentration is an estimated value because the laboratory control sample (LCS) is out of control limits.
J2	The reported concentration is an estimated value because the percent recovery for matrix spike is out of control limits.
J3	The reported concentration is an estimated value because the relative percent difference(RPD) for duplicate analysis is out of control limits.
J4	Percent recovery is outside of established control limits.
LCS	Laboratory Control Sample.
Limits	The upper and lower control limits for spike recoveries.
LOQ	Limit of quantitation( same as RL)
mg/kg	Milligrams per kilogram.
ND	Analyte not detected or below the reporting limit of the instrument or methodology
PPM	Parts per Million.
QC Batch Group	Quality Control Batch Group. The entity that links analytical results and supporting quality control results.



## Definition Appendix

### Terms

R	The data are not reliable due to possible contamination or loss of material during preparation or analysis. Re-sampling and reanalysis are necessary for verification.
RL	Reporting Limit. The minimum concentration that can be quantified under routine operating conditions.
RPD	Relative Percent Difference. The relative difference between duplicate results( matrix spike, blank spike, or samples duplicate) expressed as a percentage.
RPD Limit	The maximum RPD allowed for a set of duplicate measurements(see RPD).
SMI	Surrogate has matrix interference.
Spike Conc.	The measured concentration, in sample basis units, of a spiked sample.
SURR-ND	Surrogate was not detected due to matrix interference or dilution.
ug/m3	Micrograms per cubic meter.
ug/mL	Micrograms per milliliter
mg/Kg	milligram per kilogram

# ORGANICS LABORATORY SERVICES



Company EMB Consulting, LLC

Address PO Box 5171  
Lynnwood, WA 98046

Project Manager Ms. Elisabeth Black

Phone (206) 915-2395

NVL Batch Number **1508850.00**

TAT 5 Days AH No

Rush TAT

Due Date 5/21/2015 Time 4:00 PM

Email emblackconsult@gmail.com

Fax

Project Name/Number: 1283

Project Location: 1283

Subcategory Quantitative analysis

Item Code ORG-02 8082 PCB Aroclors <Paint>

Total Number of Samples 1

Rush Samples

	Lab ID	Sample ID	Description	A/R
1	15049017	1283-01PCB		A

	Print Name	Signature	Company	Date	Time
Sampled by	Client				
Relinquished by	Client				
Office Use Only	Print Name	Signature	Company	Date	Time
Received by	Matt Macfarlane		NVL	5/14/15	1600
Analyzed by	Evelyn Ahn		NVL	5/15/15	16:00
Results Called by					
<input type="checkbox"/> Faxed <input type="checkbox"/> Emailed					

Special  
Instructions:

Entered By: Matt Macfarlane

Date: 5/14/2015

Time: 5:49 PM

1 of 1

## ANALYSIS REPORT

## Polychlorinated Biphenyls by Gas Chromatography



Client	EMB Consulting, LLC	Samples Received*	1
SDG Number	1508850.00	Analyzed By	Evelyn Ahulu
Date Reported	05/20/2015	Samples Analyzed*	1
Project Number	1283	Analysis Method	8082A
Location	1283	Preparation Method	3546PR (PCB)

\* for this test only

Sample Number	1283-01PCB	Received	05/14/2015
Lab Sample ID	15049017	Matrix	Paint Chips
Initial Sample Size	1.6171 gm	Units of Result	mg/Kg, as received

Analyte	RL	Final Result	Analysis Date
Aroclor-1016	1.2	< 1.2	05/15/2015
Aroclor-1221	1.2	< 1.2	05/15/2015
Aroclor-1232	1.2	< 1.2	05/15/2015
Aroclor-1242	1.2	< 1.2	05/15/2015
Aroclor-1248	1.2	< 1.2	05/15/2015
Aroclor-1254	1.2	< 1.2	05/15/2015
Aroclor-1260	1.2	< 1.2	05/15/2015
<b>PCBs, Total</b>	<b>1.2</b>	<b>&lt;1.2</b>	

Comments: Paint Chips

## Quality Control Results

Project Number:	1283	SDG Number:	1508850
		Project Manager:	Elisabeth Black
QC Batch(es):	Q294	Analysis Method:	8082A
QC Batch Method:	3546PR (PCB)	Analysis Description:	Polychlorinated Biphenyls by Gas Chromatography
Preparation Date:	05/15/2015		
Blank: MBLK-1508850			

Analyte	Blank Result	Units	DF	RL	Control Limit	Qualifiers
Aroclor-1016	ND	mg/Kg	1	1.0	1	
Aroclor-1221	ND	mg/Kg	1	1.0	1	
Aroclor-1232	ND	mg/Kg	1	1.0	1	
Aroclor-1242	ND	mg/Kg	1	1.0	1	
Aroclor-1248	ND	mg/Kg	1	1.0	1	
Aroclor-1254	ND	mg/Kg	1	1.0	1	
Aroclor-1260	ND	mg/Kg	1	1.0	1	
PCBs, Total	ND	mg/Kg	1	1.0	1	
Surrogates:				% Rec		
Tetrachloro-m-xylene			1	86	40-140	
Decachlorobiphenyl			1	99	40-140	

## Lab Control Sample: MSPK-1508850

Analyte	Blank Spike Result	Units	DF	Spike Conc.	% Rec	% Rec Limits	Qualifiers
Aroclor-1254	20.1	mg/Kg	1	20.0	100	40-140	
Surrogates:							
Tetrachloro-m-xylene			1		64	40-140	
Decachlorobiphenyl			1		101	40-140	

## Lab Control Sample: LCS-1508850

## Lab Control Sample Duplicate: LCS Dup-1508850

Analyte	Blank Spike Result	Units	DF	Spike Conc.	% Rec	Limits	RPD	RPD Limit	Qualifiers
Aroclor-1016	11.2	mg/Kg	1	20.0	56	40-140			
	13.2			20.0	66	40-140	16	50	
Aroclor-1260	19.3	mg/Kg	1	20.0	97	40-140			
	18.8			20.0	94	40-140	2	50	
Surrogates:									
Tetrachloro-m-xylene			1		53	40-140			
					53	40-140			
Decachlorobiphenyl			1		94	40-140			
					93	40-140			



## Surrogate Recovery Summary Report

<b>Client</b> <u>EMB Consulting, LLC</u>			<b>SDG Number</b> <u>1508850</u>	
<b>Project</b> <u>1283</u>				
Customer Sample ID	Lab Sample ID	Analyte	Recovery	Limits
1283-01PCB	15049017	Decachlorobiphenyl	100%	40-140
1283-01PCB	15049017	Tetrachloro-m-xylene	72%	40-140
LCS Dup-1508850	LCS Dup-1508850	Decachlorobiphenyl	93%	40-140
LCS Dup-1508850	LCS Dup-1508850	Tetrachloro-m-xylene	53%	40-140
LCS-1508850	LCS-1508850	Decachlorobiphenyl	94%	40-140
LCS-1508850	LCS-1508850	Tetrachloro-m-xylene	53%	40-140
MBLK-1508850	MBLK-1508850	Decachlorobiphenyl	99%	40-140
MBLK-1508850	MBLK-1508850	Tetrachloro-m-xylene	86%	40-140
MSPK-1508850	MSPK-1508850	Decachlorobiphenyl	101%	40-140
MSPK-1508850	MSPK-1508850	Tetrachloro-m-xylene	64%	40-140

\* Recovery outside limits



**INITIAL AND CONTINUING CALIBRATION VERIFICATION**SDG No: **1508850**

Contract:

Determination: **8082 PCB Aroclors <Material>**

Run	Sample	Source	Analyzed	Analyte	True	Found	Unit	% Rec	Limits
R000287	CCV1 1016-1260	PCB_2014-1-17	05/15/2015	Aroclor-1016	5	5	ug/mL	100	80-120
		PCB_2014-1-17	05/15/2015	Aroclor-1260	5	5	ug/mL	100	80-120
	CCV1 1254	PCB_2014-1-18	05/15/2015	Aroclor-1254	5	5	ug/mL	100	80-120
	ICV 1016-1254- 1260	PCB_2014-2-4	05/15/2015	Aroclor-1016	5	4.663	ug/mL	93	85-115
		PCB_2014-2-4	05/15/2015	Aroclor-1254	5	5.548	ug/mL	111	85-115
		PCB_2014-2-4	05/15/2015	Aroclor-1260	5	5.646	ug/mL	113	85-115
	CCV2 1016-1260	PCB_2014-1-17	05/15/2015	Aroclor-1016	5	5.582	ug/mL	112	80-120
		PCB_2014-1-17	05/15/2015	Aroclor-1260	5	5.734	ug/mL	115	80-120
	CCV2 1254	PCB_2014-1-18	05/15/2015	Aroclor-1254	5	5.479	ug/mL	110	80-120

% Rec = Percent recovery

\* = Percent recovery not within control limits

**NVL Laboratories, Inc.**

4708 Aurora Ave N, Seattle, WA 98103

Tel: 206.547.0100 Emerg. Cell: 206.914.4646

Fax: 206.634.1936 1.888.NVL.LABS (685.5227)

Client EMB Consulting, LLCStreet PO Box 5171Lynnwood, WA 98046**CHAIN of CUSTODY  
SAMPLE LOG****1508850**

NVL Batch Number

Client Job Number

Total Samples

Turn Around Time

☐ 1 Hr ☐ 6 Hrs ☐ 3 Days ☐ 10 Days  
☐ 2 Hrs ☐ 1 Day ☐ 4 Days  
☐ 4 Hrs ☐ 2 Days ☒ 5 Days

Please call for TAT less than 24 Hrs

Email address emblackconsult@gmail.comProject Manager Ms. Elisabeth Black

Project Location

Phone: (206) 915-2395

Fax:

<input type="checkbox"/> Asbestos Air	<input type="checkbox"/> PCM (NIOSH 7400)	<input type="checkbox"/> TEM (NIOSH 7402)	<input type="checkbox"/> TEM (AHERA)	<input type="checkbox"/> TEM (EPA Level II)	<input type="checkbox"/> Other
<input type="checkbox"/> Asbestos Bulk	<input type="checkbox"/> PLM (EPA/600/R-93/116)	<input type="checkbox"/> PLM (EPA Point Count)	<input type="checkbox"/> PLM (EPA Gravimetry)	<input type="checkbox"/> TEM BULK	
<input type="checkbox"/> Mold/Fungus	<input type="checkbox"/> Mold Air	<input type="checkbox"/> Mold Bulk	<input type="checkbox"/> Rotometer Calibration		
<b>METALS</b>	<b>Det. Limit</b>	<b>Matrix</b>	<b>RCRA Metals</b>	<input type="checkbox"/> All 8	<b>Other Metals</b>
<input type="checkbox"/> Total Metals	<input type="checkbox"/> FAA (ppm)	<input type="checkbox"/> Air Filter	<input type="checkbox"/> Paint Chips in %	<input type="checkbox"/> Arsenic (As)	<input type="checkbox"/> All 3
<input type="checkbox"/> TCLP	<input type="checkbox"/> ICP (ppm)	<input type="checkbox"/> Drinking water	<input type="checkbox"/> Paint Chips in cm	<input type="checkbox"/> Barium (Ba)	<input type="checkbox"/> Lead (Pb)
<input type="checkbox"/> Cr 6	<input type="checkbox"/> GFAA (ppb)	<input type="checkbox"/> Dust/wipe (Area)	<input type="checkbox"/> Waste Water	<input type="checkbox"/> Cadmium (Cd)	<input type="checkbox"/> Mercury (Hg)
	<input type="checkbox"/> Soil	<input type="checkbox"/> Other	<input type="checkbox"/> Chromium (Cr)	<input type="checkbox"/> Silver (Ag)	<input type="checkbox"/> Nickel (Ni)
<input checked="" type="checkbox"/> Other Types of Analysis	<input type="checkbox"/> Fiberglass	<input type="checkbox"/> Nuisance Dust	<input type="checkbox"/> Other (Specify) <u>PCBs</u>		<input type="checkbox"/> Zinc (Zn)
	<input type="checkbox"/> Silica	<input type="checkbox"/> Respirable Dust			

Condition of Package: ☐ Good ☐ Damaged (no spillage) ☐ Severe damage (spillage)

Seq. #	Lab ID	Client Sample Number	Comments (e.g Sample are, Sample Volume, etc)	A/R
1		1283-01PCB	PCBs in Paint	
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				

	Print Below	Sign Below	Company	Date	Time
Sampled by	<u>E. Black</u>	<u>E. Black</u>	<u>EMB Consulting</u>	<u>5/14/15</u>	<u>4:00</u>
Relinquished by	<u>E. Black</u>	<u>E. Black</u>	<u>EMB Consulting</u>	<u>5/14/15</u>	<u>4:00</u>
Received by	<u>Matt</u>	<u>[Signature]</u>	<u>INVL</u>	<u>5/14/15</u>	<u>16:00</u>
Analyzed by	<u>Evelyn Ahn</u>	<u>[Signature]</u>	<u>INVL</u>	<u>5/15/15</u>	<u>16:00</u>
Results Called by					
Results Faxed by					

**Special Instructions:** Unless requested in writing, all samples will be disposed of two (2) weeks after analysis.

May 19, 2015

Elisabeth Black  
**EMB Consulting, LLC**  
PO Box 5171  
Lynnwood, WA 98046



Laboratory | Management | Training

**RE: Metals Analysis; NVL Batch # 1508852.00**

Dear Ms. Black,

Enclosed please find the test results for samples submitted to our laboratory for analysis. Preparation of these samples was conducted following protocol outlined in EPA Method SW 846 -3051 unless stated otherwise. Analysis of these samples was performed using analytical instruments in accordance with U.S. EPA, NIOSH, OSHA and other ASTM methods.

For matrix materials submitted as paint, dust wipe, soil or TCLP samples, analysis for the presence of total metals is conducted using published U.S. EPA Methods. Paint and soil results are usually expressed in mg/Kg which is equivalent to parts per million (ppm). Lead (Pb) in paint is usually expressed in mg/Kg (ppm), Percent (%) or mg/cm<sup>2</sup> by area. Dust wipe sample results are usually expressed in ug/wipe and ug/ft<sup>2</sup>. TCLP samples are reported in mg/L (ppm). For air filter samples, analyses are conducted using NIOSH and OSHA Methods. Results are expressed in ug/filter and ug/m<sup>3</sup>. Other matrix materials are analyzed accordingly using published methods or specified by client. The reported test results pertain only to items tested and are not blank corrected.

For recent regulation updates pertaining to current regulatory levels or permissible exposure levels, please call your local regulatory agencies for more details.

This report is considered highly confidential and will not be released without your approval. Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. If you need further assistance please feel free to call us at 206-547-0100 or 1-888-NVLLABS.

Sincerely,

A handwritten signature in black ink, appearing to read "Nick Ly", written over a circular stamp.

Nick Ly, Technical Director



**1.888.NVL.LABS**  
**1.888.(685.5227)**  
www.nvllabs.com

NVL Laboratories, Inc.  
4708 Aurora Ave N, Seattle, WA 98103  
p 206.547.0100 | f 206.634.1936

# Analysis Report

## Toxicity Characteristic Leaching Procedure - Lead (Pb)

Client: EMB Consulting, LLC

Address: PO Box 5171  
Lynnwood, WA 98046**Attention: Ms. Elisabeth Black**

Project Location: N-A

**Batch #: 1508852.00**

Matrix: Bulk

Method: EPA 1311/7000B

Client Project #: 1283

Date Received: 5/14/2015

Samples Received: 1

Samples Analyzed: 1

Lab ID	Client Sample #	RL mg/ L	Results in mg/L	Results in ppm
15049018	1283-TCLP	0.5	< 0.5	< 0.5

Sampled by: Client

Analyzed by: Shalini Patel

Reviewed by: Nick Ly

Date Analyzed: 05/19/2015

Date Issued: 05/19/2015



Nick Ly, Technical Director

mg/ L =Milligrams per liter

ppm = parts per million

RL = Reporting Limit

'&lt;' = Below the reporting Limit

Note : Method QC results are acceptable unless stated otherwise.

Unless otherwise indicated, the condition of all samples was acceptable at time of receipt.

**NVL Laboratories, Inc.**

4708 Aurora Ave N, Seattle, WA 98103

Tel: 206.547.0100 Emerg. Cell: 206.914.4646

Fax: 206.634.1936 1.888.NVL.LABS (685.5227)

**CHAIN of CUSTODY  
SAMPLE LOG****1508852**Client EMB Consulting, LLCStreet PO Box 5171Lynnwood, WA 98046

NVL Batch Number \_\_\_\_\_

Client Job Number 1283

Total Samples \_\_\_\_\_

Turn Around Time

☐ 1 Hr ☐ 6 Hrs ☐ 3 Days ☐ 10 Days☐ 2 Hrs ☐ 1 Day ☐ 4 Days☐ 4 Hrs ☐ 2 Days ☒ 5 Days

Please call for TAT less than 24 Hrs

Project Manager Ms. Elisabeth Black

Project Location \_\_\_\_\_

Email address emblackconsult@gmail.com

Phone: (206) 915-2395

Fax: \_\_\_\_\_

<input type="checkbox"/> Asbestos Air	<input type="checkbox"/> PCM (NIOSH 7400)	<input type="checkbox"/> TEM (NIOSH 7402)	<input type="checkbox"/> TEM (AHERA)	<input type="checkbox"/> TEM (EPA Level II)	<input type="checkbox"/> Other
<input type="checkbox"/> Asbestos Bulk	<input type="checkbox"/> PLM (EPA/600/R-93/116)	<input type="checkbox"/> PLM (EPA Point Count)	<input type="checkbox"/> PLM (EPA Gravimetry)	<input type="checkbox"/> TEM BULK	
<input type="checkbox"/> Mold/Fungus	<input type="checkbox"/> Mold Air	<input type="checkbox"/> Mold Bulk	<input type="checkbox"/> Rotometer Calibration		
<b>METALS</b>	<b>Det. Limit</b>	<b>Matrix</b>	<b>RCRA Metals</b>	<input type="checkbox"/> All 8	<b>Other Metals</b>
<input type="checkbox"/> Total Metals	<input type="checkbox"/> FAA (ppm)	<input type="checkbox"/> Air Filter	<input type="checkbox"/> Paint Chips in %	<input checked="" type="checkbox"/> Lead (Pb)	<input type="checkbox"/> All 3
<input checked="" type="checkbox"/> TCLP	<input type="checkbox"/> ICP (ppm)	<input type="checkbox"/> Drinking water	<input type="checkbox"/> Paint Chips in cm	<input type="checkbox"/> Mercury (Hg)	<input type="checkbox"/> Copper (Cu)
<input type="checkbox"/> Cr 6	<input type="checkbox"/> GFAA (ppm)	<input type="checkbox"/> Dust/wipe (Area)	<input type="checkbox"/> Waste Water	<input type="checkbox"/> Selenium (Se)	<input type="checkbox"/> Nickel (Ni)
		<input type="checkbox"/> Soil	<input type="checkbox"/> Other	<input type="checkbox"/> Silver (Ag)	<input type="checkbox"/> Zinc (Zn)
<input type="checkbox"/> Other Types of Analysis	<input type="checkbox"/> Fiberglass	<input type="checkbox"/> Nuisance Dust	<input type="checkbox"/> Other (Specify) _____		
	<input type="checkbox"/> Silica	<input type="checkbox"/> Respirable Dust			

Condition of Package: ☐ Good ☐ Damaged (no spillage) ☐ Severe damage (spillage)

Seq. #	Lab ID	Client Sample Number	Comments (e.g Sample are, Sample Volume, etc)	A/R
1		1283-TCLP		
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				

	Print Below	Sign Below	Company	Date	Time
Sampled by	<u>E. Black</u>	<u>E. Black</u>	<u>EMB Consulting</u>	<u>05/14</u>	<u>4:00</u>
Relinquished by	<u>E. Black</u>	<u>E. Black</u>	<u>EMB Consulting</u>	<u>05/14</u>	<u>4:00</u>
Received by	<u>MATT</u>	<u>[Signature]</u>	<u>ME</u>	<u>5/14/15</u>	<u>1600</u>
Analyzed by	<u>Shalini Patel</u>	<u>[Signature]</u>	<u>NU</u>	<u>5/19/15</u>	<u>900</u>
Results Called by					
Results Faxed by					

**Special Instructions:** Unless requested in writing, all samples will be disposed of two (2) weeks after analysis.

May 18, 2015

Elisabeth Black  
**EMB Consulting, LLC**  
PO Box 5171  
Lynnwood, WA 98046



Laboratory | Management | Training

**RE: Metals Analysis; NVL Batch # 1508853.00**

Dear Ms. Black,

Enclosed please find the test results for samples submitted to our laboratory for analysis. Preparation of these samples was conducted following protocol outlined in EPA Method SW 846 -3051 unless stated otherwise. Analysis of these samples was performed using analytical instruments in accordance with U.S. EPA, NIOSH, OSHA and other ASTM methods.

For matrix materials submitted as paint, dust wipe, soil or TCLP samples, analysis for the presence of total metals is conducted using published U.S. EPA Methods. Paint and soil results are usually expressed in mg/Kg which is equivalent to parts per million (ppm). Lead (Pb) in paint is usually expressed in mg/Kg (ppm), Percent (%) or mg/cm<sup>2</sup> by area. Dust wipe sample results are usually expressed in ug/wipe and ug/ft<sup>2</sup>. TCLP samples are reported in mg/L (ppm). For air filter samples, analyses are conducted using NIOSH and OSHA Methods. Results are expressed in ug/filter and ug/m<sup>3</sup>. Other matrix materials are analyzed accordingly using published methods or specified by client. The reported test results pertain only to items tested and are not blank corrected.

For recent regulation updates pertaining to current regulatory levels or permissible exposure levels, please call your local regulatory agencies for more details.

This report is considered highly confidential and will not be released without your approval. Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. If you need further assistance please feel free to call us at 206-547-0100 or 1-888-NVLLABS.

Sincerely,

A handwritten signature in black ink, appearing to read 'Nick Ly', written over a circular stamp.

Nick Ly, Technical Director



**1.888.NVL.LABS**  
**1.888.(685.5227)**  
www.nvllabs.com

NVL Laboratories, Inc.  
4708 Aurora Ave N, Seattle, WA 98103  
p 206.547.0100 | f 206.634.1936

# Analysis Report

## Total Lead (Pb)

Client: EMB Consulting, LLC  
Address: PO Box 5171  
Lynnwood, WA 98046

**Attention: Ms. Elisabeth Black**  
Project Location: N-A

**Batch #: 1508853.00**

Matrix: Paint  
Method: EPA 3051/7000B  
Client Project #: 1283  
Date Received: 5/14/2015  
Samples Received: 1  
Samples Analyzed: 1

Lab ID	Client Sample #	Sample Weight (g)	RL in mg/Kg	Results in mg/Kg	Results in percent
15049019	1283-01L	0.2009	49.0	69.0	0.0069

Sampled by: Client

Analyzed by: Yasuyuki Hida

Reviewed by: Nick Ly

Date Analyzed: 05/18/2015

Date Issued: 05/18/2015

  
Nick Ly, Technical Director

mg/ Kg =Milligrams per kilogram

Percent = Milligrams per kilogram / 10000

Note : Method QC results are acceptable unless stated otherwise.

Unless otherwise indicated, the condition of all samples was acceptable at time of receipt.

RL = Reporting Limit

'<' = Below the reporting Limit

**NVL Laboratories, Inc.**

4708 Aurora Ave N, Seattle, WA 98103

Tel: 206.547.0100 Emerg.Cell: 206.914.4646

Fax: 206.634.1936 1.888.NVL.LABS (685.5227)

Client EMB Consulting, LLCStreet PO Box 5171Lynnwood, WA 98046Project Manager Ms. Elisabeth Black

Project Location \_\_\_\_\_

Phone: (206) 915-2395

Fax: \_\_\_\_\_

**CHAIN of CUSTODY  
SAMPLE LOG****1508853**

NVL Batch Number \_\_\_\_\_

Client Job Number 1283Total Samples 1

Turn Around Time

☐ 1 Hr ☐ 6 Hrs ☐ 3 Days ☐ 10 Days☐ 2 Hrs ☐ 1 Day ☐ 4 Days☐ 4 Hrs ☐ 2 Days ☒ 5 Days

Please call for TAT less than 24 Hrs

Email address emblackconsult@gmail.com

<input type="checkbox"/> Asbestos Air	<input type="checkbox"/> PCM (NIOSH 7400)	<input type="checkbox"/> TEM (NIOSH 7402)	<input type="checkbox"/> TEM (AHERA)	<input type="checkbox"/> TEM (EPA Level II)	<input type="checkbox"/> Other
<input type="checkbox"/> Asbestos Bulk	<input type="checkbox"/> PLM (EPA/600/R-93/116)	<input type="checkbox"/> PLM (EPA Point Count)	<input type="checkbox"/> PLM (EPA Gravimetry)	<input type="checkbox"/> TEM BULK	
<input type="checkbox"/> Mold/Fungus	<input type="checkbox"/> Mold Air	<input type="checkbox"/> Mold Bulk	<input type="checkbox"/> Rotometer Calibration		
<b>METALS</b>	<b>Det. Limit</b>	<b>Matrix</b>	<b>RCRA Metals</b>	<input type="checkbox"/> All 8	<b>Other Metals</b>
<input checked="" type="checkbox"/> Total Metals	<input type="checkbox"/> FAA (ppm)	<input type="checkbox"/> Air Filter	<input type="checkbox"/> Paint Chips in %	<input type="checkbox"/> Arsenic (As)	<input type="checkbox"/> Lead (Pb)
<input type="checkbox"/> TCLP	<input type="checkbox"/> ICP (ppm)	<input type="checkbox"/> Drinking water	<input type="checkbox"/> Paint Chips in cm	<input type="checkbox"/> Barium (Ba)	<input type="checkbox"/> Mercury (Hg)
<input type="checkbox"/> Cr 6	<input type="checkbox"/> GFAA (ppm)	<input type="checkbox"/> Dust/wipe (Area)	<input type="checkbox"/> Waste Water	<input type="checkbox"/> Cadmium (Cd)	<input type="checkbox"/> Selenium (Se)
		<input type="checkbox"/> Soil	<input type="checkbox"/> Other	<input type="checkbox"/> Chromium (Cr)	<input type="checkbox"/> Silver (Ag)
<input type="checkbox"/> Other Types of Analysis	<input type="checkbox"/> Fiberglass	<input type="checkbox"/> Nuisance Dust	<input type="checkbox"/> Other (Specify) _____		
	<input type="checkbox"/> Silica	<input type="checkbox"/> Respirable Dust			

Condition of Package: ☐ Good ☐ Damaged (no spillage) ☐ Severe damage (spillage)

Seq. #	Lab ID	Client Sample Number	Comments (e.g Sample are, Sample Volume, etc)	A/R
1		1283-014	total 1 rad	
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				

	Print Below	Sign Below	Company	Date	Time
Sampled by	E. Black	E. Black	EMB Consulting	05/14	4:00
Relinquished by	E. Black	E. Black	EMB Consulting	05/14	4:00
Received by	MATTU		M	5/14/15	1600
Analyzed by	Yasuyuki Hida		m	5/18/15	11:45
Results Called by					
Results Faxed by					

**Special Instructions:** Unless requested in writing, all samples will be disposed of two (2) weeks after analysis.



**APPENDIX B**

**PIER 4 REGULATED BUILDING  
MATERIALS INSPECTION,  
DATED OCTOBER 31, 2014**



October 31, 2014

Mr. Mark Larsen  
Principal Scientist/Partner  
Anchor QEA, LLC  
720 Olive Way, Suite 1900  
Seattle, Washington 98101

**RE: PIER 4  
REGULATED BUILDING MATERIALS INSPECTION  
PORT OF TACOMA  
ON CALL ENVIRONMENTAL SUPPORT SERVICES  
PROFESSIONAL SERVICES AGREEMENT NO. 069731 – TASK ORDER 8**

EMB Consulting Project 1232

Dear Mr. Larsen,

This report presents the findings of the limited regulated building materials inspection conducted by EMB Consulting, LLC for the Port of Tacoma (POT) Pier 4 structure, limited to the top side of the pier. According to project drawings and POT personnel, the project also excludes the Marine Operations Building and substation on the south side of Pier 4. The pier is scheduled to be demolished. The inspection was conducted to document the presence and location of regulated building materials, limited to asbestos, lead-based paint, and Universal Wastes, to ensure proper handling and disposal. The inspection was conducted by Elisabeth Black, CIH of EMB Consulting under the Anchor QEA contract with the Port of Tacoma (No. 069731 – Task Order 8).

This report is organized to provide the regulations, methods, and results of the inspection. A site plan was modified to provide approximate sample locations. Tables attached to the report provide a summary of results. Photographs of the inspected materials are also included. Finally, the laboratory analytical data are attached to this report.

## **Regulations**

### ***Asbestos***

The Washington State Department of Labor and Industries Division of Occupational Safety and Health (DOSH) (WAC 296-62 and -155) and the Puget Sound Clean Air Agency (PSCAA, Regulation 3) require that building owners conduct a good faith survey for asbestos-containing materials (ACM) prior to demolition or renovation activities. The survey must be conducted by a certified asbestos building inspector under the Federal Asbestos Hazard and Emergency Response Act (AHERA, 40 CFR Part 763). Building materials that contain more than one percent asbestos are regulated as ACM and require special handling and disposal if disturbed or removed during project activities.



### Lead in Paint

Prior to 1978, lead-containing pigment was sometimes added to paint. Old lead-based paint is the most significant source of lead exposure in the U.S. today. The Environmental Protection Agency (EPA) defines lead-based paint as paint containing 5,000 parts per million (ppm) of lead or more. That definition is used in this report to determine which painted materials may require special handling to avoid release of lead to the environment or worker exposure. Pier components with lead-based paint should not require special disposal. The lead in paint comprises too small of a contribution to the mass to trigger disposal restrictions. The presence of lead in paint will also not impact material recycling, if that is the fate of the material.

### PCBs in Paint

The EPA regulates paint containing polychlorinated biphenyls (PCBs) at concentrations greater than or equal to 50 ppm as PCB bulk product waste (40 CFR 761.62). PCB bulk product waste means waste derived from manufactured products containing PCBs in a non-liquid state, at any concentration where the concentration at the time of designation for disposal is greater than or equal to 50 ppm PCBs.

### Other Regulated Building Materials

The Washington State Department of Ecology regulates other building materials as Universal Wastes, as specified in WAC 173-303-572, to include High Intensity Discharge lamps (HID) (e.g., mercury vapor, metal halide, high pressure sodium).

## **Methods**

### Asbestos

EMB Consulting conducted the asbestos inspection of Pier 4 on October 17, 2014. Samples of suspect materials were collected in the field by Elisabeth Black, CIH, an AHERA-certified Building Inspector (expiration February 12, 2015). A complete list of the samples collected, sample locations, and results is provided in Table 1 attached to this report. A project plan was modified to include sample locations. The figure is attached to this report.

EMB Consulting marked each sample location on the site figure with a unique number corresponding to the sample number to identify the material from which the sample was collected. Sample containers were labeled at the time of sample collection with the Sample ID number. The labeled samples were then placed in a larger Ziploc<sup>TM</sup> type bag and sealed for additional protection during handling and transportation. Samples were recorded on a Chain of Custody for delivery to the laboratory for analysis.

Suspect asbestos samples and chain of custody were hand delivered to NVL Laboratories of Seattle, Washington for analysis. Suspect ACM bulk samples were analyzed using polarized light microscopy (PLM) by the Interim Method for Determination of Asbestos in Bulk Insulation Samples (EPA Method 600/M4 82 020). NVL Laboratories is accredited for asbestos analysis by the National Institute of Standards and Technology (NIST) under the National Voluntary Laboratory Accreditation Program (NVLAP). Materials were considered to be positive for asbestos if they contained more than one percent asbestos.



### Lead and PCBs in Paint

Paint chip samples were collected from 12 locations to evaluate concentrations of lead. Of those, three were selected for additional analysis for PCBs in paint. Sample locations are indicated on the figure provided with this report.

All 12 paint chip samples were analyzed for lead by NVL Laboratories using Flame Atomic Absorption in accordance with EPA Method 7000B. Results are provided in Table 2 of Appendix B.

Three of the 12 paint chip samples were also analyzed for PCBs by Analytical Resources, Inc. in Tukwila, Washington using GC/ECD in accordance with EPA Method SW 8082A. Results are provided in Table 3.

### Other Regulated Building Materials

EMB Consulting conducted a visual inventory for other hazardous building materials on Pier 4.

## **Results and Conclusions**

### Asbestos

The results of the asbestos survey are summarized in this section. Table 1 provides the analytical results for the two suspect asbestos bulk samples collected by EMB Consulting for analysis. Laboratory certificates of analysis and custody forms are attached to this report.

Only the fender system pier cap fabric sample was confirmed as ACM (Sample Id 1232-02A). If this material will be disturbed during the Pier 4 demolition project, the confirmed ACM must be removed, handled, and disposed by Washington-certified asbestos abatement workers in compliance with applicable regulations.

### Lead and PCBs in Paint

A summary of the paint chip sampling results for lead is presented in Table 2. The results of the paint chip sampling can be summarized as follows:

- Yellow paint on concrete barriers (Sample ID 1232-01P) and bollard posts (Sample ID 1232-02P) was confirmed as lead-based paint.
- Orange paint on ship bollards (1232-09P) was confirmed as lead-based paint.

A summary of the paint chip sampling results for PCBs is presented in Table 3 of Appendix B. PCBs were not identified in any of the samples at or above the EPA criteria of 50 ppm for PCBs in paint. Based on this limited screening, paint waste will not be considered PCB bulk product waste during this project.

### Other Regulated Building Materials

The EMB Consulting inventory documented the following Universal Wastes on Pier 4:

- Four light posts with high-intensity discharge lamps



If these materials will be removed during the Pier 4 demolition project, they will require removal, handling, and disposal as Universal Waste Lamps in accordance with WAC 173-303-573(5).

### **Limitations**

Work for this project was performed, and this report prepared, in accordance with generally accepted professional practices for the nature and conditions of the work completed in the same or similar localities at the time the work was performed. It is intended for the exclusive use of Anchor QEA, LLC, the Port of Tacoma, and its contractors for specific application to the referenced property. No other warranty, express or implied, is made.

I appreciate the opportunity to be of service to you. Please contact me if you have questions regarding this report, or if you require additional information.

Sincerely,

A handwritten signature in blue ink, appearing to read 'E. Black'.

Elisabeth Black, CIH  
EMB Consulting LLC

### **Attachments:**

*Figure with Approximate Sample Locations*

*Site Photographs*

*Table 1 – Bulk Asbestos Sample Results, Pier 4, Port of Tacoma, Tacoma, Washington*

*Table 2 – Bulk Paint Results for Lead, Pier 4, Port of Tacoma, Tacoma, Washington*

*Table 3 – Bulk Paint Results for PCBs, Pier 4, Port of Tacoma, Tacoma, Washington*

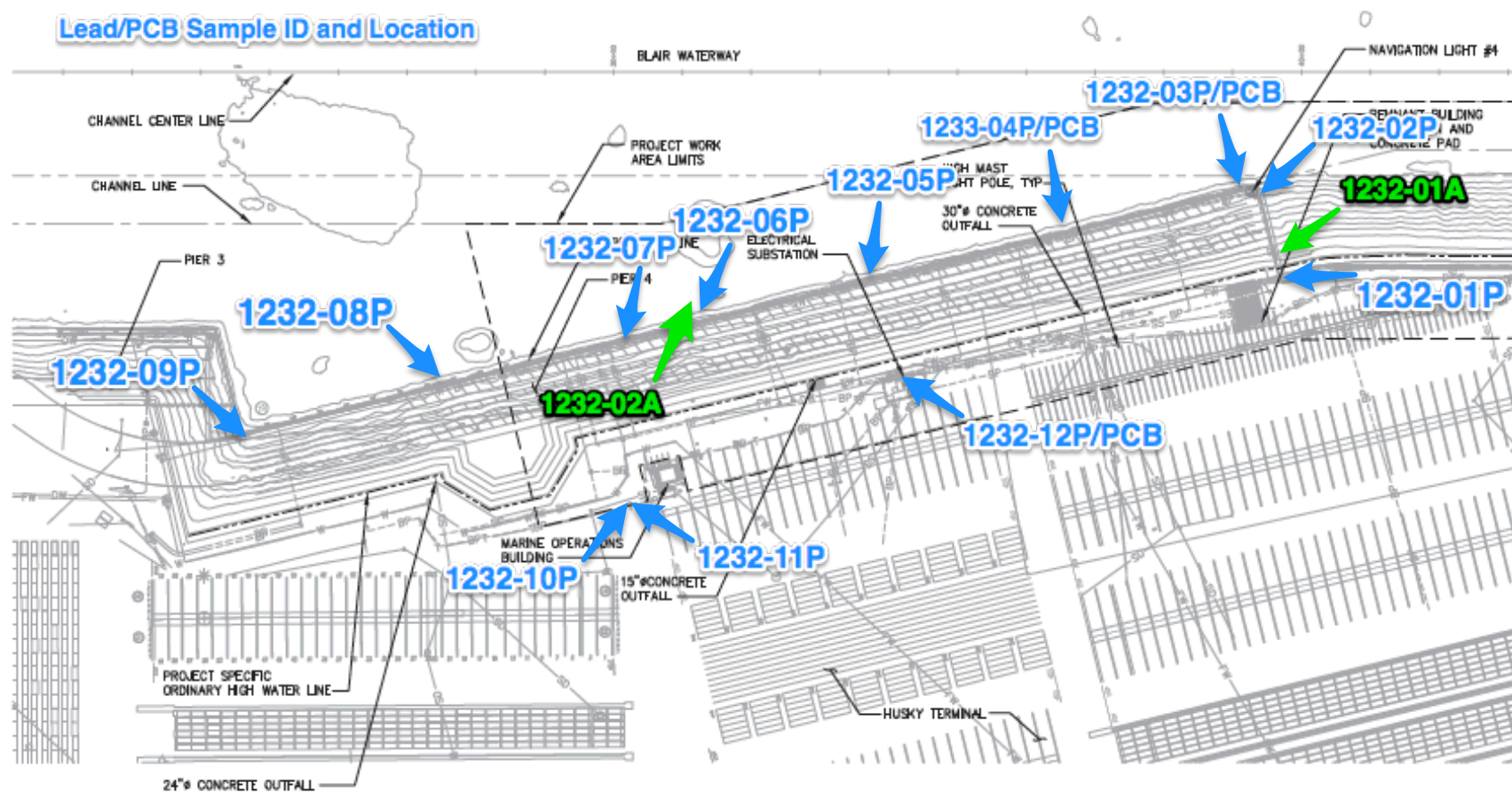
*NVL Laboratories, Bulk Asbestos Fiber Analysis, NVL Batch #1418602.00, October 23, 2014*

*NVL Laboratories, Bulk Asbestos Fiber Analysis, NVL Batch #1417323.00, October 21, 2014*

*Analytical Resources, Inc., ARI Job No. ZG31, October 27, 2014*

## Asbestos Sample ID and Location

## Lead/PCB Sample ID and Location



**Table 1 - Bulk Asbestos Sample Results**  
**Pier 4**  
**Port of Tacoma**  
**Tacoma, Washington**

Sample ID	Material Description	Location	Asbestos (in Percent)
1232-01A	Wire Wrap L1: wrap (silver) L2: fabric (white)	SW End of Pier 4 Inside metal pipe-casing	L1: ND L2: ND
1232-02A	<b>Fender System Pier Cap Material</b> <b>Asphaltic material with fabric (black/white)</b>	<b>Old fender system in water</b> <b>Directly N of Pier 4</b>	<b>5% chrysotile</b>

*ND = Non-Detect*

**Table 2 - Bulk Paint Results for Lead**  
**Pier 4**  
**Port of Tacoma**  
**Tacoma, Washington**

Sample ID	Material Description	Location	Lead (in mg/kg)	EPA Lead-Based Paint Criteria (in mg/kg)
1232-01P	Yellow Paint Barrier - Concrete	SE corner of Pier 4	16,000	5,000
1232-02P	Yellow Paint Bollard Post - Concrete and Metal	NE corner of Pier 4	40,000	
1232-03P	Yellow Paint Anchor Box - Metal	NE corner of Pier 4	<52	
1232-04P	Yellow Paint Ship Cleat - Metal	N side of Pier 4 along water SE end	390	
1232-05P	Blue Paint Bullrail Box - Metal	N side of Pier 4 along water SE end	<52	
1232-06P	Red and Grey Paint Bullrail Box - Metal	N side of Pier 4 along water Center	600	
1232-07P	Yellow Paint Ship Bollard - Metal	N side of Pier 4 along water Center	2,900	
1232-08P	Grey Paint Bullrail Box - Metal	N side of Pier 4 along water Center	<110	
1232-09P	Orange Paint Ship Bollard - Metal	N corner of Pier 4	47,000	
1232-10P	Black and Yellow Paint Light Pole - Metal	Light Pole E of Marine Ops Bldg	430	
1232-11P	Yellow Paint Light Pole Base - Concrete	Light Pole E of Marine Ops Bldg	<58	
1232-12P	Yellow Paint Railing - Metal	Railing around Substation S side of Pier 4	<63	

mg/kg - milligrams per kilogram



**Table 3 - Bulk Paint Results for PCBs**  
**Pier 4**  
**Port of Tacoma**  
**Tacoma, Washington**

Sample ID	Material Description	Sample Location	PCB Results by Aroclor (in ppb)		EPA PCB Criteria (in ppb)
1232-03PCB	Yellow Paint Anchor Box - Metal	NE corner of Pier 4	Aroclor 1016	<790	50,000
			Aroclor 1242	<790	
			Aroclor 1248	<790	
			Aroclor 1254	<790	
			Aroclor 1260	<790	
			Aroclor 1221	<790	
			Aroclor 1232	<790	
			<b>Total PCBs</b>	<b>ND</b>	
1232-04PCB	Yellow Paint Ship Cleat - Metal	N side of Pier 4 along water SE end	Aroclor 1016	<790	
			Aroclor 1242	<790	
			Aroclor 1248	<790	
			Aroclor 1254	<790	
			Aroclor 1260	<790	
			Aroclor 1221	<790	
			Aroclor 1232	<790	
			<b>Total PCBs</b>	<b>ND</b>	
1232-12PCB	Yellow Paint Railing - Metal	Railing around Substation S side of Pier 4	Aroclor 1016	<2,700	
			Aroclor 1242	<2,700	
			Aroclor 1248	<2,700	
			Aroclor 1254	<2,700	
			Aroclor 1260	<2,700	
			Aroclor 1221	<2,700	
			Aroclor 1232	<2,700	
			<b>Total PCBs</b>	<b>ND</b>	

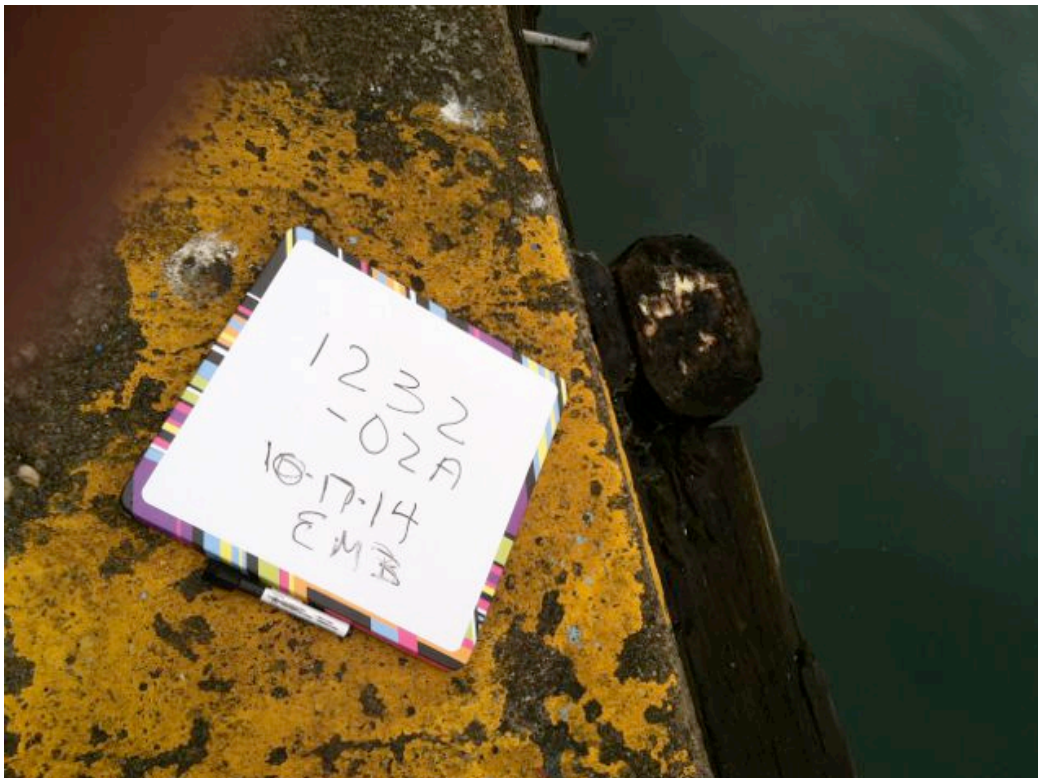
PCBs - Polychlorinated Biphenyls

ppb - parts per billion

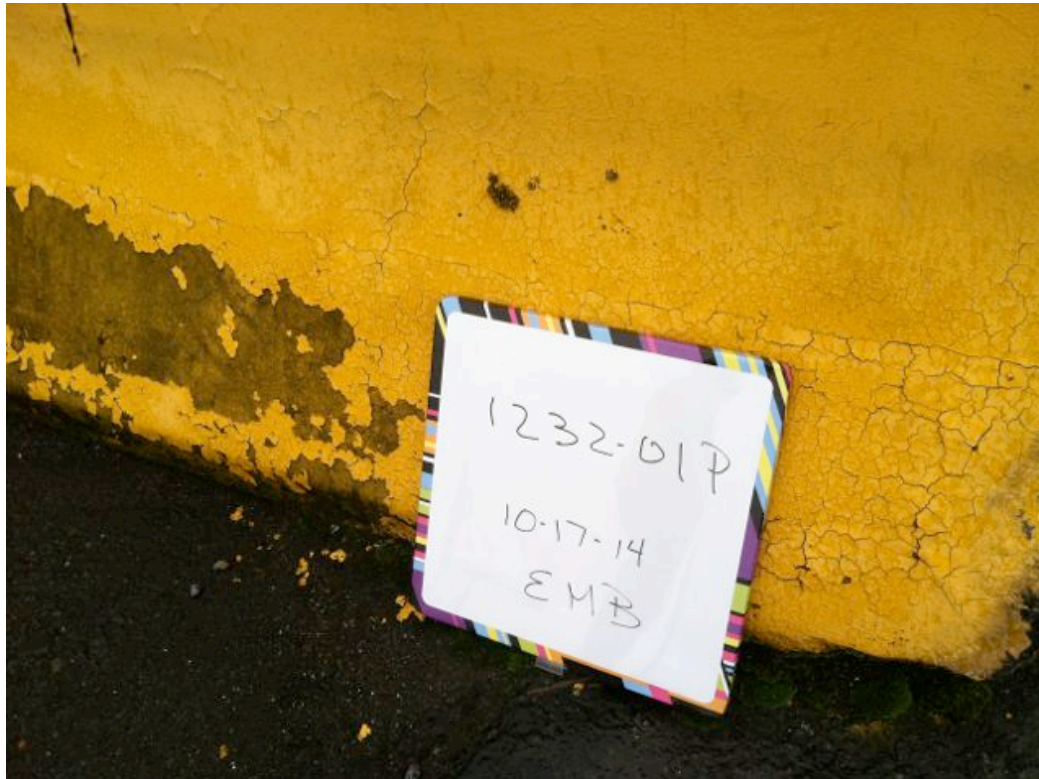
ND - Not detected at or above the laboratory limit of detection



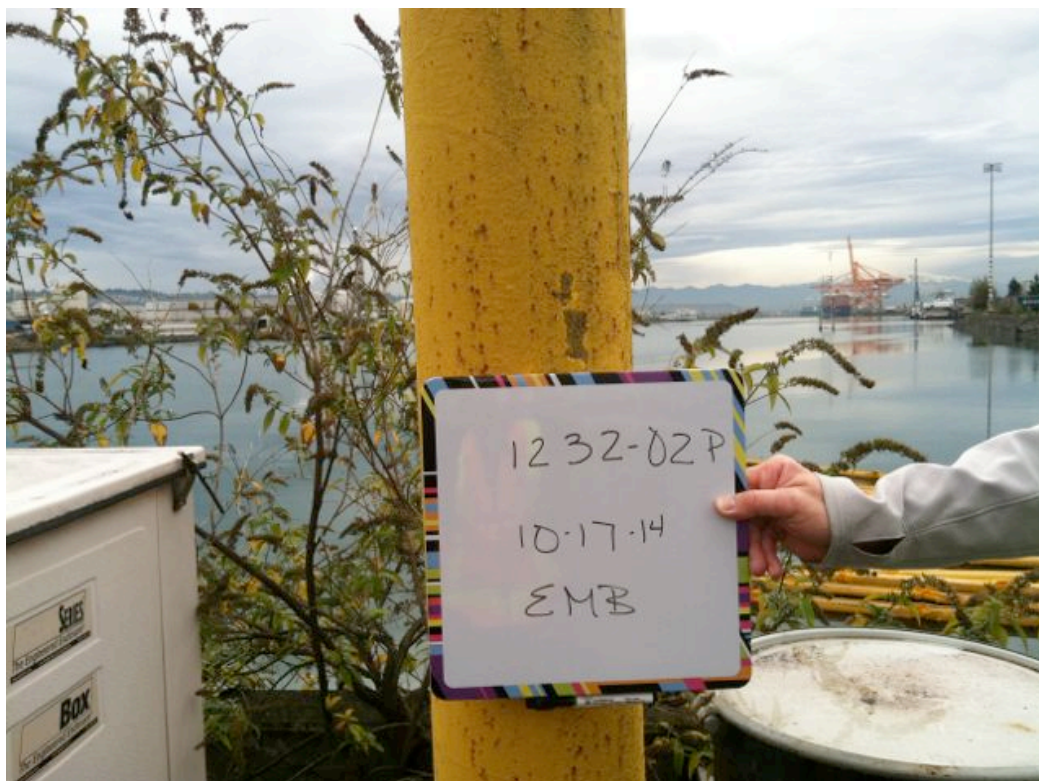
**Photograph 1: Pier 4, Wire Wrap inside Ducted Pipe (Sample 1232-01A)**



**Photograph 2: Pier 4, Old Pier Cap Material (Sample 1232-02A)**

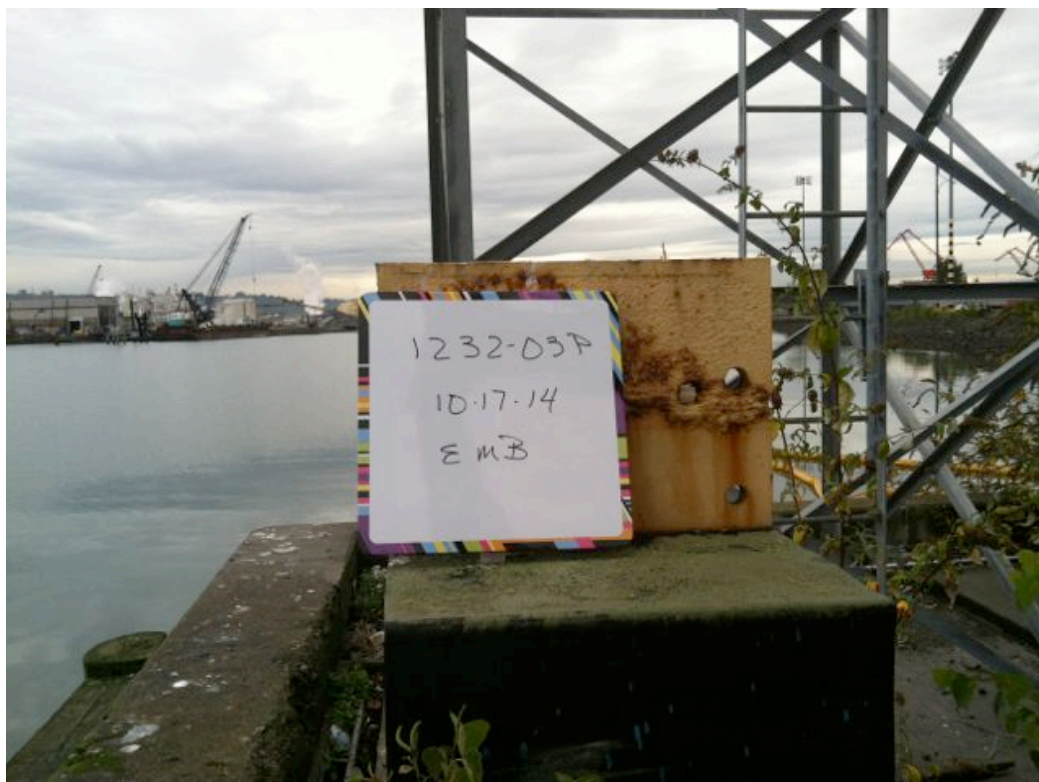


**Photograph 3: Pier 4, Concrete Barrier – Yellow (Sample 1232-01P)**



**Photograph 4: Pier 4, Bollard Post - Yellow (Sample 1232-02P)**





**Photograph 5: Pier 4, Anchor Box - Yellow (Sample 1232-03P)**



**Photograph 6: Pier 4, Ship Cleat - Yellow (Sample 1232-04P)**



**Photograph 7: Pier 4, Bullrail Box - Blue (Sample 1232-05P)**



**Photograph 8: Pier 4, Bullrail Box - Red/Grey (Sample 1232-06P)**





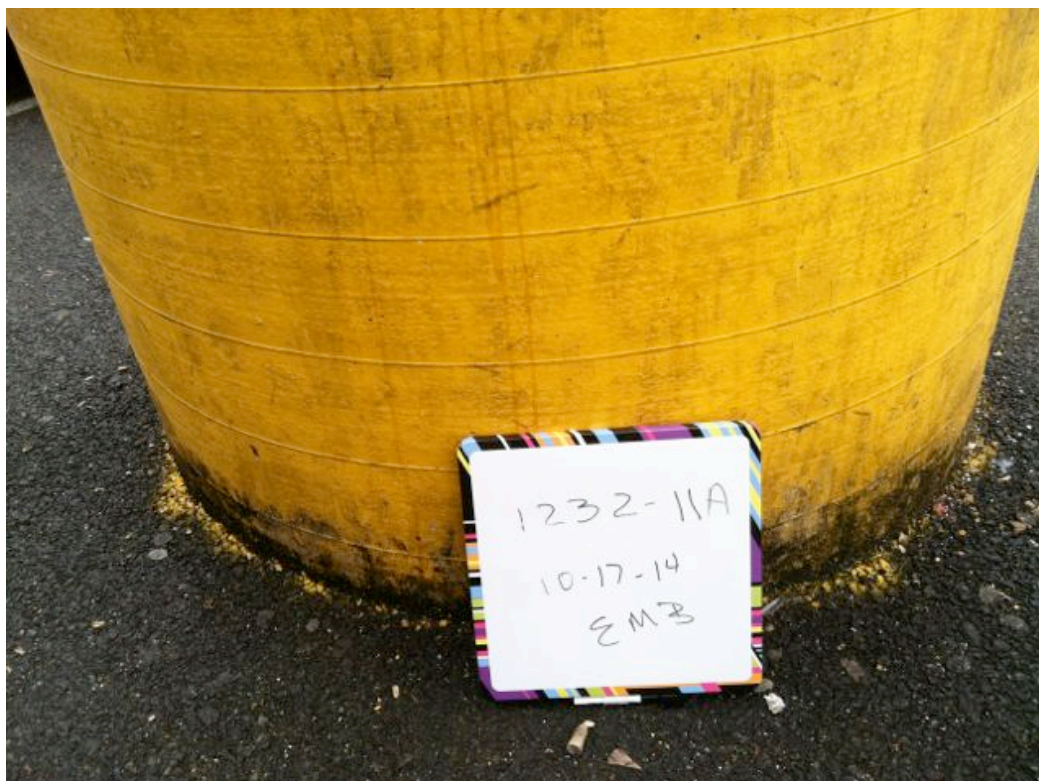
**Photograph 9: Pier 4, Ship Bollard – Orange/Yellow (Sample 1232-07P)**



**Photograph 10: Pier 4, Ship Bollard – Orange (Sample 1232-09P)**



**Photograph 11: Pier 4, Light Pole – Black/Yellow (Sample 1232-10P)**



**Photograph 12: Pier 4, Light Pole Base –Yellow (Sample 1232-11P)**





**Photograph 12: Pier 4, Railing at Substation –Yellow (Sample 1232-12P)**



# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: EMB Consulting, LLC  
Address: PO Box 5171  
Lynnwood, WA 98046

**Attention: Ms. Elisabeth Black**  
Project Location: POT - Pier 4

**Batch #: 1418602.00**

Client Project #: 1232  
Date Received: 10/20/2014  
Samples Received: 2  
Samples Analyzed: 2  
Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

**Lab ID: 14131787**      **Client Sample #: 1232-01A**

Location: POT - Pier 4

Comments: Unsure of correct layer sequence

**Layer 1 of 2**      **Description:** Silver shiny plastic material

Non-Fibrous Materials:  
Plastic

Other Fibrous Materials:%  
None Detected    ND

**Asbestos Type: %**  
None Detected ND

**Layer 2 of 2**      **Description:** Off-white woven fibers with soft white sticky material

Non-Fibrous Materials:  
Binder/Filler, Miscellaneous particles, Fine particles

Other Fibrous Materials:%  
Cellulose    65%

**Asbestos Type: %**  
None Detected ND

**Lab ID: 14131788**      **Client Sample #: 1232-02A**

Location: POT - Pier 4

**Layer 1 of 1**      **Description:** Black asphaltic built-up material with white woven fibers

Non-Fibrous Materials:  
Asphalt/Binder, Miscellaneous particles, Fine grains

Other Fibrous Materials:%  
Glass fibers    31%  
Cellulose      6%

**Asbestos Type: %**  
Chrysotile 5%

**Sampled by:** Client

**Analyzed by:** Matt Macfarlane

**Date:** 10/23/2014

**DRAFT**

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government.

**NVL Laboratories, Inc.**

4708 Aurora Ave N, Seattle, WA 98103

Tel: 206.547.0100 Emerg. Cell: 206.914.4646

Fax: 206.634.1936 1.888.NVL.LABS (685.5227)

**CHAIN of CUSTODY  
SAMPLE LOG****1418602**Client **EMB Consulting, LLC**Street **PO Box 5171**

Lynnwood, WA 98046

NVL Batch Number

Client Job Number

Total Samples

Turn Around Time

☐ 1 Hr ☐ 6 Hrs ☒ 3 Days ☐ 10 Days  
☐ 2 Hrs ☐ 1 Day ☐ 4 Days  
☐ 4 Hrs ☐ 2 Days ☐ 5 Days

Please call for TAT less than 24 Hrs

Project Manager **Ms. Elisabeth Black**

Project Location

**DOT - Pier 4**Email address **emblackconsult@gmail.com**

Phone: (206) 915-2395

Fax:

<input type="checkbox"/> Asbestos Air	<input type="checkbox"/> PCM (NIOSH 7400)	<input type="checkbox"/> TEM (NIOSH 7402)	<input type="checkbox"/> TEM (AHERA)	<input type="checkbox"/> TEM (EPA Level II)	<input type="checkbox"/> Other
<input checked="" type="checkbox"/> Asbestos Bulk	<input checked="" type="checkbox"/> PLM (EPA/600/R-93/116)	<input type="checkbox"/> PLM (EPA Point Count)	<input type="checkbox"/> PLM (EPA Gravimetry)	<input type="checkbox"/> TEM BULK	
<input type="checkbox"/> Mold/Fungus	<input type="checkbox"/> Mold Air	<input type="checkbox"/> Mold Bulk	<input type="checkbox"/> Rotometer Calibration		
<b>METALS</b>	<b>Det. Limit</b>	<b>Matrix</b>	<b>RCRA Metals</b>	<input type="checkbox"/> All 8	<b>Other Metals</b>
<input type="checkbox"/> Total Metals	<input type="checkbox"/> FAA (ppm)	<input type="checkbox"/> Air Filter	<input type="checkbox"/> Paint Chips in %	<input type="checkbox"/> Arsenic (As)	<input type="checkbox"/> All 3
<input type="checkbox"/> TCLP	<input type="checkbox"/> ICP (ppm)	<input type="checkbox"/> Drinking water	<input type="checkbox"/> Paint Chips in cn	<input type="checkbox"/> Barium (Ba)	<input type="checkbox"/> Copper (Cu)
<input type="checkbox"/> Cr 6	<input type="checkbox"/> GFAA (pp)	<input type="checkbox"/> Dust/wipe (Area)	<input type="checkbox"/> Waste Water	<input type="checkbox"/> Cadmium (Cd)	<input type="checkbox"/> Nickel (Ni)
		<input type="checkbox"/> Soil	<input type="checkbox"/> Other	<input type="checkbox"/> Chromium (Cr)	<input type="checkbox"/> Silver (Ag)
<input type="checkbox"/> Other Types of Analysis	<input type="checkbox"/> Fiberglass	<input type="checkbox"/> Nuisance Dust	<input type="checkbox"/> Other (Specify) _____		
	<input type="checkbox"/> Silica	<input type="checkbox"/> Respirable Dust			

Condition of Package: ☐ Good ☐ Damaged (no spillage) ☐ Severe damage (spillage)

Seq. #	Lab ID	Client Sample Number	Comments (e.g Sample are, Sample Volume, etc)	A/R
1		<b>1232-D1A</b>		
2		<b>1232-D2A</b>		
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				

	Print Below	Sign Below	Company	Date	Time
Sampled by	<b>Elisabeth Black</b>	<b>E. Black</b>	<b>EMB Consulting</b>	<b>10-20</b>	<b>3:00</b>
Relinquished by	<b>Elisabeth Black</b>	<b>E. Black</b>	<b>EMB Consulting</b>	<b>10-20</b>	<b>3:20</b>
Received by	<b>Tiffany Kannell</b>	<b>Tiffany Kannell</b>	<b>NVL</b>	<b>10-20-14</b>	<b>3:20pm</b>
Analyzed by					
Results Called by					
Results Faxed by					

**Special Instructions:** Unless requested in writing, all samples will be disposed of two (2) weeks after analysis.

October 21, 2014

Elisabeth Black  
**EMB Consulting, LLC**  
PO Box 5171  
Lynnwood, WA 98046



Laboratory | Management | Training

**RE: Metals Analysis; NVL Batch # 1418601.00**

Dear Ms. Black,

Enclosed please find the test results for samples submitted to our laboratory for analysis. Preparation of these samples was conducted following protocol outlined in EPA Method SW 846 -3051 unless stated otherwise. Analysis of these samples was performed using analytical instruments in accordance with U.S. EPA, NIOSH, OSHA and other ASTM methods.

For matrix materials submitted as paint, dust wipe, soil or TCLP samples, analysis for the presence of total metals is conducted using published U.S. EPA Methods. Paint and soil results are usually expressed in mg/Kg which is equivalent to parts per million (ppm). Lead (Pb) in paint is usually expressed in mg/Kg (ppm), Percent (%) or mg/cm<sup>2</sup> by area. Dust wipe sample results are usually expressed in ug/wipe and ug/ft<sup>2</sup>. TCLP samples are reported in mg/L (ppm). For air filter samples, analyses are conducted using NIOSH and OSHA Methods. Results are expressed in ug/filter and ug/m<sup>3</sup>. Other matrix materials are analyzed accordingly using published methods or specified by client. The reported test results pertain only to items tested. Lead test results are not blank corrected.

For recent regulation updates pertaining to current regulatory levels or permissible exposure levels, please call your local regulatory agencies for more details.

This report is considered highly confidential and will not be released without your approval. Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. If you need further assistance please feel free to call us at 206-547-0100 or 1-888-NVLLABS.

Sincerely,

A handwritten signature in black ink, appearing to read "Nick Ly".

Nick Ly, Technical Director



**1.888.NVL.LABS**  
1.888.(685.5227)  
www.nvllabs.com

NVL Laboratories, Inc.  
4708 Aurora Ave N, Seattle, WA 98103  
p 206.547.0100 | f 206.634.1936

## Analysis Report

## Total Lead (Pb)

Client: EMB Consulting, LLC  
Address: PO Box 5171  
Lynnwood, WA 98046

Batch #: 1418601.00

Matrix: Paint  
Method: EPA 3051/7000B  
Client Project #: 1232  
Date Received: 10/20/2014  
Samples Received: 12  
Samples Analyzed: 12

Attention: Ms. Elisabeth Black

Project Location: POT - Pier 4

Lab ID	Client Sample #	Sample Weight (g)	RL in mg/Kg	Results in mg/Kg	Results in percent
14131775	1232-01P	0.1987	51.0	16000.0	1.6000
14131776	1232-02P	0.1985	51.0	40000.0	4.0000
14131777	1232-03P	0.1952	52.0	< 52.0	<0.0052
14131778	1232-04P	0.1938	53.0	390.0	0.0390
14131779	1232-05P	0.1969	52.0	< 52.0	<0.0052
14131780	1232-06P	0.1583	64.0	600.0	0.0600
14131781	1232-07P	0.1895	54.0	2900.0	0.2900
14131782	1232-08P	0.0900	110.0	< 110.0	<0.0110
14131783	1232-09P	0.2057	50.0	47000.0	4.7000
14131784	1232-10P	0.0328	160.0	430.0	0.0430
14131785	1232-11P	0.1751	58.0	< 58.0	<0.0058
14131786	1232-12P	0.1630	63.0	< 63.0	<0.0063

Comments: Small sample size (&lt;0.05g) for 1232-10P.

Sampled by: Client

Analyzed by: Yasuyuki Hida

Reviewed by: Nick Ly

Date Analyzed: 10/21/2014

Date Issued: 10/21/2014

  
Nick Ly, Technical Director

mg/ Kg =Milligrams per kilogram

Percent = Milligrams per kilogram / 10000

Note : Method QC results are acceptable unless stated otherwise.

Unless otherwise indicated, the condition of all samples was acceptable at time of receipt.

RL = Reporting Limit

'&lt;' = Below the reporting Limit

**NVL Laboratories, Inc.**

4708 Aurora Ave N, Seattle, WA 98103

Tel: 206.547.0100 Emerg. Cell: 206.914.4646

Fax: 206.634.1936 1.888.NVL.LABS (685.5227)

**CHAIN of CUSTODY  
SAMPLE LOG****1418601**Client **EMB Consulting, LLC**Street **PO Box 5171**

Lynnwood, WA 98046

NVL Batch Number

Client Job Number

Total Samples

Turn Around Time

☐ 1 Hr ☐ 6 Hrs ☒ 3 Days ☐ 10 Days☐ 2 Hrs ☐ 1 Day ☐ 4 Days☐ 4 Hrs ☐ 2 Days ☐ 5 Days

Please call for TAT less than 24 Hrs

Project Manager **Ms. Elisabeth Black**

Project Location

Email address **emblackconsult@gmail.com**

Phone: (206) 915-2395

Fax:

<input type="checkbox"/> Asbestos Air	<input type="checkbox"/> PCM (NIOSH 7400)	<input type="checkbox"/> TEM (NIOSH 7402)	<input type="checkbox"/> TEM (AHERA)	<input type="checkbox"/> TEM (EPA Level II)	<input type="checkbox"/> Other
<input type="checkbox"/> Asbestos Bulk	<input type="checkbox"/> PLM (EPA/600/R-93/116)	<input type="checkbox"/> PLM (EPA Point Count)	<input type="checkbox"/> PLM (EPA Gravimetry)	<input type="checkbox"/> TEM BULK	
<input type="checkbox"/> Mold/Fungus	<input type="checkbox"/> Mold Air	<input type="checkbox"/> Mold Bulk	<input type="checkbox"/> Rotometer Calibration		
<b>METALS</b>	<b>Det. Limit</b>	<b>Matrix</b>	<b>RCRA Metals</b>	<input type="checkbox"/> All 8	<b>Other Metals</b>
<input checked="" type="checkbox"/> Total Metals	<input type="checkbox"/> FAA (ppm)	<input type="checkbox"/> Air Filter	<input checked="" type="checkbox"/> Paint Chips in %	<input type="checkbox"/> Arsenic (As)	<input checked="" type="checkbox"/> Lead (Pb)
<input type="checkbox"/> TCLP	<input type="checkbox"/> ICP (ppm)	<input type="checkbox"/> Drinking water	<input type="checkbox"/> Paint Chips in cn	<input type="checkbox"/> Barium (Ba)	<input type="checkbox"/> Mercury (Hg)
<input type="checkbox"/> Cr 6	<input type="checkbox"/> GFAA (ppb)	<input type="checkbox"/> Dust/wipe (Area)	<input type="checkbox"/> Waste Water	<input type="checkbox"/> Cadmium (Cd)	<input type="checkbox"/> Selenium (Se)
	<input type="checkbox"/> Soil	<input type="checkbox"/> Other	<input type="checkbox"/> Chromium (Cr)	<input type="checkbox"/> Silver (Ag)	<input type="checkbox"/> All 3
<input type="checkbox"/> Other Types of Analysis	<input type="checkbox"/> Fiberglass	<input type="checkbox"/> Nuisance Dust	<input type="checkbox"/> Other (Specify) _____		
	<input type="checkbox"/> Silica	<input type="checkbox"/> Respirable Dust			

Condition of Package: ☐ Good ☐ Damaged (no spillage) ☐ Severe damage (spillage)

Seq. #	Lab ID	Client Sample Number	Comments (e.g Sample are, Sample Volume, etc)	A/R
1		1232-01P		
2		-02P		
3		-03P		
4		-04P		
5		-05P		
6		-06P		
7		-07P		
8		-08P		
9		-09P		
10		-10P		
11		-11P		
12		-12P		
13				
14				
15				

	Print Below	Sign Below	Company	Date	Time
Sampled by	Elisabeth Black	E. Black	EMB Consulting	10/20	3:00
Relinquished by	Elisabeth Black	E. Black	EMB Consulting	10/20	3:20
Received by	Jeff Kennell	Toby Hida	NVL	10/20/14	3:25 pm
Analyzed by	Yasuyuki Hida			10/21/14	10:40
Results Called by					
Results Faxed by					

**Special Instructions:** Unless requested in writing, all samples will be disposed of two (2) weeks after analysis.



**Analytical Resources, Incorporated**  
Analytical Chemists and Consultants

October 27, 2014

Elisabeth Black, CIH  
EMB Consulting, LLC.  
PO Box 5171  
Lynnwood, WA 98046

**RE: Project: 1232**  
**ARI Job No: ZG31**

Dear Elisabeth:

Please find enclosed the original Chain-of-Custody (COC), sample receipt documentation, and the final report for the sample from the project referenced above. Analytical Resources, Inc. (ARI) accepted three solid samples in good condition on October 21, 2014. For further details regarding sample receipt, please refer to the enclosed Cooler Receipt Form.

The samples were analyzed for PCBs, as requested on the COC.

Sample 1232-12PCB has raised reporting limits due to limited sample volume.

There were no other anomalies associated with the analyses of the samples.

An electronic copy of this package will be kept on file with ARI. Should you have any questions regarding these results, please feel free to contact me at any time.

Sincerely,

ANALYTICAL RESOURCES, INC.

Kelly Bottem  
Client Services Manager  
(206) 695-6211  
[kellyb@arilabs.com](mailto:kellyb@arilabs.com)  
[www.arilabs.com](http://www.arilabs.com)

cc: eFile ZG31



## Chain of Custody Record & Laboratory Analysis Request

**Analytical Resources, Incorporated**  
Analytical Chemists and Consultants  
4611 South 134th Place, Suite 100  
Tukwila, WA 98168  
206-695-6200 206-695-6201 (fax)  
[www.arilabs.com](http://www.arilabs.com)

[illegible]

**Limits of Liability:** ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.

**Sample Retention Policy:** All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.



# Cooler Receipt Form

ARI Client: EmB Consulting  
COC No(s): \_\_\_\_\_ NA  
Assigned ARI Job No: 2631

Project Name: POT-Pier 4  
Delivered by: Fed-Ex UPS Courier Hand Delivered Other: \_\_\_\_\_  
Tracking No: \_\_\_\_\_ NA

## Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler? YES (NO)  
Were custody papers included with the cooler? (YES) NO  
Were custody papers properly filled out (ink, signed, etc.) (YES) NO  
Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry) 21.1  
Time: \_\_\_\_\_  
If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: 90877952  
Cooler Accepted by: Jm Date: 10/21/14 Time: 1130

**Complete custody forms and attach all shipping documents**

## Log-In Phase:

Was a temperature blank included in the cooler? YES (NO)  
What kind of packing material was used? ... Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other: \_\_\_\_\_  
Was sufficient ice used (if appropriate)? NA YES (NO)  
Were all bottles sealed in individual plastic bags? YES (NO)  
Did all bottles arrive in good condition (unbroken)? (YES) NO  
Were all bottle labels complete and legible? (YES) NO  
Did the number of containers listed on COC match with the number of containers received? (YES) NO  
Did all bottle labels and tags agree with custody papers? (YES) NO  
Were all bottles used correct for the requested analyses? (YES) NO  
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs).. (NA) YES NO  
Were all VOC vials free of air bubbles? (NA) YES NO  
Was sufficient amount of sample sent in each bottle? (YES) NO  
Date VOC Trip Blank was made at ARI: (NA)  
Was Sample Split by ARI: (NA) YES Date/Time: \_\_\_\_\_ Equipment: \_\_\_\_\_ Split by: \_\_\_\_\_  
Samples Logged by: JS Date: 10.21.14 Time: 1203

**\*\* Notify Project Manager of discrepancies or concerns \*\***

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

**Additional Notes, Discrepancies, & Resolutions:**

By: \_\_\_\_\_ Date: \_\_\_\_\_

<b>Small Air Bubbles</b> ~ 2mm 	<b>Peabubbles</b> 2-4 mm 	<b>LARGE Air Bubbles</b> > 4 mm 	<b>Small</b> → "sm" (< 2 mm) <b>Peabubbles</b> → "pb" (2 to < 4 mm) <b>Large</b> → "lg" (4 to < 6 mm) <b>Headspace</b> → "hs" (> 6 mm)
---------------------------------------	---------------------------------	--	---



# Sample ID Cross Reference Report



ARI Job No: ZG31  
Client: EMB Consulting LLC  
Project Event: 1232  
Project Name: POT-Pier 4

Sample ID	ARI	ARI	Matrix	Sample Date/Time	VTSR
	Lab ID	LIMS ID			
1. 1232-04PCB	ZG31A	14-22567	Paint	10/17/14	10/21/14 11:30
2. 1232-03PCB	ZG31B	14-22568	Paint	10/17/14	10/21/14 11:30
3. 1232-12PCB	ZG31C	14-22569	Paint	10/17/14	10/21/14 11:30

ORGANICS ANALYSIS DATA SHEET  
PCB by GC/ECD Method SW8082A  
Extraction Method: SW3580A  
Page 1 of 1

Sample ID: 1232-04PCB  
SAMPLE

Lab Sample ID: ZG31A  
LIMS ID: 14-22567  
Matrix: Paint  
Data Release Authorized: *mm*  
Reported: 10/27/14

QC Report No: ZG31-EMB Consulting LLC  
Project: POT-Pier 4  
1232  
Date Sampled: 10/17/14  
Date Received: 10/21/14

Date Extracted: 10/22/14  
Date Analyzed: 10/23/14 17:13  
Instrument/Analyst: ECD7/JGR  
GPC Cleanup: No  
Sulfur Cleanup: No  
Acid Cleanup: Yes  
Florisil Cleanup: No

Sample Amount: 1.01 g-as-rec  
Final Extract Volume: 40.0 mL  
Dilution Factor: 1.00  
Silica Gel: Yes  
Percent Moisture: NA

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	790	< 790 U
53469-21-9	Aroclor 1242	790	< 790 U
12672-29-6	Aroclor 1248	790	< 790 U
11097-69-1	Aroclor 1254	790	< 790 U
11096-82-5	Aroclor 1260	790	< 790 U
11104-28-2	Aroclor 1221	790	< 790 U
11141-16-5	Aroclor 1232	790	< 790 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	89.0%
Tetrachlorometaxylene	71.8%

ORGANICS ANALYSIS DATA SHEET  
PCB by GC/ECD Method SW8082A  
Extraction Method: SW3580A  
Page 1 of 1



Sample ID: 1232-03PCB  
SAMPLE

Lab Sample ID: ZG31B  
LIMS ID: 14-22568  
Matrix: Paint  
Data Release Authorized: *mm*  
Reported: 10/27/14

QC Report No: ZG31-EMB Consulting LLC  
Project: POT-Pier 4  
1232  
Date Sampled: 10/17/14  
Date Received: 10/21/14

Date Extracted: 10/22/14  
Date Analyzed: 10/23/14 17:35  
Instrument/Analyst: ECD7/JGR  
GPC Cleanup: No  
Sulfur Cleanup: No  
Acid Cleanup: Yes  
Florisil Cleanup: No

Sample Amount: 1.01 g-as-rec  
Final Extract Volume: 40.0 mL  
Dilution Factor: 1.00  
Silica Gel: Yes  
Percent Moisture: NA

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	790	< 790 U
53469-21-9	Aroclor 1242	790	< 790 U
12672-29-6	Aroclor 1248	790	< 790 U
11097-69-1	Aroclor 1254	790	< 790 U
11096-82-5	Aroclor 1260	790	< 790 U
11104-28-2	Aroclor 1221	790	< 790 U
11141-16-5	Aroclor 1232	790	< 790 U

Reported in µg/kg (ppb)

**PCB Surrogate Recovery**

Decachlorobiphenyl	90.8%
Tetrachlorometaxylene	80.8%

ORGANICS ANALYSIS DATA SHEET  
PCB by GC/ECD Method SW8082A  
Extraction Method: SW3580A  
Page 1 of 1



Sample ID: 1232-12PCB  
SAMPLE

Lab Sample ID: ZG31C  
LIMS ID: 14-22569  
Matrix: Paint  
Data Release Authorized: *[Signature]*  
Reported: 10/27/14

QC Report No: ZG31-EMB Consulting LLC  
Project: POT-Pier 4  
1232  
Date Sampled: 10/17/14  
Date Received: 10/21/14

Date Extracted: 10/22/14  
Date Analyzed: 10/23/14 17:57  
Instrument/Analyst: ECD7/JGR  
GPC Cleanup: No  
Sulfur Cleanup: No  
Acid Cleanup: Yes  
Florisil Cleanup: No

Sample Amount: 0.30 g-as-rec  
Final Extract Volume: 40.0 mL  
Dilution Factor: 1.00  
Silica Gel: Yes  
Percent Moisture: NA

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	2,700	< 2,700 U
53469-21-9	Aroclor 1242	2,700	< 2,700 U
12672-29-6	Aroclor 1248	2,700	< 2,700 U
11097-69-1	Aroclor 1254	2,700	< 2,700 U
11096-82-5	Aroclor 1260	2,700	< 2,700 U
11104-28-2	Aroclor 1221	2,700	< 2,700 U
11141-16-5	Aroclor 1232	2,700	< 2,700 U

Reported in µg/kg (ppb)

**PCB Surrogate Recovery**

Decachlorobiphenyl	87.5%
Tetrachlorometaxylene	77.8%

ORGANICS ANALYSIS DATA SHEET  
PCB by GC/ECD Method SW8082A  
Extraction Method: SW3580A  
Page 1 of 1



Sample ID: MB-102214  
METHOD BLANK

Lab Sample ID: MB-102214  
LIMS ID: 14-22567  
Matrix: Paint  
Data Release Authorized: *MW*  
Reported: 10/27/14

QC Report No: ZG31-EMB Consulting LLC  
Project: POT-Pier 4  
1232  
Date Sampled: NA  
Date Received: NA

Date Extracted: 10/22/14  
Date Analyzed: 10/23/14 16:07  
Instrument/Analyst: ECD7/JGR  
GPC Cleanup: No  
Sulfur Cleanup: Yes  
Acid Cleanup: Yes  
Florisil Cleanup: No

Sample Amount: 1.00 g  
Final Extract Volume: 40.0 mL  
Dilution Factor: 1.00  
Silica Gel: No  
Percent Moisture: NA

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	800	< 800 U
53469-21-9	Aroclor 1242	800	< 800 U
12672-29-6	Aroclor 1248	800	< 800 U
11097-69-1	Aroclor 1254	800	< 800 U
11096-82-5	Aroclor 1260	800	< 800 U
11104-28-2	Aroclor 1221	800	< 800 U
11141-16-5	Aroclor 1232	800	< 800 U

Reported in µg/kg (ppb)

**PCB Surrogate Recovery**

Decachlorobiphenyl	98.2%
Tetrachlorometaxylene	80.5%

SW8082/PCB SOIL/SOLID/SEDIMENT SURROGATE RECOVERY SUMMARY

Matrix: Paint

QC Report No: ZG31-EMB Consulting LLC  
Project: POT-Pier 4  
1232

Client ID	DCBP % REC	DCBP LCL-UCL	TCMX % REC	TCMX LCL-UCL	TOT OUT
MB-102214	98.2%	30-160	80.5%	30-160	0
LCS-102214	87.0%	30-160	70.0%	30-160	0
LCSD-102214	91.0%	30-160	77.0%	30-160	0
1232-04PCB	89.0%	30-160	71.8%	30-160	0
1232-03PCB	90.8%	30-160	80.8%	30-160	0
1232-12PCB	87.5%	30-160	77.8%	30-160	0

Medium Level Control Limits  
Prep Method: SW3580A  
Log Number Range: 14-22567 to 14-22569

Sample ID: LCS-102214  
LCS/LCSD

Lab Sample ID: LCS-102214  
LIMS ID: 14-22567  
Matrix: Paint  
Data Release Authorized: *MW*  
Reported: 10/27/14

QC Report No: ZG31-EMB Consulting LLC  
Project: POT-Pier 4  
1232  
Date Sampled: NA  
Date Received: NA

Date Extracted LCS/LCSD: 10/22/14

Sample Amount LCS: 1.00 g-as-rec  
LCSD: 1.00 g-as-rec

Date Analyzed LCS: 10/23/14 16:29

Final Extract Volume LCS: 40.0 mL

LCSD: 10/23/14 16:51

LCSD: 40.0 mL

Instrument/Analyst LCS: ECD7/JGR

Dilution Factor LCS: 1.00

LCSD: ECD7/JGR

LCSD: 1.00

GPC Cleanup: No

Silica Gel: No

Sulfur Cleanup: Yes

Percent Moisture: NA

Acid Cleanup: Yes

Florisil Cleanup: No

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Aroclor 1016	16500	20000	82.5%	17800	20000	89.0%	7.6%
Aroclor 1260	18600	20000	93.0%	19400	20000	97.0%	4.2%

PCB Surrogate Recovery

	LCS	LCSD
Decachlorobiphenyl	87.0%	91.0%
Tetrachlorometaxylene	70.0%	77.0%

Results reported in µg/kg (ppb)

RPD calculated using sample concentrations per SW846.

**APPENDIX C**

**WATER QUALITY MONITORING  
AND PROTECTION PLAN  
DATED MARCH 29, 2016**



# Pier 4 Reconfiguration Project

## Water Quality Monitoring and Protection Plan



### Prepared for

Port of Tacoma  
P.O. Box 1837  
Tacoma, Washington 98401

**March 29, 2016**



**FLOYD | SNIDER**

strategy ▪ science ▪ engineering

Two Union Square • 601 Union Street • Suite 600  
Seattle, Washington 98101 • tel: 206.292.2078

### **LIMITATIONS**

This report has been prepared for the exclusive use of the Port of Tacoma, their authorized agents, and regulatory agencies. It has been prepared following the described methods and information available at the time of the work. No other party should use this report for any purpose other than that originally intended, unless Floyd|Snider agrees in advance to such reliance in writing. The information contained herein should not be utilized for any purpose or project except the one originally intended. Under no circumstances shall this document be altered, updated, or revised without written authorization of Floyd|Snider.

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## List of Appendices

Appendix A	Water Quality Monitoring Form
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## List of Abbreviations

<b>Acronym/ Abbreviation</b>	<b>Definition</b>
BMP	Best management practice
CY	Cubic yards
DGPS	Differential global positioning system
DMMP	Dredged Material Management Program
Ecology	Washington State Department of Ecology
MLLW	Mean lower low water
NPDES	National Pollutant Discharge Elimination System
NTU	Nephelometric turbidity units
OHWM	Ordinary high water mark
Phase 2 Project	Pier 4 Phase 2 Reconfiguration Project
Port	Port of Tacoma
SWPPP	Stormwater Pollution Prevention Plan
USEPA	U.S. Environmental Protection Agency
WAC	Washington Administrative Code
WDFW	Washington State Department of Fish and Wildlife
WQMPP	Water Quality Monitoring and Protection Plan

## 1.0 Introduction

This Water Quality Monitoring and Protection Plan (WQMPP) has been prepared on behalf of the Port of Tacoma (the Port) and identifies monitoring and best management practices (BMPs) for construction activities associated with the Port's Pier 4 Phase 2 Reconfiguration Project (the Phase 2 Project). The project site is located on the west side of the northern portion of the Blair Waterway that lies within the Port's Industrial Development District, which is adjacent to Commencement Bay in Tacoma, Washington (Figures 1.1 and 1.2). The WQMPP, which is required by the Washington State Department of Ecology (Ecology), has been prepared to ensure compliance with Section 401 of the Clean Water Act, Washington State Water Quality Standards, Chapter 173-201A of the Washington Administrative Code (WAC). This plan describes water quality protection measures; monitoring parameters, methods, and evaluation criteria; and contingency response and notification procedures in the event a water quality criterion is exceeded during construction activities. The project contractor selected to perform the construction activities will be subject to the requirements and procedures specified in this plan, as well as the contract specifications and other regulatory permits.

### 1.1 PROJECT DESCRIPTION

The work occurring at Pier 4 has two distinct work phases: (1) the Pier 4 Phase 1 Removal Action Project (Phase 1 Removal Action), which includes a U.S. Environmental Protection Agency (USEPA)-ordered cleanup of contaminated sediment, and (2) the Phase 2 Project, which includes reconfiguration of the existing pier. The USEPA-directed cleanup included the removal of the majority of the Pier 4 structure, including decking and piles, and the dredging of approximately 72,000 cubic yards (CY) of tributyltin (TBT)-contaminated sediments. The cleanup was considered Phase 1 of the overall Pier 4 project, and, because it was conducted as a USEPA cleanup action, it was required to meet the substantive requirements of federal, state, and local permits but did not require agency permits. Phase 1 dredging was successfully completed in February 2016, and Phase 2 is anticipated to begin in mid-2016.

For Phase 2, referred to as the Pier 4 Reconfiguration Project, the Port is securing permits from the various federal, state, and local agencies. This WQMPP applies to the construction activities associated with Phase 2. Phase 2 includes the reconfiguration and reconstruction of Pier 4 to be in alignment with Pier 3 within the Husky Container Terminal. Once the project is completed, Pier 3 and Pier 4 will have a combined marginal pier length of 2,954 feet and will be capable of simultaneously berthing two ultra-large container ships, 18,000 twenty-foot-equivalent-unit ships that are approximately 1,300 feet long and 205 feet wide. The reconfigured Pier 4 will be able to accommodate up to eight 100-foot-gauge cranes capable of loading ships that are 24-containers-wide.

The Phase 2 Project involves the following components: demolition of approximately 28,980 square feet of existing pier structure; removal of approximately 324 16.5-inch-diameter concrete piles; removal of approximately 23 14-inch diameter creosote-treated timber piles; removal of approximately 2 20-inch steel fender piles; removal of the existing fender system; cutback and dredging of the existing channel slope to realign the pier (approximately 500,000 CY of dredged material; installation of approximately 1,150 42-inch-diameter stone columns for ground improvement; armoring the new slope with a sand-gravel filter blanket and riprap; installation of approximately 1,450 24-inch octagonal precast pre-stressed concrete piles (to support a new 236,000-square-foot cast-in-place and precast concrete deck); installation of an approximately 1,325-foot-long sheet pile wall bulkhead; installation of an 8-pile supported mooring

dolphin above the ordinary high water mark (OHWM); installation of new crane rails, a panelized fender system, new bollards, and utility vaults and lines; demolition and construction of associated upland structural improvements (two-story building, small restroom building, and utilities) and electrical (light poles, electrical distribution, and substation) improvements along with other ancillary pier components; and replacement and relocation of three stormwater outfalls installed below the project-specific OHWM behind a temporary cofferdam. Because the stormwater outfall work will be constructed behind a temporary cofferdam, this work will not be restricted to the in-water work window. Work also consists of the removal of slope stabilization measures that were placed during Phase 1 work and potential removal of a buried timber bulkhead wall system, if it is found during initial subsurface exploration activities that will be conducted prior to the start of cutback dredging.

Work will be sequenced to facilitate construction efficiency and to limit the in-water portion of the project-related work to two in-water work windows.

Detailed descriptions of both the upland and in-water construction activities are provided in the Joint Aquatic Resources Permit Application (JARPA) for Phase 2 that was submitted to Ecology in January 2015 and the JARPA Addendum that was submitted on October 20, 2015.

This WQMPP applies to work conducted below the project-specific OHWM, as well as some over-water construction activities that will require specific BMPs. In-water work is defined throughout this plan as work conducted waterward of and below the project-specific elevation of +12.78 mean lower low water (MLLW) as determined during a July 2014 field inspection (Confluence 2014).

Work performed above and landward of the project-specific OHWM will be regulated by the project's National Pollutant Discharge Elimination System (NPDES) construction stormwater permit, which will be secured under a separate permitting action.

In-water work, as defined throughout this plan, will be conducted during the in-water work window for waters of Commencement Bay, July 16 through February 14. However, there are some proposed work elements that will occur waterward and below the project specific OHWM but above the tidal/physical water level, in the dry. Because these elements will only be conducted in the dry, they are proposed to occur at any time of year with specific BMPs to protect water quality, aquatic life, and habitat, as described in Section 2.0

The WQMPP focuses on the following activities:

- Vibratory pile extraction
- Dredging
- Slope armoring
- Pile installation
- General overwater work and concrete work
- Stormwater outfall cofferdam construction and removal
- Stone column installation
- Phase 1 slope stabilization measure removal

## 1.2 WATER QUALITY STANDARDS

The water quality monitoring turbidity standards applicable to this site per WAC 173-201A-210(1)(e) are as follows:

- Turbidity shall not exceed 10 nephelometric turbidity units (NTUs) over the background turbidity when the background turbidity is less than 50 NTUs.
- Turbidity shall not exceed a 20 percent increase in turbidity when the background turbidity is more than 50 NTUs.

The water quality standard for turbidity will need to be met at the compliance boundary at the edge of the authorized mixing zone for construction activities. The turbidity water quality standard includes an allowed 150-foot mixing zone that extends out from the in-water activity (or activity that warrants instrumented monitoring, as described in Section 3.1). The water quality monitoring for turbidity will be conducted at the 150-foot-radius point of compliance per the aquatic use criteria (WAC 173-201A-210(1)(e)(i)). In addition, visible turbidity greater than the background turbidity at or beyond the 150-foot-radius point of compliance is considered an exceedance of the water quality standard.

If wet concrete is observed to fall into the waterway, pH will be measured as described in Section 3.1. The water quality standard for pH is that pH must be between 7.0 to 8.5, with a variation of no more than 0.5 pH units within this range (WAC 173-201A-210(1)(f)).

In addition to the numerical standards for turbidity and pH described above, the project will also comply with narrative water quality standards, which include the following:

- No visible petroleum sheen on water observed at the construction site.
- No distressed or dying fish observed at the construction site that can be attributed to activities at the construction site.

These narrative criteria are not subject to the requirement for a mixing zone and, therefore, must be met throughout the project area.



## 2.0 Water Quality Protection Measures

This section describes the protection measures that will be implemented during all in-water work near-water work, and overwater work (as specified below) to minimize impacts on water quality. The construction activities and the type of water quality monitoring that will be performed (i.e., instrumented and/or visual monitoring) are shown on Figures 2.1 and 2.2.

### 2.1 GENERAL WATER QUALITY PROTECTION MEASURES

The project elements have been designed to avoid and minimize adverse impacts on the environment due to the project activities, specifically, conducting demolition and construction on overwater structures (i.e., the pier) and in-water work (e.g., pile removal and installation, cutback dredging, and slope construction, slope armoring, pile installation, and stormwater outfall cofferdam construction and removal).

The following general water quality protection measures will be implemented on a project-wide basis to reduce, eliminate, or minimize the effects of the proposed action on water quality:

- Construction stormwater, sediment, and erosion control BMPs suitable to preventing exceedances of state water quality standards will be in place prior to starting construction activities.
- All work will comply with the conditions of the NPDES Construction Stormwater Permit Number WAR303365 that has been issued for the project.
- All work in and near the water will be done so as to minimize turbidity, erosion, and other water quality impacts.
- Sediment and erosion control measures will be inspected and maintained throughout project construction.
- No materials will be stockpiled below the project-specific OHWM in any water body.
- Fueling and servicing of all equipment, with the exception of barge derricks, will be confined to an established staging area. Barge derricks will be fueled and serviced while they float. Spill containment systems will be adequate to contain all fuel leaks.
- At least two oil-absorbing floating booms, appropriate for the size of the work area, will be available on-site whenever heavy equipment operates within 150 feet of open water and there is a potential for hazardous materials to enter surface waters. The booms will be stored in a location that facilitates their immediate deployment in the event of a spill.
- Barges will not ground out or rest on the substrate or be over or within 25 feet of vegetated shallows (except where such vegetation is limited to state-designated noxious weeds).
- The bottom of any structure, vessel, watercraft grid, or watercraft lift will be at least 1 foot above the level of the substrate during all water levels.
- Equipment and vehicles will be stored in established staging areas when not in use (excluding cranes, which cannot be moved easily). Staging areas will be located a minimum of 50 feet from the waterway. If a staging area must be located within 50 feet of the waterway, the Port will provide a written explanation (with additional BMPs) and

obtain approval from the Ecology Federal Permit Manager before placing the staging area with the setback area.

- A written spill prevention, control, and countermeasures (SPCC) plan will be prepared for activities that include the use of heavy equipment. The plan will describe measures to prevent or reduce impacts due to accidental leaks or spills, as well as all hazardous materials that will be used, their proper storage and handling, and the methods that will be used to monitor their use. A spill kit will be available on-site during construction and stored in a location that facilitates its immediate deployment if needed.
- The Port will prepare and implement this WQMPP, as required by the Ecology 401 water quality certification.
- Upon advance notice, the Port will provide access to the construction site for representatives of U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, the National Marine Fisheries Services, Ecology, and the Washington State Department of Fish and Wildlife (WDFW) during all hours when the proposed action is being conducted.
- No new access roads, routes, or trails will be constructed as part of the proposed action.

## 2.2 OVERWATER AND NEAR-WATER SPECIFIC PROTECTION MEASURES

The project will implement the following BMPs for demolition of remaining Pier 4 structures and the south end of Pier 3 (overwater structures):

- All equipment that will operate over water or below the project-specific OHWM will be free of accumulated grease, oil, or mud. All leaks will be repaired prior to arriving on-site. Equipment will be inspected daily for leaks, accumulations of grease, oil, or mud. Any identified problems will be fixed before the equipment is operated over water or below the project-specific OHWM. Any equipment working in or over water will utilize vegetable-grade hydraulic fluid whenever possible.
- An emergency spill kit will be available on-site during construction whenever work is being performed in or near the water. It will be stored in a location that facilitates its immediate deployment if needed.
- BMPs will be used to ensure no work materials or debris enter the water. Such BMPs may include, but are not limited to, floats, falsework, scaffolding, and other means as necessary to prevent debris from falling into the water.
- Any buoyant materials dropped into the water will be picked up immediately by the contractor. The contractor will have a boat available and on-site during in-water activities for floating debris retrieval. Materials that sink to the bottom are to be noted and removed prior to or during dredging operations.
- All saw cut water and debris generated from cutting activities that occur overwater will be contained and disposed of properly.
- A containment boom will be placed around the perimeter of the construction site during demolition and pile removal activities to contain floating debris and materials in the event that materials or debris do enter the water despite BMP implementation during project activities. The captured material will be removed upon completion each day.

## 2.3 VIBRATORY PILE EXTRACTION

The demolition of the existing timber-pile-supported fender system will include dismantling the existing chocks and wales and removing approximately 23 14-inch-diameter creosote-treated timber piles and 2 20-inch steel piles with a vibratory hammer or by pulling with a choke chain. This will result in the removal of approximately 30 square feet of overwater coverage. The demolition of the existing concrete piles will include removing approximately 324 16.5-inch-diameter concrete piles by means of a vibratory hammer or by pulling with a choke chain. Piling located within the dredge prism will be removed as part of the dredge activities. Pile extraction activities will be done below the project-specific OHWM and will occur over approximately 30 calendar days and will be restricted to the in-water work window.

### 2.3.1 Mitigation Measures

To minimize the potential for any water quality impacts during the removal of the creosote, concrete, and steel piles, the following BMPs will be implemented:

- Pile extraction will be conducted during the WDFW-approved in-water work window for Commencement Bay (July 16 to February 14).
- During removal of creosote-treated piles, containment booms and absorbent sausage booms (or other oil-absorbent fabric) will be placed around the perimeter of the work area to capture wood debris, oil, and other materials released into marine waters.
- All accumulated debris will be collected daily and disposed of at an approved upland site, and no treated wood will be reused.
- The piles will be extracted in a controlled and slow manner to minimize turbidity in the water column as well as sediment disturbance.
- The crane operator will “wake up” or vibrate the piles to break up the bond with sediment prior to extraction.
- Extraction equipment (i.e., vibratory hammer) must be kept out of the water to prevent pinching creosote-treated timber piling below the water line.
- Piling will not be broken off intentionally by twisting, bending, or other deformation, which could release creosote to the water column.
- Removed creosote-treated piles will be disposed of in a manner that precludes their further use. Piles will be cut into manageable lengths (4 feet or less) for transport and disposal in an approved upland location that meets the liner and leachate standards (Chapter 173-304 WAC, Minimum Functional Standards). The piles will be cut in an upland location, or on the barge or remaining pier deck within a plastic-lined containment area.
- Existing timber piles located outside of or deeper than the dredging footprint will either be: (1) fully extracted by vibratory pulling, or (2) cut 3 feet below the mudline. If piles cannot be fully extracted or cut below the mudline, they may be cut at or near the mudline and then driven to a depth of 3 feet below the mudline and the remaining hole capped with clean sand to match the final elevation.
- All treated wood will be contained during and after removal to preclude the entry of sediments and any contaminated materials to the aquatic environment.
- All pre-stressed concrete piles and steel pipe piles designated for demolition shall be completely removed by pulling.

- Hydraulic water jets will not be used to remove or place piles.
- Upon removal from the substrate, the pile shall be moved expeditiously from the water to a barge or to land and will be subject to the conditions of the Phase 2 Stormwater Pollution Prevention Plan (SWPPP) and no turbid water will be released to the waterway. The pile shall not be shaken, hosed-off, stripped or scraped off, left hanging to drip, or subjected to any other action intended to clean or remove adhering material from the pile while over water.
- All accumulated debris (including cut-up piling, sediments, construction residue, and construction material from the containment basin) will be collected daily and disposed of at an approved upland site.

## 2.4 DREDGING

Approximately 500,000 CY of material will be dredged (including a 2-foot overdredge) by means of a mechanical standard clamshell or digging bucket dredge on a floating derrick barge creating approximately 155,560 square feet of open water. The slope in the cutback area will be constructed as a composite slope with a steeper 1.75:1 slope from the toe to an elevation of -10 feet MLLW and a 2:1 slope from -10 feet to MLLW to the bulkhead, which is consistent with the requirements of the Puyallup Tribe of Indians Settlement Act of 1989 (United States Code, Title 25, Section 1773). The dredging activities will be below the project-specific OHWM and are expected to occur over approximately 100 calendar days.

The 500,000 CY was deemed suitable on February 25, 2016 by the Dredged Material Management Program (DMMP; DMMO 2016) and is approved to be disposed of at the Commencement Bay open-water disposal site. The placement of the suitable material will be conducted per guidance from the DMMP and in accordance with a project suitability determination and dredge and disposal quality control plan. The DMMP and Washington State Department of Natural Resources requirements will be followed, including meeting the disposal site material specifications and placement methodologies.

### 2.4.1 Mitigation Measures

To minimize the potential for any water quality impacts during dredging activities, the following BMPs will be implemented:

- Dredging will be conducted during the WDFW-approved in-water work window for Commencement Bay (July 16 to February 14).
- Dredging will be conducted in accordance with the DMMP-approved dredge and disposal quality control plan for those materials determined to be suitable for open-water disposal.
- Dredging of the cutback material (characterized and determined suitable for open-water disposal) will be conducted using a standard clamshell or digging bucket on a derrick barge.
- Horizontal control for dredging operations will be achieved by careful tracking of clamshell bucket positions using a differential global positioning system (DGPS) that provides real-time display and tracking of the horizontal position of the dredge bucket. The Port will work closely with its contractor to achieve compliance with the authorized dredge depths.

- Dredging will be conducted using procedures that will minimize potential impacts on water and sediment quality (i.e., turbidity) and prevents the accidental discharge of petroleum products, chemicals, or other toxic substances into the waterway, to the extent practicable. These procedures include the following:
  - Stockpiling of material below the project-specific OHWM will not be allowed (i.e., each time the bucket is closed, it will be brought to the surface).
  - The dredge operator will pause the bucket at the surface after its ascent through the water column to minimize turbidity by allowing free water to drain from the bucket prior to swinging the bucket onto the barge.
  - The bucket will be completely emptied of sediments over the scow before it is re-submerged in the waterway.
- Disposal scows used for transporting dredged material will not be overfilled to the point where recovered sediment or any associated water overflows directly back to the waterway.
- Material will be placed into the disposal scows without splashing material out of the barge.
- Disposal scows, flat barges, and other floating equipment will be operated in deep water to minimize nearshore impacts due to propeller wash, such as suspension of nearshore sediments.
- A containment boom will be placed around the perimeter of the project site during dredging to contain floating debris and materials during project activities.
- Any slag encountered during construction will be removed and disposed of upland at an appropriate facility.
- All debris (larger than 2 feet in any dimension) shall be removed from the dredged sediment prior to disposal. Similar-sized debris found floating in the dredging or disposal area will also be removed.

## 2.5 SLOPE ARMORING

The slope will be constructed using a revetment section of approximately 56,000 CY of material consisting of 3 feet of light riprap from the bulkhead to -10 feet MLLW and 3.5 feet of heavy riprap over 2 feet of light riprap from -10 feet MLLW to the toe of the slope at -56 feet MLLW (the rock toe will be 5.5 feet thick). The rock-riprap-armored slope will be underlain by an approximately 1-foot-thick filter blanket consisting of fine graded aggregate (gravel) and sand to prevent erosion of the native slope and subsequent migration of the armor rock. The existing slope and armoring will remain predominantly unchanged under both the existing structure and the new pier along the northern portion of Pier 4. Slope construction activities will be below the project-specific OHWM and will occur over approximately 126 calendar days.

During slope construction, a small scour hole in front of the cutback area will be filled to bring it level with the surrounding area in order to reduce the unbraced length of the new concrete piles. The hole will be filled with dredged cutback material with the upper most 5 feet filled with slope rock riprap, for a total of approximately 600 CY filled.

### 2.5.1 Mitigation Measures

To minimize the potential for any water quality impacts during slope armoring activities, the following BMPs will be implemented:

- Slope armoring will be conducted during the WDFW-approved in-water work window for Commencement Bay (July 16 to February 14).
- The riprap will be of sufficient durability and size to prevent it from being broken up or washed away by high water or wave action, and it will be appropriately graded to result in a slope surface that is stable against current tidal seepage and propeller wash forces. The riprap will be underlain by a filtering layer to prevent finer grained substrate material from migrating through the riprap layer. To maintain stability and provide a continuous riprap layer, the filter material and riprap will be placed simultaneously as the final slope is constructed.
- Barges will be used to transport and stage the riprap.
- The riprap will be placed in a controlled manner (i.e., gradually lowered into place), with the use of a skip box or clamshell bucket at the appropriate elevation above the sediment surface to minimize sediment disturbance.

## 2.6 PILE INSTALLATION

In total, approximately 1,450 24-inch-diameter concrete piles will be installed below the project-specific OHWM elevation of the waterway. The piles will be impact-driven, most likely with a two-stroke diesel hammer. Historically in this area, it has taken approximately 1,500 strokes to drive a pile to refusal. It is assumed that an average of 10 piles will be driven per day. It is anticipated that approximately 20,000 strikes by the diesel hammer are the most that could occur in 1 day. Pile installation activities will occur over approximately 212 calendar days.

### 2.6.1 Mitigation Measures

To minimize the potential for any water quality impacts during vibratory pile installation activities, the following BMPs will be implemented:

- Pile installation will be conducted during the WDFW-approved in-water work window for Commencement Bay (July 16 to February 14).
- Piles will not be placed in or adjacent to vegetated shallows, wetlands, or special aquatic sites, or within sites designated by WDFW as documented or suitable forage fish spawning areas.
- A wooden block will be placed on top of the pile during all pile driving to protect the pile and attenuate underwater noise.
- Hydraulic water jets will not be used to remove or place piles.

## 2.7 GENERAL CONCRETE WORK

Work elements that will be conducted waterward and above the project-specific OHWM and in the dry as overwater work include completion of the demolition of the remaining Pier 4 structure and the south end of Pier 3, construction of false work and forms, and concrete pouring within the false work and forms. This work will occur without in-water work timing restrictions; however,



specific BMPs will be implemented to prevent construction materials and debris from entering the water.

Some proposed work elements will occur above the tidal/physical water level and in the dry during low tide but below the project-specific OHWM; they are proposed to occur at any time of year with specific BMPs to protect water quality, aquatic life, and habitat. These work elements include the demolition of structures below the project-specific OHWM at the top of piles (beams, existing pile caps, etc.), construction of false work and forms for crane beam pile caps and pony caps, concrete pouring within false work and forms, and construction of parts of the wharf utility system.

General overwater construction work, construction of false work and forms, and concrete pouring within false work and forms will occur over approximately 414 calendar days and will not be restricted to the in-water work window.

Work elements that are located waterward and below the project-specific OHWM and conducted above the tidal/physical water level or in the dry that involve concrete pouring are described below, along with the appropriate BMPs. The mitigation measures to be implemented during concrete work and the inspection requirements are described in Section 2.7.3.

### **2.7.1 Pile Cap and Crane Beam Pony Cap Construction**

The contractor will install temporary falsework that is supported by the tops of the new concrete piles to support the formwork for the cast-in-place concrete pile caps and pony caps. The falsework will consist of timber and/or steel framing that will be removed after the pile caps and pony caps are placed. The falsework will be attached to the tops of the piles by means of a friction collar that grips the sides of the new piling. The contractor will “work the tides” by installing the falsework in the dry in advance of the incoming tide. The falsework will extend lower than the final soffit elevation of the pile caps and pony bents; therefore, the window of opportunity for installation is smaller than that for placing the concrete in the forms.

The falsework and formwork system will consist of steel and timber components that are bolted together. During the installation of the falsework and formwork, the contractor will NOT be allowed to drill into the side of the concrete piling (so that no concrete dust can enter the water).

### **2.7.2 Mitigation Measures**

To minimize the potential for any water quality impacts during concrete work in, over, or near the water, the following BMPs will be implemented:

- The contractor will be required to limit the placement of wet concrete to periods when the tides are below the bottom of the concrete forms.
- The concrete forms will be constructed to be mortar-tight to prevent leaching of wet concrete to the water.
- The contractor will NOT be allowed to drill into the side of the concrete piling (to prevent concrete dust from entering the water) during the installation of falsework and formwork.
- BMPs will be implemented to prevent construction debris from entering the water such as tarps.

### **2.7.2.1 Concrete Truck/Pumper**

The following BMPs will be implemented for concrete trucks/pumpers:

- Trucks will be inspected and chutes cleaned, as necessary, before leaving the batch plant.
- Drip pans or absorbent material will be used, when needed, to catch drips from equipment. Collected material and absorbents will be disposed of properly.
- All stormwater/surface water access around the concrete pour area will have pollution control in place (refer to BMPs in Section 2.7.3.2).
- Any upland spills or drips will be cleaned up immediately.
- No uncontained wash down will occur near the shoreline.
- No concrete residue and/or wash down will be allowed to enter stormwater or waterways.
- Excess concrete will be disposed of at an upland site.

### **2.7.2.2 Concrete Placer/Finisher**

The following BMPs will be implemented for concrete placers/finishers:

- Forms will be constructed to prevent wet concrete from entering waters of the state. Impervious materials shall be placed over any exposed wet concrete/grout.
- An oversized deck will capture any wet concrete that does leach out of the forms; if observed, wet concrete will be removed from the deck immediately, before it enters waters of the state, and before the tide level returns.
- Untreated boards measuring 2 by 6 feet will be installed on work platforms near concrete pour areas to prevent possible drips/spills from entering the water. The platform shall be constructed to prevent fresh concrete from entering waters of the state.
- Observation for leaks will be made from a float or vessel and will be available and ready during concrete pours to capture any possible leaks in forms and have sufficient head space above the tide level to do so. Pier 4 pile cap and pony bent forms will have a full (360-degree) view of the forms as there will not be an existing deck blocking the view of the forms.
- BMPs will be employed to exclude fish from the false work and forms, such as plywood, mesh, or screen that meets Revised Code of Washington 77.57 requirements.
- Boom(s) will be placed around project site when pouring concrete.
- Only freshwater will be used as a release agent on the forms. Freshwater will be sprayed on the inside of the forms prior to placing concrete.
- A thick (low slump) concrete mix will be used for placement into the forms.
- Vacuums and absorbent material will be available on work platforms to clean possible small spills.



- Concrete will be placed during an outgoing tide (above the tide water level) to allow the concrete to set and further seal the forms.
- Forms will be left on until cured to sufficient strength (i.e., 3 to 7 days).
- The platform area will be swept/cleaned after each concrete pour (before tidal inundation) to remove/collect any fresh or loose concrete materials. Material will not be hosed down into the water.
- No uncontained wash down of tools or equipment will occur near the shoreline.
- Concrete process water will not enter the waterway. Any concrete process/contact water discharged from a confined area with curing concrete will be routed to upland areas to be treated and disposed of properly.

### **2.7.2.3 Concrete Inspections**

The inspection requirements related to concrete work are as follows:

- The Port will inspect and approve formwork prior to placement of wet concrete.
- Trained and dedicated contractor personnel will conduct the placement of concrete.
- The Port/contractor will provide inspectors/biologists during active concrete pours.
- At least one staff member from the Port's Environmental Programs Department will observe all formwork prior to concrete placement. This staff member will also observe the placement of wet concrete, as well as the formwork during the concrete placement, and direct the contractor to implement additional BMPs, correct potential issues related to the formwork, or stop work, as necessary.
- Dedicated contractor personnel will inspect the forms for any leaking wet concrete or potential problems that may cause wet concrete to leak and immediately implement measures to stop the leaking wet concrete, cleanup any leaked wet concrete, and implement additional BMPs or formwork, as necessary.
- The Port's construction inspector will observe all placements of wet concrete, provide additional formwork observation, and direct the contractor to implement additional BMPs, correct potential issues related to the formwork, or stop work, as necessary.
- If concrete enters waters of the state, work will be stopped immediately and the situation will be reported to Ecology's Permit Manager, Lori Kingsbury, and the WDFW Area Habitat Biologist, among other applicable agencies, to communicate the incident and determine the next steps. Also, pH will be measured as described in Section 3.1.

## **2.8 STORMWATER OUTFALL COFFERDAM CONSTRUCTION AND REMOVAL**

Three stormwater outfalls will be replaced and slightly relocated. They will be installed below the project-specific OHWM between approximate elevations of +5 and +9.5 feet MLLW. The outfalls will consist of pipes encased in concrete collars, which will project through the reconstructed slope. Stormwater outfall installation activities will occur over approximately 20 working days. Because the cofferdams will be installed below the OHWM, they will be constructed within the in-water work window; however the outfall installation that will occur within the cofferdam will not be restricted to the in-water work window.

### 2.8.1 Mitigation Measures

To minimize the potential for any water quality impacts during construction and removal of the stormwater outfall cofferdams, the following BMPs will be implemented:

- Stormwater outfall cofferdam construction and removal will be conducted during the WDFW-approved in-water work window for Commencement Bay (July 16 to February 14).
- All dewatering water will be handled according to the project-specific Temporary Erosion and Sedimentation Control (TESC) requirements and the SWPPP.

## 2.9 UPLAND STONE COLUMN INSTALLATION

The installation of the stone columns is necessary for ground improvements to prevent liquefaction during an earthquake. In total, approximately 1,150 42-inch-diameter stone columns, extending to approximately 80 feet below grade, will be installed along the cutback portion of the project site. There will be 10 rows at the south end of the new pier, with 5 rows on each side of the proposed bulkhead. Up to 60 of the approximately 1,150 stone columns may be installed below the projects-specific OHWM elevation of +12.78 feet MLLW and, therefore, would be installed during the in-water work window.

Within the temporary section that will be cut back near the surface, above the top elevation of the stone columns, the stone column installation will not result in an open hole above the top of the column. Once the design top of column elevation is achieved the contractor will stop installing rock, the installation probe will be extracted, and the hole located above the top of the column within the section that will be dredged during the cutback will fill back in with surrounding soil.

Stone columns will be installed using the “dry bottom-feed method.” This method consists of advancing a probe with a vibrator tip to the full depth of the column (about 80 feet) and then placing stone into the ground through the probe. Stone is placed in 12- to 24-inch increments along the height of the column as the probe is extracted. Each lift of stone is then compacted by the vibrating probe into a dense layer to form the column. Compressed air is used to facilitate downward penetration of the probe and placement of the stone. The option of using water pressure to assist with advancement of the probe through hard soil layers will be allowed, only if needed and provided that adequate water management equipment and BMPs are used to prevent all ponding and all runoff at the ground surface. If water is used to facilitate installation, it will be managed under the Construction Stormwater General Permit and Phase 2 SWPPP. Additional BMPs that will be implemented to minimize the potential for any turbidity effects in the adjacent waterway are described in the following section.

### 2.9.1 Mitigation Measures

To minimize the potential for any water quality impacts during the stone column installation, the following BMPs will be implemented:

- The use of the dry bottom-feed method that consists of air injection, and water pressure only when needed, will be used to minimize the amount of soil and water disrupted during installation.
- Shielding is to be provided at all times to contain any flying aggregates, loose stone, and debris.

- No free water will be allowed to be emitted from any hole. In addition to the temporary erosion and sediment control requirements provided for the project, the contractor will need to provide dewatering equipment with sufficient capacity to contain all water at all production rates of stone column installation.
- Dust suppression equipment and measures are to be used at all times.
- Uplift or heave of the ground surface due to excess air pressure shall be prevented by adjusting air pressure as required.

During the installation of stone columns located waterward of the project-specific OHWM, the following additional BMPs will be implemented:

- Instrumented turbidity monitoring will be conducted during the installation of the initial nearshore stone columns. Visual monitoring may be conducted with approval from Ecology based on initial instrumented monitoring results.
- Additional contingency measures will be implemented as necessary, including additional BMPs, monitoring, or operational changes, as necessary. An example of a contingency BMP could be adding a silt curtain along the shoreline.

## **2.10 REMOVAL OF PHASE 1 SLOPE STABILIZATION MEASURES**

In order to improve slope stability during Phase 1 construction and dredging, slope stabilization measures were placed. Approximately 33 concrete piles in front of the substation were not extracted during Phase 1 construction in order to protect the slope from erosion. These piles will need to be extracted during Phase 2 construction; therefore, 324 total concrete piles will be removed in Phase 2. Additional measures taken to improve slope stability during dredging in Phase 1 construction included placing concrete remnant piling on the slope behind the 33 piles and placement of geotextile fabric and sandbags along the dredged slope from the top of the slope to an elevation of +5 feet MLLW. This material will be removed and disposed of at an approved upland landfill as part of Phase 2 construction prior to the start of dredging in that area. Piling located within the dredge prism will be removed as part of the dredge activities. Pile extraction activities will be done below the project-specific OHWM. The removal of the rest of the slope stabilization measures will be done above or below the water, depending on the tide.

### **2.10.1 Mitigation Measures**

To minimize the potential for any water quality impacts during the removal of Phase 1 slope stabilization measures, the following BMPs will be implemented:

- Removal of any slope stabilization measures that occurs below the project-specific OHWM will be conducted during the WDFW-approved in-water work window for Commencement Bay (July 16 to February 14).
- The 33 concrete piles will be removed by a vibratory hammer in accordance with the methods described in Section 2.3.
- The BMPs in Section 2.3.1 will be applied to the removal of the concrete piles and the concrete remnant piling that were placed on the slope.
- The BMPs in Section 2.2 will be applied to the removal of the geotextile fabric along the dredged slope.
- Additional contingency measures will be implemented as necessary, including additional BMPs, monitoring, or operational changes, as necessary.

### 3.0 Water Quality Monitoring Plan

The objective of water quality monitoring is to ensure that near-water, in-water, and overwater activities, as well as the upland stone column installation, do not result in exceedances of the applicable water quality standards at the point(s) of compliance. A combination of instrumented and visual monitoring is proposed for this project (Figures 2.1 and 2.2).

#### 3.1 INSTRUMENTED MONITORING

Turbidity will be monitored with a water quality meter during the following construction activities:

- Vibratory pile extraction
- Dredging
- Slope armoring
- Pile installation
- Stormwater outfall cofferdam construction and removal
- Stone column installation
- Phase 1 slope stabilization measure removal

Instrumented monitoring for turbidity will also be implemented in response to visual observation of a significant turbidity plume, as described in Section 4.1 to better assess compliance with the water quality criteria and the effectiveness of any supplemental BMPs that may be implemented to control turbidity.

As described in Section 1.2, instrumented monitoring for pH will be implemented if wet concrete is observed to fall into the waterway. If this occurs, pH will be measured in the waterway in the vicinity of the spilled concrete until it is confirmed that the pH is in compliance with the pH water quality standard.

##### 3.1.1 Monitoring Parameters

Real-time field measurements of turbidity water quality parameters (in NTUs) will be collected during instrumented monitoring, as appropriate to the activity.

#### 3.2 VISUAL MONITORING

Throughout all in-water work, the contractor will conduct visual monitoring of turbidity. A turbidity plume is considered significant when it is above background and extends out the entire length of the mixing zone to 150 feet and is visible from the area of construction activity. Visual monitoring will be performed during all the following construction activities:

- Vibratory pile extraction
- Dredging
- Slope armoring
- Pile installation
- General overwater work and concrete work
- Stormwater outfall cofferdam construction and removal

- Stone column installation
- Phase 1 slope stabilization measure removal

### 3.2.1 Monitoring Parameters

The following parameters will be observed during visual monitoring:

- Turbidity (visual indication of plume)
- Sheen, or oil
- Construction debris in water
- Distressed or dying fish
- Operation and effectiveness of BMPs

### 3.3 MONITORING SCHEDULE

For each construction activity for which instrumented turbidity monitoring will be performed, it will occur twice a day for the first 2 weeks of the construction activity to establish baseline conditions and verify compliance with the water quality criteria. If no exceedance of the turbidity criteria is noted during the initial monitoring period and Ecology review and approval is received, the contractor will continue to monitor visually during the remainder of the respective construction activity, unless a visible turbidity plume triggers the return to instrumented monitoring, as described in Section 3.1 and 4.1.2.

### 3.4 MONITORING LOCATIONS

Monitoring locations will be measured directly from the point of construction activity. For the stone column installation, which is in the uplands, the monitoring locations will be measured from the project-specific OHWM location on the shoreline that is directly waterward of the point of the installation activity.

The monitoring locations will be identified in the field with the use of a DGPS on board the sampling vessel. Monitoring will be conducted at the following locations (Figures 2.1 and 2.2), which are described in more detail in Sections 3.4.1 through 3.4.3:

- Background monitoring location (200 feet upstream/upgradient prior to work)
- Compliance monitoring locations (150 feet downstream/downgradient during work)
- Early detection monitoring locations (100 feet downstream/downgradient during work)

In addition to these, visual monitoring will be performed at the location of the active operation to monitor the effectiveness of BMPs and at the point of discharge to the waterway for visible sheen or oil, construction debris, and potential wet concrete.

#### 3.4.1 Background Monitoring Location

The background location will be positioned approximately 200 feet upstream of the point of construction and beyond the influence of construction activities. The monitoring location will typically be directly upstream/upgradient of the point of construction, although tidal reversals are possible during flood tide conditions, which will require the monitoring location to be shifted farther

upstream. The background location will be in an area with similar physical characteristics similar to those of the main area of construction activity (i.e., water depth and slope). Background water quality monitoring will be conducted before in-water or overwater activity begins and during each monitoring event that turbidity is measured.

### **3.4.2 Early Detection Monitoring Location**

The early detection location will be positioned approximately 100 feet downstream/downgradient of the point of construction. The monitoring location will typically be directly downstream of the point of construction.

The objective of monitoring in the early detection location at 100 feet is to have an early indication of whether exceedances of the water quality standards may occur at the point of compliance (i.e., 150 feet) if construction activities continue without modification to the BMPs being implemented. It provides an adaptive management process to adjust the construction activities or BMPs prior to a water quality standard exceedance at the point of compliance.

### **3.4.3 Compliance Monitoring Location**

The compliance location is at the edge of the mixing zone, 150 feet downstream of the point of the construction activity. The monitoring location will typically be directly downstream of the point of construction.

## **3.5 MONITORING EQUIPMENT**

Equipment to be used for the water quality monitoring will include the following:

- Water quality meter: HACH 2100Q, Troll 9500, YSI 6920 Sonde (or other suitable equipment)
- Field logbook
- Deionized water for rinsing water quality monitoring equipment
- Personal protective equipment
- Camera
- Cellular phone and project contact phone numbers

Turbidity levels will be measured with a water quality meter, which will be properly operated, calibrated, and maintained by qualified personnel before each use according to the manufacturer's guidelines and recommendations. All field analyses will be recorded in a logbook and the specific person who calibrated the equipment will be recorded.

## **3.6 DOCUMENTATION AND REPORTING**

The contractor will prepare daily water quality monitoring reports detailing the monitoring data collection activities and results. The contractor shall submit the water quality monitoring reports to the Port by noon on the following Monday in which water quality monitoring occurred. The Port will verify the reports are filled out accurately and will submit the reports to the Ecology Federal Permit Manager within 1 week of the completion of each week of water quality monitoring. The Ecology template for the water quality monitoring form is included in Appendix A. These reports or forms will include the following information:

- Date and time of the monitoring at each location
- Turbidity measurement monitoring at each monitoring location (i.e., background, early detection, and compliance)
- Name of monitoring personnel
- Monitoring notes that may include:
  - Field conditions (weather, temperature, any prior disturbance of the water body, etc.)
  - Monitoring equipment calibration information
  - Description of construction activity taking place and duration of activity



## **4.0 Contingency Response and Notification Plan**

### **4.1 CONTINGENCY MEASURES**

If exceedances are measured, the background turbidity levels will be verified, and the exceedance confirmed. If an exceedance of a water quality standard occurs during either visual and/or instrumented monitoring, field personnel will stop work and assess the source of the exceedance or impact, and corrective actions will be evaluated. Once the source has been identified, field personnel will implement operation modifications or other supplemental control measures or BMPs to bring the water quality measurements back into compliance with the criteria.

Once the control measures have been deemed effective, monitoring will continue every 4 hours during working hours until the water quality exceedances have been brought into compliance.

#### **4.1.1 Instrumented Monitoring**

As described in Section 1.2, the numerical water quality standard for turbidity must be met at the point of compliance, which is 150-feet downstream/downgradient of the construction activity (or is shifted depending on the tides, as described in Section 3.4). Turbidity outside this established mixing zone that is greater than 10 NTUs over the background turbidity when turbidity in the background sample is 50 NTUs or less, or a 20 percent increase in turbidity when the background turbidity is more than 50 NTUs, is a violation of the turbidity water quality standard.

#### **4.1.2 Visual Monitoring**

As described in Section 1.2, visible turbidity greater than the background turbidity at or beyond the 150-foot point of compliance is considered an exceedance, or violation of, the turbidity water quality standard. If a visible turbidity plume is evident at the compliance boundary, it will be photo-documented, corrective actions will be taken to eliminate the source of the turbidity, and follow-up instrumented turbidity monitoring will be implemented to confirm the turbidity exceedance and will continue every 4 hours during working hours until the turbidity complies with the water quality standard.

If construction debris is observed in the waterway, effort will be made to retrieve the debris. If sheen or oil, or concrete is observed in the waterway, the contractor will immediately cease operations. Corrective actions will be implemented to make repairs to equipment, address the spill, or modify construction activities or BMPs, and conduct appropriate notifications with the Port, Washington Military Department's Emergency Management Division at 1-800-258-5990, and permitting agencies, as appropriate. Work may resume after the corrective actions have been deemed effective, the turbidity complies with the water quality standard, and as directed by the Port or permitting agencies.

If distressed or dying fish are observed at the construction site that can be attributed to construction activities, work will stop immediately and the Port and Ecology will be notified as described in Section 4.2, as well as notifying other permitting agencies, as appropriate.

## 4.2 NOTIFICATION

If compliance monitoring data indicate an exceedance of the water quality standard for turbidity or evidence of noncompliance, such as distressed or dying fish or a discharge of oil, is noted at the compliance monitoring location (i.e., 150 feet downstream), the Port will be notified by the contractor immediately. The Port will immediately notify Ecology's 24-hour Spill Response Team at 1-800-258-5990 and, within 24 hours of the observed noncompliance, notify the Ecology federal permit manager, Lori Kingsbury, by phone, (360) 407-6926, or email, [loch461@ecy.wa.gov](mailto:loch461@ecy.wa.gov) for all noncompliance conditions or spills. If at any time during work a buried drum is found or any unusual conditions are present, the Port will notify Ecology using the above numbers.

The notification should include the following:

1. A description of the nature, extent, and cause of noncompliance.
2. The period of noncompliance, including the date, time, and anticipated time when the activity will return to compliance.
3. The steps taken to minimize, eliminate, and prevent a reoccurrence of the noncompliance action.
4. A written report to Ecology within 5 days of the noncompliance that provides a description of the nature of the violation, the sampling results and location, photographs, a description of the BMPs that were or will be implemented to prevent further violations, and any other pertinent information.

## 5.0 References

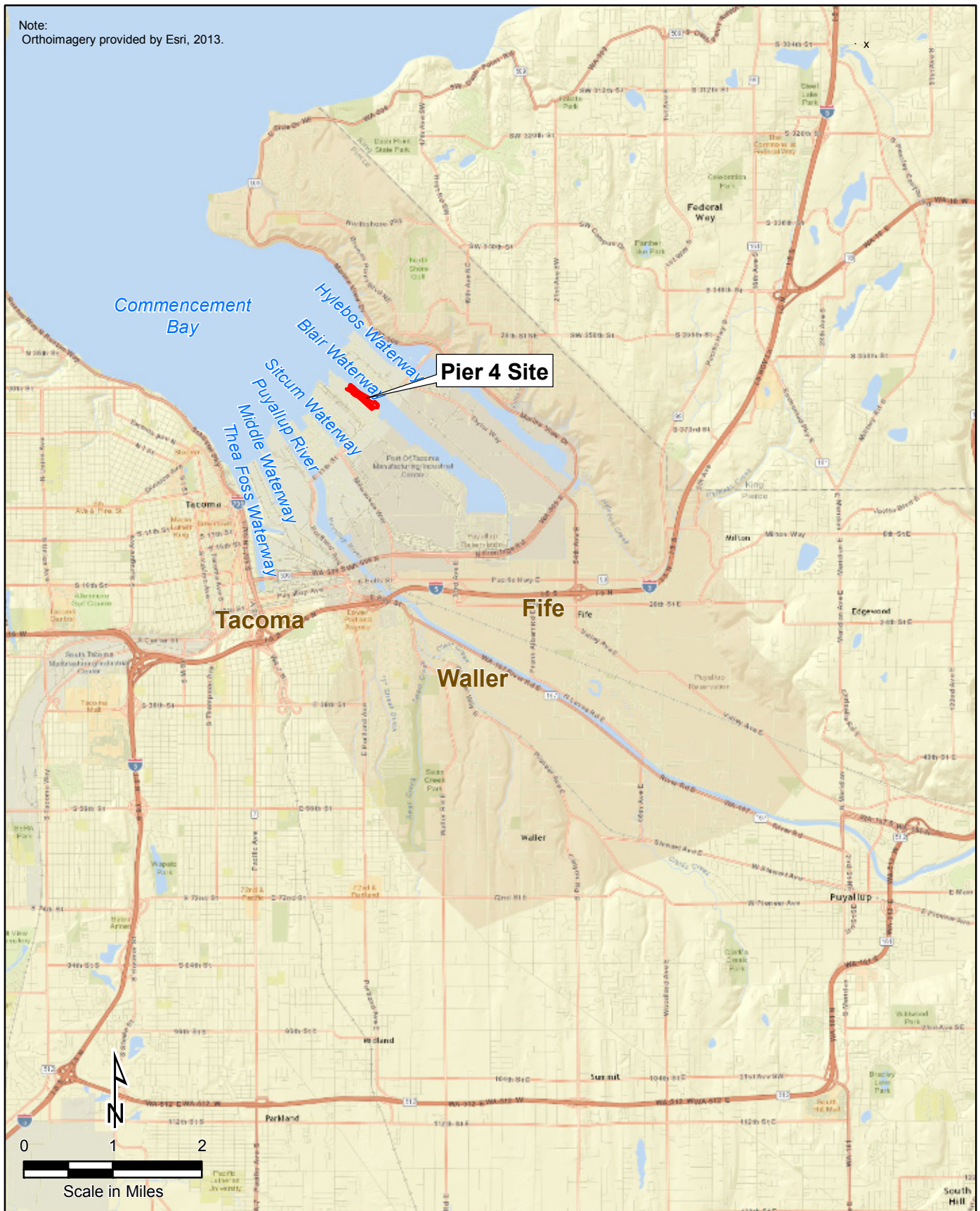
- Confluence Environmental Company. (Confluence). 2014. *Pier 4 Ordinary High Water Mark (OHWM) Determination Memorandum*. Memorandum from Marlene, Meaders, Chris Berger, and Chris Cziesla, Confluence Environmental Company, to Mark Rettmann, Port of Tacoma. 11 August.
- Dredged Material Management Office (DMMO). 2016. *Memorandum for Record Subject: Determination Regarding the Suitability of Proposed Dredged Material from Phase 2 of the Port of Tacoma's Pier 4 Reconfiguration Project*. 25 February.
- Washington State Department of Ecology (Ecology). 2010. *Guidance on Controlling Turbidity in Nearby Waters from Ground Improvement Work for Seismic Events*. Memorandum from K. Carroll, WSDOT Liaison, to K. Susewind, Ecology. 13 July.

**Pier 4 Reconfiguration Project**

**Water Quality Monitoring and  
Protection Plan**

**Figures**


Note:  
Orthoimagery provided by Esri, 2013.









**Legend**

 Construction Work Limits

 Dredging Cutback Extent

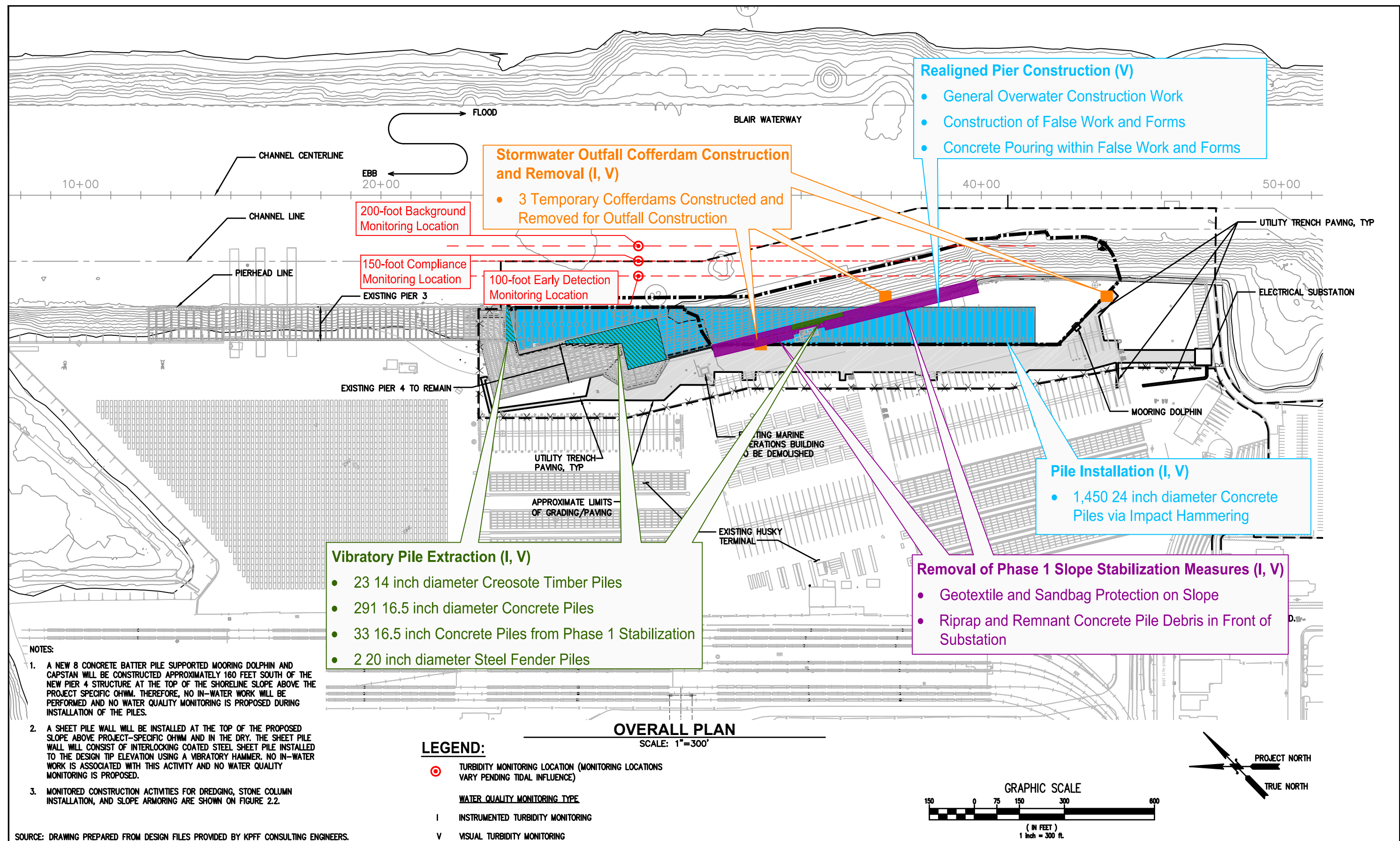
Notes:

- Pier 4 location based on KPFF data.
- Background aerial imagery provided by Esri, August 1, 2011.

 0 200 400 800

Scale in Feet



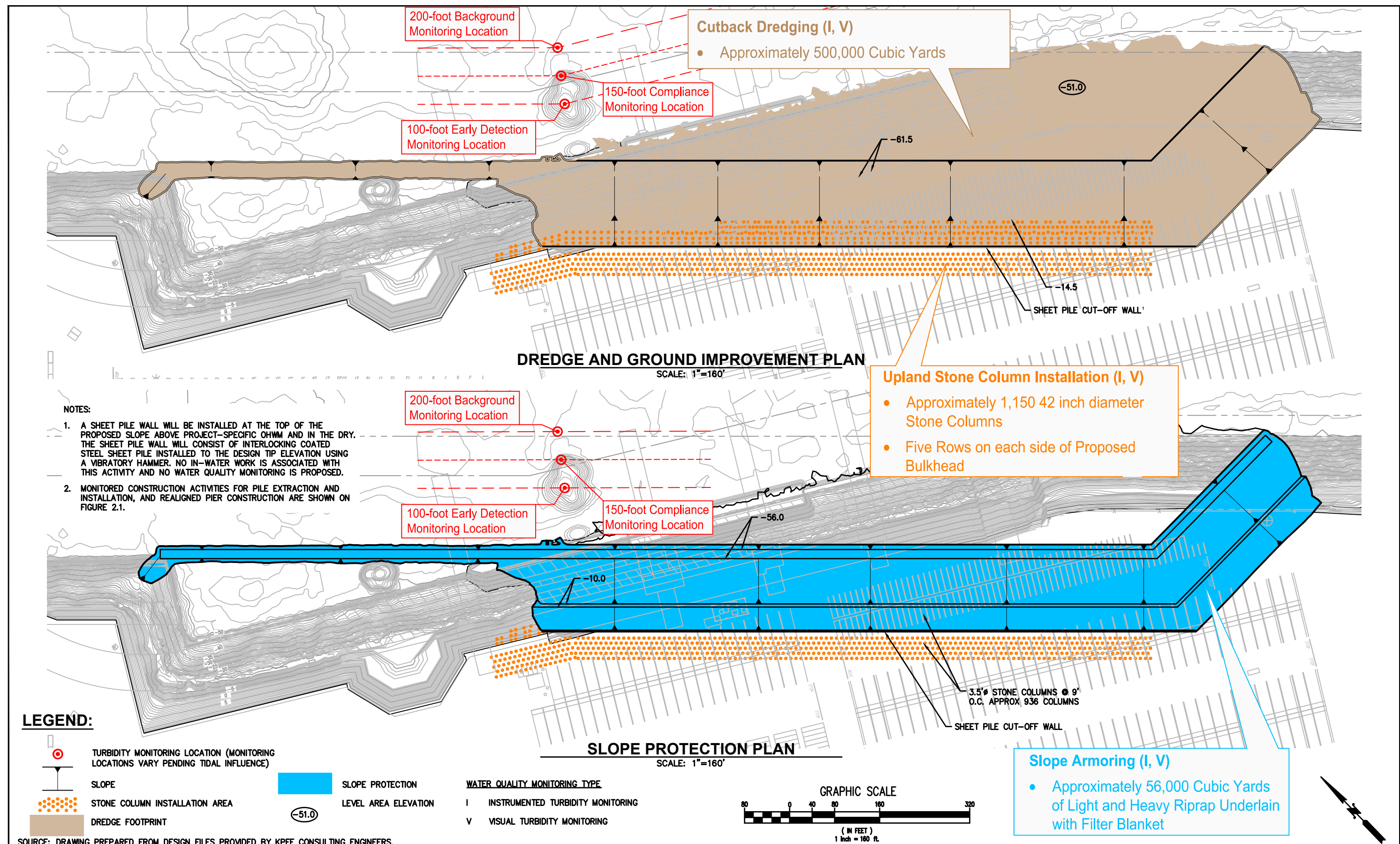


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## Water Quality Monitoring and Protection Plan Pier 4 Reconfiguration Project Tacoma, Washington

**Figure 2.1**  
Monitored Construction Activities of Pile Extraction and Installation,  
Stormwater Outfall Cofferdam Construction, Realigned Pier Construction,  
and Removal of Phase 1 Slope Stabilization Measures





SOURCE: DRAWING PREPARED FROM DESIGN FILES PROVIDED BY KPFF CONSULTING ENGINEERS.



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## Water Quality Monitoring and Protection Plan Pier 4 Reconfiguration Project Tacoma, Washington

Figure 2.2  
Monitored Construction Activities of Dredging,  
Stone Column Installation, and Slope Armoring

**Pier 4 Reconfiguration Project**

**Water Quality Monitoring and  
Protection Plan**

**Appendix A**

**Water Quality Monitoring Form**

## Water Quality Monitoring Turbidity Data Sheet

**Project Name:**

**Corps Reference No.:** NWS-2014-456-WRD

Ecology Order No.:

**Personnel Collecting Sample:**[illegible]

Notes:

The water quality monitoring turbidity standards applicable to this site per WAC 173-201A-210(1)(e) are as follows:

- 1 Turbidity shall not exceed 10 NTUs over the background turbidity when the background turbidity is less than 50 NTUs.
- 2 Turbidity shall not exceed a 20 percent increase in turbidity when the background turbidity is more than 50 NTUs.

Abbreviations:

NTU Nephelometric turbidity units

NVT No visual turbidity (for visual monitoring)

WAC Washington Administrative Code

**APPENDIX D**

**STORMWATER POLLUTION  
PREVENTION PLAN, DATED  
DECEMBER 2015**

# Stormwater Pollution Prevention Plan

## For

Port of Tacoma Pier 4 Redevelopment

## Prepared For

Northwest Regional Office  
3190 - 160th Avenue SE  
Bellevue, WA 98008-5452  
425-649-7000

## Owner

Port of Tacoma  
PO Box 1837  
Tacoma, WA 98401

## Operator/Contractor

TBD

## Project Site Location

Tacoma, Washington

## Certified Erosion and Sediment Control Lead

TBD

## SWPPP Prepared By

KPFF  
1601 5th Ave, Ste 1300  
Seattle WA, 98101  
206-382-0600  
Steve Kingsley, Principal

## SWPPP Preparation Date

Dec 2015

## Approximate Project Construction Dates

April 2016  
April 2018



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## 1.0 Introduction

**This Stormwater Pollution Prevention Plan (SWPPP) has been prepared as part of the NPDES stormwater permit requirements.** The project site is located on the west side of the northern portion of the Blair Waterway that lies within the Port's Industrial Development District, which is adjacent to Commencement Bay in Tacoma, Washington. The Pier 4 project activities will occur on approximately 15.6 Acres of the larger 127.94 Acre parcel 2275200610. The work occurring at Pier 4 will have two distinct work phases: Phase 1) US EPA-ordered cleanup of contaminated sediment, and Phase 2) reconfiguration of the existing pier. Phase 1 of the project is in progress. After the cleanup action is completed, Phase 2, referred to as the Pier 4 Reconfiguration Project, will begin. This plan and associated documents and descriptions apply to the construction activities associated with Phase 2 only.

**Construction activities will include** demolition of the existing Pier 4 structure and associated structures/utilities. The project will also include dredging of approximately 500,000 cubic yards of material to align the new Pier 4 structure with Pier 3, and the construction of a new Pier 4 structure. Miscellaneous paving, grading and minor utility construction will also occur as part of this work. **The purpose of this SWPPP is to describe the proposed construction activities and all temporary and permanent erosion and sediment control (TESC) measures, pollution prevention measures, inspection/monitoring activities, and recordkeeping that will be implemented during the proposed construction project. The objectives of the SWPPP are to:**

- 1. Implement Best Management Practices (BMPs) to prevent erosion and sedimentation, and to identify, reduce, eliminate or prevent stormwater contamination and water pollution from construction activity.**
- 2. Prevent violations of surface water quality, ground water quality, or sediment management standards.**
- 3. Prevent, during the construction phase, adverse water quality impacts including impacts on beneficial uses of the receiving water by controlling peak flow rates and volumes of stormwater runoff at the Permittee's outfalls and downstream of the outfalls.**

**This SWPPP was prepared using the Ecology SWPPP Template downloaded from the Ecology website on July 2, 2014. This SWPPP was prepared based on the requirements set forth in the Construction Stormwater General Permit, *Stormwater Management Manual for Western Washington* (SWMMWW 2012) and in the City of Tacoma *Stormwater Management Manual 2012*. The report is divided into seven main sections with several**

appendices that include stormwater related reference materials. The topics presented in the each of the main sections are:

- Section 1 – INTRODUCTION. This section provides a summary description of the project, and the organization of the SWPPP document.
- Section 2 – SITE DESCRIPTION. This section provides a detailed description of the existing site conditions, proposed construction activities, and calculated stormwater flow rates for existing conditions and post–construction conditions.
- Section 3 – CONSTRUCTION BMPs. This section provides a detailed description of the BMPs to be implemented based on the 12 required elements of the SWPPP (SWMMW 2012).
- Section 4 – CONSTRUCTION PHASING AND BMP IMPLEMENTATION. This section provides a description of the timing of the BMP implementation in relation to the project schedule.
- Section 5 – POLLUTION PREVENTION TEAM. This section identifies the appropriate contact names (emergency and non-emergency), monitoring personnel, and the onsite temporary erosion and sedimentation control inspector
- Section 6 – INSPECTION AND MONITORING. This section provides a description of the inspection and monitoring requirements such as the parameters of concern to be monitored, sample locations, sample frequencies, and sampling methods for all stormwater discharge locations from the site.
- Section 7 – RECORDKEEPING. This section describes the requirements for documentation of the BMP implementation, site inspections, monitoring results, and changes to the implementation of certain BMPs due to site factors experienced during construction.

Supporting documentation and standard forms are provided in the following Appendices:

Appendix A – Site plans  
Appendix B – Construction BMPs  
Appendix C – Alternative Construction BMP list  
Appendix D – General Permit  
Appendix E – Site Log and Inspection Forms  
Appendix F – Engineering Calculations

## **2.0 Site Description**

### **2.1 Existing Conditions**

The project site is located on the west side of the northern portion of the Blair Waterway that lies within the Port's Industrial Development District, which is adjacent to Commencement Bay in Tacoma, Washington. The project comprises approximately 15.6 Acres. A site vicinity map is provided in Appendix A. The existing site improvements include the Pier 4 structure which is supported by concrete and creosote timber piles, a two-story marine terminal building, as well as four 64-foot-gage container cranes which are supported by the Pier 4 structure. The area within the project limits is 100% impervious. Existing elevations in the project area are generally between 16 ft and 18 ft MLLW. The topography of the project area slopes to the northeast, towards the Blair Waterway. Upper layers of soil in the upland areas consist of medium dense sand to slightly silty sand. Groundwater lies between elevations 6 ft and 11 ft MLLW.

The surface water on-site generally drains from South to North with slopes varying, generally less than 1%. Surface runoff is collected in catch basins and is conveyed via an existing storm drainage system to four outfalls. The proposed work will affect three existing outfalls. The southernmost portion storm drainage system is routed through an oil/water separator prior to discharge via a 30"Ø outfall. The other two affected outfalls include a 30"Ø outfall and a 15"Ø outfall. All outfalls on site discharge directly to the Blair Waterway, approximately ½ mile upstream of Commencement Bay.

There are no critical areas on the site such as high erosion risk areas, wetlands, streams, or steep slopes (potential landslide area).

### **2.2 Proposed Construction Activities**

The Port of Tacoma is proposing to reconfigure and reconstruct Pier 4 to be in alignment with Pier 3 within the Husky Container Terminal. Once the project is completed, Pier 3 and Pier 4 will have a combined marginal pier length of 2,954 feet-long and will be capable of simultaneously berthing two ultra-large container ships (ULCS).

Phase 2 involves the demolition of approximately 28,980 square feet of existing pier structure, dredging 500,000 cubic yards of material, construction of new aligned pier structure, upland paving and miscellaneous utility work. The storm drainage system includes catch basins, manholes, conveyance pipes, oil water separators, enhanced treatment systems and reconstructed outfalls re-aligned with the proposed orientation of the new Pier 4 structure.

Construction activities will include site preparation, TESC installation, demolition of the existing pier and structures, dredging, construction of realigned Pier structure and miscellaneous grading,

paving and utility construction. The schedule and phasing of BMPs during construction is provided in Section 4.0.

Stormwater runoff volumes were calculated using the Western Washington Hydrology Model (WWHM).

The following summarizes details regarding site areas:

▪	Total site area:	32.9 acres
▪	Overwater site area before construction	17.3 acres
▪	Upland site area before construction	15.6 acres
▪	Overwater site area after construction	19.9 acres
▪	Upland site area after construction	13.0 acres
▪	Percent impervious area before construction:	100 %
▪	Percent impervious area after construction:	100 %
▪	Disturbed area during construction:	10.1 acres
▪	Disturbed area that is characterized as impervious (i.e., access roads, staging, parking):	10.1 acres
▪	2-year stormwater runoff peak flow prior to construction (existing from upland site area):	5.46 cfs
▪	10-year stormwater runoff peak flow prior to construction (existing from upland site area):	8.70 cfs
▪	2-year stormwater runoff peak flow during construction:	4.59 cfs
▪	10-year stormwater runoff peak flow during construction:	7.30 cfs
▪	2-year stormwater runoff peak flow after construction (from upland site area after construction):	4.55 cfs
▪	10-year stormwater runoff peak flow <u>after</u> construction (from upland site area after construction):	7.24 cfs

WWHM output calculations are provided in Appendix F.

## **3.0 Construction Stormwater BMPs**

### **3.1 The 12 BMP Elements**

#### **3.1.1 Element #1 – Mark Clearing Limits**

To protect adjacent properties and to reduce the area of soil exposed to construction, the limits of construction will be clearly marked before land-disturbing activities begin. Trees that are to be preserved, as well as all sensitive areas and their buffers, shall be clearly delineated, both in the field and on the plans. In general, natural vegetation and native topsoil shall be retained in an undisturbed state to the maximum extent possible. The BMPs relevant to marking the clearing limits that will be applied for this project include:

- High Visibility Plastic or Metal Fence (BMP C103)

Alternate BMPs for marking clearing limits are included in Appendix C as a quick reference tool for the onsite inspector in the event the BMP(s) listed above are deemed ineffective or inappropriate during construction to satisfy the requirements set forth in the General NPDES Permit (Appendix D). To avoid potential erosion and sediment control issues that may cause a violation(s) of the NPDES Construction Stormwater permit (as provided in Appendix D), the Certified Erosion and Sediment Control Lead will promptly initiate the implementation of one or more of the alternative BMPs listed in Appendix C after the first sign that existing BMPs are ineffective or failing.

#### **3.1.2 Element #2 – Establish Construction Access**

Construction access or activities occurring on unpaved areas shall be minimized, yet where necessary, access points shall be stabilized to minimize the tracking of sediment onto public roads, and wheel washing, street sweeping, and street cleaning shall be employed to prevent sediment from entering state waters. All wash wastewater shall be controlled on site. The specific BMPs related to establishing construction access that will be used on this project include:

- Stabilized Construction Entrance (BMP C105)
- Wheel Wash (BMP C106) - Optional

Alternate construction access BMPs are included in Appendix C as a quick reference tool for the onsite inspector in the event the BMP(s) listed above are deemed ineffective or inappropriate during construction to satisfy the requirements set forth in the General NPDES Permit (Appendix D). To avoid potential erosion and sediment control issues that may cause a violation(s) of the NPDES Construction Stormwater permit (as provided in Appendix D), the Certified Erosion and Sediment Control Lead will promptly initiate the implementation of one or more of the alternative BMPs listed in Appendix C after the first sign that existing BMPs are ineffective or failing.

### **3.1.3 Element #3 – Control Flow Rates**

In order to protect the properties and waterways downstream of the project site, stormwater discharges from the site will be controlled. The specific BMPs for flow control that shall be used on this project include:

Project Discharges to a flow control exempt receiving water, therefore flow control is not required.

Alternate flow control BMPs are included in Appendix C as a quick reference tool for the onsite inspector in the event the BMP(s) listed above are deemed ineffective or inappropriate during construction to satisfy the requirements set forth in the General NPDES Permit (Appendix D). To avoid potential erosion and sediment control issues that may cause a violation(s) of the NPDES Construction Stormwater permit (as provided in Appendix D), the Certified Erosion and Sediment Control Lead will promptly initiate the implementation of one or more of the alternative BMPs listed in Appendix C after the first sign that existing BMPs are ineffective or failing.

The project site is located west of the Cascade Mountain Crest. As such, the project must comply with Minimum Requirement 7 (Ecology 2005).

In general, discharge rates of stormwater from the site will be controlled where increases in impervious area or soil compaction during construction could lead to downstream erosion, or where necessary to meet local agency stormwater discharge requirements (e.g. discharge to combined sewer systems).

### **3.1.4 Element #4 – Install Sediment Controls**

All stormwater runoff from disturbed areas shall pass through an appropriate sediment removal BMP before leaving the construction site or prior to being discharged to an infiltration facility. The specific BMPs to be used for controlling sediment on this project include:

- Triangular Silt Dike (BMP C208)

- Storm Drain Inlet Protection (BMP C220)
- Portable Water Storage Tanks (e.g., Baker Tank) for Sedimentation if necessary.
- Materials on Hand (BMP C150) may also be applicable

Alternate sediment control BMPs are included in Appendix C as a quick reference tool for the onsite inspector in the event the BMP(s) listed above are deemed ineffective or inappropriate during construction to satisfy the requirements set forth in the General NPDES Permit (Appendix D). To avoid potential erosion and sediment control issues that may cause a violation(s) of the NPDES Construction Stormwater permit (as provided in Appendix D), the Certified Erosion and Sediment Control Lead will promptly initiate the implementation of one or more of the alternative BMPs listed in Appendix C after the first sign that existing BMPs are ineffective or failing.

In addition, sediment will be removed from paved areas in and adjacent to construction work areas manually or using mechanical sweepers, as needed, to minimize tracking of sediments on vehicle tires away from the site and to minimize washoff of sediments from adjacent streets in runoff.

In some cases, sediment discharge in concentrated runoff can be controlled using permanent stormwater BMPs (e.g., infiltration swales, ponds, trenches). Sediment loads can limit the effectiveness of some permanent stormwater BMPs, such as those used for infiltration or biofiltration; however, those BMPs designed to remove solids by settling (wet ponds or detention ponds) can be used during the construction phase. When permanent stormwater BMPs will be used to control sediment discharge during construction, the structure will be protected from excessive sedimentation with adequate erosion and sediment control BMPs. Any accumulated sediment shall be removed after construction is complete and the permanent stormwater BMP will be restabilized with vegetation per applicable design requirements once the remainder of the site has been stabilized.

The following BMPs will be implemented as end-of-pipe sediment controls as required to meet permitted turbidity limits in the site discharge(s). Prior to the implementation of these technologies, sediment sources and erosion control and soil stabilization BMP efforts will be maximized to reduce the need for end-of-pipe sedimentation controls.

- Construction Stormwater Filtration (BMP C251)
- Construction Stormwater Chemical Treatment (BMP C 250)  
(implemented only with prior written approval from Ecology).



### **3.1.5 Element #5 – Stabilize Soils**

Exposed and unworked soils shall be stabilized with the application of effective BMPs to prevent erosion throughout the life of the project. The specific BMPs for soil stabilization that shall be used on this project include:

- Plastic Covering (BMP C123)
- Dust Control (BMP C140)
- Early application of gravel base on areas to be paved
- Materials on Hand (BMP C150) may also be applicable.

Alternate soil stabilization BMPs are included in Appendix C as a quick reference tool for the onsite inspector in the event the BMP(s) listed above are deemed ineffective or inappropriate during construction to satisfy the requirements set forth in the General NPDES Permit (Appendix D). To avoid potential erosion and sediment control issues that may cause a violation(s) of the NPDES Construction Stormwater permit (as provided in Appendix D), the Certified Erosion and Sediment Control Lead will promptly initiate the implementation of one or more of the alternative BMPs listed in Appendix C after the first sign that existing BMPs are ineffective or failing.

The project site is located west of the Cascade Mountain Crest. As such, no soils shall remain exposed and unworked for more than 7 days during the dry season (May 1 to September 30) and 2 days during the wet season (October 1 to April 30). Regardless of the time of year, all soils shall be stabilized at the end of the shift before a holiday or weekend if needed based on weather forecasts.

In general, cut and fill slopes will be stabilized as soon as possible and soil stockpiles will be temporarily covered with plastic sheeting. All stockpiled soils shall be stabilized from erosion, protected with sediment trapping measures, and where possible, be located away from storm drain inlets, waterways, and drainage channels.

### **3.1.6 Element #6 – Protect Slopes**

All cut and fill slopes will be designed, constructed, and protected in a manner than minimizes erosion. The following specific BMPs will be used to protect slopes for this project:

- No BMPs to be implemented because there are no upland slopes located within the project area.

Alternate slope protection BMPs are included in Appendix C as a quick reference tool for the onsite inspector in the event the BMP(s) listed above are deemed ineffective or inappropriate during construction to satisfy the requirements set forth in the General NPDES Permit (Appendix D). To avoid potential erosion and sediment control issues that may cause a violation(s) of the NPDES Construction Stormwater permit (as provided in Appendix D), the Certified Erosion and Sediment Control Lead will promptly initiate the implementation of one or more of the alternative BMPs listed in Appendix C after the first sign that existing BMPs are ineffective or failing.

### **3.1.7 Element #7 – Protect Drain Inlets**

All storm drain inlets and culverts made operable during construction shall be protected to prevent unfiltered or untreated water from entering the drainage conveyance system. However, the first priority is to keep all access roads clean of sediment and keep street wash water separate from entering storm drains until treatment can be provided.

- Storm Drain Inlet Protection (BMP C220) will be implemented for all drainage inlets and culverts that could potentially be impacted by sediment-laden runoff on and near the project site. It is expected that all catch basins and inlets within the project site and those that could be impacted by construction activities will receive filter inserts as indicated on the Site Plans.

If the BMP options listed above are deemed ineffective or inappropriate during construction to satisfy the requirements set forth in the General NPDES Permit (Appendix D), or if no BMPs are listed above but deemed necessary during construction, the Certified Erosion and Sediment Control Lead shall implement one or more of the alternative BMP inlet protection options listed in Appendix C.

### **3.1.8 Element #8 – Stabilize Channels and Outlets**

Where site runoff is to be conveyed in channels, or discharged to a stream or some other natural drainage point, efforts will be taken to prevent downstream erosion. The specific BMPs for channel and outlet stabilization that shall be used on this project include:

- Outlet Protection (BMP C209)

Alternate channel and outlet stabilization BMPs are included in Appendix C as a quick reference tool for the onsite inspector in the event the BMP(s) listed above are deemed ineffective or inappropriate during construction to satisfy the requirements set forth in the General NPDES Permit (Appendix D). To avoid potential erosion and sediment control issues that may cause a violation(s) of the NPDES Construction Stormwater permit (as provided in Appendix D), the Certified Erosion and Sediment Control Lead will promptly initiate the implementation of one or more of the alternative BMPs listed in Appendix C after the first sign that existing BMPs are ineffective or failing.

The project site is located west of the Cascade Mountain Crest. As such, all temporary on-site conveyance channels shall be designed, constructed, and stabilized to prevent erosion from the expected peak 10 minute velocity of flow from a Type 1A, 10-year, 24-hour recurrence interval storm for the developed condition. Alternatively, the 10-year, 1-hour peak flow rate indicated by an approved continuous runoff simulation model, increased by a factor of 1.6, shall be used. Stabilization, including armoring material, adequate to prevent erosion of outlets, adjacent streambanks, slopes, and downstream reaches shall be provided at the outlets of all conveyance systems.

### **3.1.9 Element #9 – Control Pollutants**

All pollutants, including waste materials and demolition debris, that occur onsite shall be handled and disposed of in a manner that does not cause contamination of stormwater. Good housekeeping and preventative measures will be taken to ensure that the site will be kept clean, well-organized, and free of debris. If required, BMPs to be implemented to control specific sources of pollutants are discussed below.

Vehicles, construction equipment, and/or petroleum product storage/dispensing:

- All vehicles, equipment, and petroleum product storage/dispensing areas will be inspected regularly to detect any leaks or spills, and to identify maintenance needs to prevent leaks or spills.
- On-site fueling tanks and petroleum product storage containers shall include secondary containment.
- Spill prevention measures, such as drip pans, will be used when conducting maintenance and repair of vehicles or equipment.
- In order to perform emergency repairs on site, temporary plastic will be placed beneath and, if raining, over the vehicle.
- Contaminated surfaces shall be cleaned immediately following any discharge or spill incident.

Excavation spoils dewatering waste:

- Dewatering BMPs and BMPs specific to the excavation (including handling of contaminated soils) are discussed under Element 10.

Demolition:

- Dust released from demolished buildings or structures will be controlled using Dust Control measures (BMP C140).
- Storm drain inlets vulnerable to stormwater discharge carrying dust, soil, or debris will be protected using Storm Drain Inlet Protection (BMP C220 as described above for Element 7).
- Process water and slurry resulting from sawcutting and surfacing operations will be prevented from entering the waters of the State by implementing Sawcutting and Surfacing Pollution Prevention measures (BMP C152).

Concrete and grout:

- Process water and slurry resulting from concrete work will be prevented from entering the waters of the State by implementing Concrete Handling measures (BMP C151).

The facility does not require a Spill Prevention, Control, and Countermeasure (SPCC) Plan under the Federal regulations of the Clean Water Act (CWA).

### **3.1.10 Element #10 – Control Dewatering**

All dewatering water from open cut excavation, tunneling, foundation work, trench, or underground vaults shall be discharged into a controlled conveyance system. Channels will be stabilized, per Element #8. Clean, non-turbid dewatering water will be discharged to systems tributary to the receiving waters of the State in a manner that does not cause erosion, flooding, or a violation of State water quality standards in the receiving water. Highly turbid dewatering water from soils known or suspected to be contaminated, or from use of construction equipment, will require additional monitoring and treatment as required for the specific pollutants based on the receiving waters into which the discharge is occurring. Such monitoring is the responsibility of the contractor.

However, the dewatering of soils known to be free of contamination will trigger BMPs to trap sediment and reduce turbidity. At a minimum, geotextile fabric socks/bags/cells will be used to filter this material. Other BMPs to be used for sediment trapping and turbidity reduction include the following:

- Construction Stormwater Filtration (BMP C 251)

Alternate dewatering control BMPs are included in Appendix C as a quick reference tool for the onsite inspector in the event the BMP(s) listed above are deemed ineffective or inappropriate during construction to satisfy the requirements set forth in the General NPDES Permit (Appendix D). To avoid potential erosion and sediment control issues that may cause a violation(s) of the NPDES Construction Stormwater permit (as provided in Appendix D), the Certified Erosion and Sediment Control Lead will promptly initiate the implementation of one or more of the alternative BMPs listed in Appendix C after the first sign that existing BMPs are ineffective or failing.

### **3.1.11 Element #11 – Maintain BMPs**

All temporary and permanent erosion and sediment control BMPs shall be maintained and repaired as needed to assure continued performance of their intended function. Maintenance and repair shall be conducted in accordance with each particular BMP's specifications. Visual monitoring of the BMPs will be conducted at least once every calendar week and within 24 hours of any rainfall event that causes a discharge from the site. If the site becomes inactive, and is temporarily stabilized, the inspection frequency will be reduced to once every month.

All temporary erosion and sediment control BMPs shall be removed within 30 days after the final site stabilization is achieved or after the temporary BMPs are no longer needed. Trapped sediment shall be removed or stabilized on site. Disturbed soil resulting from removal of BMPs or vegetation shall be permanently stabilized.

### **3.1.12 Element #12 – Manage the Project**

Erosion and sediment control BMPs for this project have been designed based on the following principles:

- Design the project to fit the existing topography, soils, and drainage patterns.
- Emphasize erosion control rather than sediment control.
- Minimize the extent and duration of the area exposed.

- Keep runoff velocities low.
- Retain sediment on site.
- Thoroughly monitor site and maintain all ESC measures.
- Schedule major earthwork during the dry season.

In addition, project management will incorporate the key components listed below:

As this project site is located west of the Cascade Mountain Crest, the project will be managed according to the following key project components:

#### Phasing of Construction

- The construction project is being phased to the extent practicable in order to prevent soil erosion, and, to the maximum extent possible, the transport of sediment from the site during construction.
- Revegetation of exposed areas and maintenance of that vegetation shall be an integral part of the clearing activities during each phase of construction, per the Scheduling BMP (C 162).

#### Seasonal Work Limitations

- From October 1 through April 30, clearing, grading, and other soil disturbing activities shall only be permitted if shown to the satisfaction of the local permitting authority that silt-laden runoff will be prevented from leaving the site through a combination of the following:
  - Site conditions including existing vegetative coverage, slope, soil type, and proximity to receiving waters; and
  - Limitations on activities and the extent of disturbed areas; and
  - Proposed erosion and sediment control measures.
- Based on the information provided and/or local weather conditions, the local permitting authority may expand or restrict the seasonal limitation on site disturbance.
- The following activities are exempt from the seasonal clearing and grading limitations:



- ☐ Routine maintenance and necessary repair of erosion and sediment control BMPs;
- ☐ Routine maintenance of public facilities or existing utility structures that do not expose the soil or result in the removal of the vegetative cover to soil; and
- ☐ Activities where there is 100 percent infiltration of surface water runoff within the site in approved and installed erosion and sediment control facilities.

#### Coordination with Utilities and Other Jurisdictions

- Care has been taken to coordinate with utilities, other construction projects, and the local jurisdiction in preparing this SWPPP and scheduling the construction work.

#### Inspection and Monitoring

- All BMPs shall be inspected, maintained, and repaired as needed to assure continued performance of their intended function. Site inspections shall be conducted by a person who is knowledgeable in the principles and practices of erosion and sediment control. This person has the necessary skills to:
  - ☐ Assess the site conditions and construction activities that could impact the quality of stormwater, and
  - ☐ Assess the effectiveness of erosion and sediment control measures used to control the quality of stormwater discharges.
- A Certified Erosion and Sediment Control Lead shall be on-site or on-call at all times.
- Whenever inspection and/or monitoring reveals that the BMPs identified in this SWPPP are inadequate, due to the actual discharge of or potential to discharge a significant amount of any pollutant, appropriate BMPs or design changes shall be implemented as soon as possible.

#### Maintaining an Updated Construction SWPPP

- This SWPPP shall be retained on-site or within reasonable access to the site.

- The SWPPP shall be modified whenever there is a change in the design, construction, operation, or maintenance at the construction site that has, or could have, a significant effect on the discharge of pollutants to waters of the state.
- The SWPPP shall be modified if, during inspections or investigations conducted by the owner/operator, or the applicable local or state regulatory authority, it is determined that the SWPPP is ineffective in eliminating or significantly minimizing pollutants in stormwater discharges from the site. The SWPPP shall be modified as necessary to include additional or modified BMPs designed to correct problems identified. Revisions to the SWPPP shall be completed within seven (7) days following the inspection.
- 

### **3.2 Site Specific BMPs**

Site specific BMPs are shown on the TESC Plan Sheets and Details in Appendix A. These site specific plan sheets will be updated annually.

## **4.0 Construction Phasing and BMP Implementation**

The BMP implementation schedule will be driven by the construction schedule. The following provides a sequential list of the proposed construction schedule milestones and the corresponding BMP implementation schedule. The list contains key milestones such as wet season construction.

The BMP implementation schedule listed below is keyed to proposed phases of the construction project, and reflects differences in BMP installations and inspections that relate to wet season construction. The project site is located west of the Cascade Mountain Crest. As such, the dry season is considered to be from May 1 to September 30 and the wet season is considered to be from October 1 to April 30.

- |   |                |
|---|----------------|
| ■ Estimate of Construction start date:  | 04 / 15 / 2016 |
| ■ Estimate of Construction finish date: | 04 / 12 / 2018 |
| ■ Mobilize equipment on site:           | 04 / 15 / 2016 |

- Mobilize and store all ESC and soil stabilization products  
(store materials on hand BMP C150): 04 / 15 / 2016
- Install ESC measures: 04 / 15 / 2016
- Install stabilized construction entrance: 04 / 15 / 2016
- Dry Season begins 05 / 01 / 2016
- Begin site demo and prep: 05 / 10 / 2016
- Wet Season begins 10 / 01 / 2016
- Begin upland utility construction: 08 / 04 / 2017
- Dry Season begins 05 / 01 / 2017
- Begin subgrade and base construction: 12 / 18 / 2017
- Wet Season begins 10 / 01 / 2017
- Begin Paving/Striping: 02 / 14 / 2018
- Finish Paving/Striping: 04 / 12 / 2018
- **Substantial Completion: 04 / 12 / 2018**

## 5.0 Pollution Prevention Team

### 5.1 Roles and Responsibilities

The pollution prevention team consists of personnel responsible for implementation of the SWPPP, including the following:

- Certified Erosion and Sediment Control Lead (CESCL) – primary contractor contact, responsible for site inspections (BMPs, visual monitoring, sampling, etc.); to be called upon in case of failure of any ESC measures.
- Resident Engineer – For projects with engineered structures only (sediment ponds/traps, sand filters, etc.): site representative for the owner that is the project's supervising engineer responsible for inspections and issuing instructions and drawings to the contractor's site supervisor or representative
- Emergency Ecology Contact – individual to be contacted at Ecology in case of emergency.
- Emergency Owner Contact – individual that is the site owner or representative of the site owner to be contacted in the case of an emergency.
- Non-Emergency Ecology Contact – individual that is the site owner or representative of the site owner than can be contacted if required.
- Monitoring Personnel – personnel responsible for conducting water quality monitoring; for most sites this person is also the Certified Erosion and Sediment Control Lead.

### 5.2 Team Members

Names and contact information for those identified as members of the pollution prevention team are provided in the following table.

Title	Name(s)	Phone Number
Certified Erosion and Sediment Control Lead (CESCL)	~	~
Resident Engineer	~	~
Emergency Ecology Contact	~	~
Emergency Owner Contact	~	~

Non-Emergency Ecology Contact	~	~
Monitoring Personnel	~	~

NOTE: Personnel will be identified after the award of the construction contract and prior to the start of any construction activities.

## **6.0 Site Inspections and Monitoring**

Monitoring includes visual inspection, monitoring for water quality parameters of concern, and documentation of the inspection and monitoring findings in a site log book. A site log book will be maintained for all on-site construction activities and will include:

- A record of the implementation of the SWPPP and other permit requirements;
- Site inspections; and,
- Stormwater quality monitoring.

For convenience, the inspection form and water quality monitoring forms included in this SWPPP include the required information for the site log book. This SWPPP may function as the site log book if desired, or the forms may be separated and included in a separate site log book. However, if separated, the site log book but must be maintained on-site or within reasonable access to the site and be made available upon request to Ecology or the local jurisdiction.

### **6.1 Site Inspection**

All BMPs will be inspected, maintained, and repaired as needed to assure continued performance of their intended function. The inspector will be a Certified Erosion and Sediment Control Lead (CESCL) per BMP C160. The name and contact information for the CESCL is provided in Section 5 of this SWPPP.

Site inspection will occur in all areas disturbed by construction activities and at all stormwater discharge points. Stormwater will be examined for the presence of suspended sediment, turbidity, discoloration, and oily sheen. The site inspector will evaluate and document the effectiveness of the installed BMPs and determine if it is necessary to repair or replace any of the BMPs to improve the quality of stormwater discharges. All maintenance and repairs will be documented in the site log book or forms provided in this document. All new BMPs or design changes will be documented in the SWPPP as soon as possible.

#### **6.1.1 Site Inspection Frequency**

Site inspections will be conducted at least once a week and within 24 hours following any discharge from the site. For sites with temporary stabilization measures, the site inspection frequency can be reduced to once every month if the site operator has successfully applied for inactive status for the site using the Permit Fee Activity Status Change Form, which can be found at the following web site.

[http://www.ecy.wa.gov/programs/wq/permits/permit\\_fees/ConstructionActivityStatusChangeForm.pdf](http://www.ecy.wa.gov/programs/wq/permits/permit_fees/ConstructionActivityStatusChangeForm.pdf)

### **6.1.2 Site Inspection Documentation**

The site inspector will record each site inspection using the site log inspection forms provided in Appendix E. The site inspection log forms may be separated from this SWPPP document, but will be maintained on-site or within reasonable access to the site and be made available upon request to Ecology or the local jurisdiction.

## **6.2 Stormwater Quality Monitoring**

### **6.2.1 Turbidity Sampling**

Monitoring requirements for the proposed project will include either turbidity or water transparency sampling to monitor site discharges for water quality compliance with the 2005 Construction Stormwater General Permit (Appendix D). Sampling will be conducted at all discharge points at least once per calendar week.

Turbidity or transparency monitoring will follow the analytical methodologies described in Section S4 of the 2005 Construction Stormwater General Permit (Appendix D). The key benchmark values that require action are 25 NTU for turbidity (equivalent to 32 cm transparency) and 250 NTU for turbidity (equivalent to 6 cm transparency). If the 25 NTU benchmark for turbidity (equivalent to 32 cm transparency) is exceeded, the following steps will be conducted:

1. Ensure all BMPs specified in this SWPPP are installed and functioning as intended.
2. Assess whether additional BMPs should be implemented, and document revisions to the SWPPP as necessary.
3. Sample discharge location daily until the analysis results are less than 25 NTU (turbidity) or greater than 32 cm (transparency).

If the turbidity is greater than 25 NTU (or transparency is less than 32 cm) but less than 250 NTU (transparency greater than 6 cm) for more than 3 days, additional treatment BMPs will be implemented within 24 hours of the third consecutive sample that exceeded the benchmark value. Additional treatment BMPs to be considered will include, but are not limited to, off-site treatment, infiltration, filtration and chemical treatment.

If the 250 NTU benchmark for turbidity (or less than 6 cm transparency) is exceeded at any time, the following steps will be conducted:

1. Notify Ecology by phone within 24 hours of analysis (see Section 5.0 of this SWPPP for contact information).



2. Continue daily sampling until the turbidity is less than 25 NTU (or transparency is greater than 32 cm).
3. Initiate additional treatment BMPs such as off-site treatment, infiltration, filtration and chemical treatment within 24 hours of the first 250 NTU exceedance.
4. Implement additional treatment BMPs as soon as possible, but within 7 days of the first 250 NTU exceedance.
5. Describe inspection results and remedial actions taken in the site log book and in monthly discharge monitoring reports as described in Section 7.0 of this SWPPP.

### **6.2.2 pH Sampling**

Stormwater runoff will be monitored for pH starting on the first day of any activity that includes significant amounts, as defined in the Permit, of poured or recycled concrete, or after the application of “Engineered Soils” such as, Portland cement treated base, cement kiln dust, or fly ash. This does not include fertilizers. For concrete work, pH monitoring will start the first day concrete is poured and continue until the pH is the range of 6.5 – 8.5 (su). For engineered soils, the pH monitoring period begins when engineered soils are first exposed to precipitation and continue until the area is fully stabilized.

Stormwater samples will be collected daily from all points of discharge from the site and measured for pH using a calibrated pH meter, pH test kit, or wide range pH indicator paper. If the measured pH is 8.5 or greater, the following steps will be conducted:

1. Prevent the high pH water from entering storm drains or surface water.
2. Adjust or neutralize the high pH water if necessary using appropriate technology such as CO<sub>2</sub> sparging (liquid or dry ice).
3. Contact Ecology if chemical treatment other than CO<sub>2</sub> sparging is planned.

## **7.0 Reporting and Recordkeeping**

### **7.1 Recordkeeping**

#### **7.1.1 Site Log Book**

A site log book will be maintained for all on-site construction activities and will include:

- A record of the implementation of the SWPPP and other permit requirements;
- Site inspections; and,
- Stormwater quality monitoring.

For convenience, the inspection form and water quality monitoring forms included in this SWPPP include the required information for the site log book.

#### **7.1.2 Records Retention**

Records of all monitoring information (site log book, inspection reports/checklists, etc.), this Stormwater Pollution Prevention Plan, and any other documentation of compliance with permit requirements will be retained during the life of the construction project and for a minimum of three years following the termination of permit coverage in accordance with permit condition S5.C.

#### **7.1.3 Access to Plans and Records**

The SWPPP, General Permit, Notice of Authorization letter, and Site Log Book will be retained on site or within reasonable access to the site and will be made immediately available upon request to Ecology or the local jurisdiction. A copy of this SWPPP will be provided to Ecology within 14 days of receipt of a written request for the SWPPP from Ecology. Any other information requested by Ecology will be submitted within a reasonable time. A copy of the SWPPP or access to the SWPPP will be provided to the public when requested in writing in accordance with permit condition S5.G.

#### **7.1.4 Updating the SWPPP**

In accordance with Conditions S3, S4.B, and S9.B.3 of the General Permit, this SWPPP will be modified if the SWPPP is ineffective in eliminating or significantly minimizing pollutants in stormwater discharges from the site or there has been a change in design, construction, operation, or maintenance at the site that has a significant effect on the discharge, or potential for discharge, of pollutants to the waters of the State. The SWPPP will be modified within seven days of determination based on inspection(s) that additional or modified BMPs are necessary to correct problems identified, and an updated timeline for BMP implementation will be prepared.

## **7.2 Reporting**

### **7.2.1 Discharge Monitoring Reports**

If cumulative soil disturbance is 5 acres or larger: Discharge Monitoring Reports (DMRs) will be submitted to Ecology monthly. If there was no discharge during a given monitoring period, the Permittee shall submit the form as required, with the words “No discharge” entered in the place of monitoring results. The DMR due date is 15 days following the end of each month.

### **7.2.2 Notification of Noncompliance**

If any of the terms and conditions of the permit are not met, and it causes a threat to human health or the environment, the following steps will be taken in accordance with permit section S5.F:

1. Ecology will be immediately notified of the failure to comply.
2. Immediate action will be taken to control the noncompliance issue and to correct the problem. If applicable, sampling and analysis of any noncompliance will be repeated immediately and the results submitted to Ecology within five (5) days of becoming aware of the violation.
3. A detailed written report describing the noncompliance will be submitted to Ecology within five (5) days, unless requested earlier by Ecology.

In accordance with permit condition S2.A, a complete application form will be submitted to Ecology and the appropriate local jurisdiction (if applicable) to be covered by the General Permit.

## **Appendix A – Site Plans**

## **Appendix B – Construction BMPs**

High Visibility Plastic or Metal Fence (BMP C103)

Stabilized Construction Entrance (BMP C105)

Wheel Wash (BMP C106)

Sediment Trap (BMP C240)

Triangular Silt Dike (BMP C208)

Outlet Protection (BMP C209)

Storm Drain Inlet Protection (BMP C220)

Portable Water Storage Tanks (e.g., Baker Tank) for Sedimentation.

Materials on Hand (BMP C150) may also be applicable

Plastic Covering (BMP C123)

Surface Roughening (BMP C130)

Dust Control (BMP C140)

Early application of gravel base on areas to be paved

Materials on Hand (BMP C150) may also be applicable.

## **Appendix C – Alternative BMPs**

The following includes a list of possible alternative BMPs for each of the 12 elements not described in the main SWPPP text. This list can be referenced in the event a BMP for a specific element is not functioning as designed and an alternative BMP needs to be implemented.

### **Element #1 - Mark Clearing Limits**

BMP C103 – High Visibility Fence

### **Element #2 - Establish Construction Access**

BMP C106 – Wheel Wash

BMP C107 – Construction Road/Parking Area Stabilization

### **Element #3 - Control Flow Rates**

### **Element #4 - Install Sediment Controls**

### **Element #5 - Stabilize Soils**

### **Element #6 - Protect Slopes**

### **Element #8 - Stabilize Channels and Outlets**

### **Element #10 - Control Dewatering**

Additional BMPs found in current editions of the Washington State Department of Ecology Stormwater Management Manual for Western Washington or the City of Tacoma Surface Water Manual may be used.

## **Appendix D – General Permit**



## **Appendix E – Site Inspection Forms (and Site Log)**

The results of each inspection shall be summarized in an inspection report or checklist that is entered into or attached to the site log book. It is suggested that the inspection report or checklist be included in this appendix to keep monitoring and inspection information in one document, but this is optional. However, it is mandatory that this SWPPP and the site inspection forms be kept onsite at all times during construction, and that inspections be performed and documented as outlined below.

At a minimum, each inspection report or checklist shall include:

- a. Inspection date/times
- b. Weather information: general conditions during inspection, approximate amount of precipitation since the last inspection, and approximate amount of precipitation within the last 24 hours.
- c. A summary or list of all BMPs that have been implemented, including observations of all erosion/sediment control structures or practices.
- d. The following shall be noted:
  - i. locations of BMPs inspected,
  - ii. locations of BMPs that need maintenance,
  - iii. the reason maintenance is needed,
  - iv. locations of BMPs that failed to operate as designed or intended, and
  - v. locations where additional or different BMPs are needed, and the reason(s) why
- e. A description of stormwater discharged from the site. The presence of suspended sediment, turbid water, discoloration, and/or oil sheen shall be noted, as applicable.
- f. A description of any water quality monitoring performed during inspection, and the results of that monitoring.
- g. General comments and notes, including a brief description of any BMP repairs, maintenance or installations made as a result of the inspection.
- h. A statement that, in the judgment of the person conducting the site inspection, the site is either in compliance or out of compliance with the terms and conditions of the SWPPP and the NPDES

permit. If the site inspection indicates that the site is out of compliance, the inspection report shall include a summary of the remedial actions required to bring the site back into compliance, as well as a schedule of implementation.

- i. Name, title, and signature of person conducting the site inspection; and the following statement: "I certify under penalty of law that this report is true, accurate, and complete, to the best of my knowledge and belief".

When the site inspection indicates that the site is not in compliance with any terms and conditions of the NPDES permit, the Permittee shall take immediate action(s) to: stop, contain, and clean up the unauthorized discharges, or otherwise stop the noncompliance; correct the problem(s); implement appropriate Best Management Practices (BMPs), and/or conduct maintenance of existing BMPs; and achieve compliance with all applicable standards and permit conditions. In addition, if the noncompliance causes a threat to human health or the environment, the Permittee shall comply with the Noncompliance Notification requirements in Special Condition S5.F of the permit.

## Site Inspection Form

General Information			
<b>Project Name:</b>			
<b>Inspector Name:</b>		<b>Title:</b>	
		<b>CESCL # :</b>	
<b>Date:</b>		<b>Time:</b>	
<b>Inspection Type:</b>	<input type="checkbox"/> After a rain event <input type="checkbox"/> Weekly <input type="checkbox"/> Turbidity/transparency benchmark exceedance <input type="checkbox"/> Other		
<b>Weather</b>			
<b>Precipitation</b>	Since last inspection	In last 24 hours	
<b>Description of General Site Conditions:</b>			

Inspection of BMPs			
<i>Element 1: Mark Clearing Limits</i>			
<b>BMP:</b>			

Location	Inspected		Functioning			Problem/Corrective Action
	Y	N	Y	N	NIP	

<b>BMP:</b>						
Location	Inspected		Functioning			Problem/Corrective Action
	Y	N	Y	N	NIP	

<i>Element 2: Establish Construction Access</i>						
<b>BMP:</b>						

Location	Inspected		Functioning			Problem/Corrective Action
	Y	N	Y	N	NIP	

<b>BMP:</b>						
Location	Inspected		Functioning			Problem/Corrective Action
	Y	N	Y	N	NIP	

**Element 3: Control Flow Rates**

BMP:							
Location	Inspected			Functioning			Problem/Corrective Action
		Y	N	Y	N	NIP	

BMP:							
Location	Inspected			Functioning			Problem/Corrective Action
		Y	N	Y	N	NIP	

**Element 4: Install Sediment Controls**

BMP:							
Location	Inspected			Functioning			Problem/Corrective Action
		Y	N	Y	N	NIP	

BMP:							
Location	Inspected			Functioning			Problem/Corrective Action
		Y	N	Y	N	NIP	

BMP:							
Location	Inspected			Functioning			Problem/Corrective Action
		Y	N	Y	N	NIP	

BMP:							
Location	Inspected			Functioning			Problem/Corrective Action
		Y	N	Y	N	NIP	

BMP:							
Location	Inspected			Functioning			Problem/Corrective Action
		Y	N	Y	N	NIP	

**Element 5: Stabilize Soils**

BMP:

Location	Inspected			Functioning			Problem/Corrective Action
		Y	N	Y	N	NIP	

BMP:

Location	Inspected			Functioning			Problem/Corrective Action
		Y	N	Y	N	NIP	

BMP:

Location	Inspected			Functioning			Problem/Corrective Action
		Y	N	Y	N	NIP	

BMP:

Location	Inspected			Functioning			Problem/Corrective Action
		Y	N	Y	N	NIP	

**Element 6: Protect Slopes**

BMP:

Location	Inspected			Functioning			Problem/Corrective Action
		Y	N	Y	N	NIP	

BMP:

Location	Inspected			Functioning			Problem/Corrective Action
		Y	N	Y	N	NIP	

BMP:

Location	Inspected			Functioning			Problem/Corrective Action
		Y	N	Y	N	NIP	

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**Element 7: Protect Drain Inlets**

BMP:						
Location	Inspected			Functioning		
	Y	N		Y	N	NIP

BMP:						
Location	Inspected			Functioning		
	Y	N		Y	N	NIP

BMP:						
Location	Inspected			Functioning		
	Y	N		Y	N	NIP

**Element 8: Stabilize Channels and Outlets**

BMP:						
Location	Inspected			Functioning		
	Y	N		Y	N	NIP

BMP:						
Location	Inspected			Functioning		
	Y	N		Y	N	NIP

BMP:						
Location	Inspected			Functioning		
	Y	N		Y	N	NIP

BMP:						
Location	Inspected			Functioning		
	Y	N		Y	N	NIP


**Element 9: Control Pollutants**

BMP:							
Location	Inspected			Functioning			Problem/Corrective Action
		Y	N	Y	N	NIP	

BMP:							
Location	Inspected			Functioning			Problem/Corrective Action
		Y	N	Y	N	NIP	

**Element 10: Control Dewatering**

BMP:							
Location	Inspected			Functioning			Problem/Corrective Action
		Y	N	Y	N	NIP	

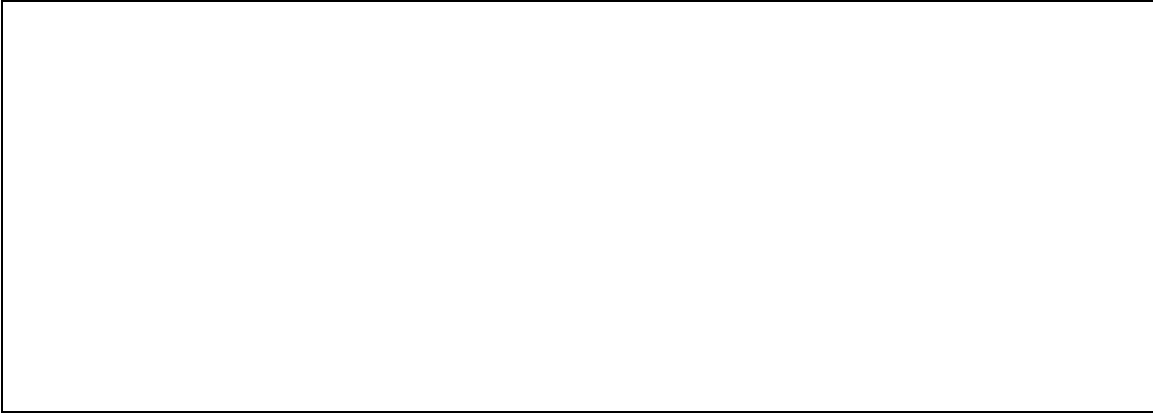
BMP:							
Location	Inspected			Functioning			Problem/Corrective Action
		Y	N	Y	N	NIP	

BMP:							
Location	Inspected			Functioning			Problem/Corrective Action
		Y	N	Y	N	NIP	



Stormwater Discharges From the Site			
		Observed?	Problem/Corrective Action
		Y N	
Location			
	Turbidity		
	Discoloration		
	Sheen		
Location			
	Turbidity		
	Discoloration		
	Sheen		

Water Quality Monitoring	
Was any water quality monitoring conducted?	<input type="checkbox"/> Yes <input type="checkbox"/> No
If water quality monitoring was conducted, record results here:	
If water quality monitoring indicated turbidity 250 NTU or greater; or transparency 6 cm or less, was Ecology notified by phone within 24 hrs?	
<input type="checkbox"/> Yes <input type="checkbox"/> No	
If Ecology was notified, indicate the date, time, contact name and phone number below:	
Date:	
Time:	
Contact Name:	
Phone #:	
General Comments and Notes	
Include BMP repairs, maintenance, or installations made as a result of the inspection.	
Were Photos Taken?	<input type="checkbox"/> Yes <input type="checkbox"/> No
If photos taken, describe photos below:	



## **Appendix F – Engineering Calculations**

**APPENDIX E**

**DREDGE MATERIAL**

**MANAGEMENT PROGRAM**

**(DMMP) SUITABILITY**

**DETERMINATION, DATED**

**FEBRUARY 25, 2016**

MEMORANDUM FOR: RECORD

February 25, 2016

**SUBJECT:** DETERMINATION REGARDING THE SUITABILITY OF PROPOSED DREDGED MATERIAL FROM PHASE 2 OF THE PORT OF TACOMA'S PIER 4 RECONFIGURATION PROJECT EVALUATED UNDER SECTION 404 OF THE CLEAN WATER ACT FOR UNCONFINED OPEN-WATER DISPOSAL AT THE COMMENCEMENT BAY DISPOSAL SITE.

1. **Introduction.** This memorandum reflects the consensus determination of the Dredged Material Management Program (DMMP) agencies (U.S. Army Corps of Engineers, Washington State Department of Ecology, Washington State Department of Natural Resources, and the Environmental Protection Agency) regarding the suitability of up to 500,000 cubic yards (cy) of dredged material from the Port of Tacoma's Pier 4 Reconfiguration Phase 2 project for open-water disposal at the Commencement Bay nondispersive disposal site, and for compliance with the State of Washington Antidegradation Policy.
2. **Background.** In early 2013 the Port of Tacoma (Port) proposed dredging of approximately 560,000 cy of material to cutback and reconfigure Pier 4 to be in alignment with Pier 3 within Husky Container Terminal on the Blair Waterway (see **Figure 1** for site vicinity and **Figure 2** for project location, extent, and areas). During sediment sampling in April 2013 for characterization of the proposed dredged material, levels of porewater tributyltin (TBT) were found within in-water Area A exceeding the DMMP bioaccumulation trigger (BT) for porewater TBT of 0.15 µg/L. Subsequent sampling events in August and November 2013 to determine the extent of TBT contamination measured TBT in bulk sediments due to holding time constraints, challenges in collecting porewater, and cost. Results of these sampling events revealed very high levels of TBT in bulk sediment analyses, up to 50,000 µg/kg, nearly three orders of magnitude above the DMMP bulk TBT BT of 73 µg/kg, within in-water Areas A and B.

A fourth sampling event in July 2014 was conducted under an Agreed Order on Consent (AOC; EPA, 2014) between the Environmental Protection Agency CERCLA program (EPA) and the Port of Tacoma to determine the vertical and horizontal extent of TBT contamination at Pier 4. Following review of the preliminary results of the July sampling event, EPA determined that cleanup of the TBT-contaminated sediments was to proceed as a CERCLA Time Critical Removal Action. Therefore, the work occurring at Pier 4 has been divided into two distinct work phases: (1) the Phase 1 Removal Action, which includes an EPA-ordered cleanup of contaminated sediment, and (2) the Phase 2 Reconfiguration Project, which includes cut-back dredging of the remaining sediments and reconfiguration of the pier. A brief description of the work associated with each phase of the project follows:

#### **Phase 1**

Removal of approximately 70,000 cy of TBT-contaminated sediment has taken place under an AOC between the Port of Tacoma and EPA (EPA, 2015). Prior to removal of the contaminated material along the slope and at the pier face, the clean upper portion of the slope was dredged to maintain slope stability (see **Figure 3**). A suitability determination for this 11,300 cy of clean Phase 1 top-of-

slope dredged material was issued on January 8, 2015 (DMMP, 2015a). An overlying layer of rip-rap was removed and re-handled upland, and the suitable dredged material was disposed at the Commencement Bay open-water disposal site.

## Phase 2

Following completion of Phase 1, the Port will continue to cutback the Pier 4 shoreline and rebuild the pier to be in alignment with Pier 3. This work, which will include dredging of approximately 500,000 cy of material, is the subject of this suitability determination.

## Confirmational Sampling Results

Following completion of Phase 1, sediment sampling was required to confirm that the goals of the Phase 1 removal action were met and that the concentrations of TBT in the sediments left behind following Phase 1 dredging met DMMP guidelines for open-water disposal. The details of the confirmational sampling plan are outlined in the Removal Action Work Plan (Floyd|Snider, 2015a), the November 30<sup>th</sup> Pier 4 Phase 1 – Additional Confirmational Sampling Approach Memo (Floyd|Snider, 2015b) and the January 21<sup>st</sup> Post Dredge Confirmational Sampling Plan Addendum (Floyd|Snider, 2016a). DMU stations are located in the dredging prism footprint, while PR stations are located in the perimeter areas adjacent to the dredge prism. In addition to the locations outlined in the RAWP, five additional discretionary sample locations were identified and added to the sampling plan. These additional perimeter locations are identified as PR-22 to PR-26 and are shown in **Figure 4**. The Port also elected to conduct pore water analysis of TBT on a subset of samples from the hot spot, non-hot spot and perimeter areas.

Confirmational samples were collected on January 4-5, 2016 by Marine Sampling Services, Inc. Results of both porewater and bulk TBT concentrations are shown in **Table 1** and **Figure 5**. Exceedances of the bulk TBT bioaccumulation trigger were observed in DMUs 3 and 6, and perimeter samples PR-10, PR-11, PR-12, PR-16, PR-17, PR-18, PR-19, and PR-26. Exceedances of the porewater TBT BT (0.15 ug/L) were observed for at least one depth interval in five of the seventeen DMUs from within the dredging footprint. It was notable that exceedances of the porewater BT did not correlate with those of the bulk BT. For example, the 10-20 cm sample from DMU 6 had a bulk value of 61 µg/kg, below the bulk BT of 73 µg/kg, but the porewater result was 2.2 µg/L, more than ten times the porewater BT of 0.15 µg/L. Similarly, in the 0-10 cm sample from DMU 8 the bulk TBT value was 39 µg/kg, well below the bulk BT of 73 µg/kg, but the porewater TBT value was 0.29 µg/L, almost twice the porewater BT.

Porewater TBT results are considered a better evaluation of the bioavailability of TBT in sediments and thus porewater TBT results trump bulk results (DMMP, 2015b). Considering this, EPA determined, in conjunction with the DMMP, that additional dredging was warranted to remove remaining TBT-contaminated sediments associated with Phase 1. Additional dredging of DMUs 3, 4, 6, 7, and 8 was conducted to remove at least one foot past the Phase 1 design depth. Dredging a minimum 1-ft lift in eleven of the perimeter DMUs was also required by EPA.

Following the first additional round of dredging, a second round of confirmational sampling limited to DMUs 3, 4, 6, 7, and 8 was required by EPA and the DMMP agencies to verify that all the remaining TBT-contaminated sediments had been removed and that the remaining surface of the proposed Phase 2 prism was suitable for open-water disposal during Phase 2. The second round of sampling

included collection of grab samples for analysis of pore water and core samples to bound the vertical extent of bulk TBT contamination, should additional dredging be necessary. In order to expedite decision-making and finish dredging as soon as possible within the fish window, the second round of confirmational sampling was split into two events as described below. Results are summarized in **Table 2** and **Figure 6**.

- The first event involved collection of grab samples and cores immediately following completion of dredging in DMUs 3, 4, 6, 7, and 8, but during dredging in adjacent perimeter DMUs. On January 27<sup>th</sup>, vibracores and grab samples were collected from DMUs 4 and 6, and cores were collected from DMUs 3, 7, and 8. The goal of grab sampling at that time was to provide an early warning of whether porewater TBT concentrations in the 0-10cm depth interval were still exceeding the DMMP BT. The goal of the coring was to collect sufficient material for porewater TBT analysis from the 10cm - 2ft and 2ft - 4ft intervals. Therefore, multiple cores were collected from each location in order to provide enough sediment for porewater extraction. Despite these efforts, the material consisted of consolidated sands, likely native material, and the laboratory was not able to extract sufficient porewater for TBT analysis from any of the core samples. Therefore, only bulk TBT analysis was conducted for the 10cm - 2 ft, and 2 - 4 ft intervals.
- The second sampling event followed completion of dredging in the second row of perimeter DMUs. Grab samples were collected from DMUs 3, 4, 6, 7 and 8 on February 9<sup>th</sup>. The porewater collected from these samples was used (in conjunction with the data from the first event) to determine if the 0-10cm depth interval exceeded the TBT BT.

Based on the surface porewater results from the second confirmation sampling event (**Table 2**), EPA and the DMMP agencies determined that a second additional round of dredging was necessary within DMUs 3, 4, 6, 7, and 8 to remove the surface layer of TBT-contaminated sediment. The results from the core sampling showed that bulk TBT was either non-detect or detected at very low levels in both the 10cm - 2ft and 2 - 4ft intervals. Therefore, it was determined that no additional confirmation sampling was needed.

Prior to the second round of dredging, the existing bathymetric elevations in DMUs 4 and 6 were deep enough that no additional dredging in Phase 2 would be needed. However, in association with the Port's reassessment of the slope stability and the surface porewater results, EPA determined that additional dredging was needed in these two DMUs to remove the remaining surface TBT contamination. During dredging of DMU 4 the slope failed, resulting in slumping of material from the clean upper slope DMU 12 into DMUs 3 and 4. At the time of slope failure, dredging in DMU 4 stopped and EPA and the DMMP agencies determined that no further dredging was warranted due to the slope stability issue, the fact that any remaining contamination within DMU 4 was buried, and that the porewater TBT within DMU 4 was just slightly above the bioaccumulation trigger of 0.15 µg/L. If dredging within DMU 4 becomes necessary in Phase 2 due to the accumulation of slumped material above the project design depth, the accumulated material is considered suitable for open-water disposal.

The second and final round of dredging was performed in DMUs 3, 4, 6, 7, and 8 with dredging completed on February 17, 2016. EPA determined that the tributyltin-contaminated sediment under Pier 4 was completely removed (Parker, 2016). A Time Critical Removal Action Report will be

prepared for EPA and will document the above-described sampling and results in greater detail (Floyd|Snider, 2016b). The final report is expected to be completed by mid-July 2016.

3. **Project Summary and Ranking.** Table 3 includes project summary and tracking information.

**Table 3. Project Summary**

Project ranking	Phase 1: Moderate to High Phase 2: Moderate
Proposed dredging volume	500,000 CY
Proposed dredging depth	-53 ft MLLW (including 2 ft overdredge)
Sampling dates	<b>Round 1:</b> April 11-19, 2013
	<b>Round 2:</b> August 8-9, 2013
	<b>Round 3:</b> November 13-16, 2013
	<b>Round 4:</b> June 30 – July 9, 2014
Confirmational sampling dates	<b>Confirmational #1:</b> January 4-5, 2016
	<b>Confirmational #2:</b> January 27 <sup>th</sup> , 2016 and February 9 <sup>th</sup> , 2016
Draft data report received	October 15, 2014
Comments provided on draft report	November 17, 2014
Final data report received	November 24, 2014
EIM Study ID	POTP413
USACE Permit Application Number	NWS-2014-0456
Recency Expiration Dates	High rank = July 2017 Moderate rank = July 2019

This project was originally ranked moderate by the DMMP agencies according to a review of previous testing results and the guidelines set out in the DMMP User Manual for areas on the Blair Waterway (DMMP, 2013). However, as a result of the high levels of TBT contamination found in the sediments along Pier 4, the in-water DMMUs (Areas A and B) are now considered to be high-ranked areas.

Areas C and D maintain the rank of moderate. In a moderate-ranked area the number of samples and analyses are calculated using the following guidelines (DMMP, 2013):

- Maximum volume of sediment represented by each field sample = 4,000 cubic yards
- Maximum volume of sediment represented by each analysis in the upper 4-feet of the dredging prism (surface sediment) = 16,000 cubic yards
- Maximum volume of sediment represented by each analysis in the subsurface portion of the dredging prism = 24,000 cubic yards,

A portion of the upland DMMUs are presumed to be located in native material and therefore don't require testing under DMMP. Sediment cores and upland bores at nearly all locations were collected to depths well into the native layer, and the material was analyzed to a depth that either



reached native or where the results were all non-detects. The volume of non-native material characterized during the first round of sampling was 199,600 cubic yards.

#### 4. Sampling.

Sediment characterization occurred over four sampling events between April 2013 and July 2014 and employed a variety of different sampling techniques designed to address the specific sampling difficulties encountered, including penetrating through the rip-rap armored under-pier slope, sampling through the pier deck, and reaching depths up to 28-ft below mudline. All sampling activities were approved by the DMMP agencies and/or the EPA removal action project manager, and conducted in accordance with the approved SAP, SAP addendum and QAPP (Floyd|Snider, 2013a; Floyd|Snider, 2013b; Kendall, 2013; Floyd|Snider, 2014a). See **Figure 2** for area outlines and sampling locations, and **Table 4** for sampling location coordinates, sampling dates and methodologies.

#### **Shoreline Cutback DMMUs**

Sampling within the shoreline cutback DMMUs in Area C and Area D occurred in April 2013 and August 2014. During the initial sampling event in April 2013, four upland boring locations were occupied and sampled via direct push boring by Cascade Drilling of Woodinville, WA. Two borings from Area C, C1 and C2, and two from Area D, D1 and D2, were advanced from ground surface at +17 ft MLLW to a distance of 10 feet into native material. At each borehole, a discrete sample was collected every 4 feet until native was encountered. The presumed native interface was reached at approximately +5 ft MLLW at stations C1, C2, and D2, and at approximately +6.5 ft MLLW at station D1. Within each area these 4-foot subunits were composited into one sample representing that DMMU, see **Table 5** for compositing information for all samples. Once native was reached, discrete samples were collected every 4 feet until reaching the bottom of the planned Z-layer (-55 ft MLLW). The native subunits were composited into one sample representing the native DMMUs across Areas C and D (DMMUs N1 and N2).

#### **In-water DMMUs**

Sampling within the in-water DMMUs began in April 2013 and continued during sampling in August and November 2013 and July 2014. The original configuration of in-water DMMUs included a single homogeneous DMMU from Area A, and one surface and two subsurface DMMUs from Area B. Sampling within each area is described in detail below.

Area A – Five surface grab samples (0-10cm) were collected with a Power Grab sampler in April 2013 and composited into a single analysis for the full suite of DMMP COCs – DMMU A. Based on the porewater TBT exceedance seen in that sample, individual archives from each of the five grab samples were also analyzed, and the results showed elevated TBT in locations A4 and A5.

Area B – Three sediment cores were collected from locations B1, B2, and B3 by diver assisted MudMole, a submersible pneumatic impact corer owned and operated by AMEC. Diver assistance was performed by Research Support Services. The top 0-4 and 4-8 feet from each core location were composited into samples DMMU B1 and B2, respectively, and sent to the laboratory for analysis.

Three additional locations within Area B (B16, B17, and B18A) were sampled via barge-mounted roto-sonic drilling rig in July 2014 by Holt Services, Inc. of Edgewood, WA. Roto-sonic drilling uses

resonant sonic energy to exploit weaknesses in hard materials. This sampling methodology was chosen in order to sample sediment underneath the rip-rap armored slope.

5. **Chemical Analysis.** Analysis of conventionals and all standard DMMP COCs was conducted by Analytical Resources, Inc. of Tukwila, Washington. The approved sampling and analysis plan (Floyd|Snider, 2013a) was followed, and quality control guidelines specified by the DMMP program were generally met. All sediment sampling results are documented in the Pier 4 Phase 2 Reconfiguration Project Sediment Characterization Report (Floyd|Snider, 2014b).

Results from the initial round of sampling in April 2013 showed that the upland cutback DMMUs (Areas C and D) were predominantly sand and gravel, with between 63 and 93% sand. The fines content (silt and clay) ranged from 5 to 17%. Total organic carbon (TOC) was variable, ranging from 0.12% to a high of 2.14%. All DMMP COC's within Areas C and D were less than DMMP screening levels (**Table 6**). Dioxin results from Areas C and D were all below the DMMP site management objective of 4 pptr TEQ (**Table 7**).

Results from the initial round of sampling in April 2013 showed that the in-water DMMUs were predominantly sand, with between 57 - 66% sand. The fines content ranged from 33 - 37%. TOC ranged from 0.56 to 1.2 %. All DMMP COCs in Areas A and B DMMUs were below DMMP screening levels, with the exception of TBT which is described in more detail below. Dieldrin and heptachlor were originally reported as undetected at the reporting limit, which were above DMMP SLs for these compounds. The analytical laboratory determined there was no chance that these compounds were present in these samples down to the method detection limit. Therefore, the results in **Table 6** for heptachlor and dieldrin are reported at the method detection limit. TBT results from locations B16, B17 and B18A are shown in **Table 8** and discussed below. Dioxin results from Area B are all below the DMMP site management objective of 4 pptr TEQ (**Table 7**). Dioxin results from Area A are slightly above the site management objective of 4 pptr TEQ, but below the maximum allowed concentration of 10 pptr TEQ. The volume-weighted average dioxin concentration for all DMMUs is 0.989 pptr TEQ, well below the site management objective of 4 pptr TEQ. Considering that a significant volume of material from DMMU A was removed during Phase 1, and that an additional 400,000 cy of native material will also be dredged as part of Phase 2, this volume-weighted average is a worst case estimate of the actual volume-weighted average dioxin concentration that will be disposed at the Commencement Bay disposal site.

### **Tributyltin**

As described above, porewater TBT in the composite grab from DMMU A was found at 1.8 µg/L, well above the DMMP BT of 0.15 µg/L. Based on subsequent sampling and analyses it was determined that the extremely high concentrations of TBT observed in DMMUs A and B would be best addressed through an EPA-ordered time critical removal action. Through the EPA process, the vertical and horizontal extent of the TBT contaminated sediments was identified and sediments exceeding the DMMP's bulk TBT BT of 73 µg/kg, or the porewater BT of 0.15 µg/L, were removed as part of the Phase 1 dredging. The results of the second round of confirmational sampling conducted in January and February 2016 and described in the introduction to this suitability determination demonstrated that TBT-contaminated sediments exceeding the DMMP porewater BT were removed and that the post-Phase 1 leave surface is suitable for open-water disposal.

6. **Sediment Exposed by Dredging.** The sediment to be exposed by dredging must either meet the State of Washington Sediment Quality Standards (SQS) or the State's Antidegradation standard (Ecology, 2013) as outlined by DMMP guidance (DMMP, 2008).

Within the in-water DMMUs in Areas A and B, the material that will be exposed at the completion of Phase 2 dredging is native material. The deep native material was not sampled and characterized in Areas A and B because cores were not deep enough, however, shallower samples from those areas that were characterized were compared to DMMP COCs and there were no SL exceedances of DMMP guidelines, other than for TBT. Chemical results from these areas were also compared to SMS criteria, and are shown in **Table 9**. All results from Areas A and B are below SMS criteria. Extensive testing of TBT occurred during Phase 1 post-dredge confirmational sampling in Areas A and B and results of cores collected during the second round of confirmational sampling showed that TBT was either non-detected or detected at very low levels (3-5 µg/kg TBT).

Within the shoreline cutback Areas C and D, the native material representing the leave surface, the material that will be exposed by dredging, was characterized and compared to DMMP COCs. There were no SL exceedances of DMMP guidelines. Chemical results from these areas were also compared to SMS criteria, however, due to low TOC values in Area C and a portion of Area D, only two DMMUs were within the range (0.5 – 4%) recommended for carbon normalization (Michelsen 1992). Chemical results compared to SMS criteria are shown in **Table 9**. All results from Areas C and D are below SMS criteria.

As demonstrated by the results of the above analysis, the sediment to be exposed by dredging is not considered to be degraded relative to the currently exposed sediment surface. On this basis the DMMP agencies conclude that this project is in compliance with the State of Washington anti-degradation policy.

7. **Suitability Determination.** This memorandum documents the evaluation of the suitability of sediment proposed for dredging from Phase 2 of the Port of Tacoma's Pier 4 Reconfiguration Project for open-water disposal at the Commencement Bay non-dispersive disposal site. The approved sampling and analysis plans were followed. The data gathered were deemed sufficient and acceptable for regulatory decision-making under the DMMP program.

In summary, based on the results of the previously described testing, the DMMP agencies conclude that **all 500,000 cy of dredged material are suitable** for open-water disposal at the Commencement Bay non-dispersive disposal site. See sections 9 and 10 for additional considerations.

At this time the only disposal option being considered for Phase 2 material is open-water disposal at the Commencement Bay disposal site. Additional coordination may be needed if an alternate disposal method or location is proposed. A determination regarding the suitability of the material for upland disposal must be coordinated with the local Health Department. Use of this material for beneficial use must be approved by the receiving site and coordinated with all applicable Federal and State resource agencies and Tribes.

This suitability determination does not constitute final agency approval of the project. During the public comment period that follows a public notice, the resource agencies and other stakeholders provide input on the overall project. A final decision will be made after full consideration of agency and stakeholder input, and after an alternatives analysis is done under section 404(b)(1) of the Clean Water Act.

*A pre-dredge meeting with DNR, Ecology, EPA, and the Corps of Engineers is required at least 7 days prior to dredging. A dredging quality control plan must be developed and submitted to the Regulatory Branch of the Seattle District Corps of Engineers at least 7 days prior to the pre-dredge meeting. A DNR site use authorization must also be acquired.*

8. **Bulkhead.** During Phase 1 pile removal and dredging a number of additional timber piles were encountered unexpectedly in the Phase 1 dredge prism. The Port of Tacoma reviewed their 1966 design plans from prior to the construction of the existing Pier 4, and discovered plans proposing the construction of a 4-step timber bulkhead within the terminal shoreline. The encountered piling were not from this structure, and no records were found conclusively documenting the construction of the timber bulkhead. However, it's unlikely that the current Pier 4 terminal area could have been hydraulically back-filled without some sort of bulkhead. **Figure 7** shows the approximate location of the potential timber bulkhead superimposed over the Phase 1 and Phase 2 footprints and sample locations. **Figures 8 and 9** are the original 1966 record drawings of the stepped timber bulkhead, which have been colored in to show the approximate extent of the bulkhead and associated hydraulically placed pad as indicated on **Figure 7**.

The DMMP agencies held several meetings and conference calls with the Port of Tacoma to discuss the potential presence of the bulkhead and its impact on the Suitability Determination and overall project. The DMMP agencies carefully reviewed the design plans and sediment sampling activities, and concluded that the existing samples provide adequate characterization of the back fill material as long as the bulkhead was back-filled exclusively with hydraulically placed channel material. However, if the bulkhead was back-filled with material other than that from hydraulic dredging, additional information/data would be needed to determine its suitability.

The Port of Tacoma has elected to dig several test pits prior to the start of Phase 2 dredging to determine if the bulkhead exists, and if so, to determine whether material other than hydraulically dredged material was used as back fill. If this investigation reveals evidence that any material other than hydraulically dredged material was placed within the timber bulkhead, the DMMP agencies must be contacted immediately. Additional sampling may be required to determine if the material is suitable for open-water disposal.

9. **Debris Management.** No debris is allowed to be disposed of at the Commencement Bay disposal site. A 1' x 1' debris screen must be on site and available for use as necessary during the entire project. In addition, a place to store debris (such as a debris barge) and the necessary equipment to separate and move any debris encountered must be available. Confirmation of removal of rip-rap and documentation/coordination of the lack of debris on the grid should be discussed in project planning documents, and will be discussed at the pre-dredge meeting.

The DMMP agencies implemented a debris screening requirement following the 2015 SMARM in

order to prevent the disposal of solid waste and large debris at the open-water disposal sites (DMMP, 2015c). The proposed clarification states that “all projects must use a screen to remove debris unless it can be demonstrated that debris is unlikely to be present or that the debris present is large woody debris that can be easily observed and removed by other means during dredging.” For the purposes of debris management, the Phase 2 dredge prism is divided into three areas with different debris screening requirements, as follows:

**Area 1.** This is the in-water portion of the project on the southern end of the former pier where no dredging during Phase 1 occurred. This area is currently covered by a rip-rap armored slope. The rip-rap must be removed prior to dredging in this area. In addition, a 1' x 1' mesh grid must be used during the first pass of dredging in this area, and until no debris is retained on the grid.

**Area 2.** This is the in-water portion of the project that was dredged during Phase 1. A debris screen will be required to be used until the dredging shows that no more debris is present under any of the following situations:

- 1) Demolition and dredging of the four-step timber bulkhead (if present),
- 2) An unexpected structure or debris such as piling are encountered,
- 3) Dredging in areas, including adjacent downslope areas, where rip-rap or other materials remain or were placed to stabilize the slope prior to Phase 2 dredging,
- 4) Dredging in areas, including adjacent downslope areas, that have experienced slope instability and collapse at any time prior to the beginning of Phase 2.

Dredged material from any remaining portions of Area 2 that do not meet any of the above conditions will not require screening.

**Area 3.** This is the upland portion of the project. No debris screening is needed in this portion of the project. However, if an unexpected structure or debris is encountered, the debris screen must be used until no further debris is retained on the screen.

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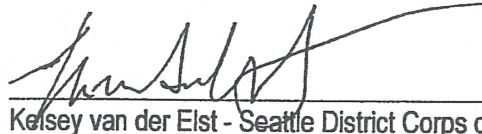
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11. Agency Signatures.

Concur:

2/25/2016

Date



Kelsey van der Elst - Seattle District Corps of Engineers

25 Feb 2016


Date



Justine Barton - Environmental Protection Agency

2/24/16

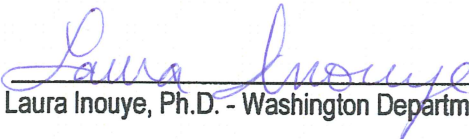
Date



Erika Hoffman - Environmental Protection Agency

02/24/2016

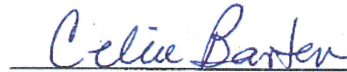
Date



Laura Inouye, Ph.D. - Washington Department of Ecology

2/25/16

Date



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Olivia Romano, USACE Regulatory Project Manager



**Table 1. First Round Post-Dredge Confirmational and Perimeter TBT Bulk and Porewater and TOC Sample Results**

				Tributyltin Bulk Sediment	Tributyltin Porewater	Total Organic Carbon
DMMP Screening Level				73	0.15	--
Area	Sample ID	Sample Date	Depth	µg/kg	µg/L	%
<b>Post-Dredge Confirmational Samples</b>						
DMU-1	DMU1-0-10	01/04/2016	0–10 cm	36	0.029	0.503
	DMU1-10-20	01/04/2016	10–20 cm	7.9 J	NA	NA
	DMU1-0-1'	01/04/2016	0–1 ft	16	NA	NA
DMU-2	DMU2-0-10	01/04/2016	0–10 cm	8.9	0.15	0.315
	DMU2-10-20	01/04/2016	10–20 cm	2.6 U	NA	NA
DMU-3	DMU3-0-10	01/04/2016	0–10 cm	<b>120</b>	<b>0.56</b>	NA
	DMU3-10-20	01/04/2016	10–20 cm	<b>320</b>	NA	NA
	DMU3-0-1'	01/04/2016	0–1 ft	44 J	NA	0.689
DMU-4	DMU4-0-10	01/04/2016	0–10 cm	33	<b>0.64</b>	0.534
	DMU4-10-20	01/04/2016	10–20 cm	42	<b>0.32</b>	0.384
DMU-5	DMU5-0-10	01/04/2016	0–10 cm	1.1 JQ	NA	0.132
	DMU5-10-20	01/04/2016	10–20 cm	2.6 U	NA	NA
DMU-6	DMU6-0-10	01/04/2016	0–10 cm	<b>120</b>	<b>0.56</b>	0.63
	DMU6-10-20	01/04/2016	10–20 cm	61	<b>2.2</b>	0.33
DMU-7	DMU7-0-10	01/04/2016	0–10 cm	41	<b>0.63</b>	0.241
	DMU7-10-20	01/04/2016	10–20 cm	24	NA	NA
DMU-8	DMU8-0-10	01/04/2016	0–10 cm	39	<b>0.29</b>	0.442
	DMU8-10-20	01/04/2016	10–20 cm	27	NA	NA
DMU-9	DMU-43:619	01/04/2016	0–10 cm	16	0.14	0.763
	DMU9-10-20	01/04/2016	10–20 cm	2.1 JQ	NA	NA
DMU-10	DMU10-0-10	01/04/2016	0–10 cm	1.8 JQ	NA	0.29
	DMU10-10-20	01/04/2016	10–20 cm	4	NA	0.122
DMU-11	DMU11-0-10	01/05/2016	0–10 cm	3.7 U	0.006 UJ	0.229
	DMU11-10-20	01/05/2016	10–20 cm	3.6 U	NA	NA
DMU-12	DMU12-0-10	01/05/2016	0–10 cm	2.9 JQ	NA	0.062
	DMU12-10-20	01/05/2016	10–20 cm	3.4 U	NA	NA
DMU-13	DMU13-0-10	01/05/2016	0–10 cm	3.7 U	NA	0.098
	DMU13-10-20	01/05/2016	10–20 cm	3.7 U	NA	NA
DMU-14	DMU14-0-10	01/05/2016	0–10 cm	3.6 U	NA	0.044
	DMU14-10-20	01/05/2016	10–20 cm	3.8 U	NA	NA
DMU-15	DMU15-0-10	01/05/2016	0–10 cm	3.6 U	NA	0.063
	DMU15-10-20	01/05/2016	10–20 cm	3.4 U	NA	NA
	DMU15-10-20-D	01/05/2016	10–20 cm	3.4 U	NA	NA
DMU-16	DMU16-0-10	01/05/2016	0–10 cm	3.4 U	NA	0.052
	DMU16-10-20	01/05/2016	10–20 cm	3.4 U	NA	NA
DMU-17	DMU17-0-10	01/05/2016	0–10 cm	3.6 U	NA	0.054
	DMU17-10-20	01/05/2016	10–20 cm	3.5 U	NA	NA
<b>Perimeter Samples<sup>4</sup></b>						
PR-01	PR1-0-10	01/05/2016	0–10 cm	4.2	NA	NA
PR-02	PR2-0-10	01/05/2016	0–10 cm	4	NA	NA
PR-03	PR3-0-10	01/05/2016	0–10 cm	7.7	NA	NA
PR-04	PR4-0-10	01/05/2016	0–10 cm	49	NA	NA
PR-05	PR5-0-10	01/05/2016	0–10 cm	18	NA	NA
PR-06	PR6-0-10	01/05/2016	0–10 cm	70	NA	NA

**Table 1. First Round Post-Dredge Confirmational and Perimeter TBT Bulk and Porewater and TOC Sample Results**

				Tributyltin Bulk Sediment	Tributyltin Porewater	Total Organic Carbon
DMMP Screening Level				73	0.15	--
Area	Sample ID	Sample Date	Depth	µg/kg	µg/L	%
<b>Perimeter Samples (Cont.)<sup>4</sup></b>						
PR-07	PR7-0-10	01/05/2016	0-10 cm	33	NA	NA
PR-08	PR8-0-10	01/05/2016	0-10 cm	44	NA	NA
PR-09	PR9-0-10	01/05/2016	0-10 cm	52	NA	NA
PR-10	PR10-0-10	01/05/2016	0-10 cm	<b>130</b>	NA	NA
PR-11	PR11-0-10	01/05/2016	0-10 cm	<b>170</b>	NA	NA
PR-12	PR12-0-10	01/05/2016	0-10 cm	<b>160</b>	NA	NA
PR-13	PR13-0-10	01/05/2016	0-10 cm	62	NA	NA
PR-14	PR14-0-10	01/04/2016	0-10 cm	46	NA	NA
PR-15	PR15-0-10	01/04/2016	0-10 cm	7	<b>0.16</b>	0.527
PR-16	PR16-0-10	01/04/2016	0-10 cm	<b>97</b>	<b>1.4</b>	0.57
PR-17	PR17-0-10	01/04/2016	0-10 cm	<b>120</b>	<b>1.7</b>	0.392
PR-18	PR18-0-10	01/04/2016	0-10 cm	<b>93</b>	<b>0.32</b>	0.245
PR-19	PR19-0-10	01/05/2016	0-10 cm	<b>160</b>	NA	NA
PR-20	PR20-0-10	01/04/2016	0-10 cm	5.5	NA	NA
PR-21	PR21-0-10	01/04/2016	0-10 cm	22	<b>0.31</b>	0.371
	PR21-0-10-D	01/04/2016	0-10 cm	25	<b>0.23</b>	0.315
PR-22	PR22-0-10	01/04/2016	0-10 cm	14	NA	NA
	PR22-0-10-D	01/04/2016	0-10 cm	13	NA	NA
PR-23	PR23-0-10	01/04/2016	0-10 cm	67	NA	NA
PR-24	PR24-0-10	01/05/2016	0-10 cm	21	NA	NA
PR-25	PR25-0-10	01/05/2016	0-10 cm	23	NA	NA
PR-26	PR26-0-10	01/05/2016	0-10 cm	77	NA	NA
OF-1 <sup>5</sup>	OF-1-0-10	01/05/2016	0-10 cm	4.2	NA	NA

Notes:

-- Not applicable.

**BOLD** Concentration exceeds the DMMP Screening Level.

- 1 Although the surface 0- to 10-cm water porewater result exceeds the DMMP Screening Level of 0.15 µg/L, the subsurface bulk TBT result was less than the DMMP Screening Level of 73 µg/kg; therefore, an additional dredge pass was conducted and no additional sampling was
- 2 For the second sampling event, sample DMU104-0-10 was a field duplicate of sample DMU4-0-10.
- 3 For the final sampling event, sample DMU104-0-10 was a field duplicate of sample DMU4-0-10.
- 4 Due to exceedances of bulk TBT concentrations in some perimeter grid cells and a lack of porewater data in any of the perimeter grid cells, as required by the USEPA/DMMP, all the perimeter grid cells were dredged 1 to 2 feet and no additional samples were collected or required.
- 5 The surface sediment sample was collected approximately 12 feet off the APM Terminal outfall associated with the dredged material water treatment system, as required by USEPA.

Abbreviations:

cm Centimeters

ft Feet

µg/kg Micrograms per kilogram

µg/L Micrograms per liter

NA Sample for respective analysis not collected or analyzed.

TBT Tributyltin

USEPA U.S. Environmental Protection Agency

Qualifiers:

J Analyte was detected, concentration is considered to be an estimate.

JQ Analyte was detected between the reporting limit and method detection limit, concentration is considered to be an estimate.

U Analyte was not detected, concentration given is the reporting limit.

UJ Analyte was not detected, concentration given is the reporting limit, which is considered to be an estimate.

**Table 2. Second and Final Round Post-Dredge Confirmational TBT Bulk and Porewater Sample Results**

					Tributyltin Bulk Sediment	Tributyltin Porewater	Total Organic Carbon
DMMP Screening Level					73	0.15	--
Area	Sampling Event	Sample ID	Sample Date	Depth	µg/kg	µg/L	%
<b>Post-Dredge Confirmational Samples</b>							
DMU-3	2 <sup>nd</sup>	DMU3-10cm-2'	01/29/2016	10 cm–2 ft	3.4 U	NA	NA
		DMU3-2-4	01/29/2016	2–4 ft	3.5 U	NA	NA
	Final	DMU3-0-10	02/09/2016	0–10 cm	NA	<b>0.24<sup>1</sup></b>	NA
DMU-4	2 <sup>nd</sup>	DMU4-0-10	01/30/2016	0–10 cm	NA	<b>0.23</b>	NA
		DMU104-0-10 <sup>2</sup>	01/30/2016	0–10 cm	NA	<b>0.43</b>	NA
		DMU4-10cm-2'	01/29/2016	10 cm–2 ft	3.3 JQ	NA	NA
		DMU4-2-4	01/29/2016	2–4 ft	3.4 U	NA	NA
	Final	DMU4-0-10	02/09/2016	0–10 cm	NA	<b>0.19<sup>1</sup></b>	NA
		DMU104-0-10 <sup>3</sup>	02/09/2016	0–10 cm	NA	<b>0.16<sup>1</sup></b>	NA
DMU-6	2 <sup>nd</sup>	DMU6-0-10	01/30/2016	0–10 cm	NA	<b>1.4</b>	NA
		DMU6-10cm-2	01/30/2016	10 cm–2 ft	3.8 U	NA	NA
		DMU6-2-4	01/30/2016	2–4 ft	3.8 U	NA	NA
	Final	DMU6-0-10	02/09/2016	0–10 cm	NA	<b>0.61<sup>1</sup></b>	NA
DMU-7	2 <sup>nd</sup>	DMU7-10cm-2'	01/30/2016	10 cm–2 ft	3.4 U	NA	NA
		DMU7-2-4	01/30/2016	2–4 ft	3.8 U	NA	NA
	Final	DMU7-0-10	02/09/2016	0–10 cm	NA	<b>0.24<sup>1</sup></b>	NA
DMU-8	2 <sup>nd</sup>	DMU8-10cm-2'	01/29/2016	10 cm–2 ft	5.2	NA	NA
		DMU8-2-4	01/29/2016	2–4 ft	3.5 U	NA	NA
	Final	DMU8-0-10	02/09/2016	0–10 cm	NA	<b>0.35<sup>1</sup></b>	NA

Notes:

**BOLD** Concentration exceeds the DMMP Screening Level.

- 1 Although the surface 0- to 10-cm water porewater result exceeds the DMMP Screening Level of 0.15 µg/L, the subsurface bulk TBT result was less than the DMMP Screening Level of 73 µg/kg; therefore, an additional dredge pass was conducted and no additional sampling was performed or required.
- 2 For the second sampling event, sample DMU104-0-10 was a field duplicate of sample DMU4-0-10.
- 3 For the final sampling event, sample DMU104-0-10 was a field duplicate of sample DMU4-0-10.

Abbreviations:

cm Centimeters

DMMP Dredged Material Management Program

ft Feet

µg/kg Micrograms per kilogram

µg/L Micrograms per liter

NA Sample for respective analysis not collected or analyzed.

TBT Tributyltin

USEPA U.S. Environmental Protection Agency

Qualifiers:

J Analyte was detected, concentration is considered to be an estimate.

JQ Analyte was detected between the reporting limit and method detection limit, concentration is considered to be an estimate.

U Analyte was not detected, concentration given is the reporting limit.

Table 4. Sampling Coordinates, Date and Methodology

		Coordinates (NAD83)		Sampling Date	Sampling Methodology
		Northing (ft)	Easting (ft)		
S t a t i o n	A1	713672.9	1166340.0	April 2013	Power Grab
	A2	713528.6	1166500.1		
	A3	713394.5	1166636.7		
	A4	713265.0	1166794.0		
	A5	713140.0	1166998.0		
	B1	712836.7	1167529.6	April 2013	MudMole Core
	B2	712667.6	1167685.3		
	B3	712524.2	1167839.9		
	B16	712803.1	1167530.7	July 2014	Roto-sonic Boring
	B17	712728.2	1167601.6		
	B18A	712753.7	1167519.1		
	C1	712933.8	1166950.1	April 2013	Direct-push Boring
	C2	712728.3	1167258.7		
	D1	712532.2	1167465.0	April 2013	Direct-push Boring
	D2	712400.4	1167646.8		

Table 5. Sampling and Compositing. Depths in ft MLLW

		DMMU A	DMMU B1	DMMU B2	DMMU C1	DMMU C2	DMMU C3	DMMU D1	DMMU D2	DMMU D3	DMMU N1	DMMU N2	B16	B17	B18A	Total
SAP volume (CY):		16,100	14,400	15,200	16,500	13,500	13,300	16,200	14,400	13,900	24,600	24,800				89,000
S t a t i o n	A1	-58.7	---	---	---	---	---	---	---	---	---		---	---	---	
	A2	-55.4	---	---	---	---	---	---	---	---	---		---	---	---	
	A3	-57.4	---	---	---	---	---	---	---	---	---		---	---	---	
	A4	-47.8	---	---	---	---	---	---	---	---	---		---	---	---	
	A5	-43.0	---	---	---	---	---	---	---	---	---		---	---	---	
	B1	---	-51.7 to -47.7	---	---	---	---	---	---	---	---		---	---	---	
	B2	---	-47.5 to -43.5	-43.5 to -39.5	---	---	---	---	---	---	---		---	---	---	
	B3	---	-47.0 to -43.0	-43.0 to -41.0	---	---	---	---	---	---	---		---	---	---	
	B16	---	---	---	---	---	---	---	---	---	---		-48.2 to -50.2 -50.2 to -52.2 -52.2 to -54.2	---	---	
	B17	---	---	---	---	---	---	---	---	---	---		---	-45.7 to -47.7	---	
	B18A	---	---	---	---	---	---	---	---	---	---		---	---	-23.9 to -25.9 -29.4 to -30.4 -30.4 to -32.4	
	C1	---	---	---	17 to 13	13 to 9	9 to 5	---	---	---	5 to 1.2	1.2 to -3	---	---	---	
	C2	---	---	---	17 to 13	13 to 9	9 to 5	---	---	---	5 to 1.2	1.2 to -3	---	---	---	
	D1	---	---	---	---	---	---	17 to 13	13 to 9	9 to 6.5	6.5 to 2.5	2.5 to -1.5	---	---	---	
	D2	---	---	---	---	---	---	17 to 13	13 to 9	9 to 5	5 to 1.2	1.2 to -3	---	---	---	

Table 6. Chemical results compared to DMMP regulatory guidelines.

CHEMICAL	DMMP Guidelines			DMMU A		DMMU A Duplicate		DMMU A2		DMMU B1		DMMU B2		DMMU C1		DMMU C2		DMMU C3		DMMU D1		DMMU D2		DMMU D3		DMMU N1		DMMU N1 Duplicate		DMMU N2	
	SL	BT	ML																												
CONVENTIONALS				conc	LQ	conc	LQ	conc	LQ	conc	LQ	conc	LQ	conc	LQ	conc	LQ	conc	LQ	conc	LQ	conc	LQ	conc	LQ	conc	LQ	conc	LQ	conc	LQ
Gravel, %				8		5.2		---		1.4		0.4		18.8		1.6		1.6		31.5		1.7		0.4		0.9		---		2.5	
Sand, %				57.2		58.2		---		65.5		65.4		64.4		89.9		93.3		62.7		92.1		86.1		81.9		---		87.9	
Silt, %				25.1		26.1		---		26.3		29.2		14.2		7.9		4.2		4.5		5.1		11.9		14.1		---		8.2	
Clay, %				9.6		10.5		---		6.9		4.9		2.6		0.4		1		1.3		1.2		1.6		3.1		---		1.6	
Fines (Silt + Clay), %				34.8		36.6		---		33.2		34.2		16.8		8.4		5.1		5.9		6.2		13.6		17.1		---		9.7	
Total Solids, %				68.09		66.31		---		78.09		76.72		92.43		94.55		86.8		96.62		94.88		79.71		82.37		81.89		83.29	
Volatile Soilids, %				2.49		2.72		---		1.44		2.32		1.18		0.88		0.84		1.87		1		1.25		0.91		0.9		0.88	
Total Organic Carbon, %				1.11		1.14		---		0.557		0.556		0.285		0.136		0.12		2.14		1.28		0.357		0.333		0.404		0.363	
Total Sulfides, mg/kg				150 J		217 J		---		12.4 J		43 J		1.53 J		2.17 J		1.08 UJ		1 UJ				1.39 J		1.8 J		---		3.37 J	
Total Ammonia, mg N/kg				4.35		5.96		---		4.1		12.1		0.1 U		0.1 U		0.11 U		0.09 U				0.35		0.76		0.94		1.94	
METALS (mg/kg dry)																															
Antimony	150	---	200	7 UJ		7 UJ		---		6 UJ		7 UJ		5 UJ		5 UJ		6 UJ		5 UJ		5 UJ		6 UJ		6 UJ		6 UJ		6 UJ	
Arsenic	57	507	700	7 U		8		---		6 U		7 U		5 U		5 U		6 U		5 U		5 U		6 U		6 U		6 U		6 U	
Cadmium	5.1	11.3	14.0	0.4		0.4		---		0.4		0.3		0.4		0.3		0.3		0.4		0.3		0.3		0.3		0.3		0.4	
Chromium	260	260	---	16		15.4		---		14.5		14.3		15.7		12.2		11.2		12				11.5		12.1		12.6		13.8	
Copper	390	1,027	1,300	30.5 J		213 J		---		18.8		18		13.4		10.9		9.8		11.3		12		10.5		11.1		11.1		11.4	
Lead	450	975	1,200	5		6		---		3		3 U		4		2 U		2 U		2 U		2 U		2 U		2 U		2 U		2 U	
Mercury	0.41	1.5	2.3	0.04		0.04		---		0.03 U		0.03 U		0.02 U		0.02 U		0.02 U		0.02 U		0.02 U		0.02 U		0.03 U		0.03 U		0.02 U	
Selenium	---	3	---	0.7 U		0.7 U		---		0.6 U		0.6 U		0.5 U		0.5 U		0.6 U		0.5 U		0.5 U		0.6 U		0.6 U		0.6 U		0.6 U	
Silver	6.1	6.1	8.4	0.4 U		0.4 U		---		0.4 U		0.4 U		0.3 U		0.3 U		0.3 U		0.3 U		0.3 U		0.4 U		0.4 U		0.4 U		0.4 U	
Zinc	410	2,783	3,800	43		58		---		30		24		22		20		18		27		17		17		19		20		21	
ORGANOMETALLIC COMPOUNDS																															
Tributyltin (porewater; µg/L)	0.15	0.15	---	1.8		1.2		---		0.084		---		---		---		---		---		---		---		---		---		---	
Tributyltin (bulk; µg/kg)	73	73	---	1,000		---		690		---		---		3.4 U		3 U		3.2 U		3.3 U		3 U		2.9 U		3.1 U		3.2 U		3.2 U	
PAHs (ug/kg dry)																															
Total LPAH	5,200	---	29,000	1,000 J		400 J		---		28 J		22		19 U		19 U		18 U		28 U		18 U		19 U		18 U		10 J		9.8 J	
Naphthalene	2,100	---	2,400	690 J		34 J		---		12 JQ		19 U		19 U		19 U		18 U		28 U		18 U		19 U		18 U		18 U		18 U	
Acenaphthylene	560	---	1,300	16 JQ		13 JQ		---		19 U		19 U		19 U		19 U		18 U		28 U		18 U		19 U		18 U		18 U		18 U	
Acenaphthene	500	---	2,000	46		55		---		19 U		19 U		19 U		19 U		18 U		28 U		18 U		19 U		18 U		18 U		18 U	
Fluorene	540	---	3,600	36		45		---		19 U		19 U		19 U		19 U		18 U		28 U		18 U		19 U		18 U		18 U		18 U	
Phenanthrene	1,500	---	21,000	170		200		---		16 JQ		22		19 U		19 U		18 U		28 U		18 U		19 U		18 U		10 JQ		9.8 JQ	
Anthracene	960	---	13,000	55		51		---		19 U		19 U		19 U		19 U		18 U		28 U		18 U		19 U		18 U		18 U		18 U	
2-Methylnaphthalene	670	---	1,900	35		28		---		19 U		16 JQ		19 U		19 U		18 U		28 U		18 U		19 U		18 U		18 U		18 U	
Total HPAH	12,000	---	69,000	2,400 J		1,900		---		180 J		38 U		21 J		37 U		36 U		56 U		37 U		37 U		37 U		37 U		36 U	
Fluoranthene	1,700	4,600	30,000	550		650		---		28		19 U		19 U		19 U		18 U		28 U		18 U		19 U		18 U		18 U		18 U	
Pyrene	2,600	11,980	16,000	830 J		590		---		64		19 U		19 U		19 U		18 U		28 U		18 U		19 U		18 U		18 U		18 U	
Benzo(a)anthracene	1,300	---	5,100	220		140		---		14 JQ		19 U		19 U		19 U		18 U		28 U		18 U		19 U		18 U		18 U		18 U	
Chrysene	1,400	---	21,000	250		160		---		18 JQ		19 U		19 U		19 U		18 U		28 U		18 U		19 U		18 U		18 U		18 U	
Total benzofluoranthenes	3,200	---	9,900	310		200		---		31 JQ		38 U		11 JQ		37 U		36 U		56 U		37 U		37 U		37 U		37 U		36 U	
Benzo[a]pyrene	1,600	---	3,600	130		88		---		14 JQ		19 U		9.7 JQ		19 U		18 U		28 U		18 U		19 U		18 U		18 U		18 U	
Indeno(1,2,3-c,d)pyrene	600	---	4,400	44		34		---		19 U		19 U		19 U		19 U		18 U		28 U		18 U		19 U		18 U		18 U		18 U	
Dibenzo(a,h)anthracene	230	---	1,900	17		16 JQ		---		3 JQ		4.8 U		4.8 U		4.6 U		4.5 U		7 U		4.6 U		4.6 U		4.6 U		4.6 U		4.4 U	
Benzo(g,h,i)perylene	670	---	3,200	44		35		---		9.7 JQ		19 U		19 U		19 U		18 U		28 U		18 U		19 U		18 U		18 U		18 U	

Table 6. Chemical results compared to DMMP regulatory guidelines.

CHEMICAL	DMMP Guidelines			DMMU A	DMMU A Duplicate	DMMU A2	DMMU B1	DMMU B2	DMMU C1	DMMU C2	DMMU C3	DMMU D1	DMMU D2	DMMU D3	DMMU N1	DMMU N1 Duplicate	DMMU N2
	SL	BT	ML														
CHLORINATED BENZENES (ug/kg dry)																	
1,2-Dichlorobenzene	35	---	110	3.2 JQ	4.8 U	---	4.8 U	4.8 U	4.8 U	4.6 U	4.5 U	7 U	4.6 U	4.6 U	4.6 U	4.6 U	4.4 U
1,4-Dichlorobenzene	110	---	120	2.7 JQ	4.8 U	---	4.8 U	4.8 U	4.8 U	4.6 U	4.5 U	7 U	4.6 U	4.6 U	4.6 U	4.6 U	4.4 U
1,2,4-Trichlorobenzene	31	---	64	4.8 U	4.8 U	---	4.8 U	4.8 U	4.8 U	4.6 U	4.5 U	7 U	4.6 U	4.6 U	4.6 U	4.6 U	4.4 U
Hexachlorobenzene	22	168	230	4.8 U	4.8 U	---	4.8 U	4.8 U	0.92 U	0.94 U	0.95 U	0.98 U	0.9 U	0.91 U	0.93 U	0.93 U	0.93 U
PHTHALATE ESTERS (ug/kg dry)																	
Dimethyl phthalate	71	---	1,400	4.8 U	4.8 U	---	4.8 U	4.8 U	4.8 U	4.6 U	4.5 U	7 U	4.6 U	4.6 U	4.6 U	4.6 U	4.4 U
Diethyl phthalate	200	---	1,200	170 J	48 UJ	---	48 U	48 U	48 U	46 U	45 U	70 U	46 U	46 U	46 U	46 U	44 U
Di-n-butyl phthalate	1,400	---	5,100	19 U	19 U	---	19 U	19 U	19 U	19 U	18 U	28 U	18 U	19 U	18 U	18 U	18 U
Butyl benzyl phthalate	63	---	970	5.3	6.2	---	4.8 U	4.8 U	4.8 U	4.6 U	4.5 U	7 U	20	4.6 U	4.6 U	4.6 U	4.4 U
Bis(2-ethylhexyl)phthalate	1,300	---	8,300	310 J	380	---	31 U	24 U	24 U	14 JQ	22 U	35 U	23 U	25	23 U	23 U	22 U
Di-n-octyl phthalate	6,200	---	6,200	19 U	19 U	---	19 U	19 U	19 U	19 U	18 U	28 U	18 U	19 U	18 U	18 U	18 U
PHENOLS (ug/kg dry)																	
Phenol	420	---	1,200	19	74	---	14 JQ	19 U	19 U	19 U	18 UJ	28 U	18 U	19 U	18 U	18 U	18 U
2 Methylphenol	63	---	77	2.4 JQ	3.6 JQ	---	4.8 U	4.8 U	4.8 U	4.6 U	4.5 UJ	7 U	4.6 U	4.6 U	4.6 U	4.6 U	4.4 U
4 Methylphenol	670	---	3,600	19 U	19 U	---	19 U	19 U	19 U	19 U	18 UJ	28 U	18 U	19 U	18 U	18 U	18 U
2,4-Dimethylphenol	29	---	210	3.4 JQ	2.8 JQ	---	19 U	19 U	19 U	19 U	18 UJ	28 U	18 U	19 U	18 U	18 U	2.8 JQ
Pentachlorophenol	400	504	690	48 U	48 U	---	48 U	48 U	48 UJ	46 UJ	45 UJ	70 UJ	190 J	14 JQ	46 UJ	46 UJ	44 UJ
MISCELLANEOUS EXTRACTABLES (ug/kg dry)																	
Benzoic acid	650	---	760	380 UJ	380 U	---	390 U	380 U	390 U	370 U	360 UJ	560 U	370 U	370 U	370 U	370 U	360 UJ
Benzyl alcohol	57	---	870	26	31	---	19 U	19 U	19 U	19 U	18 U	28 U	18 U	19 U	18 U	18 U	18 UJ
Dibenzofuran	540	---	1,700	60	41	---	19 U	19 U	19 U	19 U	18 U	28 U	18 U	19 U	18 U	18 U	18 U
Hexachlorobutadiene	11	---	270	4.8 U	4.8 U	---	4.8 U	4.8 U	0.92 U	0.94 U	0.95 U	0.98 U	0.9 U	0.91 U	0.93 U	0.93 U	0.93 U
N-Nitrosodiphenylamine	28	---	130	2.8 JQ	4.1 JQ	---	19 U	19 U	19 U	19 U	18 U	28 U	18 U	19 U	18 U	18 U	18 U
PESTICIDES (ug/kg dry)																	
Aldrin	9.5	---	---	2.5 U	2.5 U	---	2.4 U	2.4 U	0.46 U	0.47 U	0.47 U	0.49 U	0.45 U	0.46 U	0.46 U	0.46 U	0.46 U
Total Chlordane	2.8	37	---	2.5 U	2.5 U	---	2.4 U	2.4 U	0.46 U	0.47 U	0.47 U	0.49 U	1.8 UY	0.46 U	0.46 U	0.46 U	0.46 U
Dieldrin	1.9	---	---	0.5 U <sup>MDL</sup>	0.5 U <sup>MDL</sup>	---	0.49 U <sup>MDL</sup>	0.49 U <sup>MDL</sup>	0.92 U	0.94 U	0.95 U	0.98 U	0.9 U	0.91 U	0.93 U	0.93 U	0.93 U
Heptachlor	1.5	---	---	0.65 U <sup>MDL</sup>	0.65 U <sup>MDL</sup>	---	0.65 U <sup>MDL</sup>	0.65 U <sup>MDL</sup>	0.46 U	0.47 U	0.47 U	0.49 U	0.45 U	0.46 U	0.46 U	0.46 U	0.46 U
p,p'-DDE	9	---	---	5 U	5 U	---	4.9 U	4.9 U	0.92 U	0.94 U	0.95 U	0.98 U	0.9 U	0.91 U	0.93 U	0.93 U	0.93 UJ
p,p'-DDD	16	---	---	5 U	5 U	---	4.9 U	4.9 U	0.92 U	0.94 U	0.95 U	0.98 U	0.9 U	0.91 U	0.93 U	0.93 U	0.93 UJ
p,p'-DDT	12	---	---	5 U	5 U	---	4.9 U	4.9 U	0.92 U	0.94 U	0.95 U	1.2 UY	1.2 UY	0.91 U	0.93 U	0.93 U	0.93 UJ
Total DDT		50	69	5 U	5 U	---	4.9 U	4.9 U	0.92 U	0.94 U	0.95 U	1.2 UY	1.2 UY	0.91 U	0.93 U	0.93 U	0.93 UJ
PCBs (ug/kg dry)																	
Total PCBs	130	---	3,100	7.4 J	7.8 J	---	3.8 U	3.8 U	3.8 U	3.7 U	3.7 U	3.9 U	3.7 U	3.7 U	3.8 U	3.8 U	3.7 U
Total PCBs (mg/kg OC)	---	38	---	0.67 J	0.68 J	---	0.68 U	0.68 U	---	---	---	0.18 U	0.2891 U	---	---	---	---

J = estimated concentration  
JQ = detected between the MDL and MRL, concentration is an estimate  
U = undetected  
U<sup>MDL</sup> = not detected, reported by lab at the method detection limit  
UJ = not detected, estimated at the reporting limit  
UY = not detected, estimated at the reporting limit which is raised due to chromatographic interference

LQ = laboratory qualifier  
OC = organic carbon  
SL = screening level  
BT = bioaccumulation trigger  
ML = maximum level  
bioaccumulation trigger exceedance

Table 7. Dioxin/Furan TEQ calculations

CHEMICAL	TEF	DMMU A				DMMU A Duplicate				DMMU B1				DMMU B2			
DIOXINS/FURANS		conc	VQ	TEQ (U = 0)	TEQ (U = 1/2 RL)	conc	VQ	TEQ (U = 0)	TEQ (U = 1/2 RL)	conc	VQ	TEQ (U = 0)	TEQ (U = 1/2 RL)	conc	VQ	TEQ (U = 0)	TEQ (U = 1/2 RL)
2,3,7,8-TCDD	1	0.258 U		0	0.129	0.219 U		0	0.1095	0.228 U		0	0.114	0.0516 U		0	0.0258
1,2,3,7,8-PeCDD	1	0.664 J		0.664	0.664	0.705 J		0.705	0.705	0.328 J		0.328	0.328	0.0357 U		0	0.01785
1,2,3,4,7,8-HxCDD	0.1	0.793 J		0.0793	0.0793	0.959 J		0.0959	0.0959	0.298 J		0.0298	0.0298	0.0516 U		0	0.00258
1,2,3,6,7,8-HxCDD	0.1	4.02		0.402	0.402	4.84		0.484	0.484	1.37 U		0	0.0685	0.0536 U		0	0.00268
1,2,3,7,8,9-HxCDD	0.1	1.99		0.199	0.199	2.3		0.23	0.23	0.797 U		0	0.03985	0.0536 U		0	0.00268
1,2,3,4,6,7,8-HpCDD	0.01	113		1.13	1.13	159		1.59	1.59	31.8		0.318	0.318	0.973 J		0.00973	0.00973
OCDD	0.0003	1,270		0.381	0.381	1,850		0.555	0.555	318		0.0954	0.0954	7.37 U		0	0.0011055
2,3,7,8-TCDF	0.1	1.3		0.13	0.13	1.21		0.121	0.121	0.434 U		0	0.0217	0.0397 U		0	0.001985
1,2,3,7,8-PeCDF	0.03	1.8 J		0.054	0.054	1.24 J		0.0372	0.0372	0.422 U		0	0.00633	0.0437 U		0	0.0006555
2,3,4,7,8-PeCDF	0.3	1.13		0.339	0.339	0.866 J		0.2598	0.2598	0.272 J		0.0816	0.0816	0.0357 J		0.01071	0.01071
1,2,3,4,7,8-HxCDF	0.1	4.26		0.426	0.426	3.3		0.33	0.33	0.843 J		0.0843	0.0843	0.0338 U		0	0.00169
1,2,3,6,7,8-HxCDF	0.1	1.24		0.124	0.124	1.05		0.105	0.105	0.42 J		0.042	0.042	0.0318 U		0	0.00159
1,2,3,7,8,9-HxCDF	0.1	0.957 J		0.0957	0.0957	0.907 J		0.0907	0.0907	0.266 J		0.0266	0.0266	0.0437 U		0	0.002185
2,3,4,6,7,8-HxCDF	0.1	0.527		0.0527	0.0527	0.598 J		0.0598	0.0598	0.45 U		0	0.0225	0.0357 U		0	0.001785
1,2,3,4,6,7,8-HpCDF	0.01	17.9		0.179	0.179	18.9		0.189	0.189	6.44		0.0644	0.0644	0.373 J		0.00373	0.00373
1,2,3,4,7,8,9-HpCDF	0.01	1.75		0.0175	0.0175	1.74 U		0	0.0087	0.474 J		0.00474	0.00474	0.0338 U		0	0.000169
OCDF	0.0003	55.6		0.01668	0.01668	51.9		0.01557	0.01557	12.6		0.00378	0.00378	0.929 J		0.0002787	0.0002787
TOTAL TEQ				4.290	4.419			4.868	4.986			1.079	1.352			0.024	0.087

CHEMICAL	TEF	DMMU C1				DMMU C2				DMMU C3				DMMU D1				DMMU D2			
DIOXINS/FURANS		conc	VQ	TEQ (U = 0)	TEQ (U = 1/2 RL)	conc	VQ	TEQ (U = 0)	TEQ (U = 1/2 RL)	conc	VQ	TEQ (U = 0)	TEQ (U = 1/2 RL)	conc	VQ	TEQ (U = 0)	TEQ (U = 1/2 RL)	conc	VQ	TEQ (U = 0)	TEQ (U = 1/2 RL)
2,3,7,8-TCDD	1	0.168 U		0	0.084	0.152 U		0	0.076	0.0279 U		0	0.01395	0.207 U		0	0.1035	0.028 U		0	0.014
1,2,3,7,8-PeCDD	1	0.737 J		0.737	0.737	0.0819 U		0	0.04095	0.0739 U		0	0.03695	0.561 J		0.561	0.561	0.032 U		0	0.016
1,2,3,4,7,8-HxCDD	0.1	0.707 J		0.0707	0.0707	0.0899 J		0.00899	0.00899	0.0439 U		0	0.002195	0.308 J		0.0308	0.0308	0.044 U		0	0.0022
1,2,3,6,7,8-HxCDD	0.1	1.88		0.188	0.188	0.244 J		0.0244	0.0244	0.194 U		0	0.0097	1.31		0.131	0.131	0.038 U		0	0.0019
1,2,3,7,8,9-HxCDD	0.1	1.32		0.132	0.132	0.174 J		0.0174	0.0174	0.0699 U		0	0.003495	0.647 J		0.0647	0.0647	0.048 U		0	0.0024
1,2,3,4,6,7,8-HpCDD	0.01	35.2		0.352	0.352	4.26 U		0	0.0213	3.79 U		0	0.01895	25.3		0.253	0.253	8.03 U		0	0.04015
OCDD	0.0003	321		0.0963	0.0963	42.5 U		0	0.006375	41.9 U		0	0.006285	469		0.1407	0.1407	3370		1.011	1.011
2,3,7,8-TCDF	0.1	0.42 U		0	0.021	0.0779 U		0	0.003895	0.0659 U		0	0.003295	0.107 J		0.0107	0.0107	0.028 U		0	0.0014
1,2,3,7,8-PeCDF	0.03	0.402 U		0	0.00603	0.0819 U		0	0.0012285	0.0559 J		0.001677	0.001677	0.0915 U		0	0.0013725	0.02 J		0.0006	0.0006
2,3,4,7,8-PeCDF	0.3	0.384 J		0.1152	0.1152	0.0639 U		0	0.009585	0.0339 U		0	0.005085	0.0517 J		0.01551	0.01551	0.032 U		0	0.0048
1,2,3,4,7,8-HxCDF	0.1	1.01		0.101	0.101	0.176 J		0.0176	0.0176	0.12 J		0.012	0.012	0.217 U		0	0.01085	0.034 J		0.0034	0.0034
1,2,3,6,7,8-HxCDF	0.1	0.503 J		0.0503	0.0503	0.0779 U		0	0.003895	0.0419 U		0	0.002095	0.141 J		0.0141	0.0141	0.032 U		0	0.0016
1,2,3,7,8,9-HxCDF	0.1	0.332 U		0	0.0166	0.0579 U		0	0.002895	0.0619 U		0	0.003095	0.0517 U		0	0.002585	0.04 U		0	0.002
2,3,4,6,7,8-HxCDF	0.1	0.763 J		0.0763	0.0763	0.0619 U		0	0.003095	0.0499 U		0	0.002495	0.131 U		0	0.00655	0.036 U		0	0.0018
1,2,3,4,6,7,8-HpCDF	0.01	7.5		0.075	0.075	0.977 J		0.00977	0.00977	1.27		0.0127	0.0127	9.08		0.0908	0.0908	0.0859		0.000859	0.000859
1,2,3,4,7,8,9-HpCDF	0.01	0.681 U		0	0.003405	0.0799 U		0	0.0003995	0.0818 U		0	0.000409	0.484 U		0	0.00242	0.0519 U		0	0.0002595
OCDF	0.0003	17 U		0	0.00255	2.33 U		0	0.0003495	2.78 U		0	0.000417	28.1		0.00843	0.00843	5.23 U		0	0.0007845
TOTAL TEQ				1.994	2.127			0.078	0.248			0.026	0.135			1.321	1.448			1.016	1.105



Table 7. Dioxin/Furan TEQ calculations

CHEMICAL	TEF	DMMU D3			DMMU N1			DMMU N1 Duplicate			DMMU N2		
DIOXINS/FURANS		conc	VQ	TEQ (U = 0)	TEQ (U = 1/2 RL)	conc	VQ	TEQ (U = 0)	TEQ (U = 1/2 RL)	conc	VQ	TEQ (U = 0)	TEQ (U = 1/2 RL)
2,3,7,8-TCDD	1	0.024 U		0	0.012	0.108 U		0	0.054	0.0279 U		0	0.0138
1,2,3,7,8-PeCDD	1	0.036 U		0	0.018	0.0539 U		0	0.02695	0.0577 U		0	0.0217
1,2,3,4,7,8-HxCDD	0.1	0.048 U		0	0.0024	0.0858 U		0	0.00429	0.0716 U		0	0.002865
1,2,3,6,7,8-HxCDD	0.1	0.05 U		0	0.0025	0.21 U		0	0.0105	0.161 J	0.0161	0.0161	0.0071
1,2,3,7,8,9-HxCDD	0.1	0.0519 U		0	0.002595	0.0898 U		0	0.00449	0.0756 U		0	0.00555
1,2,3,4,6,7,8-HpCDD	0.01	1.06 U		0	0.0053	5.3 U		0	0.0265	3.95 U		0	0.0277
OCDD	0.0003	228		0.0684	0.0684	62 U		0	0.0093	48.2 U		0	0.009855
2,3,7,8-TCDF	0.1	0.014 U		0	0.0007	0.0319 U		0	0.001595	0.0458 U		0	0.00168
1,2,3,7,8-PeCDF	0.03	0.036 U		0	0.00054	0.0419 U		0	0.0006285	0.0617 J	0.001851	0.001851	0.001836
2,3,4,7,8-PeCDF	0.3	0.032 U		0	0.0048	0.0459 U		0	0.006885	0.0378 U		0	0.00567
1,2,3,4,7,8-HxCDF	0.1	0.03 U		0	0.0015	0.124 J	0.0124	0.0124	0.0124	0.0896 U		0	0.00448
1,2,3,6,7,8-HxCDF	0.1	0.028 U		0	0.0014	0.0579 U		0	0.002895	0.0378 U		0	0.00189
1,2,3,7,8,9-HxCDF	0.1	0.036 U		0	0.0018	0.0719 U		0	0.003595	0.0478 U		0	0.00239
2,3,4,6,7,8-HxCDF	0.1	0.032 U		0	0.0016	0.0619 U	0.00619	0.00619	0.00619	0.0418 U		0	0.00209
1,2,3,4,6,7,8-HpCDF	0.01	0.042 U		0	0.00021	1.42		0	0.0071	1.24	0.0124	0.0124	1.02
1,2,3,4,7,8,9-HpCDF	0.01	0.0579 U		0	0.0002895	0.0699 U		0	0.0003495	0.109 U		0	0.000545
OCDF	0.0003	0.394 U		0	0.0000591	4.6 U		0	0.00069	3.09 U		0	0.0004635
TOTAL TEQ				0.068	0.124			0.019	0.178			0.030	0.127
												0.037	0.131

Project Volume-  
Weighted Average

0.989 pptr TEQ

Table 8. Tributyltin results from roto sonic drilling in Area B.

CHEMICAL	DMMP Guidelines			B16						B17		B18A					
	SL	BT	ML	-48.2 to -50.2		-50.2 to -52.02		-52.2 to -54.2		-45.7 to -47.7		-23.9 to -25.9		29.4 to -30.4		-30.4 to -32.4	
CONVENTIONALS				conc	LQ	conc	LQ	conc	LQ	conc	LQ	conc	LQ	conc	LQ	conc	LQ
Gravel, %				---		5.1		---		---		11.9		---		2	
Sand, %				---		76.5		---		---		49.9		---		89.1	
Silt, %				---		15.1		---		---		29		---		5.8	
Clay, %				---		3.4		---		---		9.1		---		3.1	
Fines (Silt + Clay), %				---		18.5		---		---		38.2		---		8.9	
Total Organic Carbon, %				0.216		1.13		---		---		0.862		---		0.114	
ORGANOMETALLIC COMPOUNDS																	
Tributyltin (bulk; µg/kg)	73	73	---	11		3.5 U		3.5 U		3.6 UJ		3.6 U		3.8 U		3.4 U	

Table 9. Chemical results compared to SMS regulatory guidelines.

CHEMICAL	SMS Guidelines		DMMU A	DMMU A Duplicate	DMMU B1	DMMU B2	DMMU C1	DMMU C2	DMMU C3	DMMU D1	DMMU D2	DMMU D3	DMMU N1	DMMU N1 Duplicate	DMMU N2
	SQS	CSL													
Total Organic Carbon, %			1.11	1.14	0.557	0.556	0.285	0.136	0.12	2.14	1.28	0.357	0.333	0.404	0.363
METALS (mg/kg dry)															
Arsenic	57	93	7 U	8	6 U	7 U	5 U	5 U	6 U	6 U	5 U	6 U	6 U	6 U	6 U
Cadmium	5.1	6.7	0.4	0.4	0.4	0.3	0.4	0.3	0.3	0.3	0.4	0.3	0.3	0.3	0.4
Chromium	260	270	16	15.4	14.5	14.3	15.7	12.2	11.2	14.9	12	11.5	12.1	12.6	13.8
Copper	390	390	30.5 J	213 J	18.8	18	13.4	10.9	9.8	9.8	11.3	10.5	11.1	11.1	11.4
Lead	450	530	5	6	3	3 U	4	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Mercury	0.41	0.59	0.04	0.04	0.03 U	0.03 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.03 U	0.03 U	0.02 U
Silver	6.1	6.1	0.4 U	0.4 U	0.4 U	0.4 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.4 U	0.4 U	0.4 U	0.4 U
Zinc	410	960	43	58	30	24	22	20	18	18	27	17	19	20	21
PAHs (mg/kg OC)															
Total LPAH	370	780	91 J	35 J	5 J	4	---	---	---	1.3 U	1.8 U	---	---	---	---
Naphthalene	99	170	62 J	3 J	2.2 J	3.4 U	---	---	---	1.3 U	1.8 U	---	---	---	---
Acenaphthylene	66	66	1.4 J	1.1 J	3.4 U	3.4 U	---	---	---	1.3 U	1.8 U	---	---	---	---
Acenaphthene	16	57	4.1	4.8	3.4 U	3.4 U	---	---	---	1.3 U	1.8 U	---	---	---	---
Fluorene	23	79	3.2	3.9	3.4 U	3.4 U	---	---	---	1.3 U	1.8 U	---	---	---	---
Phenanthrene	100	480	15	18	2.9 J	4	---	---	---	1.3 U	1.8 U	---	---	---	---
Anthracene	220	1200	5	4.5	3.4 U	3.4 U	---	---	---	1.3 U	1.8 U	---	---	---	---
2-Methylnaphthalene	38	64	3.2	2.5	3.4 U	2.9 J	---	---	---	1.3 U	1.8 U	---	---	---	---
Total HPAH	960	5300	220 J	170	33 J	6.8 U	---	---	---	2.6	3.7 U	---	---	---	---
Fluoranthene	160	1200	50	57	5	3.4 U	---	---	---	1.3	1.8 U	---	---	---	---
Pyrene	1000	1400	75 J	52	11	3.4 U	---	---	---	1.3	1.8 U	---	---	---	---
Benzo(a)anthracene	110	270	20	12	2.5 J	3.4 U	---	---	---	1.3	1.8 U	---	---	---	---
Chrysene	110	460	23	14	3.2 J	3.4 U	---	---	---	1.3	1.8 U	---	---	---	---
Benzofluoranthenes	230	450	28	18	5.6 J	6.8 U	---	---	---	2.6	3.7 U	---	---	---	---
Benzo(a)pyrene	99	210	12	8	2.5 J	3.4 U	---	---	---	1.3	1.8 U	---	---	---	---
Indeno(1,2,3-c,d)pyrene	34	88	4	3	3.4 U	3.4 U	---	---	---	1.3	1.8 U	---	---	---	---
Dibenzo(a,h)anthracene	12	33	2	1 J	0.54 J	0.86 U	---	---	---	0.33	0.5 U	---	---	---	---
Benzo(g,h,i)perylene	34	88	4	3	1.7 J	3.4 U	---	---	---	1.3	1.8 U	---	---	---	---
CHLORINATED BENZENES (mg/kg OC)															
1,2-Dichlorobenzene	2.3	2.3	0.29 J	0.42 U	0.86 U	0.86 U	---	---	---	---	0.33 U	---	---	---	---
1,4-Dichlorobenzene	3.1	9	0.24 J	0.42 U	0.86 U	0.86 U	---	---	---	---	0.33 U	---	---	---	---
1,2,4-Trichlorobenzene	0.81	1.8	0.43 U	0.42 U	0.86 U	0.86 U	---	---	---	---	0.33 U	---	---	---	---
Hexachlorobenzene	0.38	2.3	0.43 U	0.42 U	0.86 U	0.86 U	---	---	---	---	0.046 U	---	---	---	---

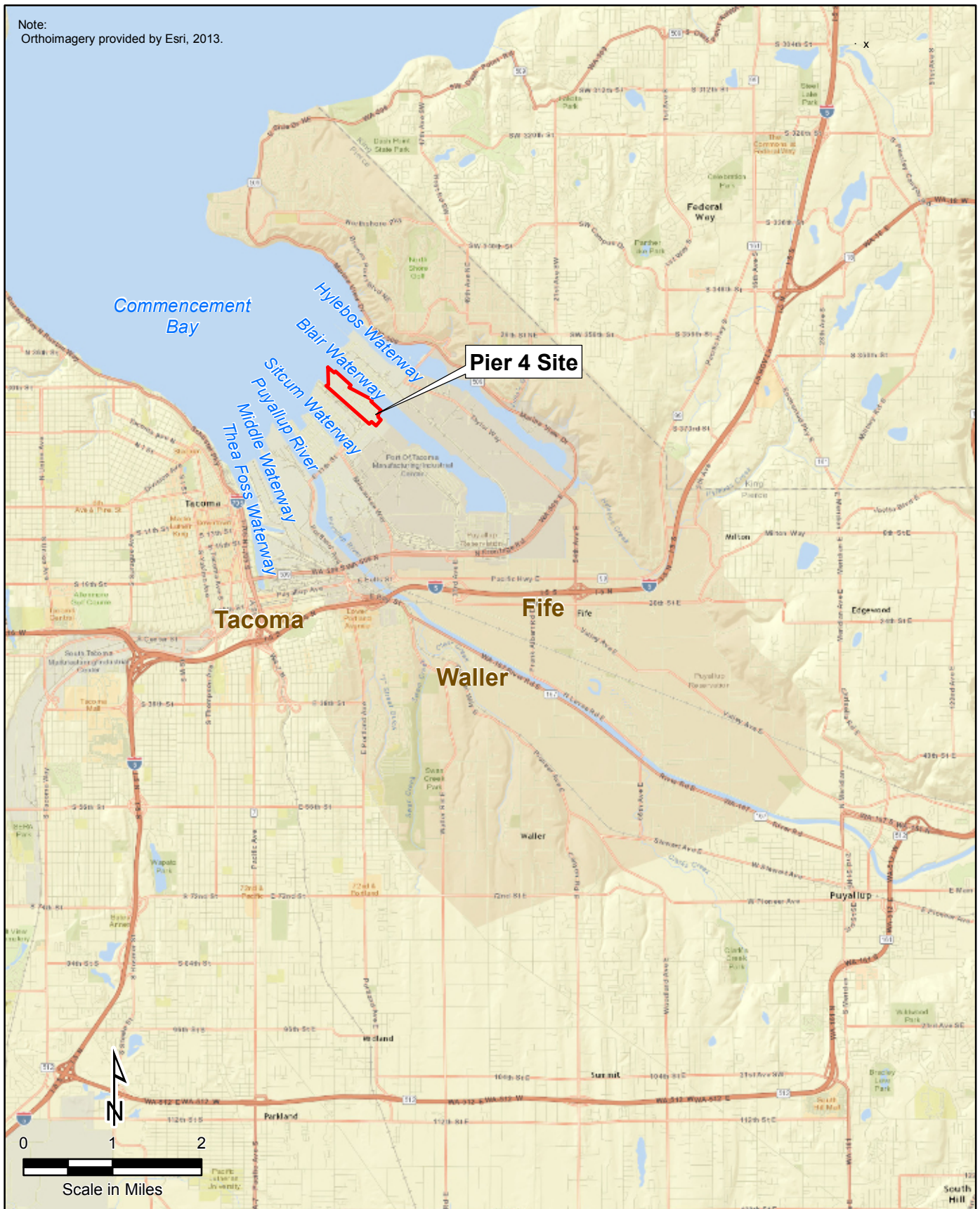
Table 9. Chemical results compared to SMS regulatory guidelines.

CHEMICAL	SMS Guidelines		DMMU A	DMMU A Duplicate	DMMU B1	DMMU B2	DMMU C1	DMMU C2	DMMU C3	DMMU D1	DMMU D2	DMMU D3	DMMU N1	DMMU N1 Duplicate	DMMU N2
	SQS	CSL													
PHTHALATE ESTERS (mg/kg OC)															
Dimethyl phthalate	53	53	0.43 U	0.42 U	0.86 U	0.86 U	---	---	---	---	0.33 U	---	---	---	---
Diethyl phthalate	61	110	15 J	4.2 UJ	8.6 U	8.6 U	---	---	---	---	3.3 U	---	---	---	---
Di-n-butyl phthalate	220	1700	1.7 U	1.7 U	3.4 U	3.4 U	---	---	---	---	1.3 U	---	---	---	---
Butyl benzyl phthalate	4.9	64	0.48	0.54	0.86 U	0.86 U	---	---	---	---	0.33 U	---	---	---	---
Bis(2-ethylhexyl)phthalate	47	78	28 J	33	5.6 U	4.3 U	---	---	---	---	1.6 U	---	---	---	---
Di-n-octyl phthalate	58	4500	1.7 U	1.7 U	3.4 U	3.4 U	---	---	---	---	1.3 U	---	---	---	---
PHENOLS (ug/kg dry)															
Phenol	420	1200	19	74	14 JQ	19 U	19 U	19 U	18 UJ	18 UJ	28 U	19 U	18 U	18 U	18 U
2 Methylphenol	63	63	2.4 JQ	3.6 JQ	4.8 U	4.8 U	4.8 U	4.6 U	4.5 UJ	4.5 UJ	7 U	4.6 U	4.6 U	4.6 U	4.4 U
4 Methylphenol	670	670	19 U	19 U	19 U	19 U	19 U	19 U	18 UJ	18 UJ	28 U	19 U	18 U	18 U	18 U
2,4-Dimethylphenol	29	29	3.4 JQ	2.8 JQ	19 U	19 U	19 U	19 U	18 UJ	18 UJ	28 U	19 U	18 U	18 U	2.8 JQ
Pentachlorophenol	360	690	48 U	48 U	48 U	48 U	48 UJ	46 UJ	45 UJ	45 UJ	70 UJ	14 JQ	46 UJ	46 UJ	44 UJ
MISCELLANEOUS EXTRACTABLES (mg/kg OC)															
Dibenzofuran	15	58	5.4	3.6	3.4 U	3.4 U	---	---	---	---	1.3 U	---	---	---	---
Hexachlorobutadiene	3.9	6.2	0.43 U	0.42 U	0.86 U	0.86 U	---	---	---	---	0.046 U	---	---	---	---
N-Nitrosodiphenylamine	11	11	0.25 J	0.36 J	3.4 U	3.4 U	---	---	---	---	1.3 U	---	---	---	---
PCBs (mg/kg OC)															
Total PCBs (mg/kg carbon)	12	65	0.67 J	0.68 J	0.68 U	0.68 U	---	---	---	---	0.18 U	---	---	---	---
MISCELLANEOUS EXTRACTABLES (ug/kg dry)															
Benzyl alcohol	57	73	26	31	19 U	19 U	19 U	19 U	18 U	18 U	28 U	19 U	18 U	18 U	18 UJ
Benzoic acid	650	650	380 UJ	380 U	390 U	380 U	390 U	370 U	360 UJ	360 UJ	560 U	370 U	370 U	370 U	360 UJ

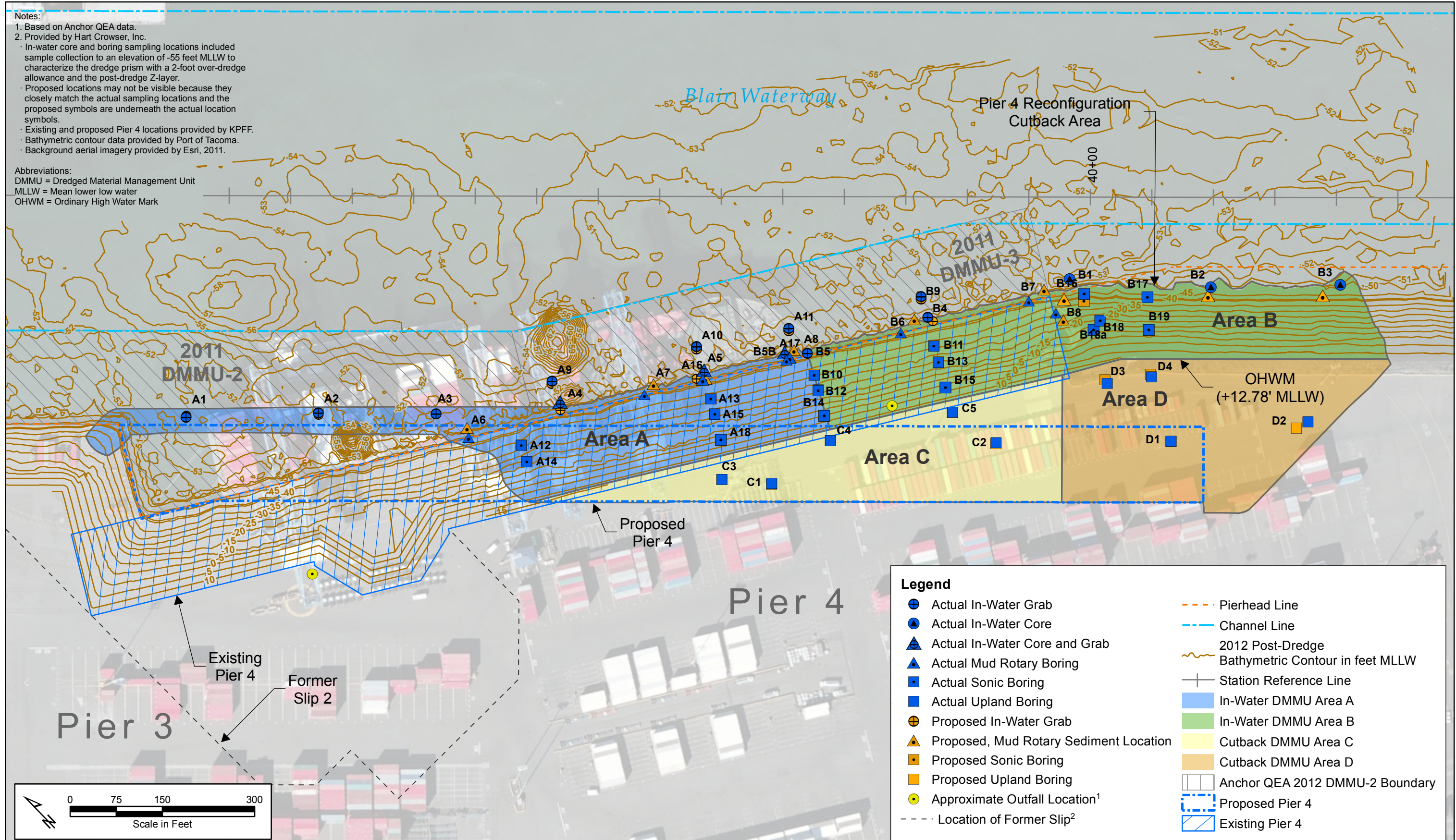
J = estimated concentration  
JQ = detected between the MDL and MRL, concentration is an estimate  
U = undetected  
UJ = not detected, estimated at the reporting limit  
UY = not detected, estimated at the reporting limit which is raised due to chromatographic interference

QL = laboratory qualifier  
OC = organic carbon  
SMS = Sediment Management Standards  
SQS = sediment quality standard  
CSL = cleanup screening level

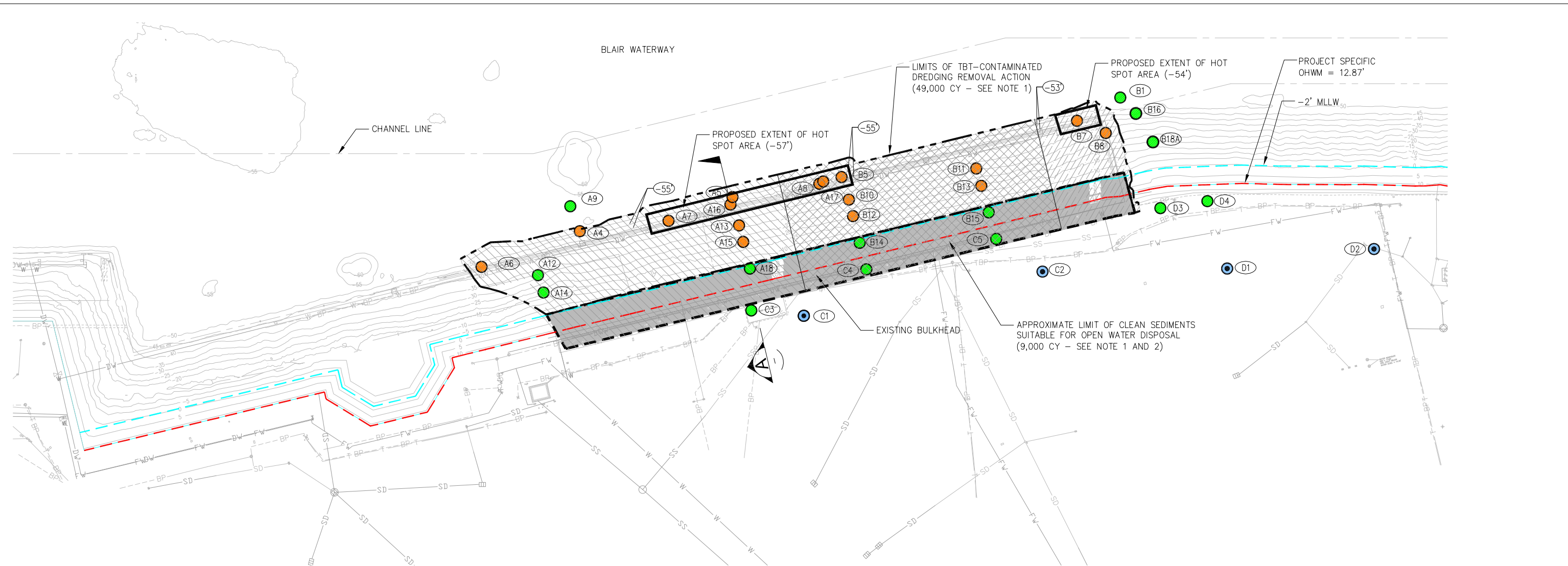
Note:  
Orthoimagery provided by Esri, 2013.











# PHASE 1 DREDGE PLAN

SCALE: 1"=150'

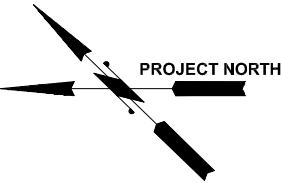
## LEGEND

- EXISTING CONTOUR
- TOE OF DREDGE, SEE NOTE 3
- SAMPLE LOCATION
- DREDGE SEDIMENT ALONG DEMOLISHED PIER FACE TO -55' MLLW AND UPPER 9FT OF SLOPE, SEE NOTE 3
- DREDGE SEDIMENT ALONG DEMOLISHED PIER FACE TO -55' MLLW AND UPPER 11FT OF SLOPE, SEE NOTE 3
- DREDGE SEDIMENT ALONG DEMOLISHED PIER FACE TO -53' MLLW AND UPPER 8FT OF SLOPE, SEE NOTE 3
- CROSS SECTION LOCATION

- SAMPLE LOCATIONS WITH SEDIMENT SAMPLES CONTAINING TBT CONCENTRATIONS GREATER THAN THE DMMP SCREENING LEVEL OF 73 UG/KG
- SAMPLE LOCATIONS WHERE THERE ARE NO TBT EXCEEDANCES OF THE DMMP TBT SCREENING LEVEL (73 UG/KG) (SAMPLES ANALYZED FOR TBT ONLY)
- SAMPLE LOCATIONS WHERE THERE ARE NO CHEMICAL EXCEEDANCES OF THE DMMP SCREENING LEVELS FOR THE DMMP SUITE OF CHEMICALS OF CONCERN

## NOTES

- VOLUME IS APPROXIMATE AND INCLUDES THE 1-FOOT OVERDREDGE ALLOWANCE.
- THE 2-FOOT RIP RAP ARMORED SLOPE MATERIAL (APPROXIMATELY 2,3000 CY) HAS BEEN DEDUCTED FROM THE VOLUME.
- DREDGE DEPTHS DO NOT INCLUDE THE 1-FOOT OVERDREDGE ALLOWANCE.



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PROPOSED SUITABILITY OF PHASE 1 PROJECT  
 CLEAN MATERIAL  
 TACOMA, WASHINGTON  
**Figure 3** PHASE 1 DREDGE PLAN

DATE: DECEMBER 2014 SCALE: 1" = 150'-0"

Notes:

1. Provided by Hart Crowser, Inc.
2. Additional discretionary perimeter sample locations.

- For locations where there were multiple sampling events and/or multiple replicates, only one location is shown. All replicates and subsequent event samples were collected within 10 feet of the target sample grab locations.
- In addition to surface grab sample locations, cores were collected from DMU's 3, 4, 6, 7, and 8 to characterize subsurface sediment.
- Existing and proposed Pier 4 locations provided by KPFF.
- Bathymetric contour data provided by Port of Tacoma.
- Background aerial imagery provided by Esri, 2013.

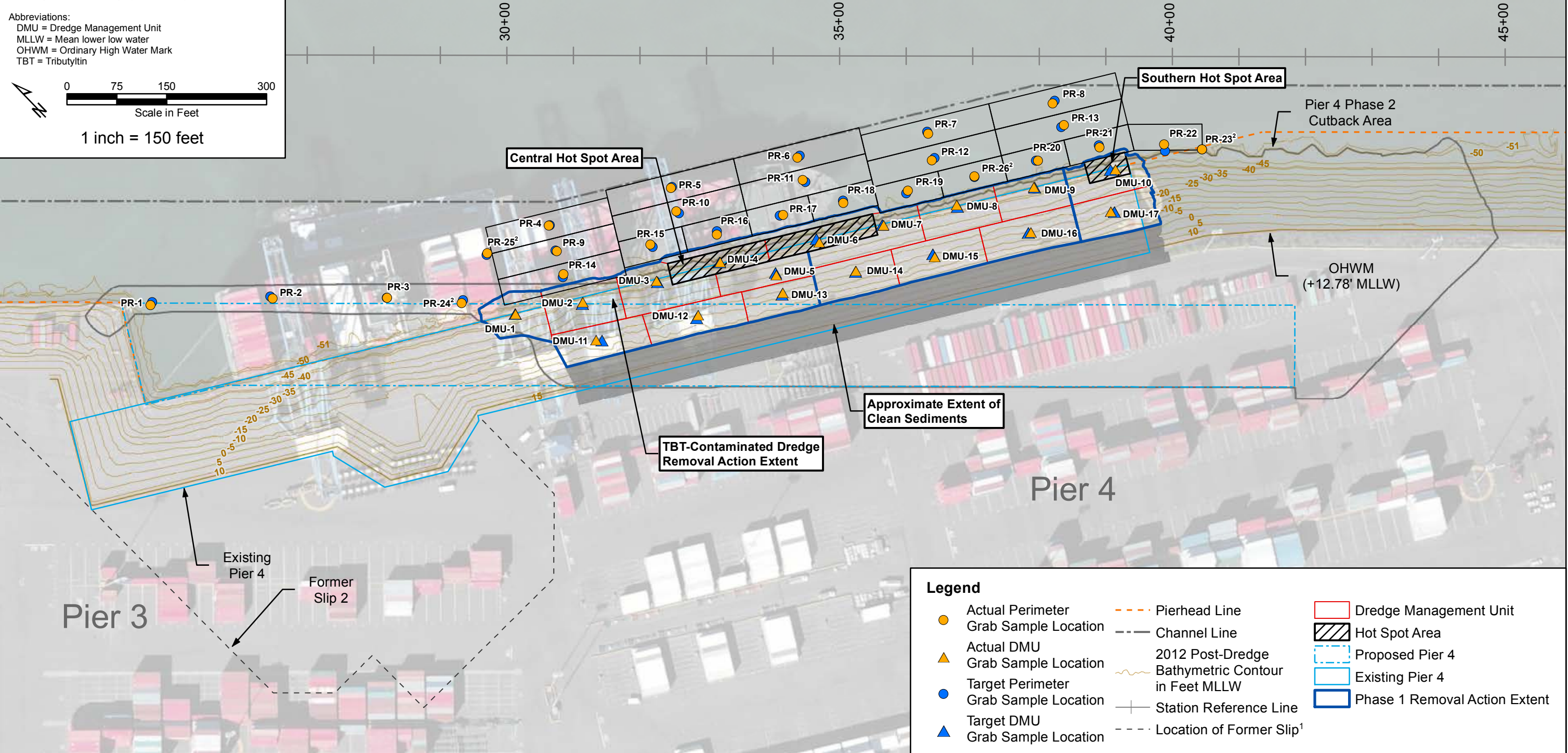
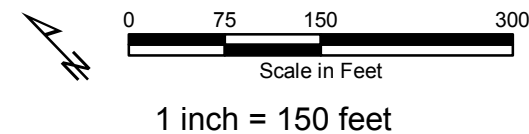
Abbreviations:

DMU = Dredge Management Unit

MLLW = Mean lower low water

OHWM = Ordinary High Water Mark

TBT = Tributyltin



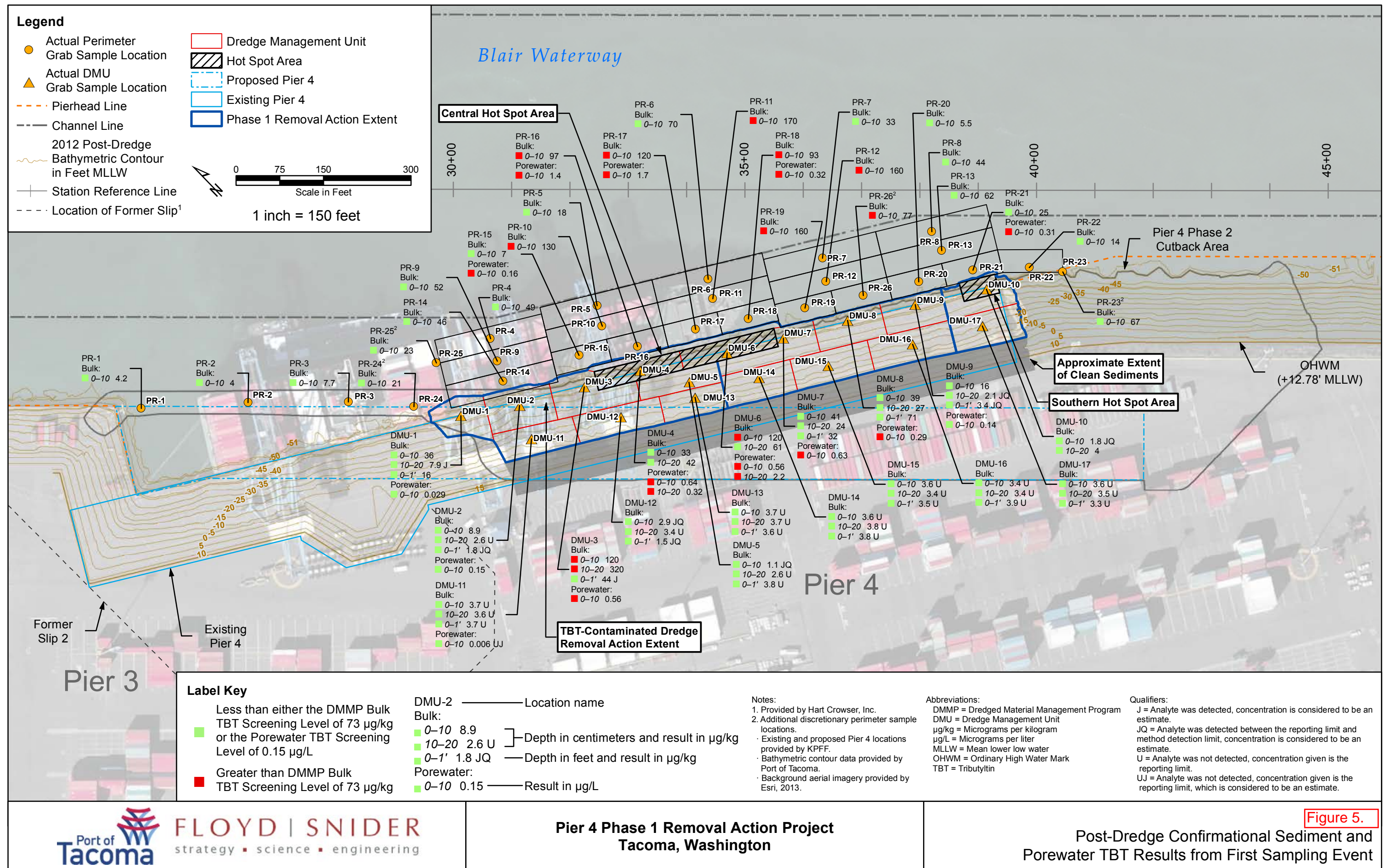
**Legend**

- Actual Perimeter
- Grab Sample Location
- Actual DMU
- Grab Sample Location
- Target Perimeter
- Grab Sample Location
- Target DMU
- Grab Sample Location

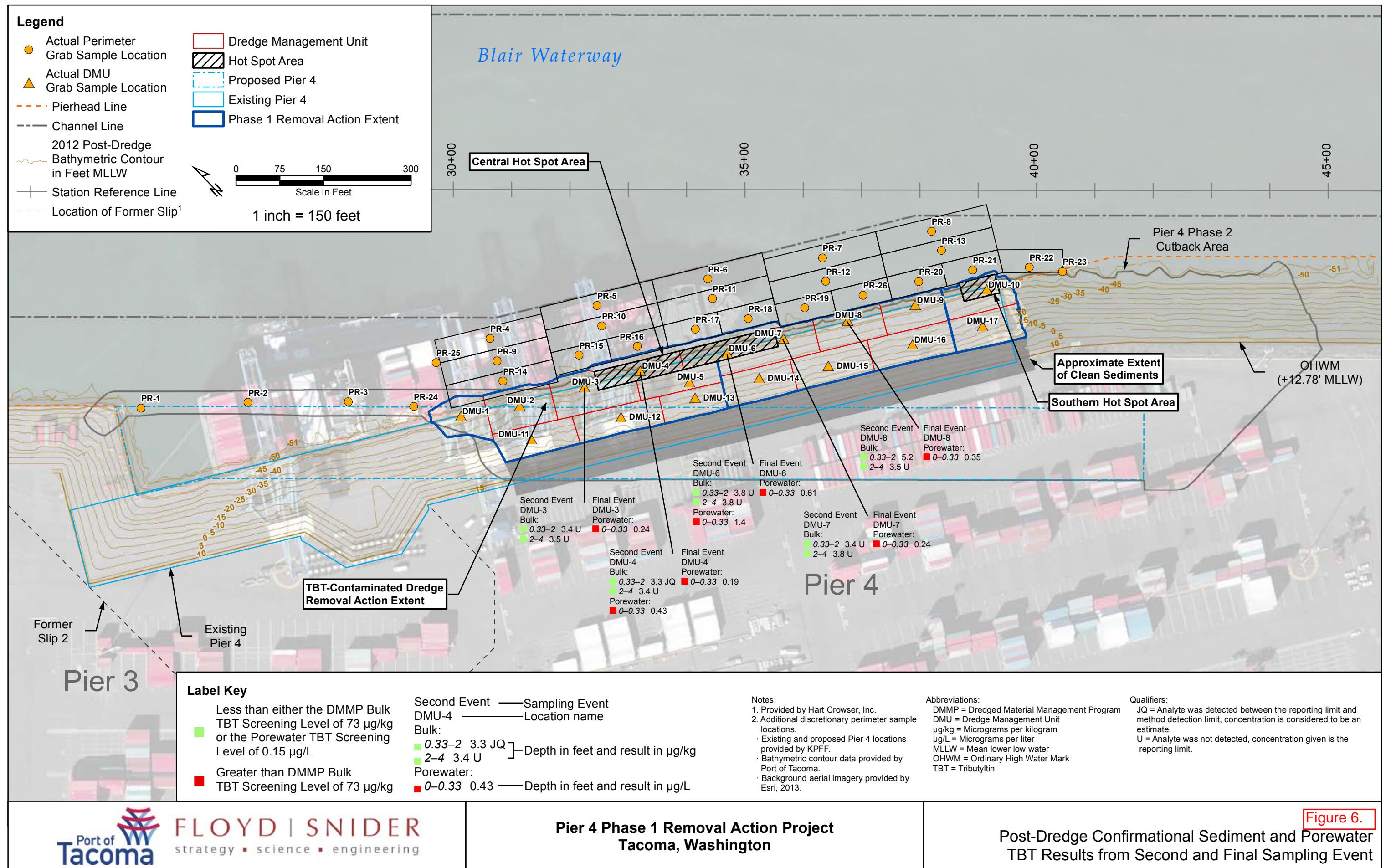
- Pierhead Line
- Channel Line
- 2012 Post-Dredge Bathymetric Contour in Feet MLLW
- Station Reference Line
- Location of Former Slip<sup>1</sup>

- Dredge Management Unit
- Hot Spot Area
- Proposed Pier 4
- Existing Pier 4
- Phase 1 Removal Action Extent

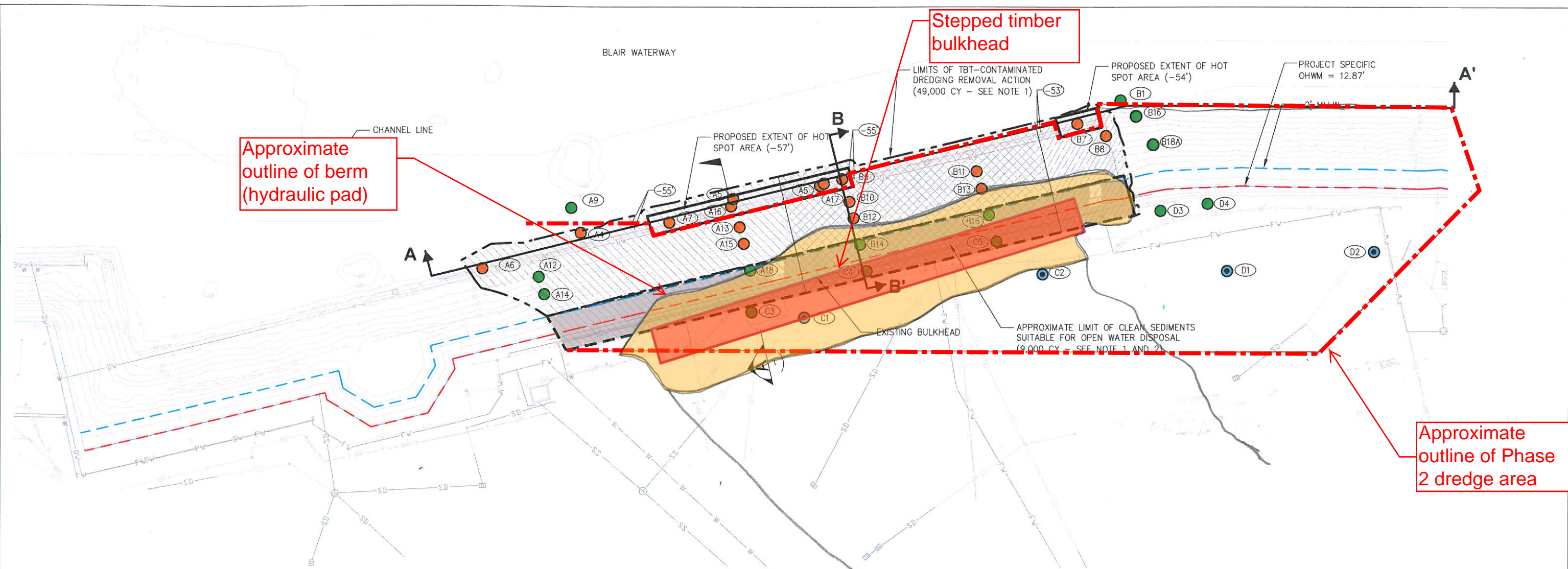












### PHASE 1 DREDGE PLAN

SCALE: 1"=150'

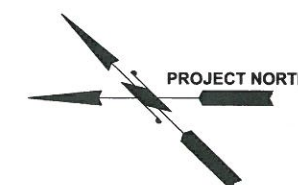
### LEGEND

- EXISTING CONTOUR
- (-51') TOE OF DREDGE, SEE NOTE 3
- (XX) SAMPLE LOCATION
- DREDGE SEDIMENT ALONG DEMOLISHED PIER FACE TO -55' MLLW AND UPPER 9FT OF SLOPE, SEE NOTE 3
- DREDGE SEDIMENT ALONG DEMOLISHED PIER FACE TO -55' MLLW AND UPPER 11FT OF SLOPE, SEE NOTE 3
- DREDGE SEDIMENT ALONG DEMOLISHED PIER FACE TO -53' MLLW AND UPPER 8FT OF SLOPE, SEE NOTE 3
- CROSS SECTION LOCATION

- SAMPLE LOCATIONS WITH SEDIMENT SAMPLES CONTAINING TBT CONCENTRATIONS GREATER THAN THE DMMP SCREENING LEVEL OF 73 UG/KG
- SAMPLE LOCATIONS WHERE THERE ARE NO TBT EXCEEDANCES OF THE DMMP TBT SCREENING LEVEL (73 UG/KG) (SAMPLES ANALYZED FOR TBT ONLY)
- SAMPLE LOCATIONS WHERE THERE ARE NO CHEMICAL EXCEEDANCES OF THE DMMP SCREENING LEVELS FOR THE DMMP SUITE OF CHEMICALS OF CONCERN
- ↔ Cross Section Designation and Location
- Potential Timber Bulkhead Extent

### NOTES

1. VOLUME IS APPROXIMATE AND INCLUDES THE 1-FOOT OVERDREDGE ALLOWANCE.
2. THE 2-FOOT RIP RAP ARMORED SLOPE MATERIAL (APPROXIMATELY 2,3000 CY) HAS BEEN DEDUCTED FROM THE VOLUME.
3. DREDGE DEPTHS DO NOT INCLUDE THE 1-FOOT OVERDREDGE ALLOWANCE.



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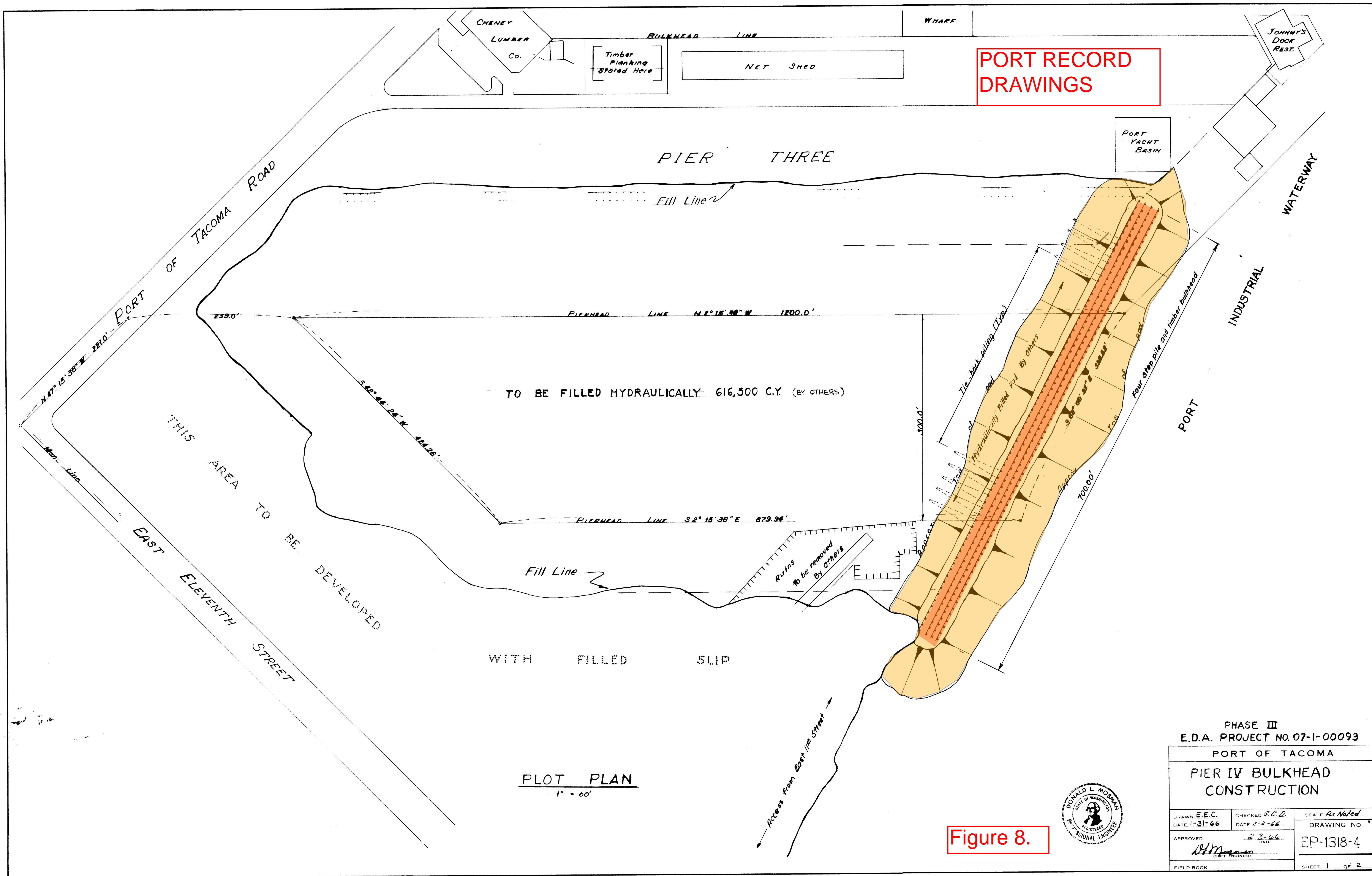
PROPOSED SUITABILITY OF PHASE 1 PROJECT  
CLEAN MATERIAL  
TACOMA, WASHINGTON

Figure 7.

DATE: DECEMBER 2014

SCALE: 1" = 150'-0"





# PORT RECORD DRAWINGS

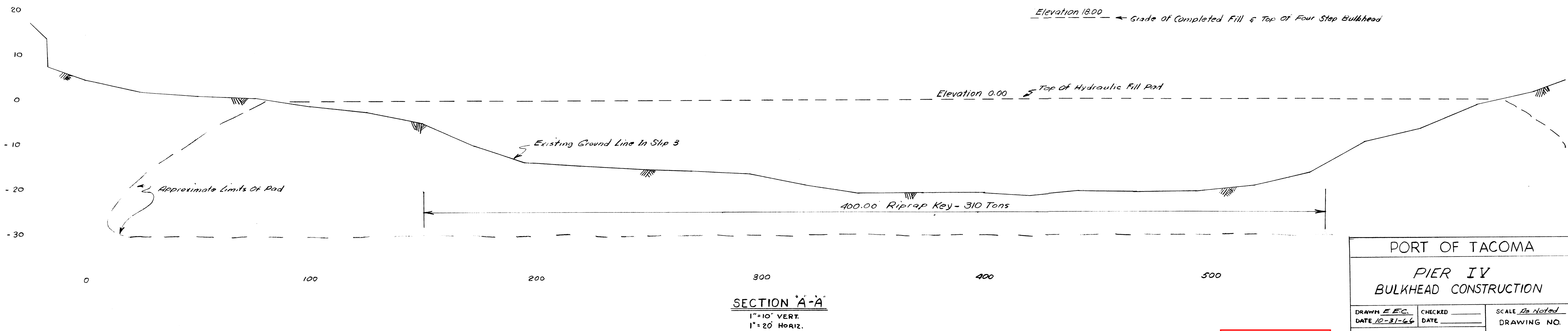
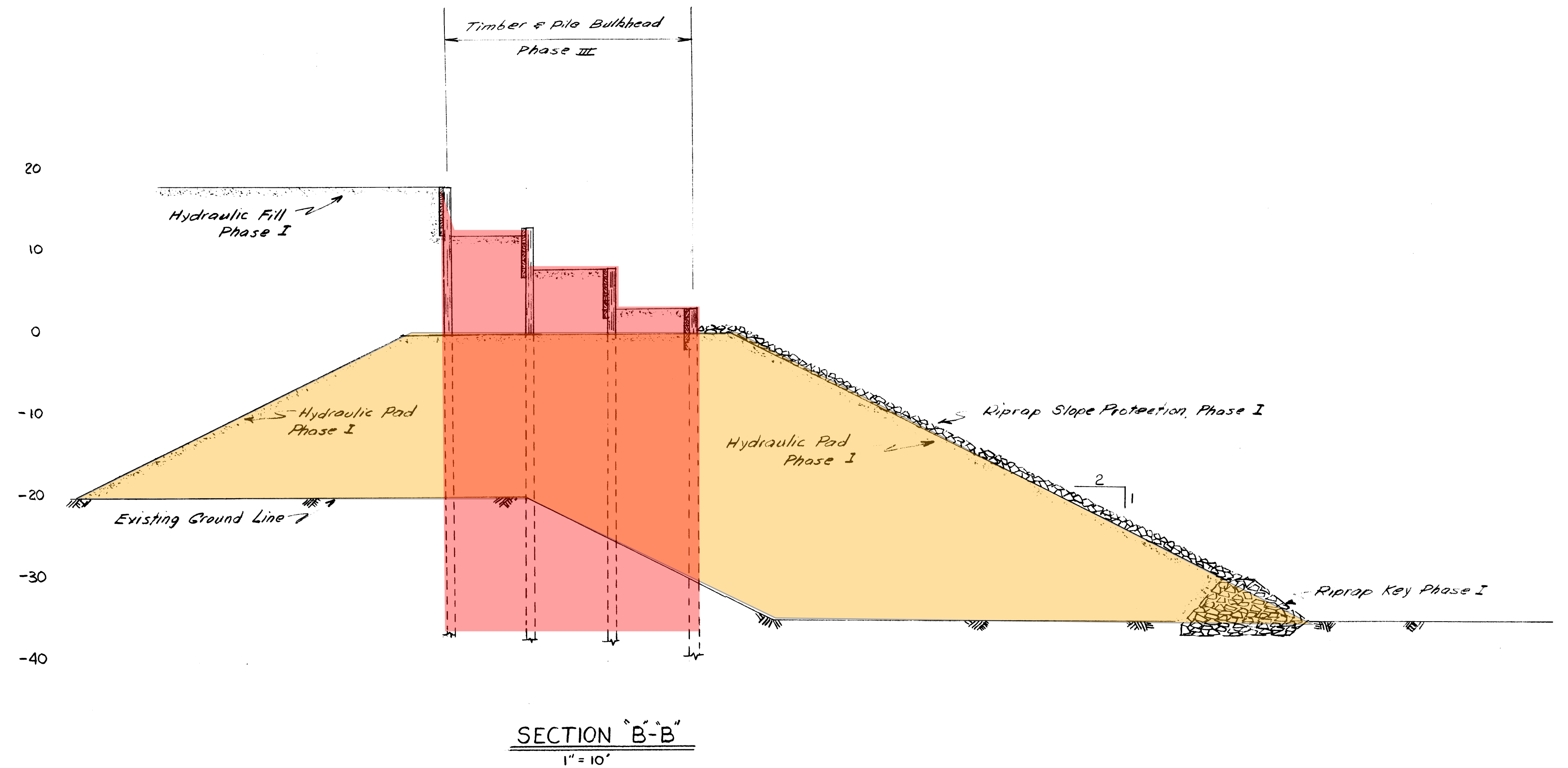
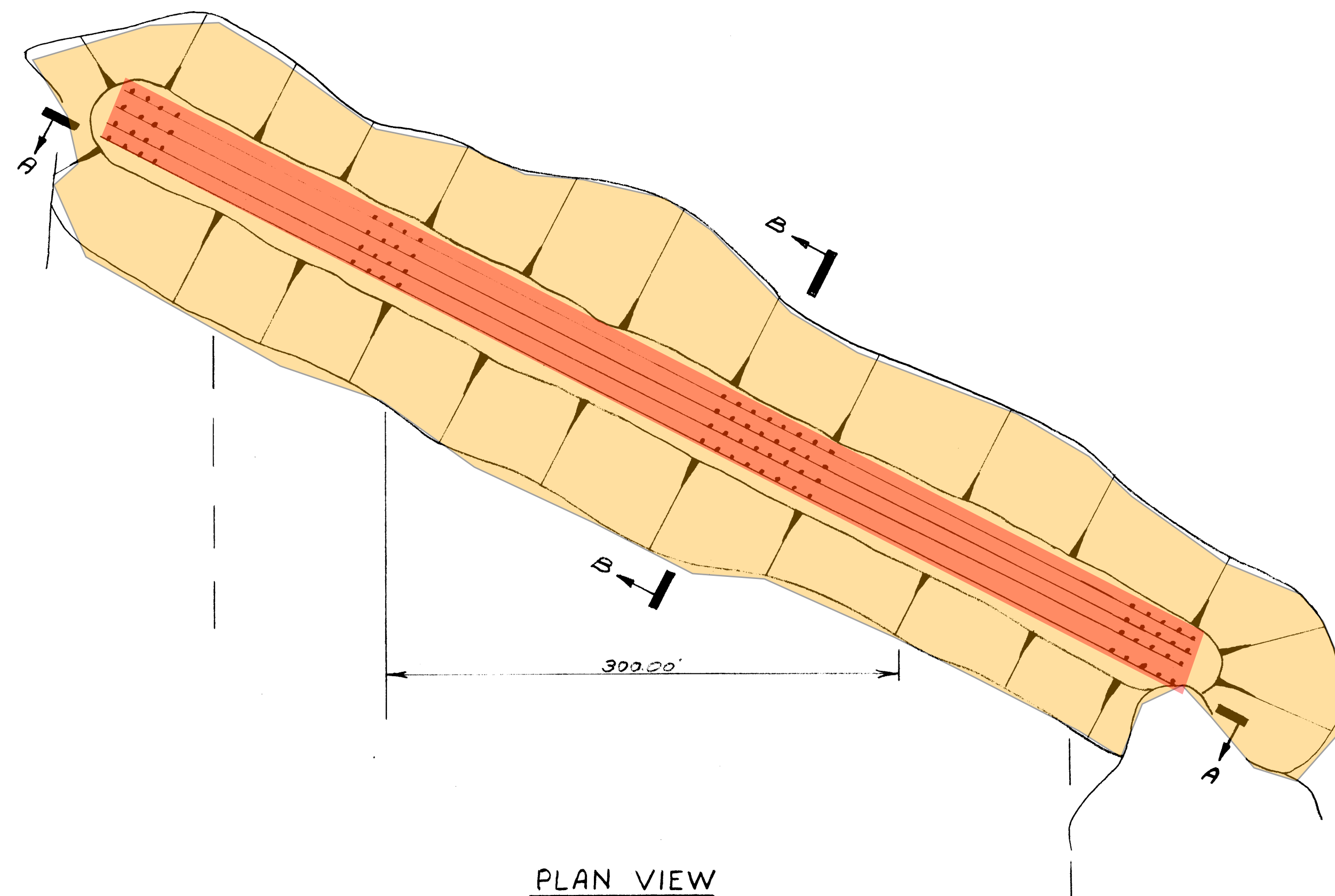


Figure 9.

PORT OF TACOMA		
PIER IV BULKHEAD CONSTRUCTION		
DRAWN <u>EEC</u>	CHECKED _____	SCALE <u>As Noted</u>
DATE <u>10-31-66</u>	DATE _____	DRAWING NO.
APPROVED _____		EP-1318-4 SHEET 3 OF 3
CHIEF ENGINEER		
FIELD BOOK _____		

**APPENDIX F**

**DEPARTMENT OF THE ARMY**

**PERMIT #NWS-2014-0456-**

**WRD, DATED MARCH 17, 2016**



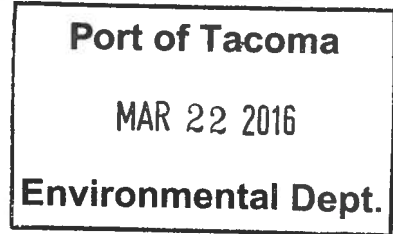


REPLY TO  
ATTENTION OF

Regulatory Branch

DEPARTMENT OF THE ARMY  
SEATTLE DISTRICT, CORPS OF ENGINEERS  
P.O. BOX 3755  
SEATTLE, WASHINGTON 98124-3755

MAR 17 2016



Mr. Mark Rettmann  
Port of Tacoma  
P.O. Box 1837  
Tacoma, Washington 98401

Reference: NWS-2014-0456-WRD  
Tacoma, Port of  
(Pier 4 reconfiguration and  
dredging)

Dear Mr. Rettmann:

Enclosed is a Department of the Army permit which authorizes performance of the work described in your referenced application. You are cautioned that any change in the location or plans of the work will require submittal of revised plans to this office for approval prior to accomplishment. Deviation from the approved plans may result in imposition of criminal or civil penalties.

Your attention is drawn to General Condition 1 of the permit which specifies the expiration date for completion of the work. Upon completing the authorized work, please fill out and return the enclosed *Certificate of Compliance with Department of the Army Permit* form.

We are interested in your experience with our Regulatory Program and encourage you to complete a customer service survey form. This form and information about our program is available on our website at: [www.nws.usace.army.mil](http://www.nws.usace.army.mil) select "Regulatory Branch, Permit Information" and then "Contact Us."

If you have any questions please contact Ms. Olivia Romano at (206) 764-6960 or by email at [olivia.h.romano@usace.army.mil](mailto:olivia.h.romano@usace.army.mil).

Sincerely,

Michelle Walker  
Chief, Regulatory Branch

Enclosures

## DEPARTMENT OF THE ARMY PERMIT

**Permittee:** Tacoma, Port of

P.O. Box 1837  
Tacoma, Washington 98401

**Permit No:** NWS-2014-0456-WRD

**Issuing Office:** Seattle District

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the U.S. Army Corps of Engineers (Corps) having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

**Project Description:** To reconfigure and reconstruct Pier 4 to align with Pier 3 within Husky Terminal, cutback and dredge up to 500,000 cubic yards of material from the existing channel slope to realign the pier (Phase 2) and disposal of dredge material in Commencement Bay in-water disposal area (in accordance with the plans and drawings dated February 2016, attached hereto which are incorporated in and made a part of this permit). The purpose of the project is to allow efficient and safe operation of large vessels at Pier 4 and in Blair Waterway.

**Project Location:** In Blair Waterway at Tacoma, Washington.

**Permit Conditions:**

*General Conditions:*

1. The time limit for completing the work authorized ends on MAR 17 2019. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least 1 month before the above date is reached.
2. You must maintain the activity authorized by this permit in good condition and in accordance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification to this permit from this office, which may require restoration of the area.
3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and State coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.
4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.
5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.
6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.



7. After a detailed and careful review of all the conditions contained in this permit, the permittee acknowledges that, although said conditions were required by the Corps, nonetheless the permittee agreed to those conditions voluntarily to facilitate issuance of the permit; the permittee will comply fully with all the terms of all the permit conditions.

*Special Conditions:*

a. You must provide a copy of the permit transmittal letter, the permit form, and drawings to all contractors performing any of the authorized work.

b. The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the U.S. Army Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

c. You must implement and abide by the Endangered Species Act (ESA) requirements and/or agreements set forth in the *Biological Evaluation Pier 4 Reconfiguration Project*, dated February 12, 2015, in its entirety. The U.S. Fish and Wildlife Service (USFWS) concurred with a finding of "may affect, not likely to adversely affect" based on this document on May 22, 2015 (USFWS Reference Number 01EWF99-2015-I-0365). The National Marine Fisheries Service (NMFS) concurred with a finding of "may affect, not likely to adversely affect" based on this document on April 6, 2015 (NMFS Reference Number WCR-2015-2194). Both agencies will be informed of this permit issuance. Failure to comply with the commitments made in this document constitutes non-compliance with the ESA and your U.S. Army Corps of Engineers permit. The USFWS/NMFS is the appropriate authority to determine compliance with ESA.

d. In order to meet the requirements of the Endangered Species Act and protect Puget Sound Chinook, Puget Sound steelhead, Coastal-Puget Sound bull trout, Georgia Basin bocaccio, Georgia Basin yelloweye rockfish, Georgia Basin canary rockfish, Southern Resident killer whale, and humpback whale, the permittee may conduct the in-water authorized activities from 16 July through 14 February in any year this permit is valid. The permittee shall not conduct work authorized by this permit from 15 February through 15 July in any year this permit is valid.

e. By accepting this permit, the permittee agrees to accept potential liability for both response costs and natural resource damages, to the same extent as would be inherent under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) as amended (42 U.S.C. 9601 et. Seq.). Further, the permittee agrees that this permit does not exclude the permittee from liability under the CERCLA or the 1989 Washington State Model Toxic Control Act (R.C.W. 70.105), nor does the permit waive any liability for response costs, damages, and any other costs that may be assessed under the CERCLA. Additionally, the permittee agrees that the permittee will be financially responsible for any logistic problems associated with the construction and operation of this project and potential cleanup operations in this portion of Blair Waterway.

f. At least 14 days prior to beginning the dredging and disposal work, you must notify the U.S. Army Corps of Engineers, Seattle District, Regulatory Branch Project Manager, by telephone at (206) 764-6960, to schedule a pre-dredge meeting.

g. At least 7 days prior to the scheduled pre-dredge meeting, you must submit to the U.S. Army Corps of Engineers, Seattle District, Regulatory Branch Project Manager, a quality control plan for dredging and disposal. This plan must include: the equipment and vessels to be used, operational controls to ensure dredging

accuracy, disposal positioning procedures, spill control and response measures, water quality monitoring and contingency plans for exceeding water quality standards, debris management, personnel and responsibilities, dredging and disposal schedule, report submittals, agency contact information and coordination procedures. The plan must be approved by the U.S. Army Corps of Engineers, Washington State Department of Natural Resources and the Washington State Department of Ecology prior to commencement of open-water disposal.

h. At least 7 days prior to dredging and disposal, you, the dredging contractor's representative, and the dredging contractor's disposal positioning supervisor must attend a pre-dredge meeting to review the Department of the Army permit conditions, dredging and disposal quality control plan, Washington State Department of Natural Resources site-use authorization and water quality certification.

i. Disposal must be by bottom-dump barge. Disposal by any other means is prohibited.

j. The U.S. Coast Guard must be notified by email at [D13-PF-LNM@uscg.mil](mailto:D13-PF-LNM@uscg.mil) at least 14 days prior to commencing dredging operations, so the project information can be issued in the Local Notice to Mariners. Dredging operations north of a line between Bush Point on Whidbey Island and Nodule Point on Marrowstone Island must monitor VHF-FM Channels 13 and 5A. Dredging operations south of this line must monitor VHF-FM Channels 13 and 14.

k. The U.S. Coast Guard (USCG) Puget Sound Vessel Traffic Service, also known as "Seattle Traffic", must be contacted by radio prior to each disposal for positioning and verification of location within the disposal site target area. Disposal may not commence until verification is received from the USCG. Information required by the USCG must be provided for recording of the dump.

l. You must have a copy of this permit available on the vessel used for the authorized transportation and disposal of the dredged material.

m. All hopper dredges must be equipped with the National Dredging Quality Management (DQM) system for hopper dredge monitoring. The DQM system must have been certified by the U.S. Army Engineer Research and Development Center within the last year. Questions regarding certification should be addressed to the DMQ support team at (601) 634-2923. The data collected by the DQM system must, upon request, be made available to U.S. Army Corps of Engineers, Seattle District, Regulatory Branch.

n. Any deviations from the authorized dredging footprint or depths must be reported to the Regulatory Branch Project Manager within 24 hours of discovery.

o. Plotted results of the post-dredge bathymetric survey shall be submitted to the U.S. Army Corps of Engineers, Seattle District, Dredged Material Management Office and Regulatory Branch Project Manager in PDF format within 30 days of completion of dredging. Results must clearly display the post-dredge sediment surface in relation to the permitted dredge boundary and depth, as well as the location of project features such as docks, wharfs and other landmarks. The vertical datum must be clearly indicated. Full bathymetric survey data must be submitted upon request.

p. A post-dredge report shall be submitted to the U.S. Army Corps of Engineers, Seattle District, Dredged Material Management Office and Regulatory Branch Project Manager within 30 days of completion of dredging and include the volume and location(s) of in-water disposal and the volume and location(s) of material placed in uplands.

q. If dredging cannot be completed prior to the "Recency Determination" date specified in the Dredged Material Management Program (DMMP) suitability determination dated February 25, 2016, the U.S. Army Corps of Engineers, Seattle District, Dredged Material Management Office (DMMO) Project Manager must be

contacted. The DMMO Project Manager will coordinate with the other DMMP agencies to determine whether an extension to the recency period can be granted.

r. For disposal at open water sites, debris management procedures must include use of a debris grid, with a maximum opening size of 12-inches by 12-inches that will cover the entire loading area of the dump scow, unless exempted in writing by the DMMP.

**Further Information:**

1. Congressional Authorities. You have been authorized to undertake the activity described above pursuant to:

- ☒ Section 10 of the Rivers and Harbor Act of 1899 (33 United States Code (U.S.C.) 403).
- ☒ Section 404 of the Clean Water Act (33 U.S.C. 1344).
- ☐ Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C 1413).

2. Limits of this authorization.

- a. This permit does not obviate the need to obtain other Federal, State, or local authorization required by law.
- b. This permit does not grant any property rights or exclusive privileges.
- c. This permit does not authorize any injury to the property or rights of others.
- d. This permit does not authorize interference with any existing or proposed Federal project.

3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:

- a. Damages to the permitted project or uses thereof as a result of other permitted activities or from natural causes.
- b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.
- c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.
- d. Design or construction deficiencies associated with the permitted work.
- e. Damage claims associated with any future modification, suspension, or revocation of this permit.

4. Reliance on Applicant's Data. The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Reevaluation of Permit Decision. This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require include, but are not limited to, the following:

- a. You fail to comply with the terms and conditions of the permit.


b. The information provided by you in support of your application proves to have been false, incomplete, or inaccurate (See 4 above).

c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 Code of Federal Regulations (CFR), Part 325.7 or enforcement procedures such as those contained in 33 CFR, Parts 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR, Part 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.


6. Extensions. General condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

X   
\_\_\_\_\_  
Port of Tacoma

3/15/2016  
\_\_\_\_\_  
(DATE)

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

  
\_\_\_\_\_  
John G. Buck  
Colonel, Corps of Engineers  
District Engineer

3/16/16  
\_\_\_\_\_  
(DATE)

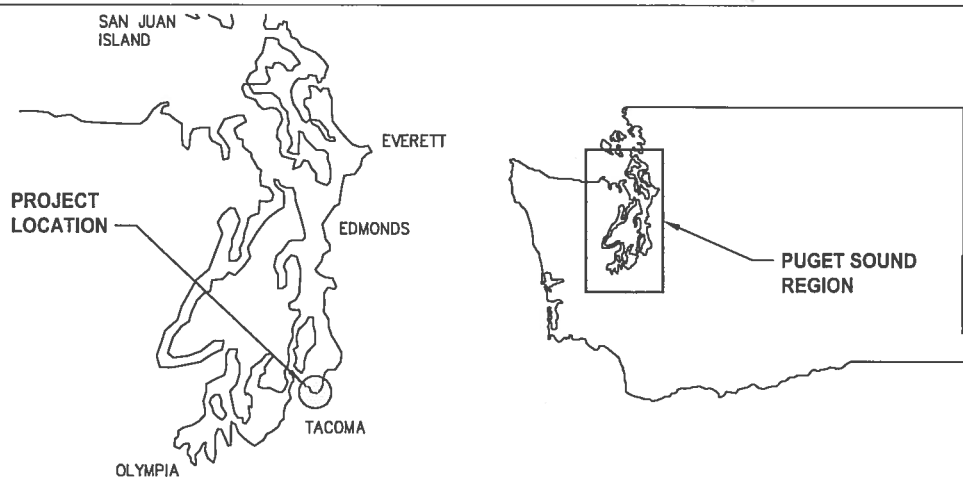
Tacoma, Port of

NWS-2014-0456-WRD

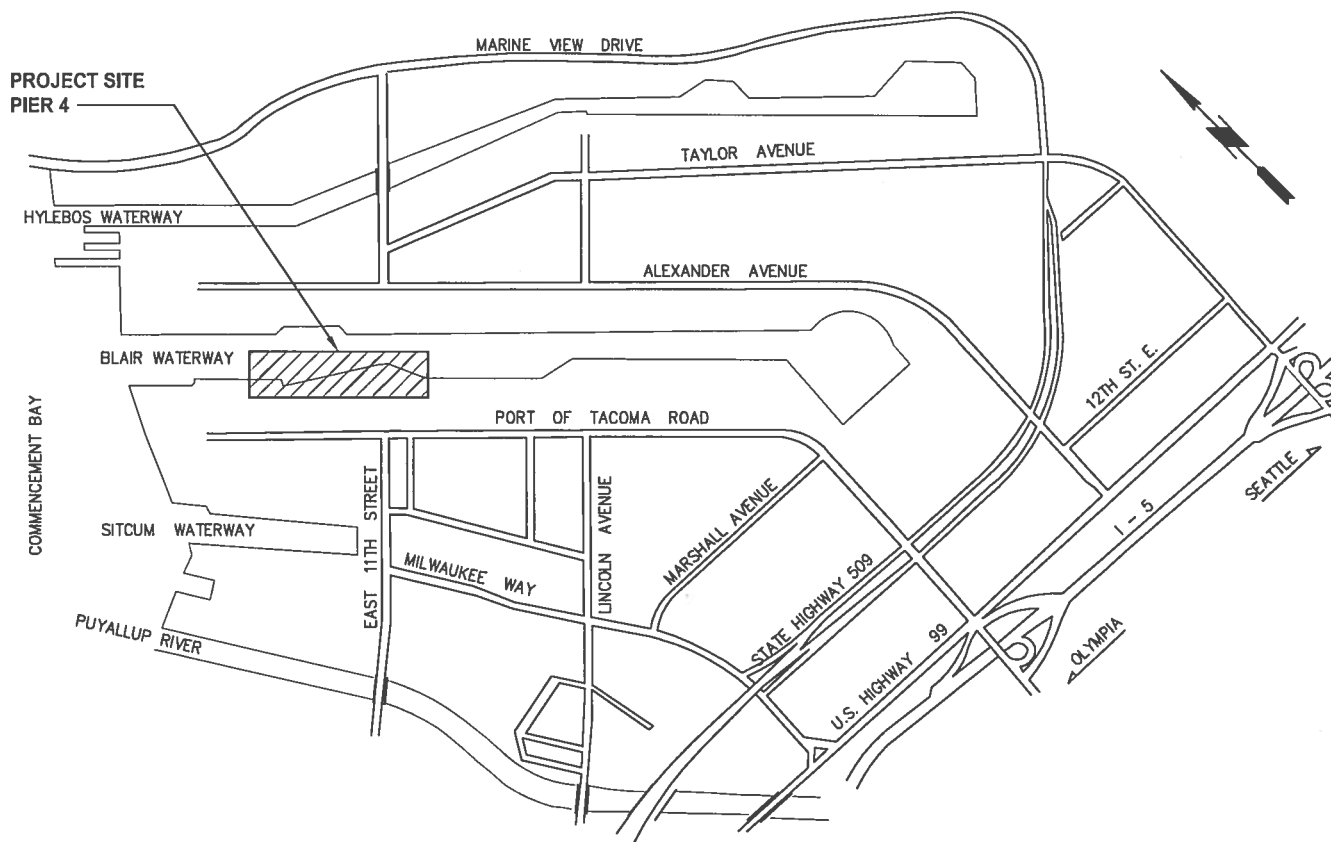
When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

\_\_\_\_\_  
(TRANSFeree)

\_\_\_\_\_  
(DATE)



PUGET SOUND REGION MAP



VICINITY MAP

NO SCALE

PORT OF TACOMA

PURPOSE: RECONFIGURE PIER 4 TO ALIGN WITH PIER 3 TO MAINTAIN TERMINAL COMPETITIVENESS AND TO WIDEN THE WATERWAY.

DATUM: VERTICAL PORT DATUM  
PROJECT SPECIFIC OHWM = +12.78'  
MHHW = +11.8'  
MHW = +10.92  
MLLW = 0.00'

ADJACENT PROPERTY OWNERS:  
PORT OF TACOMA, DNR/WASHINGTON STATE,  
TACOMA INDUSTRIAL PROPERTIES

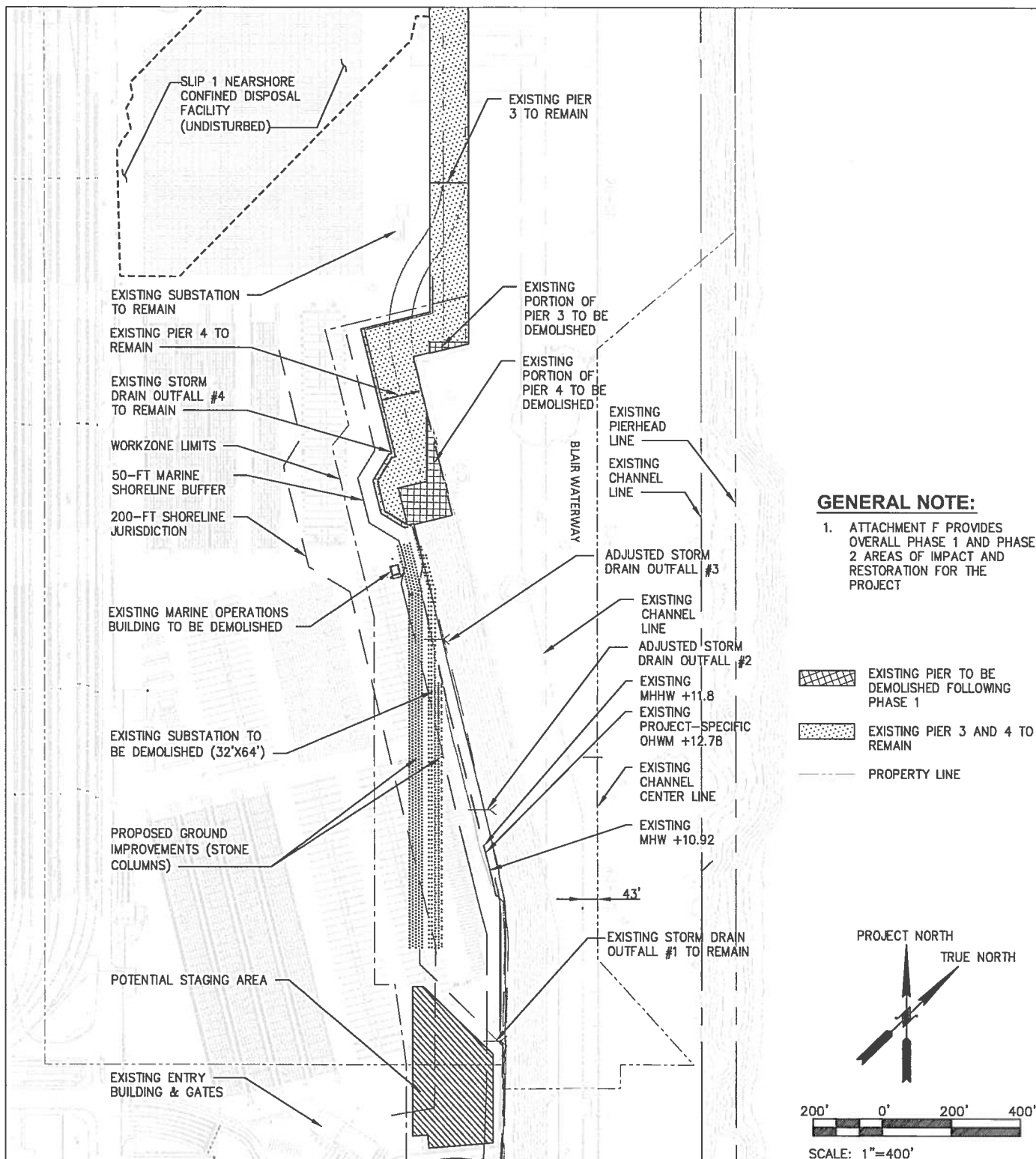
FIGURE 1 - VICINITY MAP



P.O. BOX 1837 TACOMA, WA 98401 (253)383-5841

PROJECT: PIER 4 PHASE 2 RECONFIGURATION  
ADDRESS: 1101 PORT OF TACOMA ROAD  
TACOMA, WA 98421  
PARCEL#: 2275200610  
LAT/LONG: 47.273069N 122.408736W  
SECT/TOWN/RANGE: SEC27 T21N R3E  
IN: BLAIR WATERWAY  
COUNTY OF: PIERCE  
STATE OF: WA  
APPLICATION BY: PORT OF TACOMA  
REFERENCE #: NWS-2014-456-WRD  
SHEET 1 OF 9

FEBRUARY 2016



PURPOSE: RECONFIGURE PIER 4 TO ALIGN WITH PIER 3 TO MAINTAIN TERMINAL COMPETITIVENESS AND TO WIDEN THE WATERWAY.

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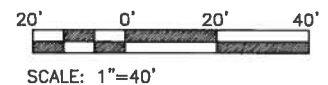
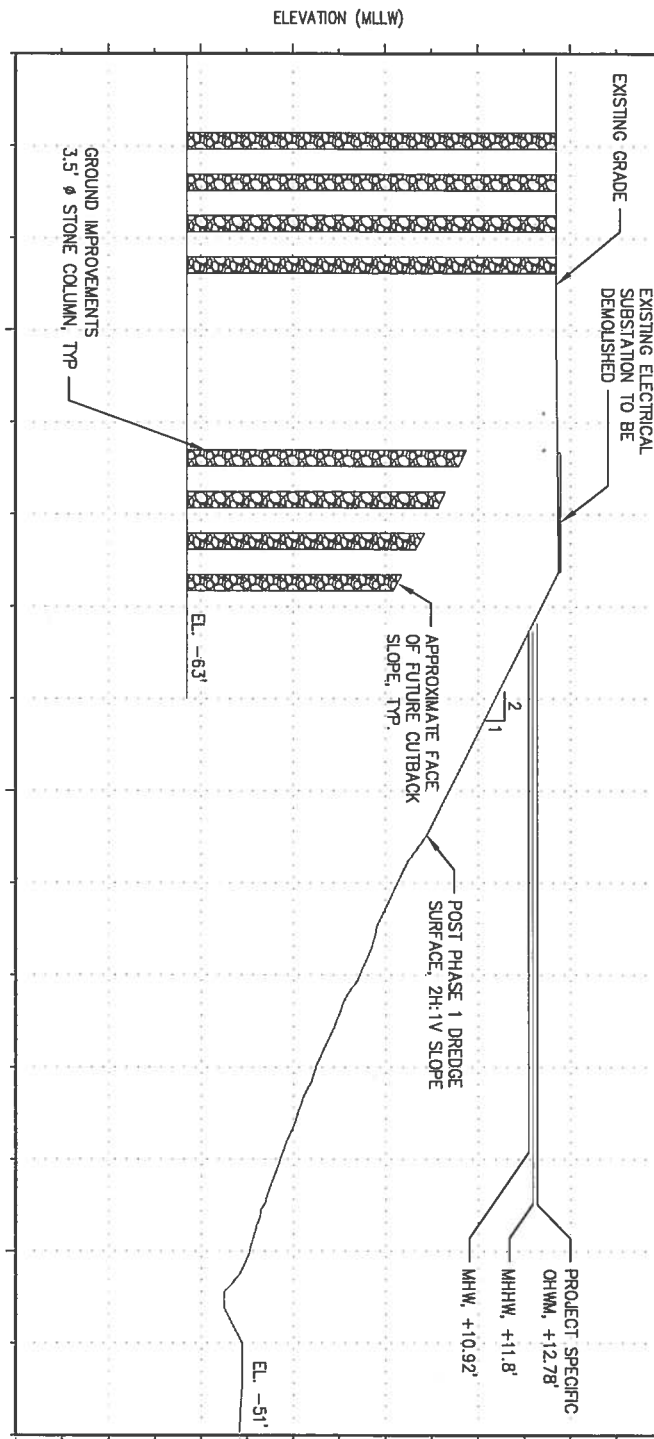
**FIGURE 2 - SITE PLAN VIEW  
PRIOR TO CUTBACK**



P.O. BOX 1837 TACOMA, WA 98401 (253)383-5841

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SHEET 2 OF 9

FEBRUARY 2016



PURPOSE: RECONFIGURE PIER 4 TO ALIGN WITH PIER 3 TO MAINTAIN TERMINAL COMPETITIVENESS AND TO WIDEN THE WATERWAY.

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ADJACENT PROPERTY OWNERS:  
PORT OF TACOMA, DNR/WASHINGTON STATE,  
TACOMA INDUSTRIAL PROPERTIES

**FIGURE 3 - TYPICAL SLOPE AND WORK ELEMENTS PRIOR TO CUTBACK**

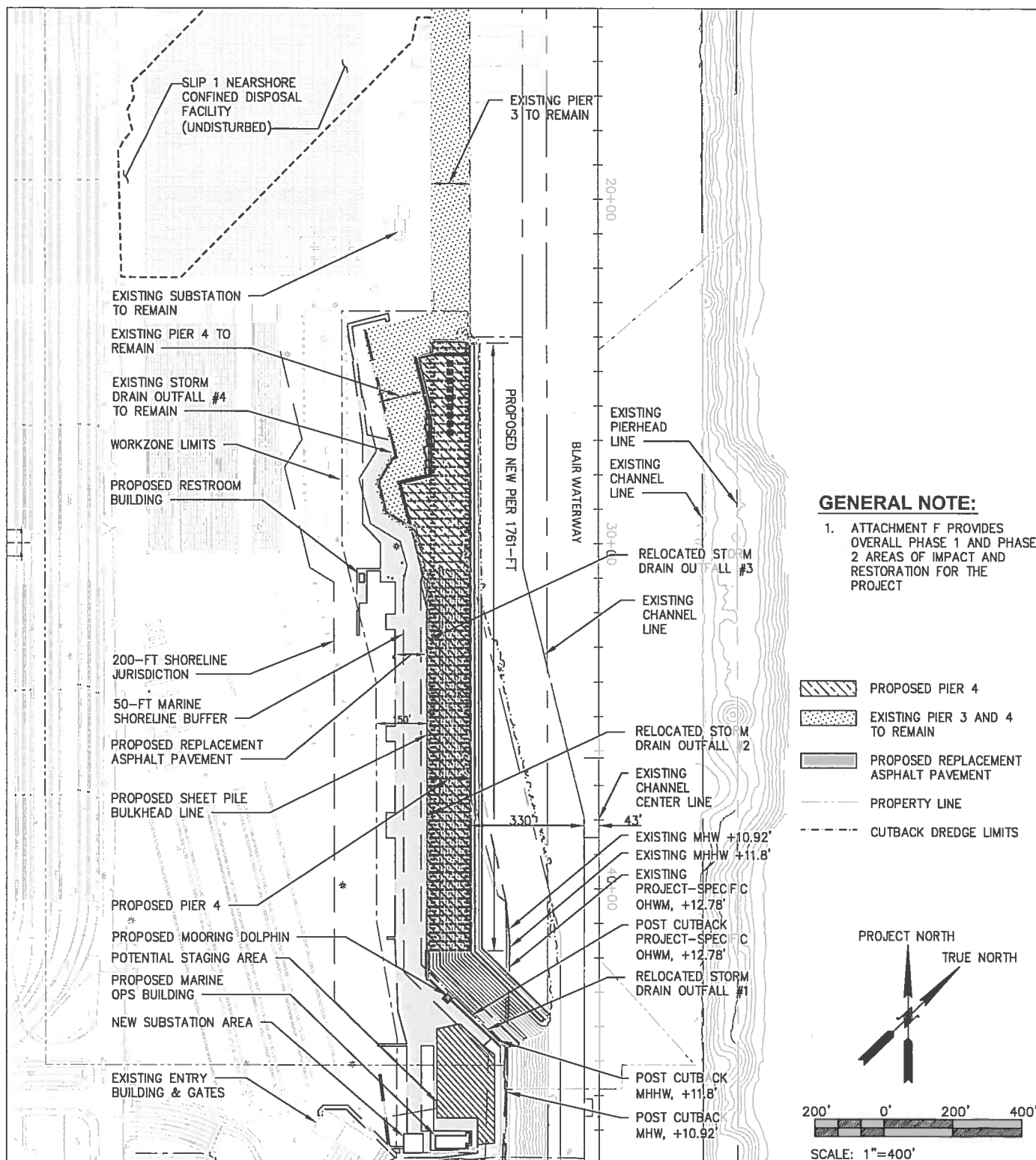


P.O. BOX 1837 TACOMA, WA 98401 (253)383-5841

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APPLICATION BY: PORT OF TACOMA  
REFERENCE #: NWS-2014-456-WRD  
SHEET 3 OF 9

FEBRUARY 2016





PURPOSE: RECONFIGURE PIER 4 TO ALIGN WITH PIER 3 TO MAINTAIN TERMINAL COMPETITIVENESS AND TO WIDEN THE WATERWAY.

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ADJACENT PROPERTY OWNERS:  
PORT OF TACOMA, DNR/WASHINGTON STATE,  
TACOMA INDUSTRIAL PROPERTIES

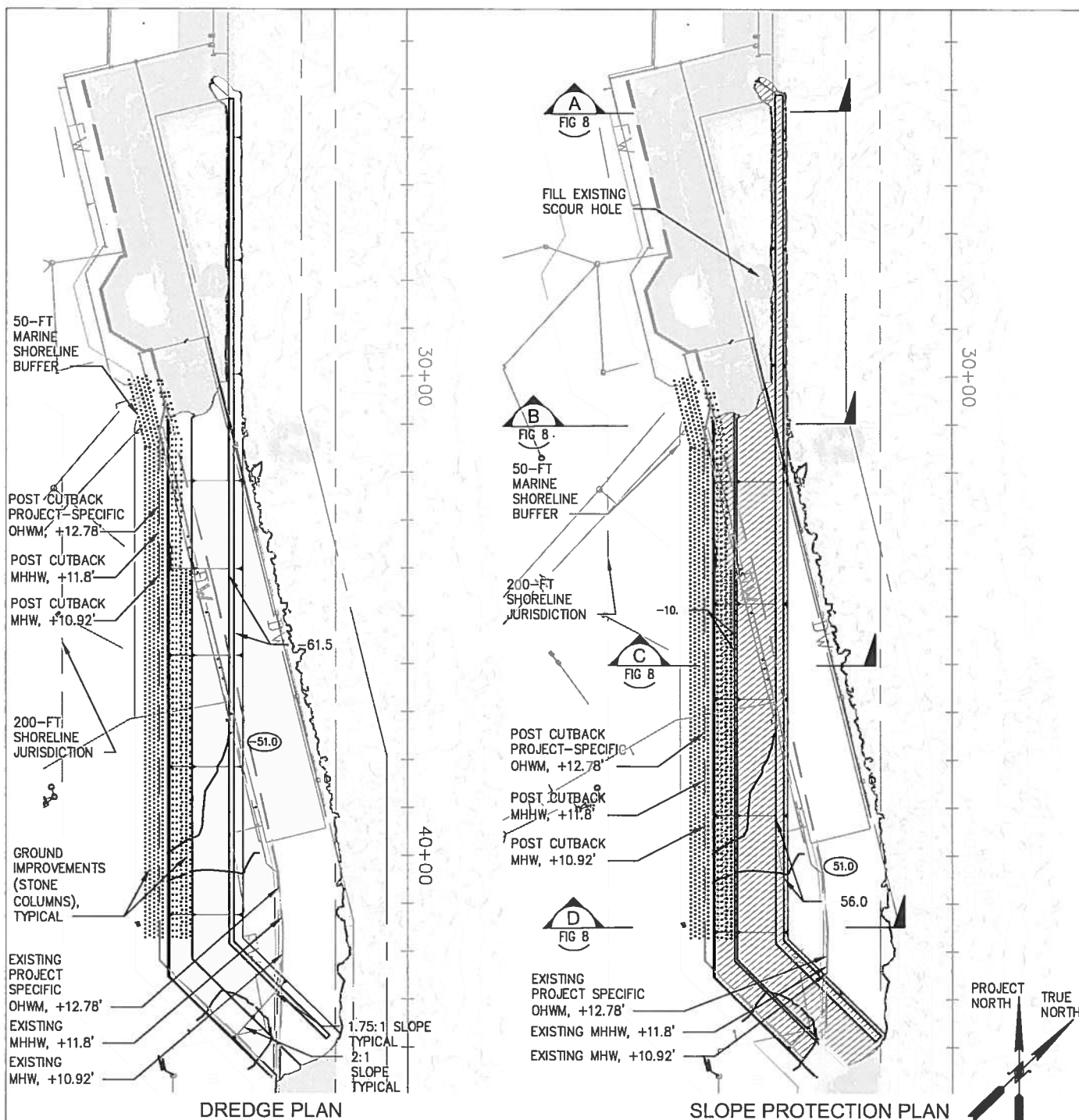
**FIGURE 4 - SITE PLAN VIEW  
AFTER CUTBACK**



P.O. BOX 1837 TACOMA, WA 98401 (253)383-5841

PROJECT: PIER 4 PHASE 2 RECONFIGURATION  
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APPLICATION BY: PORT OF TACOMA  
REFERENCE #: NWS-2014-456-WRD  
SHEET 4 OF 9

FEBRUARY 2016



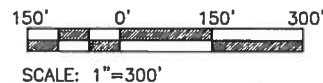
#### SURVEY NOTE:

- BATHYMETRIC DATA PROVIDED FROM FEBRUARY 2012 PIER 3 AND 4 POST-DREDGE SURVEY BY ETRAC ENGINEERING AND JUNE 2010 HYDROGRAPHIC CONDITION SURVEY BY GAHAGAN & BRYANT ASSOCIATES.



SLOPE PROTECTION

LEVEL AREA ELEVATION



PURPOSE: RECONFIGURE PIER 4 TO ALIGN WITH PIER 3 TO MAINTAIN TERMINAL COMPETITIVENESS AND TO WIDEN THE WATERWAY.

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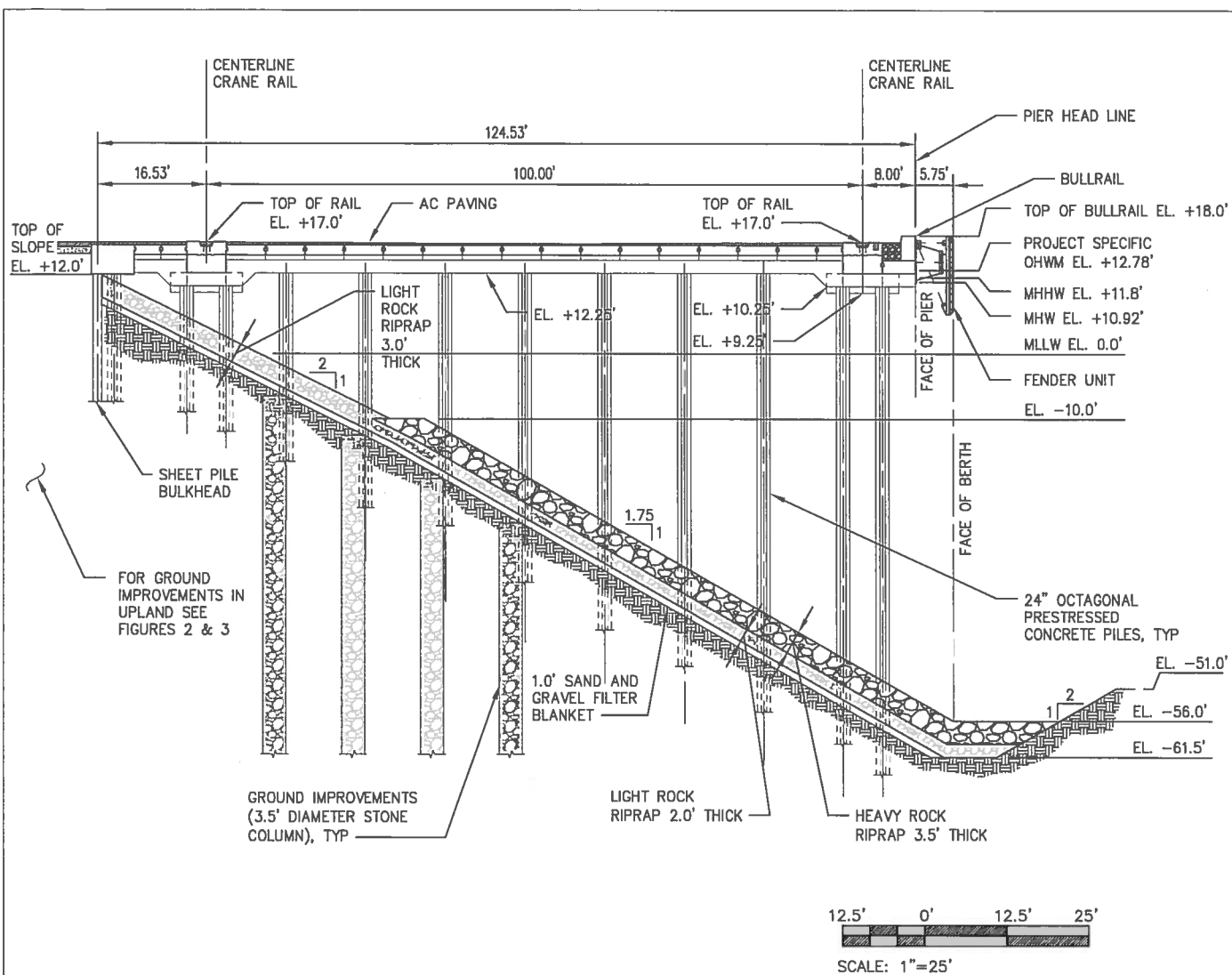
#### FIGURE 5 - DREDGE AND SLOPE PROTECTION PLAN



P.O. BOX 1837 TACOMA, WA 98401 (253)383-5841

PROJECT: PIER 4 PHASE 2 RECONFIGURATION  
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APPLICATION BY: PORT OF TACOMA  
REFERENCE #: NWS-2014-456-WRD  
SHEET 5 OF 9

FEBRUARY 2016



PURPOSE: RECONFIGURE PIER 4 TO ALIGN WITH PIER 3 TO MAINTAIN TERMINAL COMPETITIVENESS AND TO WIDEN THE WATERWAY.

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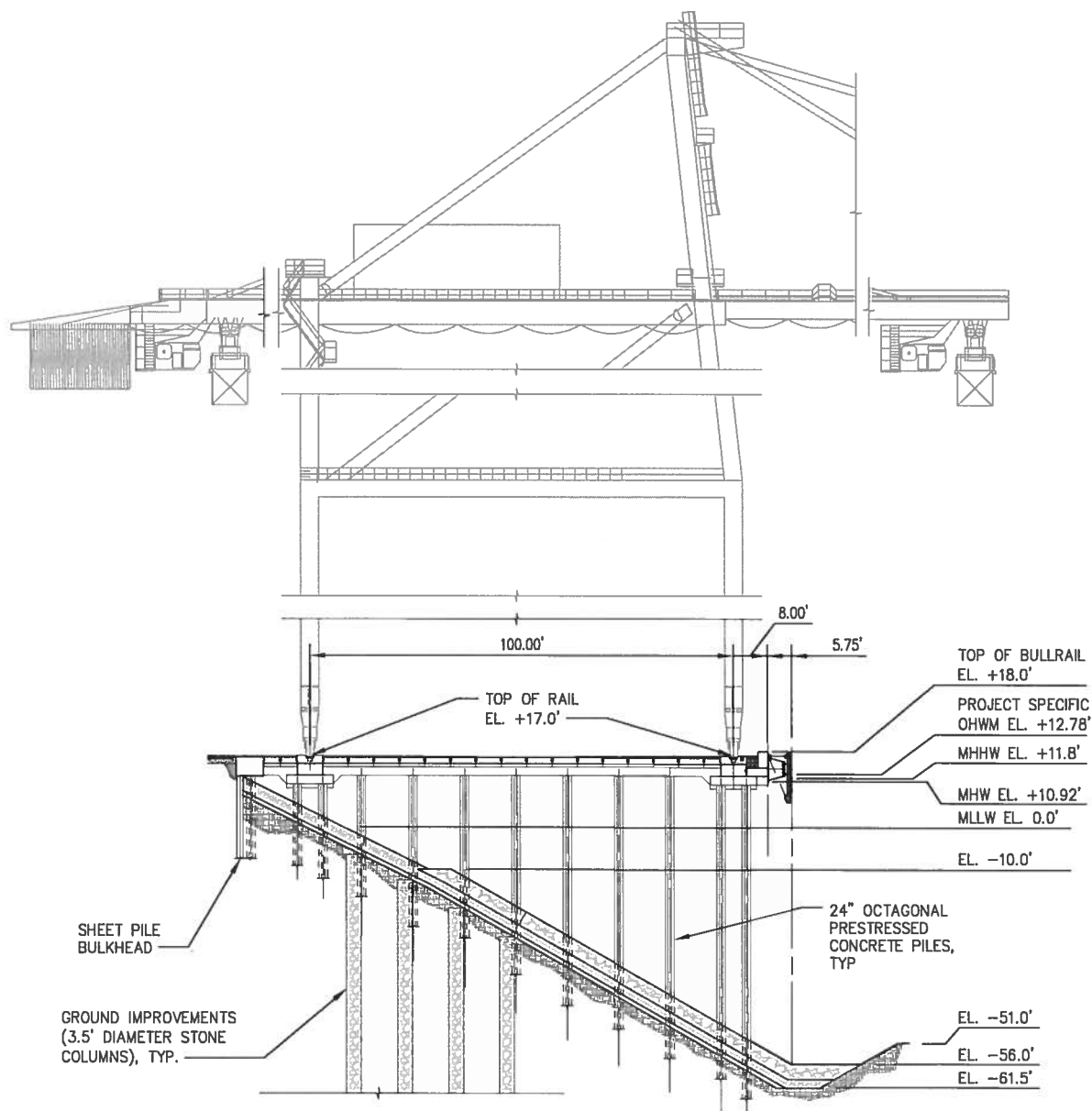
### FIGURE 6 - TYPICAL SLOPE AND WORK ELEMENTS AFTER CUTBACK



P.O. BOX 1837 TACOMA, WA 98401 (253)383-5841

PROJECT: PIER 4 PHASE 2 RECONFIGURATION  
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APPLICATION BY: PORT OF TACOMA  
REFERENCE #: NWS-2014-456-WRD  
SHEET 6 OF 9

FEBRUARY 2016



PURPOSE: RECONFIGURE PIER 4 TO ALIGN WITH PIER 3 TO MAINTAIN TERMINAL COMPETITIVENESS AND TO WIDEN THE WATERWAY.

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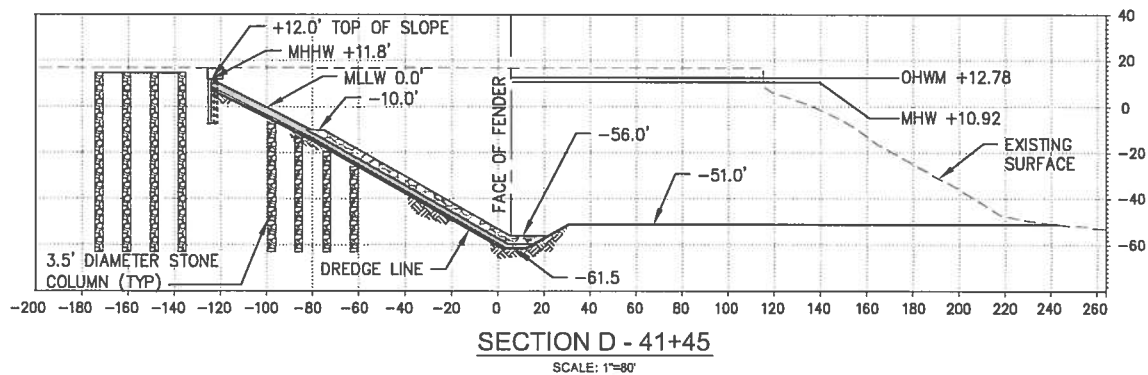
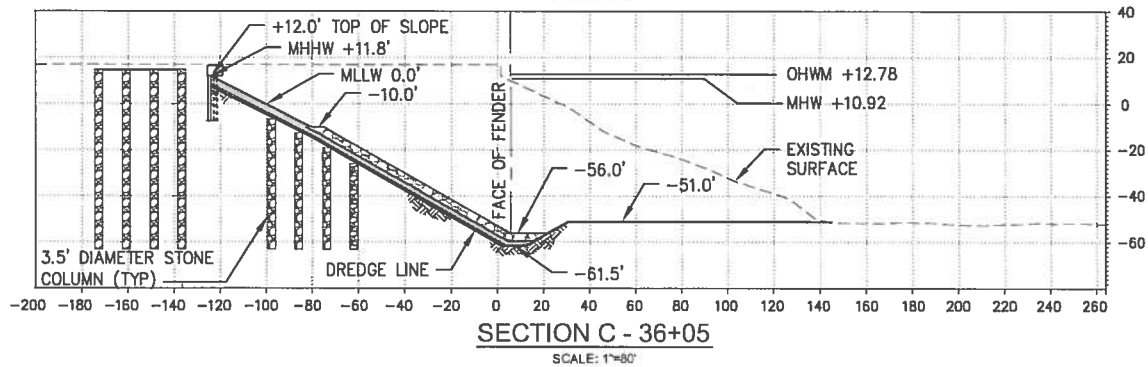
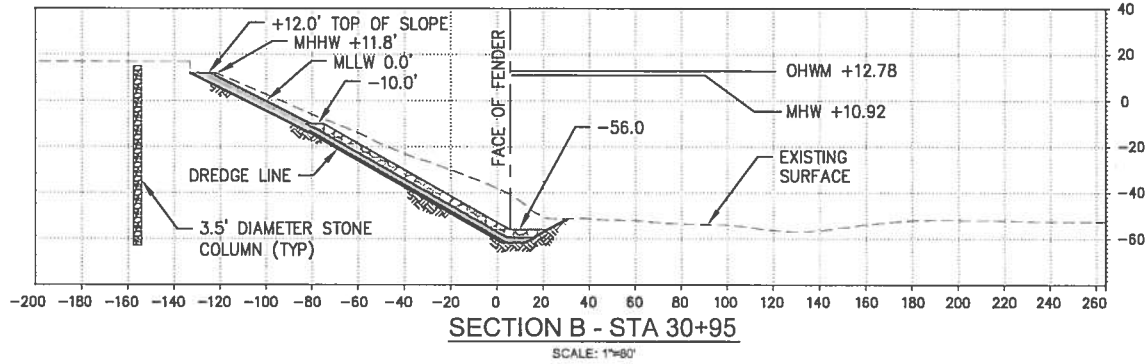
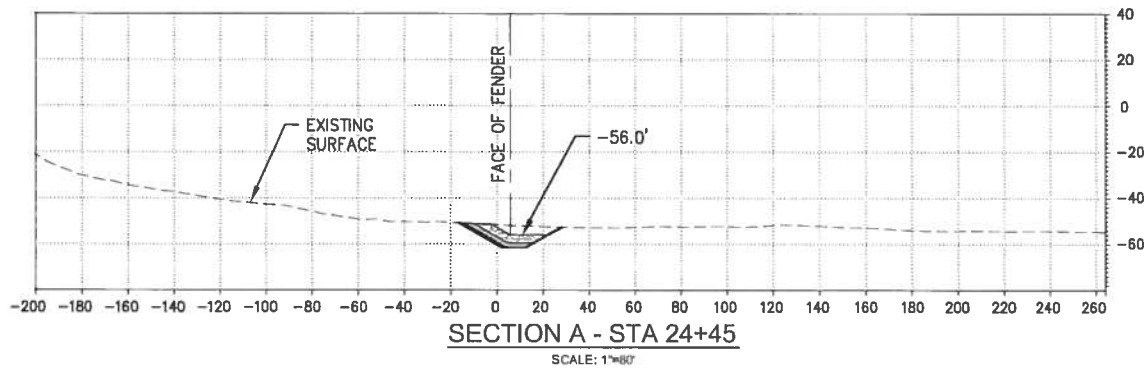
### FIGURE 7 - 100' GAUGE PIER SECTION



P.O. BOX 1837 TACOMA, WA 98401 (253)383-5841

PROJECT: PIER 4 PHASE 2 RECONFIGURATION  
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STATE OF: WA  
APPLICATION BY: PORT OF TACOMA  
REFERENCE #: NWS-2014-456-WRD  
SHEET 7 OF 9

FEBRUARY 2016



PURPOSE: RECONFIGURE PIER 4 TO ALIGN WITH PIER 3 TO MAINTAIN TERMINAL COMPETITIVENESS AND TO WIDEN THE WATERWAY.

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TACOMA INDUSTRIAL PROPERTIES

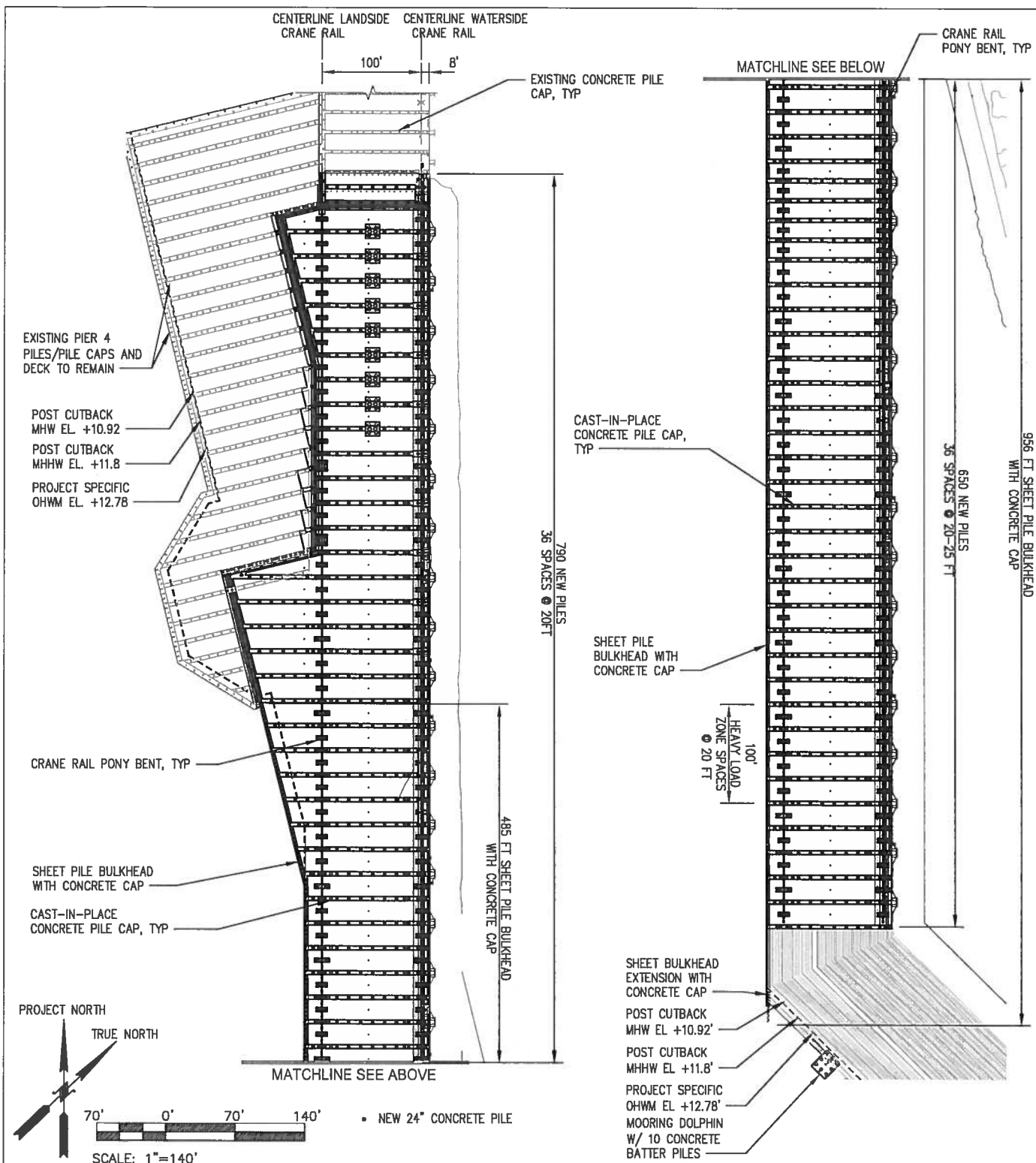
## FIGURE 8 - SECTIONS



P.O. BOX 1837 TACOMA, WA 98401 (253)383-5841

PROJECT: PIER 4 PHASE 2 RECONFIGURATION  
ADDRESS: 1101 PORT OF TACOMA ROAD  
TACOMA, WA 98421  
PARCEL#: 2275200610  
LAT/LONG: 47.273069N 122.408736W  
SECT/TOWN/RANGE: SEC27 T21N R3E  
IN: BLAIR WATERWAY  
COUNTY OF: PIERCE  
STATE OF: WA  
APPLICATION BY: PORT OF TACOMA  
REFERENCE #: NWS-2014-456-WRD  
SHEET 8 OF 9

FEBRUARY 2016



PURPOSE: RECONFIGURE PIER 4 TO ALIGN WITH PIER 3 TO MAINTAIN TERMINAL COMPETITIVENESS AND TO WIDEN THE WATERWAY.

DATUM: VERTICAL PORT DATUM  
PROJECT SPECIFIC OHWM = +12.78'  
MHHW = +11.8'  
MHW = +10.92  
MLLW = 0.00'

ADJACENT PROPERTY OWNERS:  
PORT OF TACOMA, DNR/WASHINGTON STATE,  
TACOMA INDUSTRIAL PROPERTIES

FIGURE 9 - PILE/PILE CAP PLAN



P.O. BOX 1837 TACOMA, WA 98401 (253)383-5841

PROJECT: PIER 4 PHASE 2 RECONFIGURATION  
ADDRESS: 1101 PORT OF TACOMA ROAD  
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PARCEL#: 2275200610  
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REFERENCE #: NWS-2014-456-WRD  
SHEET 9 OF 9

FEBRUARY 2016



STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

PO Box 47775 • Olympia, Washington 98504-7775 • (360) 407-6300

November 6, 2015

Port of Tacoma  
ATTN: Mr. Tim Ebner  
PO Box 1837  
Tacoma, WA 98401-1837

RE: Water Quality Certification Order No. 12816 for Corps Public Notice No. NWS-2014-0456-WRD for the Pier 4 (Terminal 4) Phase 2 Reconfiguration Project, Blair Waterway, Puget Sound, Pierce County, Washington

Dear Mr. Ebner:

Due to an oversight, the 401 Water Quality Certification Order issued on October 13, 2015, was mailed out without being signed. Enclosed please find a signed copy of Order No. 12816 for Phase 2 of the Pier 4 (Terminal 4) Project.

If you have any questions, please contact Lori Kingsbury at (360) 407-6926. The enclosed Order may be appealed by following the procedures described in the Order.

Sincerely,

Perry J Lund, Unit Manager  
Shorelands and Environmental Assistance Program  
Southwest Regional Office

Enclosures

By Certified Mail 7012 2920 0000 1182 2137

cc: Olivia Romano, U.S. Army Corps of Engineers  
Mark Rettmann, Port of Tacoma  
Matthew Curtis, WDFW  
Shirley Schultz, City of Tacoma

e-cc: [ecyrefedpermits@ecy.wa.gov](mailto:ecyrefedpermits@ecy.wa.gov)  
Loree' Randall, Ecology HQ  
Laura Inouye, Ecology HQ  
Alex Callender, Ecology SWRO/SEA  
Deb Cornett, Ecology SWRO/WQ  
Lori Kingsbury, Ecology SWRO/SEA



<b>IN THE MATTER OF GRANTING A</b>	)	<b>ORDER No. 12816</b>
<b>WATER QUALITY</b>	)	<b>Corps Reference No. NWS-2014-0456-WRD</b>
<b>CERTIFICATION TO</b>	)	<b>For the Pier 4 (Terminal 4) Phase 2</b>
<b>The Port of Tacoma</b>	)	<b>Reconfiguration Project at the Port of Tacoma,</b>
in accordance with 33 U.S.C. 1341	)	<b>Blair Waterway, Puget Sound, Pierce County,</b>
(FWPCA § 401), RCW 90.48.120, RCW	)	<b>Washington</b>
90.48.260 and Chapter 173-201A WAC	)	

TO: Port of Tacoma  
 ATTN: Mr. Tim Ebner  
 PO Box 1837  
 Tacoma, WA 98401-1837

On September 22, 2014, the Port of Tacoma submitted a Joint Aquatic Resource Permit Application (JARPA) to the Department of Ecology (Ecology) requesting a Section 401 Water Quality Certification for the Pier 4 (Terminal 4) Phase 2 Reconfiguration Project. A revised JARPA was submitted to Ecology on January 14, 2015. A joint public notice for a proposed water quality certification from Ecology was distributed by the U.S. Army Corps of Engineers for the above-referenced project pursuant to the provisions Chapter 173-225 WAC on November 26, 2014.

Work occurring at Pier 4 (Terminal 4) has been broken into two distinct phases. The Phase I Project included a USEPA-ordered clean-up of approximately 490,000 cubic yards of contaminated sediment. The Phase 2 Project (the subject of this Order) is proposing to reconfigure and reconstruct Pier 4 to be in alignment with Pier 3 within the Husky Terminal.

The work included in the Phase 2 Project is limited to the re-configuration of Pier 4 and the modification of terminal elements that are immediately adjacent to the Pier. The elements of the Reconfiguration Project include:

- Demolition of approximately 28,980 square feet of existing pier structure;
- Removal of approximately 285 16.5-inch concrete piles;
- Removal of approximately 23 14-inch creosote treated timber piles and 2 20-inch steel piles with an existing pile-supported fender system;
- Installation of approximately 1,135 42-inch diameter stone columns for ground improvement;
- Cutback and dredging of the existing channel slope to realign the pier
  - Approximately 500,000 cubic yards of material will be dredged from the slope and at the toe of the berth;
  - The berth design depth will be to elevation -56 feet MLLW, with an overcut at the toe of the slope to -61.5 feet MLLW;
- Armoring the new slope with a sand-gravel filter blanket and rip-rap,



- The overcut toe of the slope will be backfilled with riprap armoring to an approximate elevation of -56 feet MLLW to buttress the under-pier slope. The cut slope will be armored with an approximately 5.5 foot thick blanket of rock riprap. Approximately 56,000 cubic yards of stone will be placed on the slope,
- Installation of approximately 1450 24-inch diameter octagonal precast pre-stressed concrete piles;
- Installation of a new 236,000 square-foot cast-in-place and precast concrete deck and a paved pier deck with asphaltic concrete pavement;
- Installation of an approximately 1,325-foot-long sheet pile wall bulkhead;
- Installation of a 10-pile-supported mooring dolphin above the OHWM;
- Installation of new crane rails, a panelized fender system, new bollards, and utility vaults and lines to serve the ship and cranes; and,
- Associated upland structures and electrical improvements include:
  - Demolition and replacement of 2-story marine operations building, an existing substation and various underground utilities;
  - Demolition and replacement of four high-mast light poles;
  - Relocation of storm drainage lines and three storm drain outfalls. Existing outfalls and collectors behind the existing pier will be replaced;
  - A new water system will be installed on the pier to provide potable water to the ships.

Upon completion of the Phase 2 Reconfiguration project, Pier 3 and Pier 4 will be a combined marginal pier length of 2,954 feet long and will be capable of simultaneously berthing two ultra-large container ships (ULCS). The reconfigured Pier 4 will be able to accommodate up to eight 100-foot-gage cranes capable of loading ships that are 24 containers wide.

The project is located at Pier 4, Terminal 4, within the Husky Container Terminal on the Blair Waterway at the Port of Tacoma at 1101 Port of Tacoma Road, Tacoma, Pierce County, Washington; Southeast and Southwest Quarter of Section 27, Township 21 North, Range 3 East, WRIA 10, Puyallup-White Watershed.

#### **AUTHORITIES:**

In exercising authority under 33 U.S.C. 1341, 16 U.S.C. 1456, RCW 90.48.120, and RCW 90.48.260, Ecology has examined this application pursuant to the following:

1. Conformance with applicable water quality-based, technology-based, and toxic or pretreatment effluent limitations as provided under 33 U.S.C. Sections 1311, 1312, 1313, 1316, and 1317 (FWPCA Sections 301, 303, 306 and 307);

2. Conformance with the state water quality standards contained in Chapter 173-201A WAC and authorized by 33 U.S.C. 1313 and by Chapter 90.48 RCW, and with other applicable state laws; and
3. Conformance with the provision of using all known, available and reasonable methods to prevent and control pollution of state waters as required by RCW 90.48.010.

#### **WATER QUALITY CERTIFICATION CONDITIONS:**

Through issuance of this Order, Ecology certifies that it has reasonable assurance that the activity as proposed and conditioned will be conducted in a manner that will meet the applicable water quality standards and other appropriate requirements of state law. In view of the foregoing and in accordance with 33 U.S.C. § 1341, RCW 90.48.120, RCW 90.48.260, Chapter 173-200 WAC and Chapter 173-201A WAC, water quality certification is granted to the Applicant subject to the conditions within this Order.

Certification of this proposal does not authorize the Applicant to exceed applicable state water quality standards (Chapter 173-201A WAC), ground water standards (Chapter 173-200 WAC) or sediment quality standards (Chapter 173-204 WAC). Furthermore, nothing in this certification shall absolve the Applicant from liability for contamination and any subsequent cleanup of surface waters, ground waters or sediments occurring as a result of project construction or operations.

#### **A. General Conditions:**

1. For purposes of this Order, the term "Applicant" shall mean the Port of Tacoma and its agents, assignees and contractors.
2. For purposes of this Order, all submittals required by its conditions shall be sent either by regular mail to Ecology's Southwest Regional Office, Attn: Federal Permit Manager, SEA Program, P.O. Box 47775, Olympia, WA 98504-7775 or via e-mail to loch461@ecy.wa.gov. Any submittals shall reference Order No. 12816 and Corps No. NWS-2014-0456-WRD.
3. Work authorized by this Order is limited to the work described in the JARPA received by Ecology on **January 14, 2015**. The Applicant will be out of compliance with this Order and must reapply with an updated application if the information contained in the JARPA is voided by subsequent changes to the project not authorized by this Order.
4. Within 30 days of receipt of an updated JARPA Ecology will determine if the revised project requires a new Water Quality Certification and public Notice or if a modification to this Order is required.

5. This Order shall be rescinded if the U.S. Army Corps of Engineers does not issue a Section 404 permit.
6. Copies of this Order shall be kept on the job site and readily available for reference by Ecology personnel, the construction superintendent, construction managers and lead workers, and state and local government inspectors.
7. The Applicant shall provide access to the project site and all mitigation sites upon request by Ecology personnel for site inspections, monitoring, necessary data collection, and/or to ensure that conditions of this Order are being met.
8. Nothing in this Order waives Ecology's authority to issue additional orders if Ecology determines that further actions are necessary to implement the water quality laws of the state. Further, Ecology retains continuing jurisdiction to make modifications hereto through supplemental order, if additional impacts due to project construction or operation are identified (e.g., violations of water quality standards, downstream erosion, etc.), or if additional conditions are necessary to further protect water quality.
9. The Applicant shall ensure that all appropriate project engineers and contractors at the project site have read and understand relevant conditions of this Order and all permits, approvals, and documents referenced in this Order. The Applicant shall provide Ecology a signed statement (see Attachment A for an example) from each project engineer and contractor that they have read and understand the conditions of this Order and the above-referenced permit, plans, documents, and approvals. These statements shall be provided to Ecology before construction begins at the project site.
10. This Order does not authorize direct, indirect, permanent, or temporary impacts to waters of the state or related aquatic resources, except as specifically provided for in conditions of this Order.
11. Failure of any person or entity to comply with this Order may result in the issuance of civil penalties or other actions, whether administrative or judicial, to enforce the terms of this Order.

**B. Water Quality Conditions:**

1. This Order does not authorize temporary exceedances of water quality standards beyond the limits established in WAC 173-201A-210(1)(e)(i).
  - a. The area of mixing established for marine waters is a 150-foot radius surrounding the in-water activity. Turbidity occurring outside that zone that is more than 5 nephelometric turbidity units (NTUs) over background when the background is 50

NTU or less, or a 10% increase in turbidity when the background turbidity is more than 50 NTU is a violation of the turbidity water quality standard.

- b. Visible turbidity anywhere at or beyond the 150-foot point of compliance from the activity shall be considered to be an exceedance of the standard.
2. Water Quality Monitoring: The Applicant shall implement and conduct water quality monitoring as described in the *Pier 4 Reconfiguration Project Water Quality Monitoring and Protection Plan* prepared by Floyd/Snider for the Port of Tacoma dated August 24, 2015.
3. Ecology must approve, in writing, any changes or additions to the WQMPP prior to implementation.
4. Reporting: Results of the water quality monitoring shall be documented in a Monitoring Report and submitted to the Federal Permit Manager weekly during the period of in-water work per condition A.2 of this Order.
5. Water Quality Exceedances: If water quality exceedances are observed outside the point of compliance, work shall cease immediately and the Applicant or the contractor shall assess the cause of the water quality problem and take immediate action to stop, contain, correct the problem and prevent further water quality turbidity exceedances. If an exceedance occurs, the Applicant shall follow the procedures below:
6. Notification of Exceedances: Notification of exceedances shall be made to Ecology within **24 hours of occurrence**. Notification shall be made with reference to Order No. 12816, Attn: 401/CZM Federal Permit Manager by telephone at (360) 407-6926 or by e-mail at [loch461@ecy.wa.gov](mailto:loch461@ecy.wa.gov). The Applicant shall, at a minimum, provide Ecology with the following information:
  - a. A description of the nature, extent, and cause of the exceedance.
  - b. The period of non-compliance, including exact dates, duration, and times and/or anticipated time when the project will return to compliance.
  - c. The steps taken, or to be taken to reduce, eliminate, and prevent a recurrence of the non-compliance.
  - d. In addition, within five (5) days after the notification of the exceedance, the Applicant shall submit a written report to Ecology (per conditions A.2.) that describes the nature of the exceedance(s), corrective action taken and/or planned, steps taken to prevent a recurrence, photographs, and any other pertinent information;
7. Mitigation and/or additional monitoring may be required of the monitoring results indicate that the water quality standards have not been met.

**C. Timing Requirements:**

1. All in-water work shall be completed by the work windows identified in the most current Hydraulic Project Approval (HPA) issued by Washington Department of Fish and Wildlife (WDFW) for this project. Any project change that requires a new or revised HPA should also be sent to Ecology (per condition A.2. above) for review.
2. This Order shall remain in effect for a period of five (5) years from the date of issuance.

**D. Notification Requirements:**

1. The Applicant shall provide a copy of the final Corps Permit to Ecology's Southwest Regional Office Federal Permit Manager, in accordance with condition A.2 above, within two (2) weeks of receipt of the permit.
2. Written notification (FAX, e-mail, or mail) shall be made to Ecology's Southwest Regional Office Federal Permit Manager in accordance with condition A.2 above for the following activities:
  - a. At least ten (10) days prior to the onset of in-water work for **each construction season**.
  - b. Within ten (10) days after completion of construction for **each project season**.
  - c. **Immediately** following a violation of the state water quality standards or any condition of this Order.
3. If project construction is not completed within 13 months of issuance of this Order, the Applicant shall submit a written construction status report. Status reports shall be submitted every 12 months thereafter until project construction is complete.

**E. Construction Conditions:**

1. The Applicant shall comply with the conditions of the National Pollutant Discharge Elimination System (NPDES) Construction Stormwater Permit Number WAR303365 issued for this project.
2. All work in and near the water shall be done so as to minimize turbidity, erosion, and other water quality impacts.
3. Construction stormwater, sediment, and erosion control Best Management Practices (BMP's) suitable to prevent exceedances of state water quality standards shall be in place at each boat ramp before starting maintenance activities and shall be maintained throughout the cleaning and maintenance of the boat ramp.
4. Sediment and erosion control measures shall be inspected and maintained throughout project construction.
5. Machinery and equipment used during construction shall be serviced, fueled, and maintained on uplands in order to prevent contamination to surface waters.

6. All equipment that will operate over or within waters of the state shall be free of external petroleum-based products. Accumulation of soils or debris shall be removed from the drive mechanisms and the undercarriage of equipment prior to use. Equipment shall be inspected daily for leaks, accumulation of grease, etc. Any identified problems shall be fixed before operating over or within waters of the state.
7. If a barge is used, it shall not be allowed to ground-out or rest on the substrate or be anchored over vegetated shallows.
8. The Applicant shall have a boat available on site during all in-and-over water project activities to retrieve any debris that enters the water.
9. Staging areas will be located a minimum of 50 feet from waters of the state, including wetlands. If a staging area must be located within 50 feet of waters of the state, then the Applicant shall provide a written explanation (with additional BMPs) and obtain approval from Ecology Federal Permit Manager before placing the staging area within the setback area.
10. Any slag encountered during construction shall be removed and disposed of upland at an appropriate facility.
11. Turbid water generated from cleaning and maintenance activities, including turbid de-watering water, shall not be discharged directly into waters of the state. Turbid water shall be pumped to an upland area to allow the turbid water to settle.
12. Clean de-watering water associated with in-water work that has been tested and confirmed to meet water quality standards may be discharged directly to waters of the state including wetlands. The discharge outfall method shall be designed and operated so as not to cause erosion or scour along the banks of the waterbody or within the vegetation.

#### **Demolition and Piling Removal**

13. The Applicant shall contain and appropriately dispose of all saw cut water and debris generated from cutting activities that occur over water so there is no possible entry to waters of the state.
14. Removal of the timber piles will be conducted with a vibratory hammer.
15. During removal of creosote-treated piles, absorbent containment booms shall be placed around the perimeter of the work area to capture any material entering the water.
16. All pilings removed from the substrate shall be removed immediately from the water into a barge or onto uplands. The pile shall not be shaken, hosed-off, or left hanging to drip or any other action intended to clean or remove adhering material from the pile.
17. The work surface of the barge deck or the upland area shall include a containment basin for the piles and any sediment removed during extraction of the piling. Basins may be

constructed of durable plastic sheeting with sidewalls supported by hay bales or support structure to contain all sediment.

18. The extracted piles and all construction debris, excess sediment, and other solid waste material shall be properly managed and disposed of in an approved upland disposal site so that it cannot cause water quality degradation to state waters.
19. Pilings that break during extraction will be cut 3 feet below the mudline and capped with clean sand.
20. The Applicant shall operate the barge(s) and tug in deep water so as to minimize the near shore propeller wash impacts such as suspension of near shore sediments.

#### **Concrete Work**

21. Spill protection measures shall be in place prior to any concrete delivery over and/or near waters of the state.
22. If cast in place, wet concrete/grout shall be prevented from entering waters of the state. All forms for any concrete/grout structure shall be completely sealed off to prevent the possibility of entering waters of the state. Impervious materials shall be placed over any exposed concrete/grout.
23. If concrete delivery systems are situated over water, they shall be inspected daily to prevent any discharges of concrete and/or slurry water into waters of the state.
24. Concrete process water shall not enter waters of the state. Any concrete process/contact water discharged from a confined area with curing concrete shall be routed to upland areas to be treated and disposed of properly with no possible entry to waters of the state

#### **Dredging and Disposal Conditions**

25. The Applicant must dredge contaminated sediments as part of the Phase 1, USEPA cleanup action prior to the clean material dredging for the Phase 2 Project covered under this Order. The Applicant shall obtain a suitability determination from the Dredged Material Management Program (DMMP) after the Phase 1 Clean Up action is complete and prior to dredging any clean material. No dredging or disposal shall be conducted as part of the Phase 2 Project activities until the remaining sediments have been tested and a suitability determination has been issued for the post-cleanup sediments.
26. The following Plans shall be submitted to Ecology's Federal Permit Manager (per Condition A.2. above) at least ten (10) days prior to any dredge activity at the project location.
  - a. *A Dredge and Disposal Plan;*
  - b. *A Transloading Plan (for upland disposal only).*



27. All dredging is to be conducted using a clam shell or digging bucket dredge on a floating derrick barge. Use of any other type of dredge requires pre-approval from Ecology.
28. Dredging operations shall be conducted in a manner that minimizes the disturbance or siltation of adjacent waters and prevents the accidental discharge of petroleum products, chemicals, or other toxic or deleterious substances into waters of the State.
29. To minimize turbidity, hopper dredges, scows, and barges used to transport dredged materials to the disposal or transfer sites must completely contain the dredged material.
30. The Dredge Operator shall pause the bucket at the surface, after its ascent through the water column, to minimize turbidity by allowing free water to drain from the bucket prior to swinging the bucket onto the barge.
31. Dredged material shall not be stockpiled on a temporary or permanent basis below the Ordinary High Water Mark (OHWM).
32. The scow shall not be overfilled to the point where dredge material overtops the sidewalls.
33. Caution shall be used when placing material from the bucket into the scow to limit splash and prevent spillage.

**Disposal of Dredged Material**

34. All dredged material shall be disposed of in a manner consistent with the most current, valid suitability determination.
35. Dredge Material may be disposed of at the Commencement Bay open-water disposal site. Any other disposal locations require prior approval by Ecology.
36. For material taken to open water disposal sites, all debris (larger than two feet in any dimension) shall be removed from the dredged sediment prior to disposal. Similar sized debris found floating in the dredging or disposal area shall also be removed.
37. Dredged material shall not be stockpiled on a temporary or permanent basis below the ordinary high water mark.

**F. Emergency/Contingency Measures:**

1. The Applicant shall develop and implement a Spill Prevention and Containment Plan for all aspects of this project and shall have spill cleanup materials and an emergency call list available on site.
2. Any work that is out of compliance with the provisions of this Order, or conditions causing distressed or dying fish, or any discharge of oil, fuel, or chemicals into state waters, or onto land with a potential for entry into state waters, is prohibited. If these occur, the Applicant or Operator shall immediately take the following actions:
  - a. Cease operations that are causing the compliance problem.

- b. Assess the cause of the water quality problem and take appropriate and immediate measures to correct the problem and/or prevent further environmental damage.
  - c. In the event of finding distressed or dying fish, the Applicant or Operator shall collect fish specimens and water samples in the affected area within the first hour of the event. These samples shall be held in refrigeration or on ice until instructed by Ecology on what to do with them. Ecology may require analysis of these samples before allowing the work to resume.
  - d. In the event of a discharge of oil, fuel, or chemicals into state waters, or onto land with a potential for entry into state waters, containment and cleanup efforts shall begin immediately and be completed as soon as possible, taking precedence over normal work. Cleanup shall include proper disposal of any spilled material and used cleanup materials.
  - e. Immediately notify Ecology's 24-Hour Spill Response Team at 1-800-258-5990 and within 24 hours of spills or other events to Ecology's Federal Permit Manager at (360) 407-6926 or (360) 407-6300.
  - f. Submit a detailed written report to Ecology within five (5) days that describes the nature of the event, corrective action taken and/or planned, steps taken to prevent recurrence, results from any samples taken, and any other pertinent information.
3. Fuel hoses, oil drums, oil or fuel transfer valves and fittings, etc., shall be checked regularly for drips or leaks, and shall be maintained and stored properly to prevent spills into state waters.
  4. If at any time during work the proponent finds buried chemical containers, such as drums, or any unusual conditions indicating disposal of chemicals, the proponent shall immediately notify Ecology using the above phone numbers.

#### **YOUR RIGHT TO APPEAL**

You have a right to appeal this Order to the Pollution Control Hearing Board (PCHB) within 30 days of the date of receipt of this Order. The appeal process is governed by Chapter 43.21B RCW and Chapter 371-08 WAC. "Date of receipt" is defined in RCW 43.21B.001(2).

To appeal you must do the following within 30 days of the date of receipt of this Order:

- File your appeal and a copy of this Order with the PCHB (see addresses below). Filing means actual receipt by the PCHB during regular business hours.
- Serve a copy of your appeal and this Order on Ecology in paper form - by mail or in person. (See addresses below.) E-mail is not accepted.

You must also comply with other applicable requirements in Chapter 43.21B RCW and Chapter 371-08 WAC.

Order No. 12816  
Corps No. NWS-2014-0456-WRD  
Phase 2, Pier 4 Reconfiguration  
November 6, 2015  
Page 11 of 12

#### ADDRESS AND LOCATION INFORMATION

Street Addresses	Mailing Addresses
<p>Department of Ecology Attn: Appeals Processing Desk 300 Desmond Drive SE Lacey, WA 98503</p> <p>Pollution Control Hearings Board 1111 Israel Rd SW STE 301 Tumwater, WA 98501</p>	<p>Department of Ecology Attn: Appeals Processing Desk PO Box 47608 Olympia, WA 98504-7608</p> <p>Pollution Control Hearings Board PO Box 40903 Olympia, WA 98504-0903</p>

#### CONTACT INFORMATION

Please direct all questions about this Order to:

Lori Kingsbury  
Department of Ecology  
Southwest Regional Office  
P.O. Box 47775  
Olympia, WA 98504-7775  
[loch461@ecy.wa.gov](mailto:loch461@ecy.wa.gov)

#### MORE INFORMATION

Pollution Control Hearings Board Website  
[www.eho.wa.gov/Boards\\_PCHB.aspx](http://www.eho.wa.gov/Boards_PCHB.aspx)

Chapter 43.21B RCW - Environmental Hearings Office – Pollution Control Hearings Board  
<http://apps.leg.wa.gov/RCW/default.aspx?cite=43.21B>

Chapter 371-08 WAC – Practice and Procedure  
<http://apps.leg.wa.gov/WAC/default.aspx?cite=371-08>

Chapter 90.48 RCW – Water Pollution Control  
<http://apps.leg.wa.gov/RCW/default.aspx?cite=90.48>

Chapter 173.204 WAC – Sediment Management Standards  
[www.ecy.wa.gov/biblio/wac173204.html](http://www.ecy.wa.gov/biblio/wac173204.html)

Order No. 12816  
Corps No. NWS-2014-0456-WRD  
Phase 2, Pier 4 Reconfiguration  
November 6, 2015  
Page 12 of 12


**Chapter 173-200 WAC – Water Quality Standards for Ground Waters of the State of Washington**

[www.ecy.wa.gov/biblio/wac173200.html](http://www.ecy.wa.gov/biblio/wac173200.html)

**Chapter 173-201A WAC – Water Quality Standards for Surface Waters of the State of Washington**

[www.ecy.wa.gov/biblio/wac173201A.html](http://www.ecy.wa.gov/biblio/wac173201A.html)

**SIGNATURE**



Perry J Lund, Unit Manager  
Shorelands and Environmental Assistance Program  
Southwest Regional Office

11/6/2015  
Date

**Attachment # A**

**Port of Tacoma  
Pier 4 (Terminal 4) Phase 2 Reconfiguration Project  
Ecology Order No. 12816  
Corps Reference No. NWS-2014-0456-WRD  
Statement of Understanding  
Water Quality Certification Conditions**

I, \_\_\_\_\_, state that, I will be involved as an agent or contractor for the Port of Tacoma for the Pier 4 (Terminal 4) Phase 2 Reconfiguration Project within the Blair Waterway of Puget Sound at 1101 Port of Tacoma Road, Port of Tacoma, Pierce County, Washington. I further state that I have read and understand the relevant conditions of the Washington Department of Ecology Water Quality Certification Order No. 12816 and the applicable permits and approvals referenced therein which pertain to the project-related work for which I am responsible.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Title

\_\_\_\_\_  
Phone

\_\_\_\_\_  
Company



US Army Corps  
of Engineers ®  
Seattle District

## CERTIFICATE OF COMPLIANCE WITH DEPARTMENT OF THE ARMY PERMIT



Permit Number: NWS-2014-0456-WRD

Name of Permittee: Port of Tacoma

Date of Issuance: March 17, 2016

Upon completion of the activity authorized by this permit, please check the applicable boxes below, date and sign this certification, and return it to the following address:

Department of the Army  
U.S. Army Corps of Engineers  
Seattle District, Regulatory Branch  
Post Office Box 3755  
Seattle, Washington 98124-3755

Please note that your permitted activity is subject to a compliance inspection by a U.S. Army Corps of Engineers representative. If you fail to comply with the terms and conditions of your authorization, your permit may be subject to suspension, modification, or revocation.

<input type="checkbox"/>	The work authorized by the above-referenced permit has been completed in accordance with the terms and conditions of this permit. Date work complete: _____
<input type="checkbox"/>	Photographs and as-built drawings of the authorized work (OPTIONAL, unless required as a Special Condition of the permit).
<input type="checkbox"/>	If applicable, the mitigation required (e.g., construction and plantings) in the above-referenced permit has been completed in accordance with the terms and conditions of this permit (not including future monitoring). Date work complete: _____
<input type="checkbox"/>	Photographs and as-built drawings of the mitigation (OPTIONAL, unless required as a Special Condition of the permit).

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

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

Date: \_\_\_\_\_



REPLY TO  
ATTENTION OF

**DEPARTMENT OF THE ARMY**  
SEATTLE DISTRICT, CORPS OF ENGINEERS  
P.O. BOX 3755  
SEATTLE, WASHINGTON 98124-3755

Regulatory Branch

**MAR 17 2016**

Mr. Mark Rettmann  
Port of Tacoma  
P.O. Box 1837  
Tacoma, Washington 98401

Reference: NWS-2014-0456-WRD  
Tacoma, Port of  
(Pier 4 reconfiguration and  
dredging)

Dear Mr. Rettmann:

Enclosed for your signature are two initial proffered Department of the Army permit forms for your proposal to reconfigure and reconstruct Pier 4 to align with Pier 3 within Husky Terminal, cutback and dredge up to 500,000 cubic yards of material from the existing channel slope to realign the pier (Phase 2) in Blair Waterway at Tacoma, Washington as described in the enclosed drawings dated February 2016. If you object to this permit decision, you may submit your objections on the enclosed *Notification of Administrative Appeal Options and Process and Request for Appeal* form. For your objections to be considered, the appeal form describing your objections must be received in our office within 60 days of the date on the appeal form.

Please be reminded that Special Condition "c" and "d" of your permit requires that you implement and abide by the ESA requirements and/or agreements set forth in the Biological Evaluation for this project. Failure to comply with the commitments made in the BE constitutes non-compliance with the ESA and your Corps permit.

If the entire permit is acceptable, you must sign and date both permit forms and return them in the enclosed envelope. Your copy of the fully executed permit will then be returned to you. The time limit for completing the work at General Condition 1 will be three years from the effective date of the permit. You may not modify these permit forms or their accompanying drawings. By signing the permit forms you will be indicating your acceptance of all the permit's general and special conditions. The signed permit forms must be returned to us within 90 days from the date of this letter or your application will be canceled.

Since a Department of the Army permit is necessary for this work, do not commence construction before obtaining a valid permit. You can begin the work authorized by this permit



only after you have received your copy of the fully executed permit form. If you have any questions please contact Ms. Olivia Romano at [olivia.h.romano@usace.army.mil](mailto:olivia.h.romano@usace.army.mil) or by phone at (206) 764-6960.

Sincerely,

A handwritten signature in black ink, appearing to be "MS/".

Michelle Walker  
Chief, Regulatory Branch

Enclosures

**APPENDIX G**

**WATER QUALITY**

**CERTIFICATION - #NWS-2014-  
0456-WRD, DATED NOVEMBER  
6, 2015 AND AMENDMENT  
DATED MARCH 2, 2016**



STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

*PO Box 47775 • Olympia, Washington 98504-7775 • (360) 407-6300*

November 6, 2015

Port of Tacoma  
ATTN: Mr. Tim Ebner  
PO Box 1837  
Tacoma, WA 98401-1837

RE: Water Quality Certification Order No. **12816** for Corps Public Notice No. NWS-2014-0456-WRD for the Pier 4 (Terminal 4) Phase 2 Reconfiguration Project, Blair Waterway, Puget Sound, Pierce County, Washington

Dear Mr. Ebner:

Due to an oversight, the 401 Water Quality Certification Order issued on October 13, 2015, was mailed out without being signed. Enclosed please find a signed copy of Order No. 12816 for Phase 2 of the Pier 4 (Terminal 4) Project.

If you have any questions, please contact Lori Kingsbury at (360) 407-6926. The enclosed Order may be appealed by following the procedures described in the Order.

Sincerely,

Perry J Lund, Unit Manager  
Shorelands and Environmental Assistance Program  
Southwest Regional Office

Enclosures

By Certified Mail 7012 2920 0000 1182 2137

cc: Olivia Romano, U.S. Army Corps of Engineers  
Mark Rettmann, Port of Tacoma  
Matthew Curtis, WDFW  
Shirley Schultz, City of Tacoma

e-cc: [ecyrefedpermits@ecy.wa.gov](mailto:ecyrefedpermits@ecy.wa.gov)  
Loree' Randall, Ecology HQ  
Laura Inouye, Ecology HQ  
Alex Callender, Ecology SWRO/SEA  
Deb Cornett, Ecology SWRO/WQ  
Lori Kingsbury, Ecology SWRO/SEA



**IN THE MATTER OF GRANTING A ) ORDER No. 12816**  
**WATER QUALITY ) Corps Reference No. NWS-2014-0456-WRD**  
**CERTIFICATION TO ) For the Pier 4 (Terminal 4) Phase 2**  
**The Port of Tacoma ) Reconfiguration Project at the Port of Tacoma,**  
in accordance with 33 U.S.C. 1341 ) Blair Waterway, Puget Sound, Pierce County,  
(FWPCA § 401), RCW 90.48.120, RCW ) Washington  
90.48.260 and Chapter 173-201A WAC )

TO: Port of Tacoma  
ATTN: Mr. Tim Ebner  
PO Box 1837  
Tacoma, WA 98401-1837

On September 22, 2014, the Port of Tacoma submitted a Joint Aquatic Resource Permit Application (JARPA) to the Department of Ecology (Ecology) requesting a Section 401 Water Quality Certification for the Pier 4 (Terminal 4) Phase 2 Reconfiguration Project. A revised JARPA was submitted to Ecology on January 14, 2015. A joint public notice for a proposed water quality certification from Ecology was distributed by the U.S. Army Corps of Engineers for the above-referenced project pursuant to the provisions Chapter 173-225 WAC on November 26, 2014.

Work occurring at Pier 4 (Terminal 4) has been broken into two distinct phases. The Phase I Project included a USEPA-ordered clean-up of approximately 490,000 cubic yards of contaminated sediment. The Phase 2 Project (the subject of this Order) is proposing to reconfigure and reconstruct Pier 4 to be in alignment with Pier 3 within the Husky Terminal.

The work included in the Phase 2 Project is limited to the re-configuration of Pier 4 and the modification of terminal elements that are immediately adjacent to the Pier. The elements of the Reconfiguration Project include:

- Demolition of approximately 28,980 square feet of existing pier structure;
- Removal of approximately 285 16.5-inch concrete piles;
- Removal of approximately 23 14-inch creosote treated timber piles and 2 20-inch steel piles with an existing pile-supported fender system;
- Installation of approximately 1,135 42-inch diameter stone columns for ground improvement;
- Cutback and dredging of the existing channel slope to realign the pier
  - Approximately 500,000 cubic yards of material will be dredged from the slope and at the toe of the berth;
  - The berth design depth will be to elevation -56 feet MLLW, with an overcut at the toe of the slope to -61.5 feet MLLW;
- Armoring the new slope with a sand-gravel filter blanket and rip-rap,

- The overcut toe of the slope will be backfilled with riprap armoring to an approximate elevation of -56 feet MLLW to buttress the under-pier slope. The cut slope will be armored with an approximately 5.5 foot thick blanket of rock riprap. Approximately 56,000 cubic yards of stone will be placed on the slope,
- Installation of approximately 1450 24-inch diameter octagonal precast pre-stressed concrete piles;
- Installation of a new 236,000 square-foot cast-in-place and precast concrete deck and a paved pier deck with asphaltic concrete pavement;
- Installation of an approximately 1,325-foot-long sheet pile wall bulkhead;
- Installation of a 10-pile-supported mooring dolphin above the OHWM;
- Installation of new crane rails, a panelized fender system, new bollards, and utility vaults and lines to serve the ship and cranes; and,
- Associated upland structures and electrical improvements include:
  - Demolition and replacement of 2-story marine operations building, an existing substation and various underground utilities;
  - Demolition and replacement of four high-mast light poles;
  - Relocation of storm drainage lines and three storm drain outfalls. Existing outfalls and collectors behind the existing pier will be replaced;
  - A new water system will be installed on the pier to provide potable water to the ships.

Upon completion of the Phase 2 Reconfiguration project, Pier 3 and Pier 4 will be a combined marginal pier length of 2,954 feet long and will be capable of simultaneously berthing two ultra-large container ships (ULCS). The reconfigured Pier 4 will be able to accommodate up to eight 100-foot-gage cranes capable of loading ships that are 24 containers wide.

The project is located at Pier 4, Terminal 4, within the Husky Container Terminal on the Blair Waterway at the Port of Tacoma at 1101 Port of Tacoma Road, Tacoma, Pierce County, Washington; Southeast and Southwest Quarter of Section 27, Township 21 North, Range 3 East, WRIA 10, Puyallup-White Watershed.

#### **AUTHORITIES:**

In exercising authority under 33 U.S.C. 1341, 16 U.S.C. 1456, RCW 90.48.120, and RCW 90.48.260, Ecology has examined this application pursuant to the following:

1. Conformance with applicable water quality-based, technology-based, and toxic or pretreatment effluent limitations as provided under 33 U.S.C. Sections 1311, 1312, 1313, 1316, and 1317 (FWPCA Sections 301, 303, 306 and 307);

2. Conformance with the state water quality standards contained in Chapter 173-201A WAC and authorized by 33 U.S.C. 1313 and by Chapter 90.48 RCW, and with other applicable state laws; and
3. Conformance with the provision of using all known, available and reasonable methods to prevent and control pollution of state waters as required by RCW 90.48.010.

#### **WATER QUALITY CERTIFICATION CONDITIONS:**

Through issuance of this Order, Ecology certifies that it has reasonable assurance that the activity as proposed and conditioned will be conducted in a manner that will meet the applicable water quality standards and other appropriate requirements of state law. In view of the foregoing and in accordance with 33 U.S.C. § 1341, RCW 90.48.120, RCW 90.48.260, Chapter 173-200 WAC and Chapter 173-201A WAC, water quality certification is granted to the Applicant subject to the conditions within this Order.

Certification of this proposal does not authorize the Applicant to exceed applicable state water quality standards (Chapter 173-201A WAC), ground water standards (Chapter 173-200 WAC) or sediment quality standards (Chapter 173-204 WAC). Furthermore, nothing in this certification shall absolve the Applicant from liability for contamination and any subsequent cleanup of surface waters, ground waters or sediments occurring as a result of project construction or operations.

#### **A. General Conditions:**

1. For purposes of this Order, the term "Applicant" shall mean the Port of Tacoma and its agents, assignees and contractors.
2. For purposes of this Order, all submittals required by its conditions shall be sent either by regular mail to Ecology's Southwest Regional Office, Attn: Federal Permit Manager, SEA Program, P.O. Box 47775, Olympia, WA 98504-7775 or via e-mail to loch461@ecy.wa.gov. Any submittals shall reference Order No. **12816** and Corps No. **NWS-2014-0456-WRD**.
3. Work authorized by this Order is limited to the work described in the JARPA received by Ecology on **January 14, 2015**. The Applicant will be out of compliance with this Order and must reapply with an updated application if the information contained in the JARPA is voided by subsequent changes to the project not authorized by this Order.
4. Within 30 days of receipt of an updated JARPA Ecology will determine if the revised project requires a new Water Quality Certification and public Notice or if a modification to this Order is required.

5. This Order shall be rescinded if the U.S. Army Corps of Engineers does not issue a Section 404 permit.
6. Copies of this Order shall be kept on the job site and readily available for reference by Ecology personnel, the construction superintendent, construction managers and lead workers, and state and local government inspectors.
7. The Applicant shall provide access to the project site and all mitigation sites upon request by Ecology personnel for site inspections, monitoring, necessary data collection, and/or to ensure that conditions of this Order are being met.
8. Nothing in this Order waives Ecology's authority to issue additional orders if Ecology determines that further actions are necessary to implement the water quality laws of the state. Further, Ecology retains continuing jurisdiction to make modifications hereto through supplemental order, if additional impacts due to project construction or operation are identified (e.g., violations of water quality standards, downstream erosion, etc.), or if additional conditions are necessary to further protect water quality.
9. The Applicant shall ensure that all appropriate project engineers and contractors at the project site have read and understand relevant conditions of this Order and all permits, approvals, and documents referenced in this Order. The Applicant shall provide Ecology a signed statement (see Attachment A for an example) from each project engineer and contractor that they have read and understand the conditions of this Order and the above-referenced permit, plans, documents, and approvals. These statements shall be provided to Ecology before construction begins at the project site.
10. This Order does not authorize direct, indirect, permanent, or temporary impacts to waters of the state or related aquatic resources, except as specifically provided for in conditions of this Order.
11. Failure of any person or entity to comply with this Order may result in the issuance of civil penalties or other actions, whether administrative or judicial, to enforce the terms of this Order.

**B. Water Quality Conditions:**

1. This Order does not authorize temporary exceedances of water quality standards beyond the limits established in WAC 173-201A-210(1)(e)(i).
  - a. The area of mixing established for marine waters is a 150-foot radius surrounding the in-water activity. Turbidity occurring outside that zone that is more than 5 nephelometric turbidity units (NTUs) over background when the background is 50



NTU or less, or a 10% increase in turbidity when the background turbidity is more than 50 NTU is a violation of the turbidity water quality standard.

- b. Visible turbidity anywhere at or beyond the 150-foot point of compliance from the activity shall be considered to be an exceedance of the standard.
2. Water Quality Monitoring: The Applicant shall implement and conduct water quality monitoring as described in the *Pier 4 Reconfiguration Project Water Quality Monitoring and Protection Plan* prepared by Floyd/Snider for the Port of Tacoma dated August 24, 2015.
3. Ecology must approve, in writing, any changes or additions to the WQMPP prior to implementation.
4. Reporting: Results of the water quality monitoring shall be documented in a Monitoring Report and submitted to the Federal Permit Manager weekly during the period of in-water work per condition A.2 of this Order.
5. Water Quality Exceedances: If water quality exceedances are observed outside the point of compliance, work shall cease immediately and the Applicant or the contractor shall assess the cause of the water quality problem and take immediate action to stop, contain, correct the problem and prevent further water quality turbidity exceedances. If an exceedance occurs, the Applicant shall follow the procedures below:
6. Notification of Exceedances: Notification of exceedances shall be made to Ecology within **24 hours of occurrence**. Notification shall be made with reference to Order No. **12816**, Attn: 401/CZM Federal Permit Manager by telephone at (360) 407-6926 or by e-mail at [loch461@ecy.wa.gov](mailto:loch461@ecy.wa.gov). The Applicant shall, at a minimum, provide Ecology with the following information:
  - a. A description of the nature, extent, and cause of the exceedance.
  - b. The period of non-compliance, including exact dates, duration, and times and/or anticipated time when the project will return to compliance.
  - c. The steps taken, or to be taken to reduce, eliminate, and prevent a recurrence of the non-compliance.
  - d. In addition, within five (5) days after the notification of the exceedance, the Applicant shall submit a written report to Ecology (per conditions A.2.) that describes the nature of the exceedance(s), corrective action taken and/or planned, steps taken to prevent a recurrence, photographs, and any other pertinent information;
7. Mitigation and/or additional monitoring may be required of the monitoring results indicate that the water quality standards have not been met.

**C. Timing Requirements:**

1. All in-water work shall be completed by the work windows identified in the most current Hydraulic Project Approval (HPA) issued by Washington Department of Fish and Wildlife (WDFW) for this project. Any project change that requires a new or revised HPA should also be sent to Ecology (per condition A.2. above) for review.
2. This Order shall remain in effect for a period of five (5) years from the date of issuance.

**D. Notification Requirements:**

1. The Applicant shall provide a copy of the final Corps Permit to Ecology's Southwest Regional Office Federal Permit Manager, in accordance with condition A.2 above, within two (2) weeks of receipt of the permit.
2. Written notification (FAX, e-mail, or mail) shall be made to Ecology's Southwest Regional Office Federal Permit Manager in accordance with condition A.2 above for the following activities:
  - a. At least ten (10) days prior to the onset of in-water work for **each construction season**.
  - b. Within ten (10) days after completion of construction for **each project season**.
  - c. **Immediately** following a violation of the state water quality standards or any condition of this Order.
3. If project construction is not completed within 13 months of issuance of this Order, the Applicant shall submit a written construction status report. Status reports shall be submitted every 12 months thereafter until project construction is complete.

**E. Construction Conditions:**

1. The Applicant shall comply with the conditions of the National Pollutant Discharge Elimination System (NPDES) Construction Stormwater Permit Number WAR303365 issued for this project.
2. All work in and near the water shall be done so as to minimize turbidity, erosion, and other water quality impacts.
3. Construction stormwater, sediment, and erosion control Best Management Practices (BMP's) suitable to prevent exceedances of state water quality standards shall be in place at each boat ramp before starting maintenance activities and shall be maintained throughout the cleaning and maintenance of the boat ramp.
4. Sediment and erosion control measures shall be inspected and maintained throughout project construction.
5. Machinery and equipment used during construction shall be serviced, fueled, and maintained on uplands in order to prevent contamination to surface waters.

6. All equipment that will operate over or within waters of the state shall be free of external petroleum-based products. Accumulation of soils or debris shall be removed from the drive mechanisms and the undercarriage of equipment prior to use. Equipment shall be inspected daily for leaks, accumulation of grease, etc. Any identified problems shall be fixed before operating over or within waters of the state.
7. If a barge is used, it shall not be allowed to ground-out or rest on the substrate or be anchored over vegetated shallows.
8. The Applicant shall have a boat available on site during all in-and-over water project activities to retrieve any debris that enters the water.
9. Staging areas will be located a minimum of 50 feet from waters of the state, including wetlands. If a staging area must be located within 50 feet of waters of the state, then the Applicant shall provide a written explanation (with additional BMPs) and obtain approval from Ecology Federal Permit Manager before placing the staging area within the setback area.
10. Any slag encountered during construction shall be removed and disposed of upland at an appropriate facility.
11. Turbid water generated from cleaning and maintenance activities, including turbid de-watering water, shall not be discharged directly into waters of the state. Turbid water shall be pumped to an upland area to allow the turbid water to settle.
12. Clean de-watering water associated with in-water work that has been tested and confirmed to meet water quality standards may be discharged directly to waters of the state including wetlands. The discharge outfall method shall be designed and operated so as not to cause erosion or scour along the banks of the waterbody or within the vegetation.

#### **Demolition and Piling Removal**

13. The Applicant shall contain and appropriately dispose of all saw cut water and debris generated from cutting activities that occur over water so there is no possible entry to waters of the state.
14. Removal of the timber piles will be conducted with a vibratory hammer.
15. During removal of creosote-treated piles, absorbent containment booms shall be placed around the perimeter of the work area to capture any material entering the water.
16. All pilings removed from the substrate shall be removed immediately from the water into a barge or onto uplands. The pile shall not be shaken, hosed-off, or left hanging to drip or any other action intended to clean or remove adhering material from the pile.
17. The work surface of the barge deck or the upland area shall include a containment basin for the piles and any sediment removed during extraction of the piling. Basins may be

constructed of durable plastic sheeting with sidewalls supported by hay bales or support structure to contain all sediment.

18. The extracted piles and all construction debris, excess sediment, and other solid waste material shall be properly managed and disposed of in an approved upland disposal site so that it cannot cause water quality degradation to state waters.
19. Pilings that break during extraction will be cut 3 feet below the mudline and capped with clean sand.
20. The Applicant shall operate the barge(s) and tug in deep water so as to minimize the near shore propeller wash impacts such as suspension of near shore sediments.

#### **Concrete Work**

21. Spill protection measures shall be in place prior to any concrete delivery over and/or near waters of the state.
22. If cast in place, wet concrete/grout shall be prevented from entering waters of the state. All forms for any concrete/grout structure shall be completely sealed off to prevent the possibility of entering waters of the state. Impervious materials shall be placed over any exposed concrete/grout.
23. If concrete delivery systems are situated over water, they shall be inspected daily to prevent any discharges of concrete and/or slurry water into waters of the state.
24. Concrete process water shall not enter waters of the state. Any concrete process/contact water discharged from a confined area with curing concrete shall be routed to upland areas to be treated and disposed of properly with no possible entry to waters of the state

#### **Dredging and Disposal Conditions**

25. The Applicant must dredge contaminated sediments as part of the Phase 1, USEPA cleanup action prior to the clean material dredging for the Phase 2 Project covered under this Order. The Applicant shall obtain a suitability determination from the Dredged Material Management Program (DMMP) after the Phase 1 Clean Up action is complete and prior to dredging any clean material. No dredging or disposal shall be conducted as part of the Phase 2 Project activities until the remaining sediments have been tested and a suitability determination has been issued for the post-cleanup sediments.
26. The following Plans shall be submitted to Ecology's Federal Permit Manager (per Condition A.2. above) at least ten (10) days prior to any dredge activity at the project location.
  - a. *A Dredge and Disposal Plan;*
  - b. *A Transloading Plan (for upland disposal only).*

27. All dredging is to be conducted using a clam shell or digging bucket dredge on a floating derrick barge. Use of any other type of dredge requires pre-approval from Ecology.
28. Dredging operations shall be conducted in a manner that minimizes the disturbance or siltation of adjacent waters and prevents the accidental discharge of petroleum products, chemicals, or other toxic or deleterious substances into waters of the State.
29. To minimize turbidity, hopper dredges, scows, and barges used to transport dredged materials to the disposal or transfer sites must completely contain the dredged material.
30. The Dredge Operator shall pause the bucket at the surface, after its ascent through the water column, to minimize turbidity by allowing free water to drain from the bucket prior to swinging the bucket onto the barge.
31. Dredged material shall not be stockpiled on a temporary or permanent basis below the Ordinary High Water Mark (OHWM).
32. The scow shall not be overfilled to the point where dredge material overtops the sidewalls.
33. Caution shall be used when placing material from the bucket into the scow to limit splash and prevent spillage.

**Disposal of Dredged Material**

34. All dredged material shall be disposed of in a manner consistent with the most current, valid suitability determination.
35. Dredge Material may be disposed of at the Commencement Bay open-water disposal site. Any other disposal locations require prior approval by Ecology.
36. For material taken to open water disposal sites, all debris (larger than two feet in any dimension) shall be removed from the dredged sediment prior to disposal. Similar sized debris found floating in the dredging or disposal area shall also be removed.
37. Dredged material shall not be stockpiled on a temporary or permanent basis below the ordinary high water mark.

**F. Emergency/Contingency Measures:**

1. The Applicant shall develop and implement a Spill Prevention and Containment Plan for all aspects of this project and shall have spill cleanup materials and an emergency call list available on site.
2. Any work that is out of compliance with the provisions of this Order, or conditions causing distressed or dying fish, or any discharge of oil, fuel, or chemicals into state waters, or onto land with a potential for entry into state waters, is prohibited. If these occur, the Applicant or Operator shall immediately take the following actions:
  - a. Cease operations that are causing the compliance problem.

- b. Assess the cause of the water quality problem and take appropriate and immediate measures to correct the problem and/or prevent further environmental damage.
  - c. In the event of finding distressed or dying fish, the Applicant or Operator shall collect fish specimens and water samples in the affected area within the first hour of the event. These samples shall be held in refrigeration or on ice until instructed by Ecology on what to do with them. Ecology may require analysis of these samples before allowing the work to resume.
  - d. In the event of a discharge of oil, fuel, or chemicals into state waters, or onto land with a potential for entry into state waters, containment and cleanup efforts shall begin immediately and be completed as soon as possible, taking precedence over normal work. Cleanup shall include proper disposal of any spilled material and used cleanup materials.
  - e. Immediately notify Ecology's 24-Hour Spill Response Team at 1-800-258-5990 **and** within 24 hours of spills or other events to Ecology's Federal Permit Manager at (360) 407-6926 or (360) 407-6300.
  - f. Submit a detailed written report to Ecology within five (5) days that describes the nature of the event, corrective action taken and/or planned, steps taken to prevent recurrence, results from any samples taken, and any other pertinent information.
3. Fuel hoses, oil drums, oil or fuel transfer valves and fittings, etc., shall be checked regularly for drips or leaks, and shall be maintained and stored properly to prevent spills into state waters.
  4. If at any time during work the proponent finds buried chemical containers, such as drums, or any unusual conditions indicating disposal of chemicals, the proponent shall immediately notify Ecology using the above phone numbers.

## **YOUR RIGHT TO APPEAL**

You have a right to appeal this Order to the Pollution Control Hearing Board (PCHB) within 30 days of the date of receipt of this Order. The appeal process is governed by Chapter 43.21B RCW and Chapter 371-08 WAC. "Date of receipt" is defined in RCW 43.21B.001(2).

To appeal you must do the following within 30 days of the date of receipt of this Order:

- File your appeal and a copy of this Order with the PCHB (see addresses below). Filing means actual receipt by the PCHB during regular business hours.
- Serve a copy of your appeal and this Order on Ecology in paper form - by mail or in person. (See addresses below.) E-mail is not accepted.

You must also comply with other applicable requirements in Chapter 43.21B RCW and Chapter 371-08 WAC.

## ADDRESS AND LOCATION INFORMATION

Street Addresses	Mailing Addresses
<b>Department of Ecology</b> Attn: Appeals Processing Desk 300 Desmond Drive SE Lacey, WA 98503	<b>Department of Ecology</b> Attn: Appeals Processing Desk PO Box 47608 Olympia, WA 98504-7608
<b>Pollution Control Hearings Board</b> 1111 Israel Rd SW STE 301 Tumwater, WA 98501	<b>Pollution Control Hearings Board</b> PO Box 40903 Olympia, WA 98504-0903

## CONTACT INFORMATION

Please direct all questions about this Order to:

Lori Kingsbury  
Department of Ecology  
Southwest Regional Office  
P.O. Box 47775  
Olympia, WA 98504-7775  
[loch461@ecy.wa.gov](mailto:loch461@ecy.wa.gov)

## MORE INFORMATION

### **Pollution Control Hearings Board Website**

[www.eho.wa.gov/Boards\\_PCHB.aspx](http://www.eho.wa.gov/Boards_PCHB.aspx)

### **Chapter 43.21B RCW - Environmental Hearings Office – Pollution Control Hearings Board**

<http://apps.leg.wa.gov/RCW/default.aspx?cite=43.21B>

### **Chapter 371-08 WAC – Practice and Procedure**

<http://apps.leg.wa.gov/WAC/default.aspx?cite=371-08>

### **Chapter 90.48 RCW – Water Pollution Control**

<http://apps.leg.wa.gov/RCW/default.aspx?cite=90.48>

### **Chapter 173.204 WAC – Sediment Management Standards**

[www.ecy.wa.gov/biblio/wac173204.html](http://www.ecy.wa.gov/biblio/wac173204.html)



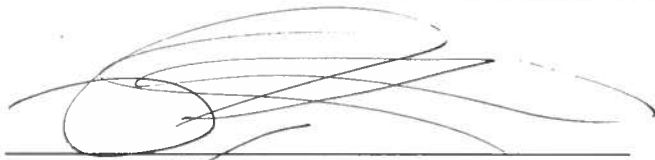
**Chapter 173-200 WAC – Water Quality Standards for Ground Waters of the State of Washington**

[www.ecy.wa.gov/biblio/wac173200.html](http://www.ecy.wa.gov/biblio/wac173200.html)

**Chapter 173-201A WAC – Water Quality Standards for Surface Waters of the State of Washington**

[www.ecy.wa.gov/biblio/wac173201A.html](http://www.ecy.wa.gov/biblio/wac173201A.html)

**SIGNATURE**



Perry J Lund, Unit Manager  
Shorelands and Environmental Assistance Program  
Southwest Regional Office

11/6/2015  
Date

**Attachment # A**

Port of Tacoma  
Pier 4 (Terminal 4) Phase 2 Reconfiguration Project  
Ecology Order No. **12816**  
Corps Reference No. **NWS-2014-0456-WRD**  
Statement of Understanding  
Water Quality Certification Conditions

I, \_\_\_\_\_, state that, I will be involved as an agent or contractor for the Port of Tacoma for the Pier 4 (Terminal 4) Phase 2 Reconfiguration Project within the Blair Waterway of Puget Sound at 1101 Port of Tacoma Road, Port of Tacoma, Pierce County, Washington. I further state that I have read and understand the relevant conditions of the Washington Department of Ecology Water Quality Certification Order No. **12816** and the applicable permits and approvals referenced therein which pertain to the project-related work for which I am responsible.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Title

\_\_\_\_\_  
Phone

\_\_\_\_\_  
Company



STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

PO Box 47775 • Olympia, Washington 98504-7775 • (360) 407-6300

March 2, 2016

Port of Tacoma  
ATTN: Mr. Tim Ebner  
P.O. Box 1837  
Tacoma, WA 98401-1837

RE: First Amendment to §401 Water Quality Certification Order No. 12816,  
U.S. Army Corps of Engineers Reference No. NWS-2014-0456, for the  
Pier 4 (Terminal 4) Phase 2 Reconfiguration Project, Blair Waterway, Puget Sound, Pierce  
County, Washington

Dear Mr. Ebner:

Enclosed is an amendment to §401 Water Quality Certification Order No. 12816 that was initially issued on October 13, 2015. On November 6, 2015 the §401 Water Quality Certification was re-issued due to an oversight, on the original decision, which was mailed without signature.

The purpose of this amendment is to address the revised project description and associated drawings contained in a JARPA addendum submitted by the Port of Tacoma to Ecology in an e-mail on October 20, 2015.

This amendment also provides corrections to the project description and conditions; authorizes the removal of temporary slope stabilization materials placed during Phase 1 of this project, and the removal of a buried timber-pile bulkhead. In order to reflect the changes and additional work authorized by the amendment to Order No. 12816, we are providing a strikeout version of the §401 Water Quality Certification for your information.

All other conditions of §401 Water Quality Certification Order No. 12816 remain in effect. If you have any questions, please contact Lori Kingsbury at [Lori.kingsbury@ecy.wa.gov](mailto:Lori.kingsbury@ecy.wa.gov) or 360-407-6926. The enclosed Amendment may be appealed by following the procedures described in the Amendment.

Sincerely,

Perry J Lund, Unit Supervisor  
Shorelands and Environmental Assistance Program  
Southwest Regional Office

Enclosures

By certified mail: 7015 0640 0001 0768 2409

cc: Olivia Romano, U.S. Army Corps of Engineers  
Mark Rettmann, Port of Tacoma  
Mathew Curtis, WDFW  
Shirley Shultz, City of Tacoma



e-cc: [ecyrefedpermits@ecy.wa.gov](mailto:ecyrefedpermits@ecy.wa.gov)  
Loreé Randall, Ecology - HQ/SEA  
Laura Inouye, Ecology-HQ/SEA  
Alex Callender, Ecology – SWRO/SEA  
Deb Cornett, Ecology – SWRO/WQ  
Lori Kingsbury, Ecology – SWRO/SEA

**IN THE MATTER OF GRANTING  
A WATER QUALITY  
CERTIFICATION TO**

***The Port of Tacoma***

In accordance with 33U.S.C. 1341  
(FWPCA §401), RCW 90.48.120, RCW  
90.48.260 and Chapter 173-201A WAC

) **ORDER No. 12816, First Amendment**  
) **Corps Reference No. 2014-0456**  
) For the Pier 4 (Terminal 4) Phase 2  
) Reconfiguration Project at the Port of  
) Tacoma, Blair Waterway, Puget Sound,  
) Pierce County, Washington  
)

TO: The Port of Tacoma  
ATTN: Mr. Tim Ebner  
PO Box 1837  
Tacoma, WA 98401-1837

On October 13, 2015 the Washington Department of Ecology (Ecology) initially issued a § 401 Water Quality Certification to the Port of Tacoma for the above-referenced project pursuant to the provisions of 33 U.S.C. 1341 (FWPCA § 401). On November 6, 2015 the §401 Water Quality Certification was re-issued due to an oversight, on the original decision, which was mailed without signature.

Ecology received a JARPA Addendum with a revised project description and associated drawings on October 20<sup>th</sup>, 2015. The revised project description includes: an adjustment of the size and location of the new marine building; the addition of a small restroom building; extraction of an additional thirty-three (33) concrete piles; the removal of temporary slope stabilization measures placed during Phase 1, the removal of a buried timber bulkhead discovered during Phase 1 work; and the placement of additional stone columns for ground improvement. This amendment also provides corrections to the project description and conditions.

Administrative Order No. 12816 dated November 6, 2015 is hereby amended as follows:

I. The second sentence of the second paragraph of the project description which reads:

- The Phase 1 Project included a USEPA-ordered clean-up of approximately 490,000 cubic yards of contaminated sediment.

Is replaced with:

- The Phase 1 Project included a USEPA-ordered clean-up of approximately 49,000 cubic yards of contaminated sediment.

II. The First sentence of the third paragraph which reads:

- The work included in the Phase 2 Project is limited to the re-configuration of Pier 4 and the modification of terminal elements that are immediately adjacent to the Pier.

Is replaced with:



- This Order only covers the work included in the Phase 2 Project and is limited to the re-configuration of Pier 4 and the modification of the terminal elements that are immediately adjacent to the Pier.

III. The second bullet within the elements of the project description which reads:

- Removal of approximately 285 16.5-inch concrete piles.

Is replaced with:

- Removal of approximately 324 concrete piles.

IV. The fourth bullet within the elements of the project description which reads:

- Installation of approximately 1,135 42-inch diameter stone columns for ground improvement.

Is replaced with:

- Installation of approximately 1,150 42-inch-diameter stone columns for ground improvement.

V. The following bullets are added to the project description:

- Construction of a small restroom building located near the middle of the terminal.
- Removal of a buried timber bulkhead wall system within the Phase 2 dredge prism.
- Removal of slope stabilization measures that were placed during Phase 1 project work.

VI. Condition number A.3, which reads:

- Work authorized by this Order is limited to the work described in the JARPA received by Ecology on **January 14, 2015**. The Applicant will be out of compliance with this Order and must reapply with an updated application if the information contained in the JARPA is voided by subsequent changes to the project not authorized by this Order.

Is replaced with:

- Work authorized by this Order is limited to the work described in the JARPA received by Ecology on **January 14, 2015 and the JARPA Addendum from the Port of Tacoma dated October 20, 2015**. The Applicant will be out of compliance with this Order and must reapply with an updated application if the information contained in the JARPA and the JARPA Addendum is voided by subsequent changes to the project not authorized by this Order.

VII. The following condition is added to Section B, Water Quality Conditions:

- B.3. If contaminated sediments are encountered within the Phase 2 project area, the Applicant shall implement and conduct water quality monitoring as described in Appendix B of the *Removal Action Work Plan* dated January 27, 2015 that was used for Phase 1 of the project.

VIII. Condition number D.2.b, which reads:

- Within ten (10) days after completion of construction for **each project season**.

Is replaced with:

- Within ten (10) days after completion of in-water construction for **each project season**.

IX. Condition number D.2.c, which reads:

- **Immediately** following a violation of the state water quality standards or any condition of this Order.

Is replaced with:

- **Immediately** following a violation of any condition of this Order.

X. Condition number E.3, which reads:

- Construction stormwater, sediment, and erosion control Best Management Practices (BMPs) suitable to prevent exceedances of state water quality standards shall be in place at each boat ramp before starting maintenance activities and shall be maintained throughout the cleaning and maintenance of the boat ramps.

Is replaced with:

- Construction stormwater, sediment, and erosion control Best Management Practices (BMPs) suitable to prevent exceedances of state water quality standards shall be in place prior to starting construction activities at the project site.

XI. Condition number E.19, which reads:

- Pilings that break during extraction will be cut 3 feet below the mudline and capped with clean sand.

Is replaced with:

- Treated pilings that break during extraction will be cut 3 feet below the mudline and capped with clean sand to match the final elevation.

XII. Condition number E.22, which reads:

- If cast in place, wet concrete/grout shall be prevented from entering waters of the state. All forms for any concrete/grout structure shall be completely sealed off to prevent the possibility of entering waters of the state. Impervious materials shall be placed over any exposed concrete/grout.

Is replaced with:

- If cast in place, wet concrete/grout shall be prevented from entering waters of the state. All forms for any concrete/grout structure shall be completely sealed off to prevent the possibility of entering waters of the state. Impervious materials shall be placed over any exposed wet concrete/grout.



XIII. Condition number E.26, which reads:

- The following Plans shall be submitted to Ecology's Federal Permit Manager (per Condition A.2, above) at least ten (10) days prior to any dredge activity at the project location.
  - a. *A Dredge and Disposal Plan*;
  - b. *A Transloading Plan* (for upland disposal only).

Is replaced with:

- The following Plans shall be submitted **for review and approval** to Ecology's Federal Permit Manager (per Condition A.2, above) at least ten (10) days prior to any dredge activity at the project location.
  - a. *A Dredge and Disposal Plan*;
  - b. *A Transloading Plan* (for upland disposal only).

XIV. The following conditions are added to Section E, Construction Conditions:

- E.38. The Applicant shall remove slope stabilization measures that were placed during Phase 1 project work and dispose of the geotextile fabric at an approved upland landfill prior to the start of dredging in that location. Concrete piles that were placed for slope stabilization shall not be re-used on-site, but will be removed and taken offsite to a concrete recycling facility.
- E.39. Prior to the start of cutback dredging, or dredging that would de-stabilize the existing cutback area, the Applicant shall conduct a subsurface exploration to determine if the step-bulkhead is present per the contract plan sheet G7.1 and D1.2.
- E.40. If the step-bulkhead structure is present, the creosote-treated wood shall be removed and disposed of at an appropriate upland landfill. The surrounding soil shall be inspected for signs of contamination. If it is determined that contaminated material is present, Ecology shall be notified and the suspect material shall be characterized to determine the appropriate disposal requirements.

No other conditions or requirements of the above-mentioned order are affected by this amendment.

The Ecology retains continuing jurisdiction to make modifications hereto through supplemental order, if it appears necessary to further protect the public interest.

Failure to comply with this amended Order may result in the issuance of civil penalties or other actions whether administrative or judicial, to enforce the terms of this amended Order.

#### YOUR RIGHT TO APPEAL

You have a right to appeal this Order to the Pollution Control Hearing Board (PCHB) within 30 days of the date of receipt of this Order. The appeal process is governed by Chapter 43.21B RCW and Chapter 371-08 WAC. "Date of receipt" is defined in RCW 43.21B.001(2).

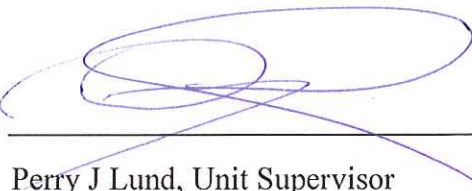
To appeal you must do all of the following within 30 days of the date of receipt of this Order:

- File your appeal and a copy of this Order with the PCHB (see addresses below). Filing means actual receipt by the PCHB during regular business hours.
- Serve a copy of your appeal and this Order on Ecology in paper form - by mail or in person. (See addresses below.) E-mail is not accepted.

You must also comply with other applicable requirements in Chapter 43.21B RCW and Chapter 371-08 WAC.

#### ADDRESS AND LOCATION INFORMATION

Street Addresses	Mailing Addresses
<b>Department of Ecology</b> Attn: Appeals Processing Desk 300 Desmond Drive SE Lacey, WA 98503	<b>Department of Ecology</b> Attn: Appeals Processing Desk PO Box 47608 Olympia, WA 98504-7608
<b>Pollution Control Hearings Board</b> 1111 Israel RD SW STE 301 Tumwater, WA 98501	<b>Pollution Control Hearings Board</b> PO Box 40903 Olympia, WA 98504-0903



Perry J Lund, Unit Supervisor  
Shorelands and Environmental Assistance Program  
Department of Ecology  
Southwest Regional Office

Date

3/2/2016





This document shows the activities and conditions that have been amended since the original Order was issued. Therefore it is not the official certification and should only be used for informational purposes.

**First Amendment changes are reflected in RED.**

IN THE MATTER OF GRANTING A )	ORDER No. 12816
WATER QUALITY )	Corps Reference No. NWS-2014-0456-WRD
CERTIFICATION TO )	For the Pier 4 (Terminal 4) Phase 2
The Port of Tacoma )	Reconfiguration Project at the Port of Tacoma,
in accordance with 33 U.S.C. 1341 )	Blair Waterway, Puget Sound, Pierce County,
(FWPCA § 401), RCW 90.48.120, RCW )	Washington
90.48.260 and Chapter 173-201A WAC )	

TO: Port of Tacoma  
ATTN: Mr. Tim Ebner  
PO Box 1837  
Tacoma, WA 98401-1837

On September 22, 2014 the Port of Tacoma submitted a Joint Aquatic Resource Permit Application (JARPA) to the Department of Ecology (Ecology) requesting a Section 401 Water Quality Certification for the Pier 4 (Terminal 4) Phase 2 Reconfiguration Project. A revised JARPA was submitted to Ecology on January 14, 2015. A joint public notice for a proposed water quality certification from Ecology was distributed by the U.S. Army Corps of Engineers for the above-referenced project pursuant to the provisions Chapter 173-225 WAC on November 26, 2014.

Work occurring at Pier 4 (Terminal 4) has been broken into two distinct phases. The Phase I Project included a USEPA-ordered clean-up of approximately ~~490,000~~ 49,000 cubic yards of contaminated sediment. The Phase 2 Project (the subject of this Order) is proposing to reconfigure and reconstruct Pier 4 to be in alignment with Pier 3 within the Husky Terminal.

The work included in the Phase 2 Project is limited to the re-configuration of Pier 4 and the modification of terminal elements that are immediately adjacent to the Pier. This Order only covers the work included in the Phase 2 Project and is limited to the re-configuration of Pier 4 and the modification of the terminal elements that are immediately adjacent to the Pier. The elements of the Reconfiguration Project include:

- Demolition of approximately 28,980 square feet of existing pier structure;
- Removal of approximately ~~285~~ 324 16.5-inch concrete piles;
- Removal of approximately 23 14-inch creosote treated timber piles and 2 20-inch steel piles with an existing pile-supported fender system;
- Installation of approximately ~~1,135~~ 1,150 42-inch diameter stone columns for ground improvement;
- Cutback and dredging of the existing channel slope to realign the pier

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Phase 2, Pier 4 Reconfiguration  
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- Approximately 500,000 cubic yards of material will be dredged from the slope and at the toe of the berth;
- The berth design depth will be to elevation -56 feet MLLW, with an overcut at the toe of the slope to -61.5 feet MLLW;
- Armoring the new slope with a sand-gravel filter blanket and rip-rap,
  - The overcut toe of the slope will be backfilled with riprap armoring to an approximate elevation of -56 feet MLLW to buttress the under-pier slope. The cut slope will be armored with an approximately 5.5 foot thick blanket of rock riprap. Approximately 56,000 cubic yards of stone will be placed on the slope,
- Installation of approximately 1450 24-inch diameter octagonal precast pre-stressed concrete piles;
- Installation of a new 236,000 square-foot cast-in-place and precast concrete deck and a paved pier deck with asphaltic concrete pavement;
- Installation of an approximately 1,325-foot-long sheet pile wall bulkhead;
- Installation of a 10-pile-supported mooring dolphin above the OHWM;
- Installation of new crane rails, a panelized fender system, new bollards, and utility vaults and lines to serve the ship and cranes; and
- Associated upland structures and electrical improvements include:
  - Demolition and replacement of 2-story marine operations building, an existing substation and various underground utilities;
  - Demolition and replacement of four high-mast light poles;
  - Relocation of storm drainage lines and three storm drain outfalls. Existing outfalls and collectors behind the existing pier will be replaced;
  - A new water system will be installed on the pier to provide potable water to the ships.
  - **Construction of a small restroom building located near the middle of the terminal.**
- Removal of a buried timber bulkhead wall system within the Phase 2 dredge prism;
- Removal of slope stabilization measures that were placed during the Phase 1 project work;

Upon completion of the Phase 2 Reconfiguration project, Pier 3 and Pier 4 will be a combined marginal pier length of 2,954 feet long and will be capable of simultaneously berthing two ultra-large container ships (ULCS). The reconfigured Pier 4 will be able to accommodate up to eight 100-foot-gage cranes capable of loading ships that are 24 containers wide.



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The project is located at Pier 4, Terminal 4, within the Husky Container Terminal on the Blair Waterway at the Port of Tacoma at 1101 Port of Tacoma Road, Tacoma, Pierce County, Washington; Southeast and Southwest Quarter of Section 27, Township 21 North, Range 3 East, WRIA 10, Puyallup-White Watershed.

#### **AUTHORITIES:**

In exercising authority under 33 U.S.C. 1341, 16 U.S.C. 1456, RCW 90.48.120, and RCW 90.48.260, Ecology has examined this application pursuant to the following:

1. Conformance with applicable water quality-based, technology-based, and toxic or pretreatment effluent limitations as provided under 33 U.S.C. Sections 1311, 1312, 1313, 1316, and 1317 (FWPCA Sections 301, 303, 306 and 307);
2. Conformance with the state water quality standards contained in Chapter 173-201A WAC and authorized by 33 U.S.C. 1313 and by Chapter 90.48 RCW, and with other applicable state laws; and
3. Conformance with the provision of using all known, available and reasonable methods to prevent and control pollution of state waters as required by RCW 90.48.010.

#### **WATER QUALITY CERTIFICATION CONDITIONS:**

Through issuance of this Order, Ecology certifies that it has reasonable assurance that the activity as proposed and conditioned will be conducted in a manner that will meet the applicable water quality standards and other appropriate requirements of state law. In view of the foregoing and in accordance with 33 U.S.C. § 1341, RCW 90.48.120, RCW 90.48.260, Chapter 173-200 WAC and Chapter 173-201A WAC, water quality certification is granted to the Applicant subject to the conditions within this Order.

Certification of this proposal does not authorize the Applicant to exceed applicable state water quality standards (Chapter 173-201A WAC), ground water standards (Chapter 173-200 WAC) or sediment quality standards (Chapter 173-204 WAC). Furthermore, nothing in this certification shall absolve the Applicant from liability for contamination and any subsequent cleanup of surface waters, ground waters or sediments occurring as a result of project construction or operations.

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*Order No. 12816, First Amendment  
Corps No. NWS-2014-0456-WRD  
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**A. General Conditions:**

1. For purposes of this Order, the term "Applicant" shall mean the Port of Tacoma and its agents, assignees and contractors.
2. For purposes of this Order, all submittals required by its conditions shall be sent either by regular mail to Ecology's Southwest Regional Office, Attn: Federal Permit Manager, SEA Program, P.O. Box 47775, Olympia, WA 98504-7775 or via e-mail to loch461@ecy.wa.gov. Any submittals shall reference Order No. **12816** and Corps No. **NWS-2014-0456-WRD**.
3. Work authorized by this Order is limited to the work described in the JARPA received by Ecology on **January 14, 2015** and the JARPA Addendum from the Port of Tacoma dated October 20, 2015. The Applicant will be out of compliance with this Order and must reapply with an updated application if the information contained in the JARPA and the JARPA Addendum is voided by subsequent changes to the project not authorized by this Order.
4. Within 30 days of receipt of an updated JARPA Ecology will determine if the revised project requires a new Water Quality Certification and public Notice or if a modification to this Order is required.
5. This Order shall be rescinded if the U.S. Army Corps of Engineers does not issue a Section 404 permit.
6. Copies of this Order shall be kept on the job site and readily available for reference by Ecology personnel, the construction superintendent, construction managers and lead workers, and state and local government inspectors.
7. The Applicant shall provide access to the project site and all mitigation sites upon request by Ecology personnel for site inspections, monitoring, necessary data collection, and/or to ensure that conditions of this Order are being met.
8. Nothing in this Order waives Ecology's authority to issue additional orders if Ecology determines that further actions are necessary to implement the water quality laws of the state. Further, Ecology retains continuing jurisdiction to make modifications hereto through supplemental order, if additional impacts due to project construction or operation are identified (e.g., violations of water quality standards, downstream erosion, etc.), or if additional conditions are necessary to further protect water quality.



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9. The Applicant shall ensure that all appropriate project engineers and contractors at the project site have read and understand relevant conditions of this Order and all permits, approvals, and documents referenced in this Order. The Applicant shall provide Ecology a signed statement (see Attachment A for an example) from each project engineer and contractor that they have read and understand the conditions of this Order and the above-referenced permit, plans, documents, and approvals. These statements shall be provided to Ecology before construction begins at the project site.
10. This Order does not authorize direct, indirect, permanent, or temporary impacts to waters of the state or related aquatic resources, except as specifically provided for in conditions of this Order.
11. Failure of any person or entity to comply with this Order may result in the issuance of civil penalties or other actions, whether administrative or judicial, to enforce the terms of this Order.

#### **B. Water Quality Conditions:**

1. This Order does not authorize temporary exceedances of water quality standards beyond the limits established in WAC 173-201A-210(1)(e)(i).
  - a. The area of mixing established for marine waters is a 150-foot radius surrounding the in-water activity. Turbidity occurring outside that zone that is more than 5 nephelometric turbidity units (NTUs) over background when the background is 50 NTU or less, or a 10% increase in turbidity when the background turbidity is more than 50 NTU is a violation of the turbidity water quality standard.
  - b. Visible turbidity anywhere at or beyond the 150-foot point of compliance from the activity shall be considered to be an exceedance of the standard.
2. Water Quality Monitoring: The Applicant shall implement and conduct water quality monitoring as described in the *Pier 4 Reconfiguration Project Water Quality Monitoring and Protection Plan* prepared by Floyd/Snider for the Port of Tacoma dated August 24, 2015.
3. If contaminated sediments are encountered within the Phase 2 project area, the Applicant shall implement and conduct water quality monitoring as described in Appendix B of the Removal Action Work Plan dated January 27, 2015 that was used for Phase 1 of the project.

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4. Ecology must approve, in writing, any changes or additions to the WQMPP prior to implementation.
4. Reporting: Results of the water quality monitoring shall be documented in a Monitoring Report and submitted to the Federal Permit Manager weekly during the period of in-water work per condition A.2 of this Order.
5. Water Quality Exceedances: If water quality exceedances are observed outside the point of compliance, work shall cease immediately and the Applicant or the contractor shall assess the cause of the water quality problem and take immediate action to stop, contain, correct the problem and prevent further water quality turbidity exceedances. If an exceedance occurs, the Applicant shall follow the procedures below:
6. Notification of Exceedances: Notification of exceedances shall be made to Ecology within **24 hours of occurrence**. Notification shall be made with reference to Order No. **12816**, Attn: 401/CZM Federal Permit Manager by telephone at (360) 407-6926 or by e-mail at [loch461@ecy.wa.gov](mailto:loch461@ecy.wa.gov). The Applicant shall, at a minimum, provide Ecology with the following information:
  - a. A description of the nature, extent, and cause of the exceedance.
  - b. The period of non-compliance, including exact dates, duration, and times and/or anticipated time when the project will return to compliance.
  - c. The steps taken, or to be taken to reduce, eliminate, and prevent a recurrence of the non-compliance.
  - d. In addition, within five (5) days after the notification of the exceedance, the Applicant shall submit a written report to Ecology (per conditions A.2.) that describes the nature of the exceedance(s), corrective action taken and/or planned, steps taken to prevent a recurrence, photographs, and any other pertinent information;
7. Mitigation and/or additional monitoring may be required of the monitoring results indicate that the water quality standards have not been met.

#### **C. Timing Requirements:**

1. All in-water work shall be completed by the work windows identified in the most current Hydraulic Project Approval (HPA) issued by Washington Department of Fish and Wildlife (WDFW) for this project. Any project change that requires a new or revised HPA should also be sent to Ecology (per condition A.2. above) for review.
2. This Order shall remain in effect for a period of five (5) years from the date of issuance.

#### **D. Notification Requirements:**



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*Order No. 12816, First Amendment  
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1. The Applicant shall provide a copy of the final Corps Permit to Ecology's Southwest Regional Office Federal Permit Manager, in accordance with condition A.2 above, within two (2) weeks of receipt of the permit.
2. Written notification (FAX, e-mail, or mail) shall be made to Ecology's Southwest Regional Office Federal Permit Manager in accordance with condition A.2 above for the following activities:
  - a. At least ten (10) days prior to the onset of in-water work for **each construction season.**
  - b. Within ten (10) days after completion of in-water construction for **each project season.**
  - c. **Immediately** following a violation of ~~the state water quality standards or any~~ condition of this Order.
3. If project construction is not completed within 13 months of issuance of this Order, the Applicant shall submit a written construction status report. Status reports shall be submitted every 12 months thereafter until project construction is complete.

#### **E. Construction Conditions:**

1. The Applicant shall comply with the conditions of the National Pollutant Discharge Elimination System (NPDES) Construction Stormwater Permit Number WAR303365 issued for this project.
2. All work in and near the water shall be done so as to minimize turbidity, erosion, and other water quality impacts.
3. Construction stormwater, sediment, and erosion control Best Management Practices (BMP's) suitable to prevent exceedances of state water quality standards shall be in place ~~at each boat ramp before starting maintenance activities and shall be maintained throughout the cleaning and maintenance of the boat ramp. prior to starting construction activities at the project site.~~
4. Sediment and erosion control measures shall be inspected and maintained throughout project construction.
5. Machinery and equipment used during construction shall be serviced, fueled, and maintained on uplands in order to prevent contamination to surface waters.
6. All equipment that will operate over or within waters of the state shall be free of external petroleum-based products. Accumulation of soils or debris shall be removed from the drive mechanisms and the undercarriage of equipment prior to use. Equipment shall be

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inspected daily for leaks, accumulation of grease, etc. Any identified problems shall be fixed before operating over or within waters of the state.

7. If a barge is used, it shall not be allowed to ground-out or rest on the substrate or be anchored over vegetated shallows.
8. The Applicant shall have a boat available on site during all in-and-over water project activities to retrieve any debris that enters the water.
9. Staging areas will be located a minimum of 50 feet from waters of the state, including wetlands. If a staging area must be located within 50 feet of waters of the state, then the Applicant shall provide a written explanation (with additional BMPs) and obtain approval from Ecology Federal Permit Manager before placing the staging area within the setback area.
10. Any slag encountered during construction shall be removed and disposed of upland at an appropriate facility.
11. Turbid water generated from cleaning and maintenance activities, including turbid de-watering water, shall not be discharged directly into waters of the state. Turbid water shall be pumped to an upland area to allow the turbid water to settle.
12. Clean de-watering water associated with in-water work that has been tested and confirmed to meet water quality standards may be discharged directly to waters of the state including wetlands. The discharge outfall method shall be designed and operated so as not to cause erosion or scour along the banks of the waterbody or within the vegetation.

#### **Demolition and Piling Removal**

13. The Applicant shall contain and appropriately dispose of all saw cut water and debris generated from cutting activities that occur over water so there is no possible entry to waters of the state.
14. Removal of the timber piles will be conducted with a vibratory hammer.
15. During removal of creosote-treated piles, absorbent containment booms shall be placed around the perimeter of the work area to capture any material entering the water.
16. All pilings removed from the substrate shall be removed immediately from the water into a barge or onto uplands. The pile shall not be shaken, hosed-off, or left hanging to drip or any other action intended to clean or remove adhering material from the pile.
17. The work surface of the barge deck or the upland area shall include a containment basin for the piles and any sediment removed during extraction of the piling. Basins may be



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constructed of durable plastic sheeting with sidewalls supported by hay bales or support structure to contain all sediment.

18. The extracted piles and all construction debris, excess sediment, and other solid waste material shall be properly managed and disposed of in an approved upland disposal site so that it cannot cause water quality degradation to state waters.
19. **Treated Pp**ilings that break during extraction will be cut 3 feet below the mudline and capped with clean sand **to match the final elevation**.
20. The Applicant shall operate the barge(s) and tug in deep water so as to minimize the near shore propeller wash impacts such as suspension of near shore sediments.

#### **Concrete Work**

21. Spill protection measures shall be in place prior to any concrete delivery over and/or near waters of the state.
22. If cast in place, wet concrete/grout shall be prevented from entering waters of the state. All forms for any concrete/grout structure shall be completely sealed off to prevent the possibility of entering waters of the state. Impervious materials shall be placed over any exposed **wet** concrete/grout.
23. If concrete delivery systems are situated over water, they shall be inspected daily to prevent any discharges of concrete and/or slurry water into waters of the state.
24. Concrete process water shall not enter waters of the state. Any concrete process/contact water discharged from a confined area with curing concrete shall be routed to upland areas to be treated and disposed of properly with no possible entry to waters of the state

#### **Dredging and Disposal Conditions**

25. The Applicant must dredge contaminated sediments as part of the Phase 1, USEPA cleanup action prior to the clean material dredging for the Phase 2 Project covered under this Order. The Applicant shall obtain a suitability determination from the Dredged Material Management Program (DMMP) after the Phase 1 Clean Up action is complete and prior to dredging any clean material. No dredging or disposal shall be conducted as part of the Phase 2 Project activities until the remaining sediments have been tested and a suitability determination has been issued for the post-cleanup sediments.
26. The following Plans shall be submitted **for review and approval** to Ecology's Federal Permit Manager (per Condition A.2. above) at least ten (10) days prior to any dredge activity at the project location.

This document shows the activities that have been amended since the original Order was issued. Therefore it is not the official certification and should only be used for informational purposes.

**First Amendment changes are reflected in RED.**

*Order No. 12816, First Amendment  
Corps No. NWS-2014-0456-WRD  
Phase 2, Pier 4 Reconfiguration  
November 6, 2015  
Page 10 of 12*

- a. *A Dredge and Disposal Plan;*
  - b. *A Transloading Plan* (for upland disposal only).
27. All dredging is to be conducted using a clam shell or digging bucket dredge on a floating derrick barge. Use of any other type of dredge requires pre-approval from Ecology.
28. Dredging operations shall be conducted in a manner that minimizes the disturbance or siltation of adjacent waters and prevents the accidental discharge of petroleum products, chemicals, or other toxic or deleterious substances into waters of the State.
29. To minimize turbidity, hopper dredges, scows, and barges used to transport dredged materials to the disposal or transfer sites must completely contain the dredged material.
30. The Dredge Operator shall pause the bucket at the surface, after its ascent through the water column, to minimize turbidity by allowing free water to drain from the bucket prior to swinging the bucket onto the barge.
31. Dredged material shall not be stockpiled on a temporary or permanent basis below the Ordinary High Water Mark (OHWM).
32. The scow shall not be overfilled to the point where dredge material overtops the sidewalls.
33. Caution shall be used when placing material from the bucket into the scow to limit splash and prevent spillage.

#### **Disposal of Dredged Material**

34. All dredged material shall be disposed of in a manner consistent with the most current, valid suitability determination.
35. Dredge Material may be disposed of at the Commencement Bay open-water disposal site. Any other disposal locations require prior approval by Ecology.
36. For material taken to open water disposal sites, all debris (larger than two feet in any dimension) shall be removed from the dredged sediment prior to disposal. Similar sized debris found floating in the dredging or disposal area shall also be removed.
37. Dredged material shall not be stockpiled on a temporary or permanent basis below the ordinary high water mark.

#### **New Conditions**

- 38. The Applicant shall remove slope stabilization measures that were placed during Phase 1 project work and dispose of the geotextile fabric at an approved upland landfill prior to**



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**First Amendment changes are reflected in RED.**

*Order No. 12816, First Amendment*

*Corps No. NWS-2014-0456-WRD*

*Phase 2, Pier 4 Reconfiguration*

*November 6, 2015*

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the start of dredging in that location. Concrete piles that were placed for slope stabilization shall not be re-used on-site, but will be removed and taken offsite to a concrete recycling facility.

39. Prior to the start of the cutback dredging, or dredging that would de-stabilize the existing cutback area, the Applicant shall conduct a subsurface exploration to determine if the step-bulkhead is present per the contract plan sheet G7.1 and D1.2.

40. If the step-bulkhead structure is present, the creosote-treated wood shall be removed and disposed of at an appropriate upland landfill. The surrounding soil shall be inspected for signs of contamination. If it is determined that contaminated material is present, Ecology shall be notified and the suspect material shall be characterized to determine the appropriate disposal requirements.

#### **F. Emergency/Contingency Measures:**

1. The Applicant shall develop and implement a Spill Prevention and Containment Plan for all aspects of this project and shall have spill cleanup materials and an emergency call list available on site.
2. Any work that is out of compliance with the provisions of this Order, or conditions causing distressed or dying fish, or any discharge of oil, fuel, or chemicals into state waters, or onto land with a potential for entry into state waters, is prohibited. If these occur, the Applicant or Operator shall immediately take the following actions:
  - a. Cease operations that are causing the compliance problem.
  - b. Assess the cause of the water quality problem and take appropriate and immediate measures to correct the problem and/or prevent further environmental damage.
  - c. In the event of finding distressed or dying fish, the Applicant or Operator shall collect fish specimens and water samples in the affected area within the first hour of the event. These samples shall be held in refrigeration or on ice until instructed by Ecology on what to do with them. Ecology may require analysis of these samples before allowing the work to resume.
  - d. In the event of a discharge of oil, fuel, or chemicals into state waters, or onto land with a potential for entry into state waters, containment and cleanup efforts shall begin immediately and be completed as soon as possible, taking precedence over normal work. Cleanup shall include proper disposal of any spilled material and used cleanup materials.



This document shows the activities that have been amended since the original Order was issued. Therefore it is not the official certification and should only be used for informational purposes.

**First Amendment changes are reflected in RED.**

*Order No. 12816, First Amendment*

*Corps No. NWS-2014-0456-WRD*

*Phase 2, Pier 4 Reconfiguration*

*November 6, 2015*

*Page 12 of 12*

- e. Immediately notify Ecology's 24-Hour Spill Response Team at 1-800-258-5990 **and** within 24 hours of spills or other events to Ecology's Federal Permit Manager at (360) 407-6926 or (360) 407-6300.
- f. Submit a detailed written report to Ecology within five (5) days that describes the nature of the event, corrective action taken and/or planned, steps taken to prevent recurrence, results from any samples taken, and any other pertinent information.
3. Fuel hoses, oil drums, oil or fuel transfer valves and fittings, etc., shall be checked regularly for drips or leaks, and shall be maintained and stored properly to prevent spills into state waters.
4. If at any time during work the proponent finds buried chemical containers, such as drums, or any unusual conditions indicating disposal of chemicals, the proponent shall immediately notify Ecology using the above phone numbers.

**APPENDIX H**

**DEPARTMENT OF ECOLOGY**

**CONSTRUCTION STORM**

**WATER GENERAL PERMIT**

**#WAR303365, DATED**

**OCTOBER 7, 2015**



STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

PO Box 47600 • Olympia, WA 98504-7600 • 360-407-6000  
711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

October 7, 2015

Jennifer Stebbing  
Port of Tacoma  
PO Box 1837  
Tacoma, WA 98401-1837

**RE: Coverage under the Construction Stormwater General Permit**

<b>Permit number:</b>	<b>WAR303365</b>
<b>Site Name:</b>	<b>Port of Tacoma Pier 4 Reconfiguration</b>
<b>Location:</b>	<b>1101 Port of Tacoma Rd</b>
	<b>Tacoma, WA County: Pierce</b>
<b>Disturbed Acres:</b>	<b>8.1</b>

Dear Ms. Stebbing:

The Washington State Department of Ecology (Ecology) received your Notice of Intent for coverage under Ecology's Construction Stormwater General Permit (permit). This is your permit coverage letter. Your permit coverage is effective on October 7, 2015. **Please retain this permit coverage letter with your permit (enclosed), stormwater pollution prevention plan (SWPPP), and site log book. These materials are the official record of permit coverage for your site.**

Please take time to read the entire permit and contact Ecology if you have any questions.

**Appeal Process**

You have a right to appeal coverage under the general permit to the Pollution Control Hearing Board (PCHB) within 30 days of the date of receipt of this letter. This appeal is limited to the general permit's applicability or non-applicability to a specific discharger. The appeal process is governed by chapter 43.21B RCW and chapter 371-08 WAC. "Date of receipt" is defined in RCW 43.21B.001(2).



Jennifer Stebbing  
October 7, 2015  
Page 2

To appeal, you must do the following within 30 days of the date of receipt of this letter:

- File your appeal and a copy of the permit cover page with the PCHB (see addresses below). Filing means actual receipt by the PCHB during regular business hours.
- Serve a copy of your appeal and the permit cover page on Ecology in paper form - by mail or in person (see addresses below). E-mail is not accepted.

You must also comply with other applicable requirements in chapter 43.21B RCW and chapter 371-08 WAC.

**Address and Location Information:**

**Street Addresses:**

Department of Ecology  
Attn: Appeals Processing Desk  
300 Desmond Drive SE  
Lacey, WA 98503

---

Pollution Control Hearings Board (PCHB)  
1111 Israel Road SW, Suite 301  
Tumwater, WA 98501

**Mailing Addresses:**

Department of Ecology  
Attn: Appeals Processing Desk  
PO Box 47608  
Olympia, WA 98504-7608

---

Pollution Control Hearings Board  
PO Box 40903  
Olympia, WA 98504-0903

**Electronic Discharge Monitoring Reports (WQWebDMR)**

This permit requires that Permittees submit monthly discharge monitoring reports (DMRs) electronically using Ecology's secure online system, WQWebDMR. To sign up for WQWebDMR go to: [www.ecy.wa.gov/programs/wq/permits/paris/webdmr.html](http://www.ecy.wa.gov/programs/wq/permits/paris/webdmr.html). If you have questions, contact the portal staff at (360) 407-7097 (Olympia area), or (800) 633-6193/option 3, or email [WQWebPortal@ecy.wa.gov](mailto:WQWebPortal@ecy.wa.gov).

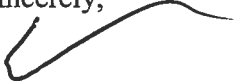
**Ecology Field Inspector Assistance**

If you have questions regarding stormwater management at your construction site, please contact Deborah Cornett of Ecology's Southwest Regional Office in Lacey at [deborah.cornett@ecy.wa.gov](mailto:deborah.cornett@ecy.wa.gov) or (360) 407-7269.

**Questions or Additional Information**

Ecology is committed to providing assistance. Please review our web page at: [www.ecy.wa.gov/programs/wq/stormwater/construction](http://www.ecy.wa.gov/programs/wq/stormwater/construction). If you have questions about the construction stormwater general permit, please contact Josh Klimek at [josh.klimek@ecy.wa.gov](mailto:josh.klimek@ecy.wa.gov) or (360) 407-7451.

Sincerely,



Bill Moore, P.E., Manager  
Program Development Services Section  
Water Quality Program

Enclosure

Issuance Date: December 1, 2010  
Effective Date: January 1, 2011  
Expiration Date: December 31, 2015

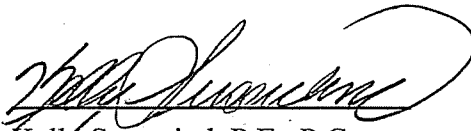
# CONSTRUCTION STORMWATER GENERAL PERMIT

National Pollutant Discharge Elimination System (NPDES) and State Waste Discharge General  
Permit for Stormwater Discharges Associated with Construction Activity

**State of Washington**  
**Department of Ecology**  
Olympia, Washington 98504

In compliance with the provisions of  
Chapter 90.48 Revised Code of Washington  
(State of Washington Water Pollution Control Act)  
and  
Title 33 United States Code, Section 1251 et seq.  
The Federal Water Pollution Control Act (The Clean Water Act)

Until this permit expires, is modified or revoked, Permittees that have properly obtained  
coverage under this general permit are authorized to discharge in accordance with the special and  
general conditions that follow.



Kelly Susewind, P.E., P.G.  
Water Quality Program Manager  
Washington State Department of Ecology

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## SUMMARY OF PERMIT REPORT SUBMITTALS

Refer to the Special and General Conditions within this permit for additional submittal requirements. Appendix A provides a list of definitions. Appendix B provides a list of acronyms.

Table 1. Summary of Permit Report Submittals

Permit Section	Submittal	Frequency	First Submittal Date
S5.A and S8	High Turbidity/Transparency Phone Reporting	As Necessary	Within 24 hours
S5.B	Discharge Monitoring Report	Monthly*	Within 15 days of applicable monitoring period
S5.F and S8	Noncompliance Notification	As necessary	Immediately
S5.F	Noncompliance Notification – Written Report	As necessary	Within 5 Days of non-compliance
G2.	Notice of Change in Authorization	As necessary	
G6.	Permit Application for Substantive Changes to the Discharge	As necessary	
G8.	Application for Permit Renewal	1/permit cycle	No later than 180 days before expiration
G9.	Notice of Permit Transfer	As necessary	
G20.	Notice of Planned Changes	As necessary	
G22.	Reporting Anticipated Non-compliance	As necessary	

**SPECIAL NOTE:** \*Permittees must submit Discharge Monitoring Reports (DMRs) to the Washington State Department of Ecology monthly, regardless of site discharge, for the full duration of permit coverage. Refer to Section S5.B of this General Permit for more specific information regarding DMRs.

Table 2. Summary of Required On-site Documentation

Document Title	Permit Conditions
Permit Coverage Letter	See Conditions S2, S5
Construction Stormwater General Permit	See Conditions S2, S5
Site Log Book	See Conditions S4, S5
Stormwater Pollution Prevention Plan (SWPPP)	See Conditions S9, S5

## **SPECIAL CONDITIONS**

### **S1. PERMIT COVERAGE**

#### **A. Permit Area**

This Construction Stormwater General Permit (CSWGP) covers all areas of Washington State, except for federal and Tribal lands as specified in Special Condition S1.E.3.

#### **B. Operators Required to Seek Coverage Under this General Permit:**

1. Operators of the following construction activities are required to seek coverage under this CSWGP:
  - a. Clearing, grading and/or excavation that results in the disturbance of one or more acres and discharges stormwater to surface waters of the State; and clearing, grading and/or excavation on sites smaller than one acre that are part of a larger common plan of development or sale, if the common plan of development or sale will ultimately disturb one acre or more and discharge stormwater to surface waters of the State.
    - i. This includes forest practices (including, but not limited to, class IV conversions) that are part of a construction activity that will result in the disturbance of one or more acres, and discharge to surface waters of the State (that is, forest practices that prepare a site for construction activities); and
  - b. Any size construction activity discharging stormwater to waters of the State that the Department of Ecology ( "Ecology"):
    - i. Determines to be a significant contributor of pollutants to waters of the State of Washington.
    - ii. Reasonably expects to cause a violation of any water quality standard.
2. Operators of the following activities are not required to seek coverage under this CSWGP (unless specifically required under Special Condition S1.B.1.b. above):
  - a. Construction activities that discharge all stormwater and non-stormwater to ground water, sanitary sewer, or combined sewer, and have no point source discharge to either surface water or a storm sewer system that drains to surface waters of the State.
  - b. Construction activities covered under an Erosivity Waiver (Special Condition S2.C).
  - c. Routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility.

C. Authorized Discharges:

1. Stormwater Associated with Construction Activity. Subject to compliance with the terms and conditions of this permit, Permittees are authorized to discharge stormwater associated with construction activity to surface waters of the State or to a storm sewer system that drains to surface waters of the State. (Note that “surface waters of the State” may exist on a construction site as well as off site; for example, a creek running through a site.)
2. Stormwater Associated with Construction Support Activity. This permit also authorizes stormwater discharge from support activities related to the permitted construction site (for example, an on-site portable rock crusher, off-site equipment staging yards, material storage areas, borrow areas, etc.) provided:
  - a. The support activity relates directly to the permitted construction site that is required to have a NPDES permit; and
  - b. The support activity is not a commercial operation serving multiple unrelated construction projects, and does not operate beyond the completion of the construction activity; and
  - c. Appropriate controls and measures are identified in the Stormwater Pollution Prevention Plan (SWPPP) for the discharges from the support activity areas.
3. Non-Stormwater Discharges. The categories and sources of non-stormwater discharges identified below are authorized conditionally, provided the discharge is consistent with the terms and conditions of this permit:
  - a. Discharges from fire-fighting activities.
  - b. Fire hydrant system flushing.
  - c. Potable water, including uncontaminated water line flushing.
  - d. Pipeline hydrostatic test water.
  - e. Uncontaminated air conditioning or compressor condensate.
  - f. Uncontaminated ground water or spring water.
  - g. Uncontaminated excavation dewatering water (in accordance with S9.D.10).
  - h. Uncontaminated discharges from foundation or footing drains.
  - i. Water used to control dust. Permittees must minimize the amount of dust control water used.
  - j. Routine external building wash down that does not use detergents.
  - k. Landscape irrigation water.

The SWPPP must adequately address all authorized non-stormwater discharges, except for discharges from fire-fighting activities, and must comply with Special

Condition S3. At a minimum, discharges from potable water (including water line flushing), fire hydrant system flushing, and pipeline hydrostatic test water must undergo the following: dechlorination to a concentration of 0.1 parts per million (ppm) or less, and pH adjustment to within 6.5 – 8.5 standard units (su), if necessary.

D. Prohibited Discharges:

The following discharges to waters of the State, including ground water, are prohibited.

1. Concrete wastewater.
2. Wastewater from washout and clean-up of stucco, paint, form release oils, curing compounds and other construction materials.
3. Process wastewater as defined by 40 Code of Federal Regulations (CFR) 122.1 (see Appendix A of this permit).
4. Slurry materials and waste from shaft drilling.
5. Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance.
6. Soaps or solvents used in vehicle and equipment washing.
7. Wheel wash wastewater, unless discharged according to Special Condition S9.D.9.d.
8. Discharges from dewatering activities, including discharges from dewatering of trenches and excavations, unless managed according to Special Condition S9.D.10.

E. Limits on Coverage

Ecology may require any discharger to apply for and obtain coverage under an individual permit or another more specific general permit. Such alternative coverage will be required when Ecology determines that this CSWGP does not provide adequate assurance that water quality will be protected, or there is a reasonable potential for the project to cause or contribute to a violation of water quality standards.

The following stormwater discharges are not covered by this permit:

1. Post-construction stormwater discharges that originate from the site after completion of construction activities and the site has undergone final stabilization.
2. Non-point source silvicultural activities such as nursery operations, site preparation, reforestation and subsequent cultural treatment, thinning, prescribed burning, pest and fire control, harvesting operations, surface drainage, or road construction and maintenance, from which there is natural runoff as excluded in 40 CFR Subpart 122.
3. Stormwater from any federal project or project on federal land or land within an Indian Reservation except for the Puyallup Reservation. Within the Puyallup

Reservation, any project that discharges to surface water on land held in trust by the federal government may be covered by this permit.

4. Stormwater from any site covered under an existing NPDES individual permit in which stormwater management and/or treatment requirements are included for all stormwater discharges associated with construction activity.
5. Stormwater from a site where an applicable Total Maximum Daily Load (TMDL) requirement specifically precludes or prohibits discharges from construction activity.

## **S2. APPLICATION REQUIREMENTS**

### **A. Permit Application Forms**

#### **1. Notice of Intent Form/Timeline**

- a. Operators of new or previously unpermitted construction activities must submit a complete and accurate permit application (Notice of Intent, or NOI) to Ecology.
- b. The operator must submit the NOI at least 60 days before discharging stormwater from construction activities and must submit it on or before the date of the first public notice (see Special Condition S2.B below for details). The 30-day public comment period required by WAC 173-226-130(5) begins on the publication date of the second public notice. Unless Ecology responds to the complete application in writing, based on public comments, or any other relevant factors, coverage under the general permit will automatically commence on the thirty-first day following receipt by Ecology of a completed NOI, or the issuance date of this permit, whichever is later, unless Ecology specifies a later date in writing.
- c. Applicants who propose to discharge to a storm or sewer system operated by Seattle, King County, Snohomish County, Tacoma, Pierce County, or Clark County must also submit a copy of the NOI to the appropriate jurisdiction.
- d. If an applicant intends to use a Best Management Practice (BMP) selected on the basis of Special Condition S9.C.4 (“demonstrably equivalent” BMPs), the applicant must notify Ecology of its selection as part of the NOI. In the event the applicant selects BMPs after submission of the NOI, it must provide notice of the selection of an equivalent BMP to Ecology at least 60 days before intended use of the equivalent BMP.
- e. Permittees must notify Ecology regarding any changes to the information provided on the NOI by submitting an updated NOI. Examples of such changes include, but are not limited to,
  - i. changes to the Permittee’s mailing address,
  - ii. changes to the on-site contact person information, and



iii. changes to the area/acreage affected by construction activity.

2. Transfer of Coverage Form

The Permittee can transfer current coverage under this permit to one or more new operators, including operators of sites within a Common Plan of Development, provided the Permittee submits a Transfer of Coverage Form in accordance with General Condition G9. Transfers do not require public notice.

B. Public Notice

For new or previously unpermitted construction activities, the applicant must publish a public notice at least one time each week for two consecutive weeks, at least 7 days apart, in a newspaper with general circulation in the county where the construction is to take place. The notice must contain:

1. A statement that "The applicant is seeking coverage under the Washington State Department of Ecology's Construction Stormwater NPDES and State Waste Discharge General Permit."
2. The name, address and location of the construction site.
3. The name and address of the applicant.
4. The type of construction activity that will result in a discharge (for example, residential construction, commercial construction, etc.), and the number of acres to be disturbed.
5. The name of the receiving water(s) (that is, the surface water(s) to which the site will discharge), or, if the discharge is through a storm sewer system, the name of the operator of the system.
6. The statement: "Any persons desiring to present their views to the Washington State Department of Ecology regarding this application, or interested in Ecology's action on this application, may notify Ecology in writing no later than 30 days of the last date of publication of this notice. Ecology reviews public comments and considers whether discharges from this project would cause a measurable change in receiving water quality, and, if so, whether the project is necessary and in the overriding public interest according to Tier II antidegradation requirements under WAC 173-201A-320. Comments can be submitted to: Department of Ecology, P.O. Box 47696, Olympia, WA 98504-7696 Attn: Water Quality Program, Construction Stormwater."

### C. Erosivity Waiver

Construction site operators may qualify for an erosivity waiver from the CSWGP if the following conditions are met:

1. The site will result in the disturbance of fewer than 5 acres and the site is not a portion of a common plan of development or sale that will disturb 5 acres or greater.
2. Calculation of Erosivity “R” Factor and Regional Timeframe:
  - a. The project’s rainfall erosivity factor (“R” Factor) must be less than 5 during the period of construction activity, as calculated using either the Texas A&M University online rainfall erosivity calculator at: <http://ei.tamu.edu/> or EPA's calculator at <http://cfpub.epa.gov/npdes/stormwater/lew/lewcalculator.cfm>. The period of construction activity starts when the land is first disturbed and ends with final stabilization. In addition:
  - b. The entire period of construction activity must fall within the following timeframes:
    - i. For sites west of the Cascades Crest: June 15 – September 15.
    - ii. For sites east of the Cascades Crest, excluding the Central Basin: June 15 – October 15.
    - iii. For sites east of the Cascades Crest, within the Central Basin: no additional timeframe restrictions apply. The Central Basin is defined as the portions of Eastern Washington with mean annual precipitation of less than 12 inches. For a map of the Central Basin (Region 2), refer to <http://www.ecy.wa.gov/pubs/ecy070202.pdf>.
3. Construction site operators must submit a complete Erosivity Waiver certification form at least one week before disturbing the land. Certification must include statements that the operator will:
  - a. Comply with applicable local stormwater requirements; and
  - b. Implement appropriate erosion and sediment control BMPs to prevent violations of water quality standards.
4. This waiver is not available for facilities declared significant contributors of pollutants as defined in Special Condition S1.B.1.b.
5. This waiver does not apply to construction activities which include non-stormwater discharges listed in Special Condition S1.C.3.
6. If construction activity extends beyond the certified waiver period for any reason, the operator must either:
  - a. Recalculate the rainfall erosivity “R” factor using the original start date and a new projected ending date and, if the “R” factor is still under 5 and the entire

project falls within the applicable regional timeframe in Special Condition S2.C.2.b, complete and submit an amended waiver certification form before the original waiver expires; or

- b. Submit a complete permit application to Ecology in accordance with Special Condition S2.A and B before the end of the certified waiver period.

### **S3. COMPLIANCE WITH STANDARDS**

- A. Discharges must not cause or contribute to a violation of surface water quality standards (Chapter 173-201A WAC), ground water quality standards (Chapter 173-200 WAC), sediment management standards (Chapter 173-204 WAC), and human health-based criteria in the National Toxics Rule (40 CFR Part 131.36). Discharges not in compliance with these standards are not authorized.
- B. Prior to the discharge of stormwater and non-stormwater to waters of the State, the Permittee must apply all known, available, and reasonable methods of prevention, control, and treatment (AKART). This includes the preparation and implementation of an adequate Stormwater Pollution Prevention Plan (SWPPP), with all appropriate BMPs installed and maintained in accordance with the SWPPP and the terms and conditions of this permit.
- C. Ecology presumes that a Permittee complies with water quality standards unless discharge monitoring data or other site-specific information demonstrates that a discharge causes or contributes to a violation of water quality standards, when the Permittee complies with the following conditions. The Permittee must fully:
  - 1. Comply with all permit conditions, including planning, sampling, monitoring, reporting, and recordkeeping conditions.
  - 2. Implement stormwater BMPs contained in stormwater management manuals published or approved by Ecology, or BMPs that are demonstrably equivalent to BMPs contained in stormwater technical manuals published or approved by Ecology, including the proper selection, implementation, and maintenance of all applicable and appropriate BMPs for on-site pollution control. (For purposes of this section, the stormwater manuals listed in Appendix 10 of the Phase I Municipal Stormwater Permit are approved by Ecology.)
- D. Where construction sites also discharge to ground water, the ground water discharges must also meet the terms and conditions of this CSWGP. Permittees who discharge to ground water through an injection well must also comply with any applicable requirements of the Underground Injection Control (UIC) regulations, Chapter 173-218 WAC.

## S4. MONITORING REQUIREMENTS, BENCHMARKS AND REPORTING TRIGGERS

Table 3. Summary of Primary Monitoring Requirements

Size of Soil Disturbance <sup>1</sup>	Weekly Site Inspections	Weekly Sampling w/ Turbidity Meter	Weekly Sampling w/ Transparency Tube	Weekly pH Sampling <sup>2</sup>	Requires CESCL Certification?
Sites that disturb less than 1 acre, but are part of a larger Common Plan of Development	Required	Not Required	Not Required	Not Required	No
Sites that disturb 1 acre or more, but fewer than 5 acres	Required	Sampling Required – either method <sup>3</sup>		Required	Yes
Sites that disturb 5 acres or more	Required	Required	Not Required <sup>4</sup>	Required	Yes

### A. Site Log Book

The Permittee must maintain a site log book that contains a record of the implementation of the SWPPP and other permit requirements, including the installation and maintenance of BMPs, site inspections, and stormwater monitoring.

### B. Site Inspections

The Permittee's (operator's) site inspections must include all areas disturbed by construction activities, all BMPs, and all stormwater discharge points. (See Special Conditions S4.B.3 and B.4 below for detailed requirements of the Permittee's Certified Erosion and Sediment Control Lead [CESCL]).

<sup>1</sup> Soil disturbance is calculated by adding together all areas affected by construction activity. Construction activity means clearing, grading, excavation, and any other activity that disturbs the surface of the land, including ingress/egress from the site.

<sup>2</sup> If construction activity results in the disturbance of 1 acre or more, and involves significant concrete work (1,000 cubic yards of poured or recycled concrete over the life of a project) or the use of engineered soils (soil amendments including but not limited to Portland cement-treated base [CTB], cement kiln dust [CKD], or fly ash), and stormwater from the affected area drains to surface waters of the State or to a storm sewer stormwater collection system that drains to other surface waters of the State, the Permittee must conduct pH monitoring sampling in accordance with Special Condition S4.D.

<sup>3</sup> Sites with one or more acres, but fewer than 5 acres of soil disturbance, must conduct turbidity or transparency sampling in accordance with Special Condition S4.C.

<sup>4</sup> Sites equal to or greater than 5 acres of soil disturbance must conduct turbidity sampling using a turbidity meter in accordance with Special Condition S4.C.

Construction sites one acre or larger that discharge stormwater to surface waters of the State must have site inspections conducted by a certified CESCL. Sites less than one acre may have a person without CESCL certification conduct inspections; sampling is not required on sites that disturb less than an acre.

1. The Permittee must examine stormwater visually for the presence of suspended sediment, turbidity, discoloration, and oil sheen. The Permittee must evaluate the effectiveness of BMPs and determine if it is necessary to install, maintain, or repair BMPs to improve the quality of stormwater discharges.

Based on the results of the inspection, the Permittee must correct the problems identified by:

- a. Reviewing the SWPPP for compliance with Special Condition S9 and making appropriate revisions within 7 days of the inspection.
  - b. Immediately beginning the process of fully implementing and maintaining appropriate source control and/or treatment BMPs as soon as possible, addressing the problems no later than within 10 days of the inspection. If installation of necessary treatment BMPs is not feasible within 10 days, Ecology may approve additional time when an extension is requested by a Permittee within the initial 10-day response period.
  - c. Documenting BMP implementation and maintenance in the site log book.
2. The Permittee must inspect all areas disturbed by construction activities, all BMPs, and all stormwater discharge points at least once every calendar week and within 24 hours of any discharge from the site. (For purposes of this condition, individual discharge events that last more than one day do not require daily inspections. For example, if a stormwater pond discharges continuously over the course of a week, only one inspection is required that week.) The Permittee may reduce the inspection frequency for temporarily stabilized, inactive sites to once every calendar month.
  3. The Permittee must have staff knowledgeable in the principles and practices of erosion and sediment control. The CESCL (sites one acre or more) or inspector (sites less than one acre) must have the skills to assess the:
    - a. Site conditions and construction activities that could impact the quality of stormwater, and
    - b. Effectiveness of erosion and sediment control measures used to control the quality of stormwater discharges.
  4. The SWPPP must identify the CESCL or inspector, who must be present on site or on-call at all times. The CESCL must obtain this certification through an approved erosion and sediment control training program that meets the minimum training standards established by Ecology (see BMP C160 in the manual referred to in Special Condition S9.C.1 and 2).

5. The Permittee must summarize the results of each inspection in an inspection report or checklist and enter the report/checklist into, or attach it to, the site log book. At a minimum, each inspection report or checklist must include:
  - a. Inspection date and time.
  - b. Weather information, the general conditions during inspection and the approximate amount of precipitation since the last inspection, and precipitation within the last 24 hours.
  - c. A summary or list of all implemented BMPs, including observations of all erosion/sediment control structures or practices.
  - d. A description of the locations:
    - i. Of BMPs inspected.
    - ii. Of BMPs that need maintenance and why.
    - iii. Of BMPs that failed to operate as designed or intended, and
    - iv. Where additional or different BMPs are needed, and why.
  - e. A description of stormwater discharged from the site. The Permittee must note the presence of suspended sediment, turbidity, discoloration, and oil sheen, as applicable.
  - f. Any water quality monitoring performed during inspection.
  - g. General comments and notes, including a brief description of any BMP repairs, maintenance or installations made following the inspection.
  - h. A summary report and a schedule of implementation of the remedial actions that the Permittee plans to take if the site inspection indicates that the site is out of compliance. The remedial actions taken must meet the requirements of the SWPPP and the permit.
  - i. The name, title, and signature of the person conducting the site inspection, a phone number or other reliable method to reach this person, and the following statement: "I certify that this report is true, accurate, and complete to the best of my knowledge and belief."

C. Turbidity/Transparency Sampling Requirements

1. Sampling Methods
  - a. If construction activity involves the disturbance of 5 acres or more, the Permittee must conduct turbidity sampling per Special Condition S4.C.
  - b. If construction activity involves 1 acre or more but fewer than 5 acres of soil disturbance, the Permittee must conduct either transparency sampling **or** turbidity sampling per Special Condition S4.C.



## 2. Sampling Frequency

- a. The Permittee must sample all discharge locations at least once every calendar week when stormwater (or authorized non-stormwater) discharges from the site or enters any on-site surface waters of the state (for example, a creek running through a site).
- b. Samples must be representative of the flow and characteristics of the discharge.
- c. Sampling is not required when there is no discharge during a calendar week.
- d. Sampling is not required outside of normal working hours or during unsafe conditions.
- e. If the Permittee is unable to sample during a monitoring period, the Permittee must include a brief explanation in the monthly Discharge Monitoring Report (DMR).
- f. Sampling is not required before construction activity begins.

## 3. Sampling Locations

- a. Sampling is required at all points where stormwater associated with construction activity (or authorized non-stormwater) is discharged off site, including where it enters any on-site surface waters of the state (for example, a creek running through a site).
- b. The Permittee may discontinue sampling at discharge points that drain areas of the project that are fully stabilized to prevent erosion.
- c. The Permittee must identify all sampling point(s) on the SWPPP site map and clearly mark these points in the field with a flag, tape, stake or other visible marker.
- d. Sampling is not required for discharge that is sent directly to sanitary or combined sewer systems.

## 4. Sampling and Analysis Methods

- a. The Permittee performs turbidity analysis with a calibrated turbidity meter (turbidimeter) either on site or at an accredited lab. The Permittee must record the results in the site log book in nephelometric turbidity units (NTU).
- b. The Permittee performs transparency analysis on site with a 1¾-inch-diameter, 60-centimeter (cm)-long transparency tube. The Permittee will record the results in the site log book in centimeters (cm). Transparency tubes are available from: <http://watermonitoringequip.com/pages/stream.html>.

Table 4. Monitoring and Reporting Requirements

Parameter	Unit	Analytical Method	Sampling Frequency	Benchmark Value	Phone Reporting Trigger Value
Turbidity	NTU	SM2130 or EPA 180.1	Weekly, if discharging	25 NTU	250 NTU
Transparency	cm	Manufacturer instructions, or Ecology guidance	Weekly, if discharging	33 cm	6 cm

#### 5. Turbidity/Transparency Benchmark Values and Reporting Triggers

The benchmark value for turbidity is 25 NTU or less. The benchmark value for transparency is 33 centimeters (cm). Note: Benchmark values do not apply to discharges to segments of water bodies on Washington State's 303(d) list (Category 5) for turbidity, fine sediment, or phosphorus; these discharges are subject to a numeric effluent limit for turbidity. Refer to Special Condition S8 for more information.

##### a. Turbidity 26 – 249 NTU, or Transparency 32 – 7 cm:

If the discharge turbidity is 26 to 249 NTU; or if discharge transparency is less than 33 cm, but equal to or greater than 6 cm, the Permittee must:

- i. Review the SWPPP for compliance with Special Condition S9 and make appropriate revisions within 7 days of the date the discharge exceeded the benchmark.
- ii. Immediately begin the process to fully implement and maintain appropriate source control and/or treatment BMPs as soon as possible, addressing the problems within 10 days of the date the discharge exceeded the benchmark. If installation of necessary treatment BMPs is not feasible within 10 days, Ecology may approve additional time when the Permittee requests an extension within the initial 10-day response period.
- iii. Document BMP implementation and maintenance in the site log book.

##### b. Turbidity 250 NTU or greater, or Transparency 6 cm or less:

If a discharge point's turbidity is 250 NTU or greater, or if discharge transparency is less than or equal to 6 cm, the Permittee must complete the reporting and adaptive management process described below.

- i. Telephone the applicable Ecology Region's Environmental Report Tracking System (ERTS) number within 24 hours, in accordance with Special Condition S5.F.
  - Central Region (Okanogan, Chelan, Douglas, Kittitas, Yakima, Klickitat, Benton): (509) 575-2490

- Eastern Region (Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, Whitman): (509) 329-3400
- Northwest Region (Kitsap, Snohomish, Island, King, San Juan, Skagit, Whatcom): (425) 649-7000
- Southwest Region (Grays Harbor, Lewis, Mason, Thurston, Pierce, Clark, Cowlitz, Skamania, Wahkiakum, Clallam, Jefferson, Pacific): (360) 407-6300

These numbers are also listed at the following web site:

<http://www.ecy.wa.gov/programs/wq/stormwater/construction/permit.html>

- ii. Review the SWPPP for compliance with Special Condition S9 and make appropriate revisions within 7 days of the date the discharge exceeded the benchmark.
- iii. Immediately begin the process to fully implement and maintain appropriate source control and/or treatment BMPs as soon as possible, addressing the problems within 10 days of the date the discharge exceeded the benchmark. If installation of necessary treatment BMPs is not feasible within 10 days, Ecology may approve additional time when the Permittee requests an extension within the initial 10-day response period.
- iv. Document BMP implementation and maintenance in the site log book.
- v. Continue to sample discharges daily until:
  - a) Turbidity is 25 NTU (or lower); or
  - b) Transparency is 33 cm (or greater); or
  - c) The Permittee has demonstrated compliance with the water quality limit for turbidity:
    - 1) No more than 5 NTU over background turbidity, if background is less than 50 NTU, or
    - 2) No more than 10% over background turbidity, if background is 50 NTU or greater; or
  - d) The discharge stops or is eliminated.

#### D. pH Sampling Requirements -- Significant Concrete Work or Engineered Soils

If construction activity results in the disturbance of 1 acre or more, **and** involves significant concrete work (significant concrete work means greater than 1000 cubic yards poured concrete or recycled concrete used over the life of a project ) or the use of engineered soils (soil amendments including but not limited to Portland cement-treated base [CTB], cement kiln dust [CKD], or fly ash), and stormwater from the affected area

drains to surface waters of the State or to a storm sewer system that drains to surface waters of the state, the Permittee must conduct pH monitoring as set forth below. Note: In addition, discharges to segments of water bodies on Washington State's 303(d) list (Category 5) for high pH are subject to a numeric effluent limit for pH; refer to Special Condition S8.

1. For sites with significant concrete work, the Permittee must begin the pH monitoring period when the concrete is first poured and exposed to precipitation, and continue weekly throughout and after the concrete pour and curing period, until stormwater pH is in the range of 6.5 to 8.5 (su).
2. For sites with engineered soils, the Permittee must begin the pH monitoring period when the soil amendments are first exposed to precipitation and must continue until the area of engineered soils is fully stabilized.
3. During the applicable pH monitoring period defined above, the Permittee must obtain a representative sample of stormwater and conduct pH analysis at least once per week.
4. The Permittee must monitor pH in the sediment trap/pond(s) or other locations that receive stormwater runoff from the area of significant concrete work or engineered soils before the stormwater discharges to surface waters.
5. The benchmark value for pH is 8.5 standard units. Anytime sampling indicates that pH is 8.5 or greater, the Permittee must either:
  - a. Prevent the high pH water (8.5 or above) from entering storm sewer systems or surface waters; or
  - b. If necessary, adjust or neutralize the high pH water until it is in the range of pH 6.5 to 8.5 (su) using an appropriate treatment BMP such as carbon dioxide (CO<sub>2</sub>) sparging or dry ice. The Permittee must obtain written approval from Ecology before using any form of chemical treatment other than CO<sub>2</sub> sparging or dry ice.
6. The Permittee must perform pH analysis on site with a calibrated pH meter, pH test kit, or wide range pH indicator paper. The Permittee must record pH monitoring results in the site log book.

## **S5. REPORTING AND RECORDKEEPING REQUIREMENTS**

### **A. High Turbidity Phone Reporting**

Anytime sampling performed in accordance with Special Condition S4.C indicates turbidity has reached the 250 NTU phone reporting level, the Permittee must call Ecology's Regional office by phone within 24 hours of analysis. The web site is <http://www.ecy.wa.gov/programs/wq/stormwater/construction/permit.html>. Also see phone numbers in Special Condition S4.C.5.b.i.

### **B. Discharge Monitoring Reports**

Permittees required to conduct water quality sampling in accordance with Special Conditions S4.C (Turbidity/Transparency), S4.D (pH), S8 (303[d]/TMDL sampling), and/or G13 (Additional Sampling) must submit the results to Ecology.

Permittees must submit monitoring data using Ecology's WebDMR program. To find out more information and to sign up for WebDMR go to:

<http://www.ecy.wa.gov/programs/wq/permits/paris/webdmr.html>.

Permittees unable to submit electronically (for example, those who do not have an internet connection) must contact Ecology to request a waiver and obtain instructions on how to obtain a paper copy DMR at:

Mailing Address:

Department of Ecology

Water Quality Program

Attn: Stormwater Compliance Specialist

PO Box 47696

Olympia, WA 98504-7696

Permittees who obtain a waiver not to use WebDMR must use the forms provided to them by Ecology; submittals must be mailed to the address above. Permittees shall submit DMR forms to be received by Ecology within 15 days following the end of each month.

If there was no discharge during a given monitoring period, all Permittees must submit a DMR as required with "no discharge" entered in place of the monitoring results. For more information, contact Ecology staff using information provided at the following web site: <http://www.ecy.wa.gov/programs/spills/response/assistancesoil%20map.pdf>

### **C. Records Retention**

The Permittee must retain records of all monitoring information (site log book, sampling results, inspection reports/checklists, etc.), Stormwater Pollution Prevention Plan, and any other documentation of compliance with permit requirements for the entire life of the construction project and for a minimum of three years following the termination of permit coverage. Such information must include all calibration and maintenance records, and records of all data used to complete the application for this

permit. This period of retention must be extended during the course of any unresolved litigation regarding the discharge of pollutants by the Permittee or when requested by Ecology.

D. Recording Results

For each measurement or sample taken, the Permittee must record the following information:

1. Date, place, method, and time of sampling or measurement.
2. The first and last name of the individual who performed the sampling or measurement.
3. The date(s) the analyses were performed.
4. The first and last name of the individual who performed the analyses.
5. The analytical techniques or methods used.
6. The results of all analyses.

E. Additional Monitoring by the Permittee

If the Permittee monitors any pollutant more frequently than required by this permit using test procedures specified by Special Condition S4 of this permit, the results of this monitoring must be included in the calculation and reporting of the data submitted in the Permittee's DMR.

F. Noncompliance Notification

In the event the Permittee is unable to comply with any part of the terms and conditions of this permit, and the resulting noncompliance may cause a threat to human health or the environment, the Permittee must:

1. Immediately notify Ecology of the failure to comply by calling the applicable Regional office ERTS phone number (find at <http://www.ecy.wa.gov/programs/spills/response/assistancesoil%20map.pdf>) or refer to Special Condition S4.C.5.b.i.
2. Immediately take action to prevent the discharge/pollution, or otherwise stop or correct the noncompliance, and, if applicable, repeat sampling and analysis of any noncompliance immediately and submit the results to Ecology within five (5) days of becoming aware of the violation.
3. Submit a detailed written report to Ecology within five (5) days, unless requested earlier by Ecology. The report must contain a description of the noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and the steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.



The Permittee must report any unanticipated bypass and/or upset that exceeds any effluent limit in the permit in accordance with the 24-hour reporting requirement contained in 40 C.F.R. 122.41(l)(6)).

Compliance with these requirements does not relieve the Permittee from responsibility to maintain continuous compliance with the terms and conditions of this permit or the resulting liability for failure to comply. Refer to Section G14 of this permit for specific information regarding non-compliance.

G. Access to Plans and Records

1. The Permittee must retain the following permit documentation (plans and records) on site, or within reasonable access to the site, for use by the operator or for on-site review by Ecology or the local jurisdiction:
  - a. General Permit.
  - b. Permit Coverage Letter.
  - c. Stormwater Pollution Prevention Plan (SWPPP).
  - d. Site Log Book.
2. The Permittee must address written requests for plans and records listed above (Special Condition S5.G.1) as follows:
  - a. The Permittee must provide a copy of plans and records to Ecology within 14 days of receipt of a written request from Ecology.
  - b. The Permittee must provide a copy of plans and records to the public when requested in writing. Upon receiving a written request from the public for the Permittee's plans and records, the Permittee must either:
    - i. Provide a copy of the plans and records to the requester within 14 days of a receipt of the written request; or
    - ii. Notify the requester within 10 days of receipt of the written request of the location and times within normal business hours when the plans and records may be viewed; and provide access to the plans and records within 14 days of receipt of the written request; or

Within 14 days of receipt of the written request, the Permittee may submit a copy of the plans and records to Ecology for viewing and/or copying by the requester at an Ecology office, or a mutually agreed location. If plans and records are viewed and/or copied at a location other than at an Ecology office, the Permittee will provide reasonable access to copying services for which a reasonable fee may be charged. The Permittee must notify the requester within 10 days of receipt of the request where the plans and records may be viewed and/or copied.

## **S6. PERMIT FEES**

The Permittee must pay permit fees assessed by Ecology. Fees for stormwater discharges covered under this permit are established by Chapter 173-224 WAC. Ecology continues to assess permit fees until the permit is terminated in accordance with Special Condition S10 or revoked in accordance with General Condition G5.

## **S7. SOLID AND LIQUID WASTE DISPOSAL**

The Permittee must handle and dispose of solid and liquid wastes generated by construction activity, such as demolition debris, construction materials, contaminated materials, and waste materials from maintenance activities, including liquids and solids from cleaning catch basins and other stormwater facilities, in accordance with:

- A. Special Condition S3, Compliance with Standards.
- B. WAC 173-216-110.
- C. Other applicable regulations.

## **S8. DISCHARGES TO 303(D) OR TMDL WATER BODIES**

### **A. Sampling and Numeric Effluent Limits For Certain Discharges to 303(d)-listed Water Bodies**

- 1. Permittees who discharge to segments of water bodies listed as impaired by the State of Washington under Section 303(d) of the Clean Water Act for turbidity, fine sediment, high pH, or phosphorus, must conduct water quality sampling according to the requirements of this section, and Special Conditions S4.C.2.b-f and S4.C.3.b-d, and must comply with the applicable numeric effluent limitations in S8.C and S8.D.
- 2. All references and requirements associated with Section 303(d) of the Clean Water Act mean the most current listing by Ecology of impaired waters (Category 5) that exists on January 1, 2011, or the date when the operator's complete permit application is received by Ecology, whichever is later.

### **B. Limits on Coverage for New Discharges to TMDL or 303(d)-listed Waters**

Operators of construction sites that discharge to a 303(d)-listed water body are not eligible for coverage under this permit *unless* the operator:

- 1. Prevents exposing stormwater to pollutants for which the water body is impaired, and retains documentation in the SWPPP that details procedures taken to prevent exposure on site; or
- 2. Documents that the pollutants for which the water body is impaired are not present at the site, and retains documentation of this finding within the SWPPP; or

3. Provides Ecology with data indicating the discharge is not expected to cause or contribute to an exceedance of a water quality standard, and retains such data on site with the SWPPP. The operator must provide data and other technical information to Ecology that sufficiently demonstrate:
  - a. For discharges to waters without an EPA-approved or -established TMDL, that the discharge of the pollutant for which the water is impaired will meet in-stream water quality criteria at the point of discharge to the water body; or
  - b. For discharges to waters with an EPA-approved or -established TMDL, that there is sufficient remaining wasteload allocation in the TMDL to allow construction stormwater discharge and that existing dischargers to the water body are subject to compliance schedules designed to bring the water body into attainment with water quality standards.

Operators of construction sites are eligible for coverage under this permit if Ecology issues permit coverage based upon an affirmative determination that the discharge will not cause or contribute to the existing impairment.

C. Sampling and Numeric Effluent Limits for Discharges to Water Bodies on the 303(d) List for Turbidity, Fine Sediment, or Phosphorus

1. Permittees who discharge to segments of water bodies on the 303(d) list (Category 5) for turbidity, fine sediment, or phosphorus must conduct turbidity sampling in accordance with Special Condition S4.C.2 and comply with either of the numeric effluent limits noted in Table 5 below.
2. As an alternative to the 25 NTU effluent limit noted in Table 5 below (applied at the point where stormwater [or authorized non-stormwater] is discharged off-site), permittees may choose to comply with the surface water quality standard for turbidity. The standard is: no more than 5 NTU over background turbidity when the background turbidity is 50 NTU or less, or no more than a 10% increase in turbidity when the background turbidity is more than 50 NTU. In order to use the water quality standard requirement, the sampling must take place at the following locations:
  - a. Background turbidity in the 303(d)-listed receiving water immediately upstream (upgradient) or outside the area of influence of the discharge.
  - b. Turbidity at the point of discharge into the 303(d)-listed receiving water, inside the area of influence of the discharge.
3. Discharges that exceed the numeric effluent limit for turbidity constitute a violation of this permit.
4. Permittees whose discharges exceed the numeric effluent limit shall sample discharges daily until the violation is corrected and comply with the non-compliance notification requirements in Special Condition S5.F.

Table 5. Turbidity, Fine Sediment & Phosphorus Sampling and Limits for 303(d)-Listed Waters

Parameter identified in 303(d) listing	Parameter Sampled	Unit	Analytical Method	Sampling Frequency	Numeric Effluent Limit <sup>1</sup>
<ul style="list-style-type: none"> <li>• Turbidity</li> <li>• Fine Sediment</li> <li>• Phosphorus</li> </ul>	Turbidity	NTU	SM2130 or EPA180.1	Weekly, if discharging	25 NTU, at the point where stormwater is discharged from the site; OR  In compliance with the surface water quality standard for turbidity (S8.C.1.a)

<sup>1</sup>Permittees subject to a numeric effluent limit for turbidity may, at their discretion, choose either numeric effluent limitation based on site-specific considerations including, but not limited to, safety, access and convenience.

**D. Discharges to Water Bodies on the 303(d) List for High pH**

1. Permittees who discharge to segments of water bodies on the 303(d) list (Category 5) for high pH must conduct pH sampling in accordance with the table below, and comply with the numeric effluent limit of pH 6.5 to 8.5 su (Table 6).

Table 6. pH Sampling and Limits for 303(d)-Listed Waters

Parameter identified in 303(d) listing	Parameter Sampled/Units	Analytical Method	Sampling Frequency	Numeric Effluent Limit
High pH	pH /Standard Units	pH meter	Weekly, if discharging	In the range of 6.5 – 8.5

2. At the Permittee's discretion, compliance with the limit shall be assessed at one of the following locations:
  - a. Directly in the 303(d)-listed water body segment, inside the immediate area of influence of the discharge; or
  - b. Alternatively, the permittee may measure pH at the point where the discharge leaves the construction site, rather than in the receiving water.
3. Discharges that exceed the numeric effluent limit for pH (outside the range of 6.5 – 8.5 su) constitute a violation of this permit.
4. Permittees whose discharges exceed the numeric effluent limit shall sample discharges daily until the violation is corrected and comply with the non-compliance notification requirements in Special Condition S5.F.

E. Sampling and Limits for Sites Discharging to Waters Covered by a TMDL or Another Pollution Control Plan

1. Discharges to a water body that is subject to a Total Maximum Daily Load (TMDL) for turbidity, fine sediment, high pH, or phosphorus must be consistent with the TMDL. Refer to <http://www.ecy.wa.gov/programs/wq/tmdl/index.html> for more information on TMDLs.
  - a. Where an applicable TMDL sets specific waste load allocations or requirements for discharges covered by this permit, discharges must be consistent with any specific waste load allocations or requirements established by the applicable TMDL.
    - i. The Permittee must sample discharges weekly or as otherwise specified by the TMDL to evaluate compliance with the specific waste load allocations or requirements.
    - ii. Analytical methods used to meet the monitoring requirements must conform to the latest revision of the Guidelines Establishing Test Procedures for the Analysis of Pollutants contained in 40 CFR Part 136. Turbidity and pH methods need not be accredited or registered unless conducted at a laboratory which must otherwise be accredited or registered.
  - b. Where an applicable TMDL has established a general waste load allocation for construction stormwater discharges, but has not identified specific requirements, compliance with Special Conditions S4 (Monitoring) and S9 (SWPPPs) will constitute compliance with the approved TMDL.
  - c. Where an applicable TMDL has not specified a waste load allocation for construction stormwater discharges, but has not excluded these discharges, compliance with Special Conditions S4 (Monitoring) and S9 (SWPPPs) will constitute compliance with the approved TMDL.
  - d. Where an applicable TMDL specifically precludes or prohibits discharges from construction activity, the operator is not eligible for coverage under this permit.
2. Applicable TMDL means a TMDL for turbidity, fine sediment, high pH, or phosphorus that is completed and approved by EPA before January 1, 2011, or before the date the operator's complete permit application is received by Ecology, whichever is later. TMDLs completed after the operator's complete permit application is received by Ecology become applicable to the Permittee only if they are imposed through an administrative order by Ecology, or through a modification of permit coverage.

## **S9. STORMWATER POLLUTION PREVENTION PLAN**

The Permittee must prepare and properly implement an adequate Stormwater Pollution Prevention Plan (SWPPP) for construction activity in accordance with the requirements of this permit beginning with initial soil disturbance and until final stabilization.

### **A. The Permittee's SWPPP must meet the following objectives:**

1. To implement best management practices (BMPs) to prevent erosion and sedimentation, and to identify, reduce, eliminate or prevent stormwater contamination and water pollution from construction activity.
2. To prevent violations of surface water quality, ground water quality, or sediment management standards.
3. To control peak volumetric flow rates and velocities of stormwater discharges.

### **B. General Requirements**

1. The SWPPP must include a narrative and drawings. All BMPs must be clearly referenced in the narrative and marked on the drawings. The SWPPP narrative must include documentation to explain and justify the pollution prevention decisions made for the project. Documentation must include:
  - a. Information about existing site conditions (topography, drainage, soils, vegetation, etc.).
  - b. Potential erosion problem areas.
  - c. The 12 elements of a SWPPP in Special Condition S9.D.1-12, including BMPs used to address each element.
  - d. Construction phasing/sequence and general BMP implementation schedule.
  - e. The actions to be taken if BMP performance goals are not achieved—for example, a contingency plan for additional treatment and/or storage of stormwater that would violate the water quality standards if discharged.
  - f. Engineering calculations for ponds and any other designed structures.
2. The Permittee must modify the SWPPP if, during inspections or investigations conducted by the owner/operator, or the applicable local or state regulatory authority, it is determined that the SWPPP is, or would be, ineffective in eliminating or significantly minimizing pollutants in stormwater discharges from the site. The Permittee must then:
  - a. Review the SWPPP for compliance with Special Condition S9 and make appropriate revisions within 7 days of the inspection or investigation.
  - b. Immediately begin the process to fully implement and maintain appropriate source control and/or treatment BMPs as soon as possible, addressing the problems no later than 10 days from the inspection or investigation. If



installation of necessary treatment BMPs is not feasible within 10 days, Ecology may approve additional time when an extension is requested by a Permittee within the initial 10-day response period,

- c. Document BMP implementation and maintenance in the site log book.

The Permittee must modify the SWPPP whenever there is a change in design, construction, operation, or maintenance at the construction site that has, or could have, a significant effect on the discharge of pollutants to waters of the State.

#### C. Stormwater Best Management Practices (BMPs)

BMPs must be consistent with:

1. Stormwater Management Manual for Western Washington (most recent edition), for sites west of the crest of the Cascade Mountains; or
2. Stormwater Management Manual for Eastern Washington (most recent edition), for sites east of the crest of the Cascade Mountains; or
3. Revisions to the manuals listed in Special Condition S9.C.1. & 2., or other stormwater management guidance documents or manuals which provide an equivalent level of pollution prevention, that are approved by Ecology and incorporated into this permit in accordance with the permit modification requirements of WAC 173-226-230; or
4. Documentation in the SWPPP that the BMPs selected provide an equivalent level of pollution prevention, compared to the applicable Stormwater Management Manuals, including:
  - a. The technical basis for the selection of all stormwater BMPs (scientific, technical studies, and/or modeling) that support the performance claims for the BMPs being selected.
  - b. An assessment of how the selected BMP will satisfy AKART requirements and the applicable federal technology-based treatment requirements under 40 CFR part 125.3.

#### D. SWPPP – Narrative Contents and Requirements

The Permittee must include each of the 12 elements below in Special Condition S9.D.1-12 in the narrative of the SWPPP and implement them unless site conditions render the element unnecessary and the exemption from that element is clearly justified in the SWPPP.

1. Preserve Vegetation/Mark Clearing Limits
  - a. Before beginning land-disturbing activities, including clearing and grading, clearly mark all clearing limits, sensitive areas and their buffers, and trees that are to be preserved within the construction area.

- b. Retain the duff layer, native top soil, and natural vegetation in an undisturbed state to the maximum degree practicable.
- 2. Establish Construction Access
  - a. Limit construction vehicle access and exit to one route, if possible.
  - b. Stabilize access points with a pad of quarry spalls, crushed rock, or other equivalent BMPs, to minimize tracking sediment onto roads.
  - c. Locate wheel wash or tire baths on site, if the stabilized construction entrance is not effective in preventing tracking sediment onto roads.
  - d. If sediment is tracked off site, clean the affected roadway thoroughly at the end of each day, or more frequently as necessary (for example, during wet weather). Remove sediment from roads by shoveling, sweeping, or pickup and transport of the sediment to a controlled sediment disposal area.
  - e. Conduct street washing only after sediment removal in accordance with Special Condition S9.D.2.d. Control street wash wastewater by pumping back on site or otherwise preventing it from discharging into systems tributary to waters of the State.
- 3. Control Flow Rates
  - a. Protect properties and waterways downstream of development sites from erosion and the associated discharge of turbid waters due to increases in the velocity and peak volumetric flow rate of stormwater runoff from the project site, as required by local plan approval authority.
  - b. Where necessary to comply with Special Condition S9.D.3.a, construct stormwater retention or detention facilities as one of the first steps in grading. Assure that detention facilities function properly before constructing site improvements (for example, impervious surfaces).
  - c. If permanent infiltration ponds are used for flow control during construction, protect these facilities from siltation during the construction phase.

4. Install Sediment Controls

The Permittee must design, install and maintain effective erosion controls and sediment controls to minimize the discharge of pollutants. At a minimum, the Permittee must design, install and maintain such controls to:

- a. Construct sediment control BMPs (sediment ponds, traps, filters, etc.) as one of the first steps in grading. These BMPs must be functional before other land disturbing activities take place.
- b. Minimize sediment discharges from the site. The design, installation and maintenance of erosion and sediment controls must address factors such as the amount, frequency, intensity and duration of precipitation, the nature of

resulting stormwater runoff, and soil characteristics, including the range of soil particle sizes expected to be present on the site.

- c. Direct stormwater runoff from disturbed areas through a sediment pond or other appropriate sediment removal BMP, before the runoff leaves a construction site or before discharge to an infiltration facility. Runoff from fully stabilized areas may be discharged without a sediment removal BMP, but must meet the flow control performance standard of Special Condition S9.D.3.a.
- d. Locate BMPs intended to trap sediment on site in a manner to avoid interference with the movement of juvenile salmonids attempting to enter off-channel areas or drainages.
- e. Provide and maintain natural buffers around surface waters, direct stormwater to vegetated areas to increase sediment removal and maximize stormwater infiltration, unless infeasible.
- f. Where feasible, design outlet structures that withdraw impounded stormwater from the surface to avoid discharging sediment that is still suspended lower in the water column.

#### 5. Stabilize Soils

- a. The Permittee must stabilize exposed and unworked soils by application of effective BMPs that prevent erosion. Applicable BMPs include, but are not limited to: temporary and permanent seeding, sodding, mulching, plastic covering, erosion control fabrics and matting, soil application of polyacrylamide (PAM), the early application of gravel base on areas to be paved, and dust control.
- b. The Permittee must control stormwater volume and velocity within the site to minimize soil erosion.
- c. The Permittee must control stormwater discharges, including both peak flow rates and total stormwater volume, to minimize erosion at outlets and to minimize downstream channel and stream bank erosion.
- d. Depending on the geographic location of the project, the Permittee must not allow soils to remain exposed and unworked for more than the time periods set forth below to prevent erosion:

West of the Cascade Mountains Crest

During the dry season (May 1 - Sept. 30): 7 days

During the wet season (October 1 - April 30): 2 days

East of the Cascade Mountains Crest, except for Central Basin\*

During the dry season (July 1 - September 30): 10 days

During the wet season (October 1 - June 30): 5 days

The Central Basin\*, East of the Cascade Mountains Crest

During the dry Season (July 1 - September 30): 30 days

During the wet season (October 1 - June 30): 15 days

\*Note: The Central Basin is defined as the portions of Eastern Washington with mean annual precipitation of less than 12 inches.

- e. The Permittee must stabilize soils at the end of the shift before a holiday or weekend if needed based on the weather forecast.
  - f. The Permittee must stabilize soil stockpiles from erosion, protected with sediment trapping measures, and where possible, be located away from storm drain inlets, waterways, and drainage channels.
  - g. The Permittee must minimize the amount of soil exposed during construction activity.
  - h. The Permittee must minimize the disturbance of steep slopes.
  - i. The Permittee must minimize soil compaction and, unless infeasible, preserve topsoil.
6. Protect Slopes
- a. The Permittee must design and construct cut-and-fill slopes in a manner to minimize erosion. Applicable practices include, but are not limited to, reducing continuous length of slope with terracing and diversions, reducing slope steepness, and roughening slope surfaces (for example, track walking).
  - b. The Permittee must divert off-site stormwater (run-on) or ground water away from slopes and disturbed areas with interceptor dikes, pipes, and/or swales. Off-site stormwater should be managed separately from stormwater generated on the site.
  - c. At the top of slopes, collect drainage in pipe slope drains or protected channels to prevent erosion.
    - i. West of the Cascade Mountains Crest: Temporary pipe slope drains must handle the peak 10-minute velocity of flow from a Type 1A, 10-year, 24-hour frequency storm for the developed condition. Alternatively, the 10-year, 1-hour flow rate predicted by an approved continuous runoff model, increased by a factor of 1.6, may be used. The hydrologic analysis must use the existing land cover condition for predicting flow rates from tributary areas outside the project limits. For tributary areas on the project site, the analysis must use the temporary or permanent project land cover condition, whichever will produce the highest flow rates. If using the Western Washington Hydrology Model (WWHM) to predict flows, bare soil areas should be modeled as "landscaped area."

- ii. East of the Cascade Mountains Crest: Temporary pipe slope drains must handle the expected peak flow velocity from a 6-month, 3-hour storm for the developed condition, referred to as the short duration storm.
  - d. Place excavated material on the uphill side of trenches, consistent with safety and space considerations.
  - e. Place check dams at regular intervals within constructed channels that are cut down a slope.
7. Protect Drain Inlets
- a. Protect all storm drain inlets made operable during construction so that stormwater runoff does not enter the conveyance system without first being filtered or treated to remove sediment.
  - b. Clean or remove and replace inlet protection devices when sediment has filled one-third of the available storage (unless a different standard is specified by the product manufacturer).
8. Stabilize Channels and Outlets
- a. Design, construct and stabilize all on-site conveyance channels to prevent erosion from the following expected peak flows:
    - i. West of the Cascade Mountains Crest: Channels must handle the peak 10-minute velocity of flow from a Type 1A, 10-year, 24-hour frequency storm for the developed condition. Alternatively, the 10-year, 1-hour flow rate indicated by an approved continuous runoff model, increased by a factor of 1.6, may be used. The hydrologic analysis must use the existing land cover condition for predicting flow rates from tributary areas outside the project limits. For tributary areas on the project site, the analysis must use the temporary or permanent project land cover condition, whichever will produce the highest flow rates. If using the WWHM to predict flows, bare soil areas should be modeled as "landscaped area."
    - ii. East of the Cascade Mountains Crest: Channels must handle the expected peak flow velocity from a 6-month, 3-hour storm for the developed condition, referred to as the short duration storm.
  - b. Provide stabilization, including armoring material, adequate to prevent erosion of outlets, adjacent stream banks, slopes, and downstream reaches at the outlets of all conveyance systems.
9. Control Pollutants

Design, install, implement and maintain effective pollution prevention measures to minimize the discharge of pollutants. The Permittee must:

- a. Handle and dispose of all pollutants, including waste materials and demolition debris that occur on site in a manner that does not cause contamination of stormwater.
  - b. Provide cover, containment, and protection from vandalism for all chemicals, liquid products, petroleum products, and other materials that have the potential to pose a threat to human health or the environment. On-site fueling tanks must include secondary containment. Secondary containment means placing tanks or containers within an impervious structure capable of containing 110% of the volume contained in the largest tank within the containment structure. Double-walled tanks do not require additional secondary containment.
  - c. Conduct maintenance, fueling, and repair of heavy equipment and vehicles using spill prevention and control measures. Clean contaminated surfaces immediately following any spill incident.
  - d. Discharge wheel wash or tire bath wastewater to a separate on-site treatment system that prevents discharge to surface water, such as closed-loop recirculation or upland land application, or to the sanitary sewer with local sewer district approval.
  - e. Apply fertilizers and pesticides in a manner and at application rates that will not result in loss of chemical to stormwater runoff. Follow manufacturers' label requirements for application rates and procedures.
  - f. Use BMPs to prevent contamination of stormwater runoff by pH-modifying sources. The sources for this contamination include, but are not limited to: bulk cement, cement kiln dust, fly ash, new concrete washing and curing waters, waste streams generated from concrete grinding and sawing, exposed aggregate processes, dewatering concrete vaults, concrete pumping and mixer washout waters. (Also refer to the definition for "concrete wastewater" in Appendix A--Definitions.)
  - g. Adjust the pH of stormwater if necessary to prevent violations of water quality standards.
  - h. Assure that washout of concrete trucks is performed offsite or in designated concrete washout areas only. Do not wash out concrete trucks onto the ground, or into storm drains, open ditches, streets, or streams. Do not dump excess concrete on site, except in designated concrete washout areas. Concrete spillage or concrete discharge to surface waters of the State is prohibited.
  - i. Obtain written approval from Ecology before using chemical treatment other than CO<sub>2</sub> or dry ice to adjust pH.
10. Control Dewatering
- a. Permittees must discharge foundation, vault, and trench dewatering water, which have characteristics similar to stormwater runoff at the site, into a

controlled conveyance system before discharge to a sediment trap or sediment pond.

- b. Permittees may discharge clean, non-turbid dewatering water, such as well-point ground water, to systems tributary to, or directly into surface waters of the State, as specified in Special Condition S9.D.8, provided the dewatering flow does not cause erosion or flooding of receiving waters. Do not route clean dewatering water through stormwater sediment ponds. Note that “surface waters of the State” may exist on a construction site as well as off site; for example, a creek running through a site.
- c. Other treatment or disposal options may include:
  - i. Infiltration.
  - ii. Transport off site in a vehicle, such as a vacuum flush truck, for legal disposal in a manner that does not pollute state waters.
  - iii. Ecology-approved on-site chemical treatment or other suitable treatment technologies.
  - iv. Sanitary or combined sewer discharge with local sewer district approval, if there is no other option.
  - v. Use of a sedimentation bag with discharge to a ditch or swale for small volumes of localized dewatering.
- d. Permittees must handle highly turbid or contaminated dewatering water separately from stormwater.

#### 11. Maintain BMPs

- a. Permittees must maintain and repair all temporary and permanent erosion and sediment control BMPs as needed to assure continued performance of their intended function in accordance with BMP specifications.
- b. Permittees must remove all temporary erosion and sediment control BMPs within 30 days after achieving final site stabilization or after the temporary BMPs are no longer needed.

#### 12. Manage the Project

- a. Phase development projects to the maximum degree practicable and take into account seasonal work limitations.
- b. Inspection and monitoring -- Inspect, maintain and repair all BMPs as needed to assure continued performance of their intended function. Conduct site inspections and monitoring in accordance with Special Condition S4.
- c. Maintaining an updated construction SWPPP -- Maintain, update, and implement the SWPPP in accordance with Special Conditions S3, S4 and S9.



E. SWPPP – Map Contents and Requirements

The Permittee's SWPPP must also include a vicinity map or general location map (for example, a USGS quadrangle map, a portion of a county or city map, or other appropriate map) with enough detail to identify the location of the construction site and receiving waters within one mile of the site.

The SWPPP must also include a legible site map (or maps) showing the entire construction site. The following features must be identified, unless not applicable due to site conditions:

1. The direction of north, property lines, and existing structures and roads.
2. Cut and fill slopes indicating the top and bottom of slope catch lines.
3. Approximate slopes, contours, and direction of stormwater flow before and after major grading activities.
4. Areas of soil disturbance and areas that will not be disturbed.
5. Locations of structural and nonstructural controls (BMPs) identified in the SWPPP.
6. Locations of off-site material, stockpiles, waste storage, borrow areas, and vehicle/equipment storage areas.
7. Locations of all surface water bodies, including wetlands.
8. Locations where stormwater or non-stormwater discharges off-site and/or to a surface water body, including wetlands.
9. Location of water quality sampling station(s), if sampling is required by state or local permitting authority.
10. Areas where final stabilization has been accomplished and no further construction-phase permit requirements apply.

**S10. NOTICE OF TERMINATION**

- A. The site is eligible for termination of coverage when it has met any of the following conditions:
1. The site has undergone final stabilization, the Permittee has removed all temporary BMPs (except biodegradable BMPs clearly manufactured with the intention for the material to be left in place and not interfere with maintenance or land use), and all stormwater discharges associated with construction activity have been eliminated; or
  2. All portions of the site that have not undergone final stabilization per Special Condition S10.A.1 have been sold and/or transferred (per General Condition G9), and the Permittee no longer has operational control of the construction activity; or

3. For residential construction only, the Permittee has completed temporary stabilization and the homeowners have taken possession of the residences.
- B. When the site is eligible for termination, the Permittee must submit a complete and accurate Notice of Termination (NOT) form, signed in accordance with General Condition G2, to:

Department of Ecology  
Water Quality Program - Construction Stormwater  
PO Box 47696  
Olympia, Washington 98504-7696

The termination is effective on the date Ecology receives the NOT form, unless Ecology notifies the Permittee within 30 days that termination request is denied because the Permittee has not met the eligibility requirements in Special Condition S10.A.

Permittees transferring the property to a new property owner or operator/permittee are required to complete and submit the Notice of Transfer form to Ecology, but are not required to submit a Notice of Termination form for this type of transaction.

## **GENERAL CONDITIONS**

### **G1. DISCHARGE VIOLATIONS**

All discharges and activities authorized by this general permit must be consistent with the terms and conditions of this general permit. Any discharge of any pollutant more frequent than or at a level in excess of that identified and authorized by the general permit must constitute a violation of the terms and conditions of this permit.

### **G2. SIGNATORY REQUIREMENTS**

- A. All permit applications must bear a certification of correctness to be signed:
  - 1. In the case of corporations, by a responsible corporate officer of at least the level of vice president of a corporation;
  - 2. In the case of a partnership, by a general partner of a partnership;
  - 3. In the case of sole proprietorship, by the proprietor; or
  - 4. In the case of a municipal, state, or other public facility, by either a principal executive officer or ranking elected official.
- B. All reports required by this permit and other information requested by Ecology must be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:
  - 1. The authorization is made in writing by a person described above and submitted to the Ecology.
  - 2. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters.
- C. Changes to authorization. If an authorization under paragraph G2.B.2 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph G2.B.2 above must be submitted to Ecology prior to or together with any reports, information, or applications to be signed by an authorized representative.
- D. Certification. Any person signing a document under this section must make the following certification:

“I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering

information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”

### **G3. RIGHT OF INSPECTION AND ENTRY**

The Permittee must allow an authorized representative of Ecology, upon the presentation of credentials and such other documents as may be required by law:

- A. To enter upon the premises where a discharge is located or where any records are kept under the terms and conditions of this permit.
- B. To have access to and copy – at reasonable times and at reasonable cost -- any records required to be kept under the terms and conditions of this permit.
- C. To inspect -- at reasonable times – any facilities, equipment (including monitoring and control equipment), practices, methods, or operations regulated or required under this permit.
- D. To sample or monitor – at reasonable times – any substances or parameters at any location for purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act.

### **G4. GENERAL PERMIT MODIFICATION AND REVOCATION**

This permit may be modified, revoked and reissued, or terminated in accordance with the provisions of Chapter 173-226 WAC. Grounds for modification, revocation and reissuance, or termination include, but are not limited to, the following:

- A. When a change occurs in the technology or practices for control or abatement of pollutants applicable to the category of dischargers covered under this permit.
- B. When effluent limitation guidelines or standards are promulgated pursuant to the CWA or Chapter 90.48 RCW, for the category of dischargers covered under this permit.
- C. When a water quality management plan containing requirements applicable to the category of dischargers covered under this permit is approved, or
- D. When information is obtained that indicates cumulative effects on the environment from dischargers covered under this permit are unacceptable.

### **G5. REVOCATION OF COVERAGE UNDER THE PERMIT**

Pursuant to Chapter 43.21B RCW and Chapter 173-226 WAC, the Director may terminate coverage for any discharger under this permit for cause. Cases where coverage may be terminated include, but are not limited to, the following:

- A. Violation of any term or condition of this permit.
- B. Obtaining coverage under this permit by misrepresentation or failure to disclose fully all relevant facts.
- C. A change in any condition that requires either a temporary or permanent reduction or elimination of the permitted discharge.
- D. Failure or refusal of the Permittee to allow entry as required in RCW 90.48.090.
- E. A determination that the permitted activity endangers human health or the environment, or contributes to water quality standards violations.
- F. Nonpayment of permit fees or penalties assessed pursuant to RCW 90.48.465 and Chapter 173-224 WAC.
- G. Failure of the Permittee to satisfy the public notice requirements of WAC 173-226-130(5), when applicable.

The Director may require any discharger under this permit to apply for and obtain coverage under an individual permit or another more specific general permit. Permittees who have their coverage revoked for cause according to WAC 173-226-240 may request temporary coverage under this permit during the time an individual permit is being developed, provided the request is made within ninety (90) days from the time of revocation and is submitted along with a complete individual permit application form.

## **G6. REPORTING A CAUSE FOR MODIFICATION**

The Permittee must submit a new application, or a supplement to the previous application, whenever a material change to the construction activity or in the quantity or type of discharge is anticipated which is not specifically authorized by this permit. This application must be submitted at least sixty (60) days prior to any proposed changes. Filing a request for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not relieve the Permittee of the duty to comply with the existing permit until it is modified or reissued.

## **G7. COMPLIANCE WITH OTHER LAWS AND STATUTES**

Nothing in this permit will be construed as excusing the Permittee from compliance with any applicable federal, state, or local statutes, ordinances, or regulations.

## **G8. DUTY TO REAPPLY**

The Permittee must apply for permit renewal at least 180 days prior to the specified expiration date of this permit.

## **G9. TRANSFER OF GENERAL PERMIT COVERAGE**

Coverage under this general permit is automatically transferred to a new discharger, including operators of lots/parcels within a common plan of development or sale, **if**:

- A. A written agreement (Transfer of Coverage Form) between the current discharger (Permittee) and new discharger, signed by both parties and containing a specific date for transfer of permit responsibility, coverage, and liability is submitted to the Director; and
- B. The Director does not notify the current discharger and new discharger of the Director's intent to revoke coverage under the general permit. If this notice is not given, the transfer is effective on the date specified in the written agreement.

When a current discharger (Permittee) transfers a portion of a permitted site, the current discharger must also submit an updated application form (NOI) to the Director indicating the remaining permitted acreage after the transfer.

## **G10. REMOVED SUBSTANCES**

The Permittee must not re-suspend or reintroduce collected screenings, grit, solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of stormwater to the final effluent stream for discharge to state waters.

## **G11. DUTY TO PROVIDE INFORMATION**

The Permittee must submit to Ecology, within a reasonable time, all information that Ecology may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The Permittee must also submit to Ecology, upon request, copies of records required to be kept by this permit [40 CFR 122.41(h)].

## **G12. OTHER REQUIREMENTS OF 40 CFR**

All other requirements of 40 CFR 122.41 and 122.42 are incorporated in this permit by reference.

## **G13. ADDITIONAL MONITORING**

Ecology may establish specific monitoring requirements in addition to those contained in this permit by administrative order or permit modification.

#### **G14. PENALTIES FOR VIOLATING PERMIT CONDITIONS**

Any person who is found guilty of willfully violating the terms and conditions of this permit shall be deemed guilty of a crime, and upon conviction thereof shall be punished by a fine of up to ten thousand dollars (\$10,000) and costs of prosecution, or by imprisonment in the discretion of the court. Each day upon which a willful violation occurs may be deemed a separate and additional violation.

Any person who violates the terms and conditions of a waste discharge permit shall incur, in addition to any other penalty as provided by law, a civil penalty in the amount of up to ten thousand dollars (\$10,000) for every such violation. Each and every such violation shall be a separate and distinct offense, and in case of a continuing violation, every day's continuance shall be deemed to be a separate and distinct violation.

#### **G15. UPSET**

Definition – "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of the following paragraph are met.

A Permittee who wishes to establish the affirmative defense of upset must demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that: 1) an upset occurred and that the Permittee can identify the cause(s) of the upset; 2) the permitted facility was being properly operated at the time of the upset; 3) the Permittee submitted notice of the upset as required in Special Condition S5.F, and; 4) the Permittee complied with any remedial measures required under this permit.

In any enforcement proceeding, the Permittee seeking to establish the occurrence of an upset has the burden of proof.

#### **G16. PROPERTY RIGHTS**

This permit does not convey any property rights of any sort, or any exclusive privilege.

#### **G17. DUTY TO COMPLY**

The Permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.



## **G18. TOXIC POLLUTANTS**

The Permittee must comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants within the time provided in the regulations that establish those standards or prohibitions, even if this permit has not yet been modified to incorporate the requirement.

## **G19. PENALTIES FOR TAMPERING**

The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than two years per violation, or by both. If a conviction of a person is for a violation committed after a first conviction of such person under this condition, punishment shall be a fine of not more than \$20,000 per day of violation, or imprisonment of not more than four (4) years, or both.

## **G20. REPORTING PLANNED CHANGES**

The Permittee must, as soon as possible, give notice to Ecology of planned physical alterations, modifications or additions to the permitted construction activity. The Permittee should be aware that, depending on the nature and size of the changes to the original permit, a new public notice and other permit process requirements may be required. Changes in activities that require reporting to Ecology include those that will result in:

- A. The permitted facility being determined to be a new source pursuant to 40 CFR 122.29(b).
- B. A significant change in the nature or an increase in quantity of pollutants discharged, including but not limited to: for sites 5 acres or larger, a 20% or greater increase in acreage disturbed by construction activity.
- C. A change in or addition of surface water(s) receiving stormwater or non-stormwater from the construction activity.
- D. A change in the construction plans and/or activity that affects the Permittee's monitoring requirements in Special Condition S4.

Following such notice, permit coverage may be modified, or revoked and reissued pursuant to 40 CFR 122.62(a) to specify and limit any pollutants not previously limited. Until such modification is effective, any new or increased discharge in excess of permit limits or not specifically authorized by this permit constitutes a violation.

## **G21. REPORTING OTHER INFORMATION**

Where the Permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to Ecology, it must promptly submit such facts or information.

## **G22. REPORTING ANTICIPATED NON-COMPLIANCE**

The Permittee must give advance notice to Ecology by submission of a new application or supplement thereto at least forty-five (45) days prior to commencement of such discharges, of any facility expansions, production increases, or other planned changes, such as process modifications, in the permitted facility or activity which may result in noncompliance with permit limits or conditions. Any maintenance of facilities, which might necessitate unavoidable interruption of operation and degradation of effluent quality, must be scheduled during non-critical water quality periods and carried out in a manner approved by Ecology.

## **G23. REQUESTS TO BE EXCLUDED FROM COVERAGE UNDER THE PERMIT**

Any discharger authorized by this permit may request to be excluded from coverage under the general permit by applying for an individual permit. The discharger must submit to the Director an application as described in WAC 173-220-040 or WAC 173-216-070, whichever is applicable, with reasons supporting the request. These reasons will fully document how an individual permit will apply to the applicant in a way that the general permit cannot. Ecology may make specific requests for information to support the request. The Director will either issue an individual permit or deny the request with a statement explaining the reason for the denial. When an individual permit is issued to a discharger otherwise subject to the construction stormwater general permit, the applicability of the construction stormwater general permit to that Permittee is automatically terminated on the effective date of the individual permit.

## **G24. APPEALS**

- A. The terms and conditions of this general permit, as they apply to the appropriate class of dischargers, are subject to appeal by any person within 30 days of issuance of this general permit, in accordance with Chapter 43.21B RCW, and Chapter 173-226 WAC.
- B. The terms and conditions of this general permit, as they apply to an individual discharger, are appealable in accordance with Chapter 43.21B RCW within 30 days of the effective date of coverage of that discharger. Consideration of an appeal of general permit coverage of an individual discharger is limited to the general permit's applicability or nonapplicability to that individual discharger.
- C. The appeal of general permit coverage of an individual discharger does not affect any other dischargers covered under this general permit. If the terms and conditions of this general permit are found to be inapplicable to any individual discharger(s), the matter

shall be remanded to Ecology for consideration of issuance of an individual permit or permits.

## **G25. SEVERABILITY**

The provisions of this permit are severable, and if any provision of this permit, or application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

## **G26. BYPASS PROHIBITED**

### **A. Bypass Procedures**

Bypass, which is the intentional diversion of waste streams from any portion of a treatment facility, is prohibited for stormwater events below the design criteria for stormwater management. Ecology may take enforcement action against a Permittee for bypass unless one of the following circumstances (1, 2, 3 or 4) is applicable.

1. Bypass of stormwater is consistent with the design criteria and part of an approved management practice in the applicable stormwater management manual.
2. Bypass for essential maintenance without the potential to cause violation of permit limits or conditions.

Bypass is authorized if it is for essential maintenance and does not have the potential to cause violations of limitations or other conditions of this permit, or adversely impact public health.

3. Bypass of stormwater is unavoidable, unanticipated, and results in noncompliance of this permit.

This bypass is permitted only if:

- a. Bypass is unavoidable to prevent loss of life, personal injury, or severe property damage. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which would cause them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass.
- b. There are no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, maintenance during normal periods of equipment downtime (but not if adequate backup equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventative maintenance), or transport of untreated wastes to another treatment facility.

- c. Ecology is properly notified of the bypass as required in Special Condition S5.F of this permit.
- 4. A planned action that would cause bypass of stormwater and has the potential to result in noncompliance of this permit during a storm event.

The Permittee must notify Ecology at least thirty (30) days before the planned date of bypass. The notice must contain:

- a. a description of the bypass and its cause
  - b. an analysis of all known alternatives which would eliminate, reduce, or mitigate the need for bypassing.
  - c. a cost-effectiveness analysis of alternatives including comparative resource damage assessment.
  - d. the minimum and maximum duration of bypass under each alternative.
  - e. a recommendation as to the preferred alternative for conducting the bypass.
  - f. the projected date of bypass initiation.
  - g. a statement of compliance with SEPA.
  - h. a request for modification of water quality standards as provided for in WAC 173-201A-110, if an exceedance of any water quality standard is anticipated.
  - i. steps taken or planned to reduce, eliminate, and prevent reoccurrence of the bypass.
- 5. For probable construction bypasses, the need to bypass is to be identified as early in the planning process as possible. The analysis required above must be considered during preparation of the Stormwater Pollution Prevention Plan (SWPPP) and must be included to the extent practical. In cases where the probable need to bypass is determined early, continued analysis is necessary up to and including the construction period in an effort to minimize or eliminate the bypass.

Ecology will consider the following before issuing an administrative order for this type bypass:

- a. If the bypass is necessary to perform construction or maintenance-related activities essential to meet the requirements of this permit.
- b. If there are feasible alternatives to bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, stopping production, maintenance during normal periods of equipment down time, or transport of untreated wastes to another treatment facility.
- c. If the bypass is planned and scheduled to minimize adverse effects on the public and the environment.

After consideration of the above and the adverse effects of the proposed bypass and any other relevant factors, Ecology will approve, conditionally approve, or deny the request. The public must be notified and given an opportunity to comment on bypass incidents of significant duration, to the extent feasible. Approval of a request to bypass will be by administrative order issued by Ecology under RCW 90.48.120.

B. Duty to Mitigate

The Permittee is required to take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit that has a reasonable likelihood of adversely affecting human health or the environment.

## APPENDIX A – DEFINITIONS

AKART is an acronym for “all known, available, and reasonable methods of prevention, control, and treatment.” AKART represents the most current methodology that can be reasonably required for preventing, controlling, or abating the pollutants and controlling pollution associated with a discharge.

Applicable TMDL means a TMDL for turbidity, fine sediment, high pH, or phosphorus, which was completed and approved by EPA before January 1, 2011, or before the date the operator’s complete permit application is received by Ecology, whichever is later.

Applicant means an operator seeking coverage under this permit.

Best Management Practices (BMPs) means schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural and/or managerial practices to prevent or reduce the pollution of waters of the State. BMPs include treatment systems, operating procedures, and practices to control: stormwater associated with construction activity, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Buffer means an area designated by a local jurisdiction that is contiguous to and intended to protect a sensitive area.

Bypass means the intentional diversion of waste streams from any portion of a treatment facility.

Calendar Day A period of 24 consecutive hours starting at 12:00 midnight and ending the following 12:00 midnight.

Calendar Week (same as Week) means a period of seven consecutive days starting at 12:01 a.m. (0:01 hours) on Sunday.

Certified Erosion and Sediment Control Lead (CESCL) means a person who has current certification through an approved erosion and sediment control training program that meets the minimum training standards established by Ecology (see BMP C160 in the SWMM).

Clean Water Act (CWA) means the Federal Water Pollution Control Act enacted by Public Law 92-500, as amended by Public Laws 95-217, 95-576, 96-483, and 97-117; USC 1251 et seq.

Combined Sewer means a sewer which has been designed to serve as a sanitary sewer and a storm sewer, and into which inflow is allowed by local ordinance.

Common Plan of Development or Sale means a site where multiple separate and distinct construction activities may be taking place at different times on different schedules and/or by different contractors, but still under a single plan. Examples include: 1) phased projects and projects with multiple filings or lots, even if the separate phases or filings/lots will be constructed under separate contract or by separate owners (e.g., a development where lots are sold to separate builders); 2) a development plan that may be phased over multiple years, but is still under a

consistent plan for long-term development; 3) projects in a contiguous area that may be unrelated but still under the same contract, such as construction of a building extension and a new parking lot at the same facility; and 4) linear projects such as roads, pipelines, or utilities. If the project is part of a common plan of development or sale, the disturbed area of the entire plan must be used in determining permit requirements.

Composite Sample means a mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing discrete samples. May be "time-composite" (collected at constant time intervals) or "flow-proportional" (collected either as a constant sample volume at time intervals proportional to stream flow, or collected by increasing the volume of each aliquot as the flow increases while maintaining a constant time interval between the aliquots).

Concrete wastewater means any water used in the production, pouring and/or clean-up of concrete or concrete products, and any water used to cut, grind, wash, or otherwise modify concrete or concrete products. Examples include water used for or resulting from concrete truck/mixer/pumper/tool/chute rinsing or washing, concrete saw cutting and surfacing (sawing, coring, grinding, roughening, hydro-demolition, bridge and road surfacing). When stormwater comes in contact with concrete wastewater, the resulting water is considered concrete wastewater and must be managed to prevent discharge to waters of the state, including ground water.

Construction Activity means land disturbing operations including clearing, grading or excavation which disturbs the surface of the land. Such activities may include road construction, construction of residential houses, office buildings, or industrial buildings, and demolition activity.

Contaminant means any hazardous substance that does not occur naturally or occurs at greater than natural background levels. See definition of "hazardous substance" and WAC 173-340-200.

Demonstrably Equivalent means that the technical basis for the selection of all stormwater BMPs is documented within a SWPPP, including:

1. The method and reasons for choosing the stormwater BMPs selected.
2. The pollutant removal performance expected from the BMPs selected.
3. The technical basis supporting the performance claims for the BMPs selected, including any available data concerning field performance of the BMPs selected.
4. An assessment of how the selected BMPs will comply with state water quality standards.
5. An assessment of how the selected BMPs will satisfy both applicable federal technology-based treatment requirements and state requirements to use all known, available, and reasonable methods of prevention, control, and treatment (AKART).

Department means the Washington State Department of Ecology.

Detention means the temporary storage of stormwater to improve quality and/or to reduce the mass flow rate of discharge.



Dewatering means the act of pumping ground water or stormwater away from an active construction site.

Director means the Director of the Washington Department of Ecology or his/her authorized representative.

Discharger means an owner or operator of any facility or activity subject to regulation under Chapter 90.48 RCW or the Federal Clean Water Act.

Domestic Wastewater means water carrying human wastes, including kitchen, bath, and laundry wastes from residences, buildings, industrial establishments, or other places, together with such ground water infiltration or surface waters as may be present.

Ecology means the Washington State Department of Ecology.

Engineered Soils means the use of soil amendments including, but not limited, to Portland cement treated base (CTB), cement kiln dust (CKD), or fly ash to achieve certain desirable soil characteristics.

Equivalent BMPs means operational, source control, treatment, or innovative BMPs which result in equal or better quality of stormwater discharge to surface water or to ground water than BMPs selected from the SWMM.

Erosion means the wearing away of the land surface by running water, wind, ice, or other geological agents, including such processes as gravitational creep.

Erosion and Sediment Control BMPs means BMPs intended to prevent erosion and sedimentation, such as preserving natural vegetation, seeding, mulching and matting, plastic covering, filter fences, sediment traps, and ponds. Erosion and sediment control BMPs are synonymous with stabilization and structural BMPs.

Final Stabilization (same as fully stabilized or full stabilization) means the establishment of a permanent vegetative cover, or equivalent permanent stabilization measures (such as riprap, gabions or geotextiles) which prevents erosion.

Ground Water means water in a saturated zone or stratum beneath the land surface or a surface water body.

Hazardous Substance means any dangerous or extremely hazardous waste as defined in RCW 70.105.010 (5) and (6), or any dangerous or extremely dangerous waste as designated by rule under chapter 70.105 RCW; any hazardous sub-stance as defined in RCW 70.105.010(14) or any hazardous substance as defined by rule under chapter 70.105 RCW; any substance that, on the effective date of this section, is a hazardous substance under section 101(14) of the federal cleanup law, 42 U.S.C., Sec. 9601(14); petroleum or petroleum products; and any substance or category of substances, including solid waste decomposition products, determined by the director

by rule to present a threat to human health or the environment if released into the environment. The term hazardous substance does not include any of the following when contained in an underground storage tank from which there is not a release: crude oil or any fraction thereof or petroleum, if the tank is in compliance with all applicable federal, state, and local law.

Injection Well means a well that is used for the subsurface emplacement of fluids. (See Well.)

Jurisdiction means a political unit such as a city, town or county; incorporated for local self-government.

National Pollutant Discharge Elimination System (NPDES) means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring, and enforcing permits, and imposing and enforcing pretreatment requirements, under sections 307, 402, 318, and 405 of the Federal Clean Water Act, for the discharge of pollutants to surface waters of the State from point sources. These permits are referred to as NPDES permits and, in Washington State, are administered by the Washington Department of Ecology.

Notice of Intent (NOI) means the application for, or a request for coverage under this general permit pursuant to WAC 173-226-200.

Notice of Termination (NOT) means a request for termination of coverage under this general permit as specified by Special Condition S10 of this permit.

Operator means any party associated with a construction project that meets either of the following two criteria:

- The party has operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications; or
- The party has day-to-day operational control of those activities at a project that are necessary to ensure compliance with a SWPPP for the site or other permit conditions (e.g., they are authorized to direct workers at a site to carry out activities required by the SWPPP or comply with other permit conditions).

Permittee means individual or entity that receives notice of coverage under this general permit.

pH means a liquid's measure of acidity or alkalinity. A pH of 7 is defined as neutral. Large variations above or below this value are considered harmful to most aquatic life.

pH monitoring period means the time period in which the pH of stormwater runoff from a site must be tested a minimum of once every seven days to determine if stormwater pH is between 6.5 and 8.5.

Point source means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, and container from which pollutants are or may be discharged to surface waters of the State. This term does not include return flows from irrigated agriculture. (See Fact Sheet for further explanation.)

Pollutant means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, domestic sewage sludge (biosolids), munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal, and agricultural waste. This term does not include sewage from vessels within the meaning of section 312 of the CWA, nor does it include dredged or fill material discharged in accordance with a permit issued under section 404 of the CWA.

Pollution means contamination or other alteration of the physical, chemical, or biological properties of waters of the State; including change in temperature, taste, color, turbidity, or odor of the waters; or such discharge of any liquid, gaseous, solid, radioactive or other substance into any waters of the State as will or is likely to create a nuisance or render such waters harmful, detrimental or injurious to the public health, safety or welfare; or to domestic, commercial, industrial, agricultural, recreational, or other legitimate beneficial uses; or to livestock, wild animals, birds, fish or other aquatic life.

Process wastewater means any water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product (40 CFR 122.1).

Receiving water means the water body at the point of discharge. If the discharge is to a storm sewer system, either surface or subsurface, the receiving water is the water body to which the storm system discharges. Systems designed primarily for other purposes such as for ground water drainage, redirecting stream natural flows, or for conveyance of irrigation water/return flows that coincidentally convey stormwater are considered the receiving water.

Representative means a stormwater or wastewater sample which represents the flow and characteristics of the discharge. Representative samples may be a grab sample, a time-proportionate composite sample, or a flow proportionate sample. Ecology's Construction Stormwater Monitoring Manual provides guidance on representative sampling.

Sanitary sewer means a sewer which is designed to convey domestic wastewater.

Sediment means the fragmented material that originates from the weathering and erosion of rocks or unconsolidated deposits, and is transported by, suspended in, or deposited by water.

Sedimentation means the depositing or formation of sediment.

Sensitive area means a water body, wetland, stream, aquifer recharge area, or channel migration zone.

SEPA (State Environmental Policy Act) means the Washington State Law, RCW 43.21C.020, intended to prevent or eliminate damage to the environment.

Significant Amount means an amount of a pollutant in a discharge that is amenable to available and reasonable methods of prevention or treatment; or an amount of a pollutant that has a

reasonable potential to cause a violation of surface or ground water quality or sediment management standards.

Significant concrete work means greater than 1000 cubic yards poured concrete or recycled concrete over the life of a project.

Significant Contributor of Pollutants means a facility determined by Ecology to be a contributor of a significant amount(s) of a pollutant(s) to waters of the State of Washington.

Site means the land or water area where any "facility or activity" is physically located or conducted.

Source control BMPs means physical, structural or mechanical devices or facilities that are intended to prevent pollutants from entering stormwater. A few examples of source control BMPs are erosion control practices, maintenance of stormwater facilities, constructing roofs over storage and working areas, and directing wash water and similar discharges to the sanitary sewer or a dead end sump.

Stabilization means the application of appropriate BMPs to prevent the erosion of soils, such as, temporary and permanent seeding, vegetative covers, mulching and matting, plastic covering and sodding. See also the definition of Erosion and Sediment Control BMPs.

Storm drain means any drain which drains directly into a storm sewer system, usually found along roadways or in parking lots.

Storm sewer system means a means a conveyance, or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains designed or used for collecting or conveying stormwater. This does not include systems which are part of a combined sewer or Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.

Stormwater means that portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a stormwater drainage system into a defined surface water body, or a constructed infiltration facility.

Stormwater Management Manual (SWMM) or Manual means the technical Manual published by Ecology for use by local governments that contain descriptions of and design criteria for BMPs to prevent, control, or treat pollutants in stormwater.

Stormwater Pollution Prevention Plan (SWPPP) means a documented plan to implement measures to identify, prevent, and control the contamination of point source discharges of stormwater.

Surface Waters of the State includes lakes, rivers, ponds, streams, inland waters, salt waters, and all other surface waters and water courses within the jurisdiction of the state of Washington.

Temporary Stabilization means the exposed ground surface has been covered with appropriate materials to provide temporary stabilization of the surface from water or wind erosion. Materials include, but are not limited to, mulch, riprap, erosion control mats or blankets and temporary cover crops. Seeding alone is not considered stabilization. Temporary stabilization is not a substitute for the more permanent “final stabilization.”

Total Maximum Daily Load (TMDL) means a calculation of the maximum amount of a pollutant that a water body can receive and still meet state water quality standards. Percentages of the total maximum daily load are allocated to the various pollutant sources. A TMDL is the sum of the allowable loads of a single pollutant from all contributing point and nonpoint sources. The TMDL calculations must include a "margin of safety" to ensure that the water body can be protected in case there are unforeseen events or unknown sources of the pollutant. The calculation must also account for seasonable variation in water quality.

Treatment BMPs means BMPs that are intended to remove pollutants from stormwater. A few examples of treatment BMPs are detention ponds, oil/water separators, biofiltration, and constructed wetlands.

Transparency means a measurement of water clarity in centimeters (cm), using a 60 cm transparency tube. The transparency tube is used to estimate the relative clarity or transparency of water by noting the depth at which a black and white Secchi disc becomes visible when water is released from a value in the bottom of the tube. A transparency tube is sometimes referred to as a “turbidity tube.”

Turbidity means the clarity of water expressed as nephelometric turbidity units (NTU) and measured with a calibrated turbidimeter.

Uncontaminated means free from any contaminant, as defined in MTCA cleanup regulations. See definition of “contaminant” and WAC 173-340-200.

Waste Load Allocation (WLA) means the portion of a receiving water’s loading capacity that is allocated to one of its existing or future point sources of pollution. WLAs constitute a type of water quality based effluent limitation (40 CFR 130.2[h]).

Water quality means the chemical, physical, and biological characteristics of water, usually with respect to its suitability for a particular purpose.

Waters of the State includes those waters as defined as "waters of the United States" in 40 CFR Subpart 122.2 within the geographic boundaries of Washington State and "waters of the State" as defined in Chapter 90.48 RCW, which include lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, and all other surface waters and water courses within the jurisdiction of the state of Washington.

Well means a bored, drilled or driven shaft, or dug hole whose depth is greater than the largest surface dimension. (See Injection well.)

Wheel wash wastewater means any water used in, or resulting from the operation of, a tire bath or wheel wash (BMP C106: Wheel Wash), or other structure or practice that uses water to physically remove mud and debris from vehicles leaving a construction site and prevent track-out onto roads. When stormwater comingles with wheel wash wastewater, the resulting water is considered wheel wash wastewater and must be managed according to Special Condition S9.D.9.

## **APPENDIX B – ACRONYMS**

AKART	All Known, Available, and Reasonable Methods of Prevention, Control, and Treatment
BMP	Best Management Practice
CESCL	Certified Erosion and Sediment Control Lead
CFR	Code of Federal Regulations
CKD	Cement Kiln Dust
cm	Centimeters
CTB	Cement-Treated Base
CWA	Clean Water Act
DMR	Discharge Monitoring Report
EPA	Environmental Protection Agency
ESC	Erosion and Sediment Control
FR	Federal Register
NOI	Notice of Intent
NOT	Notice of Termination
NPDES	National Pollutant Discharge Elimination System
NTU	Nephelometric Turbidity Unit
RCW	Revised Code of Washington
SEPA	State Environmental Policy Act
SWMM	Stormwater Management Manual
SWPPP	Stormwater Pollution Prevention Plan
TMDL	Total Maximum Daily Load
UIC	Underground Injection Control
USC	United States Code
USEPA	United States Environmental Protection Agency
WAC	Washington Administrative Code
WQ	Water Quality
WWHM	Western Washington Hydrology Model



**APPENDIX I**

**HYDRAULIC PROJECT**

**APPROVAL, DATED NOVEMBER**

**19, 2015**



# HYDRAULIC PROJECT APPROVAL

Washington Department of  
Fish & Wildlife  
PO Box 43234  
Olympia, WA 98504-3234  
(360) 902-2200

Issued Date: November 19, 2015  
Project End Date: August 05, 2020

Permit Number: 2015-6-486+02  
FPA/Public Notice Number: N/A  
Application ID: 1712

PERMITTEE	AUTHORIZED AGENT OR CONTRACTOR
Port of Tacoma ATTENTION: Tom Bellerud PO Box 1837 Tacoma, WA 98401-1837	Port of Tacoma ATTENTION: Mark Rettmann PO Box 1837 Tacoma, WA 98401-1837

**Project Name:** Pier 4 (Terminal 4) Phase 2 Reconfiguration Project

**Project Description:** See JARPA.

## PROVISIONS

### TIMING RESTRICTIONS:

1. Work waterward of the ordinary high water line (OHWL) shall not occur from February 15 through July 15 of any year for the protection of migrating juvenile salmonids, with the following exceptions as described and agreed to in the JARPA Attachment F dated January 13, 2015:

- a.) False work, deck, forms and supports, including both installation and removal, and concrete pouring during the fish closure window during low tide in the dry at any elevation, is approved year-round for this project.
- b.) Removal of decking and other structures on the decking waterward of the OHWL is approved year-round.

### REQUIRED MITIGATION:

2. Due to impacts from this project that can be neither avoided nor minimized, and in lieu of the mitigation required under HPA 126683-2 (i.e., rehabilitation of the NRDA Olympic View Site), the permittee shall complete the mitigation elements listed in the approved mitigation plan submitted to and approved by WDFW June 5, 2015. The approved mitigation plan shall be attached to this HPA and followed as a HPA requirement.

### NOTIFICATION REQUIREMENTS:

3. The Area Habitat Biologist (AHB: Matt Curtis; email: matthew.curtis@dfw.wa.gov or fax: 360-902-2946) shall receive written notification from the person to whom this HPA is issued (permittee) or the agent/contractor no less than three working days prior to the start of construction. Applicant shall contact the AHB at the conclusion of project. All notifications shall include the permittee's name, project location, starting date for work, and the control number for this HPA.

4. Officer Prater shall receive written notification (e-mail: dustin.prater@dfw.wa.gov or fax: 360-876-1894) from the person to whom this HPA is issued (permittee) or the agent/contractor no less than three working days prior to start of work, and again within seven days of completion of work to arrange for a compliance inspection. The notification shall include the permittee's name, project location, starting date for work or completion date of work, and the control number for this HPA.

5. If at any time, as a result of project activities, fish are observed in distress, a fish kill occurs, or water quality problems develop (including equipment leaks or spills), work shall stop immediately except for efforts to control the spill and prevent additional toxic substances from entering the water. Immediate notification shall be made to the Washington Military Department's Emergency Management Division at 1-800-258-5990, and to the Area Habitat Biologist listed on this permit.

6. The permittee, agent or contractor shall contact WDFW by e-mail: HPAapplications@dfw.wa.gov; mail: PO Box



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43234, Olympia, Washington 98501; or fax: 360-902-2946 within seven days of work completion. The notification shall include the permittee's name, project location, completion date for the work, and the HPA control number. WDFW may conduct a compliance inspection; however, WDFW will notify the permittee or agent prior to the inspection.

### APPROVED PLANS:

7. Except as modified by this HPA, work shall be accomplished per plans and specifications approved by WDFW entitled "Pier 4 (Terminal 4) Phase 2 Reconfiguration Project" originally submitted and dated September 25, 2014, with updated plans submitted January 13, 2015, and updated with mitigation plans June 5, 2015. A copy of these plans shall be available on site during construction.

8. This HPA authorizes the following actions:

- a.) Demolition of approximately 28,980 square feet of the existing pier structure (approximately 28,910 square feet waterward of the project-specific OHWM elevation of +12.78 feet MLLW).
- b.) Removal of approximately 330 16.5-inch concrete piles.
- c.) Removal of approximately 23 14-inch creosote-treated timber piles and 2 20-inch steel piles associated with an existing pile-supported fender system.
- d.) Installation of approximately 1,135 42-inch stone columns in fourteen rows at the south end of the new pier. (Up to 60 of the approximately 1,000 stone columns may be installed below the project-specific OHWM elevation of +12.78 feet MLLW).
- e.) Cutback and dredging of the existing channel slope to realign the pier (Approximately 500,000 CY of material)
- f.) Backfilling of overdredged area with riprap armoring to an approximate elevation of -56 feet MLLW. (Approximately 56,000 CY of stone will be placed on the slope)
- g.) Installation of approximately 1,450 24-inch-diameter octagonal precast pre-stressed concrete piles.
- h.) Installation of an approximately 1,325 foot-long sheet pile wall bulkhead.
- i.) Installation of a 236,000-square-foot cast-in-place and precast concrete deck and a paved pier deck with asphaltic concrete pavement with new crane rails, a panelized fender system, new bollards, and utility vaults and lines to serve the ship and cranes.
- j.) Installation of a 10-pile-supported mooring dolphin above OHWM.
- k.) Placement of geotextile fabric along the dredged slope from the top of the slope to elevation +5 (MLLW) from Phase 1 must be removed and disposed of at an approved upland site prior to the start of dredging in that area.
- l.) The approximately 300 potentially creosote treated timber piles may need to be removed in the dredge area, along with timber lagging and bracing installed between the piles. Any encountered creosote piles below OHWM must be removed as soon as possible once they are encountered/discovered.

### PILING:

- 9. All creosote piling to be removed shall be disposed of at an approved upland disposal site such that they do not enter waters of the state.
- 10. Concrete and steel piling removed shall be fully extracted and disposed or recycled at an approved upland site such that they do not enter waters of the state.



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11. Upon removal from substrate the pile shall be moved from the water to an upland location or barge.
12. Existing creosote piles shall be fully extracted whenever possible. If full extraction is not possible piles shall be cut or driven 3 feet below the mudline and the remaining hole capped with clean sand if they are not to be removed during dredging activities.
13. During removal of creosote-treated piles, containment booms and absorbent sausage booms (or other oil-absorbent fabric) will be placed around the perimeter of the work area to capture wood debris, oil, and other materials released into marine waters. All accumulated debris will be collected daily and disposed of at an approved upland site.
14. Beach area depressions created during project activities shall be shaped according to project specifications so that no beach area depressions exist upon project completion.
15. As per the approved plan, pile removal shall be done using a vibratory hammer or by pulling with a choke chain, and pile installation shall be done using impact driving methodology.

### DREDGING:

16. A clamshell or digging dredge bucket shall be used for dredging. Each pass of the clamshell dredge bucket shall be complete.
17. The bucket will be required to pause for several seconds at the water surface during retrieval to release excess water.
18. Dredged material shall not be stockpiled below the ordinary high water line.
19. Horizontal control for dredging operations will be achieved by careful tracking of clamshell bucket positions using an electronic positioning system that provides real-time display and tracking of the horizontal position of the dredge bucket to be in compliance with the authorized dredge depths.
20. Except for dredged material approved for use at the Saltchuk Site or an approved open water disposal site, dredged materials shall be disposed upland such that they do not re-enter surface waters of the state.
21. The bucket will be filled to capacity as much as possible to minimize water in the bucket, without overfilling the bucket.
22. Operators will ensure that the bucket is completely emptied of sediments over the scow before re-submerging the bucket in the waterway.
23. Disposal scows used for cutback dredging will not be overfilled to the point where recovered sediment overflows directly back to the waterway.
24. Disposal scows, flat barges, and other floating equipment shall be operated to minimize nearshore propeller-wash impacts such as suspension of nearshore sediments.
25. Per plans, a containment boom will be placed around the perimeter of the project site during dredging to contain floating debris and materials during project activities.

### RIPRAP:

26. Riprap for edge protection shall be clean, angular material of a sufficient durability and size to prevent its being broken up or washed away by high water or wave action. Riprap from the demolition of old riprap shoreline protection that is expected to be re-used in this project must meet these criteria.
27. Per the approved plans, barges or trucks will be used to transport and stage the riprap; the riprap will be placed in a controlled manner (i.e., gradually lowered into place), with the use of a skip box or clamshell bucket at the appropriate elevation above the sediment surface to minimize sediment disturbance.

### CONCRETE:

28. Fresh concrete or concrete by-products shall be prevented from entering waters of the state. All forms used for concrete shall be completely sealed to prevent leaching of fresh concrete from getting into state waters. Impervious materials shall be placed over any exposed concrete not lined with forms that will come in contact with waters of the



## HYDRAULIC PROJECT APPROVAL

Washington Department of  
Fish & Wildlife  
PO Box 43234  
Olympia, WA 98504-3234  
(360) 902-2200

Issued Date: November 19, 2015  
Project End Date: August 05, 2020

Permit Number: 2015-6-486+02  
FPA/Public Notice Number: N/A  
Application ID: 1712

state. Forms and impervious materials shall remain in place until concrete is cured to a sufficient strength.

29. The placement of wet concrete shall only occur when the tides are below the bottom of the concrete forms.

30. BMPs will be implemented to minimize actions that would cause concrete dust (drilling, cutting, etc) to enter state waters.

31. Oversized deck will capture any wet concrete that does leach out of the forms; if observed, wet concrete will be removed from the deck immediately and prior to it entering waters of the state and prior to tidal inundation.

32. Mats, tarps, or other material will be installed on the work platform near concrete pour areas to prevent possible drips/spills from entering the water.

33. Per plans and specifications, a float or vessel will be available for observation to capture leaks and fix problems and have sufficient head space above the tide level to do so. Pier 4 pile cap and pony bent forms will have a full (360 degree) view of the forms as there will not be an existing deck blocking the view of the forms.

34. Boom(s) will be placed around the project site when pouring concrete.

35. Per plans, a thick (low slump) concrete mix will be utilized for placement into the forms.

36. Vacuum and absorbent material will be available on the work platform to clean possible small spills.

37. Concrete will be placed on an outgoing tide (above the water level) to allow concrete to set and further seal the forms.

38. Forms will be left on until concrete is cured to sufficient strength.

39. Platform areas will be swept/cleaned after each concrete pour before tidal inundation to remove/collect any fresh or loose concrete materials; material will not be hosed down into the water.

40. Only freshwater will be used as a release agent on the forms.

41. Tools or equipment shall not be washed or cleaned off near the shoreline unless water for doing so is contained and prevented from entering state waters.

42. Plywood, mesh, or screens that meet the requirements of RCW 77.57 shall be used to exclude fish from the false work and forms.

43. Forms shall be inspected daily for any leaking wet concrete or potential problems that may cause wet concrete to leak. If concrete enters the water of the state, work will be stopped immediately and the situation will be reported to the Area Habitat Biologist.

44. Excess concrete will be disposed of at an upland site.

### HABITAT FEATURES: EELGRASS, WETLAND, ETC

45. Eelgrass and kelp shall not be adversely impacted due to any project activities (e.g., barge shall not ground, equipment shall not operate, and other project activities shall not occur in eelgrass and kelp).

46. Removal or destruction of overhanging bankline vegetation shall be limited to that necessary for the construction of the project.

47. Intertidal wetland vascular plants shall not be adversely impacted due to project activities (e.g., barge shall not ground, equipment shall not operate, and other activities shall not occur in intertidal wetland vascular plants). If such vegetation is adversely impacted, it shall be replaced using proven methodology.

48. All natural habitat features on the beach larger than 12 inches in diameter, including trees, stumps, logs, and large rocks, shall be retained on the beach following construction. These habitat features may be moved during construction if necessary.

### WATER QUALITY

49. Project activities shall be conducted to minimize siltation of the beach area and bed.



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50. All debris or deleterious material resulting from construction shall be removed from the beach area and bed and prevented from entering waters of the state.
51. No petroleum products or other deleterious materials shall enter surface waters.
52. Project activities shall not degrade water quality to the detriment of fish life.

LOCATION #1:	Site Name: Pier 4 (Husky Terminal, Port of Tacoma) 1101 Port of Tacoma Rd, Tacoma, WA 98421					
WORK START:	August 6, 2015			WORK END:	August 5, 2020	
<u>WRIA</u>		<u>Waterbody:</u>			<u>Tributary to:</u>	
10 - Puyallup - White		Puyallup River			Puyallup River	
<u>1/4 SEC:</u>	<u>Section:</u>	<u>Township:</u>	<u>Range:</u>	<u>Latitude:</u>	<u>Longitude:</u>	<u>County:</u>
S 1/2	27	21 N	03 E	47.273069	-122.408736	Pierce
<u>Location #1 Driving Directions</u>						
From I-5, exit onto Port of Tacoma Road (southbound exit 136, northbound exit 136B) and proceed west approximately 2 miles to the gate located at 1101 Port of Tacoma Road.						

### APPLY TO ALL HYDRAULIC PROJECT APPROVALS

This Hydraulic Project Approval pertains only to those requirements of the Washington State Hydraulic Code, specifically Chapter 77.55 RCW. Additional authorization from other public agencies may be necessary for this project. The person(s) to whom this Hydraulic Project Approval is issued is responsible for applying for and obtaining any additional authorization from other public agencies (local, state and/or federal) that may be necessary for this project.

This Hydraulic Project Approval shall be available on the job site at all times and all its provisions followed by the person (s) to whom this Hydraulic Project Approval is issued and operator(s) performing the work.

This Hydraulic Project Approval does not authorize trespass.

The person(s) to whom this Hydraulic Project Approval is issued and operator(s) performing the work may be held liable for any loss or damage to fish life or fish habitat that results from failure to comply with the provisions of this Hydraulic Project Approval.

Failure to comply with the provisions of this Hydraulic Project Approval could result in a civil penalty of up to one hundred dollars per day and/or a gross misdemeanor charge, possibly punishable by fine and/or imprisonment.



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All Hydraulic Project Approvals issued under RCW 77.55.021 are subject to additional restrictions, conditions, or revocation if the Department of Fish and Wildlife determines that changed conditions require such action. The person(s) to whom this Hydraulic Project Approval is issued has the right to appeal those decisions. Procedures for filing appeals are listed below.

**MINOR MODIFICATIONS TO THIS HPA:** You may request approval of minor modifications to the required work timing or to the plans and specifications approved in this HPA. Any approved minor modification will require issuance of a letter documenting the approval. A minor modification to the required work timing means any change to the work start or end dates of the current work season to enable project or work phase completion. Minor modifications will be approved only if spawning or incubating fish are not present within the vicinity of the project. You may request subsequent minor modifications to the required work timing. A minor modification of the plans and specifications means any changes in the materials, characteristics or construction of your project that does not alter the project's impact to fish life or habitat and does not require a change in the provisions of the HPA to mitigate the impacts of the modification. Minor modifications do not require you to pay additional application fees or be issued a new HPA. If you originally applied for your HPA through the online Aquatic Protection Permitting System (APPS), you may request a minor modification through APPS. A link to APPS is at <http://wdfw.wa.gov/licensing/hpa/>. If you did not use APPS you must submit a written request that clearly indicates you are seeking a minor modification to an existing HPA. Written requests must include the name of the applicant, the name of the authorized agent if one is acting for the applicant, the APP ID number of the HPA, the date issued, the permitting biologist, the requested changes to the HPA, the reason for the requested change, the date of the request, and the requestor's signature. Send by mail to: Washington Department of Fish and Wildlife, PO Box 43234, Olympia, Washington 98504-3234, or by email to [HPAapplications@dfw.wa.gov](mailto:HPAapplications@dfw.wa.gov). Do not include payment with your request. You should allow up to 45 days for the department to process your request.

**MAJOR MODIFICATIONS TO THIS HPA:** You may request approval of major modifications to any aspect of your HPA. Any approved change other than a minor modification to your HPA will require issuance of a new HPA. If you paid an application fee for your original HPA you must pay an additional \$150 for the major modification. If you did not pay an application fee for the original HPA, no fee is required for a change to it. If you originally applied for your HPA through the online Aquatic Protection Permitting System (APPS), you may request a major modification through APPS. A link to APPS is at <http://wdfw.wa.gov/licensing/hpa/>. If you did not use APPS you must submit a written request that clearly indicates you are requesting a major modification to an existing HPA. Written requests must include the name of the applicant, the name of the authorized agent if one is acting for the applicant, the APP ID number of the HPA, the date issued, the permitting biologist, the requested changes to the HPA, the reason for the requested change, the date of the request, payment if the original application was subject to an application fee, and the requestor's signature. Send your written request and payment, if applicable, by mail to: Washington Department of Fish and Wildlife, PO Box 43234, Olympia, Washington 98504-3234. You may email your request for a major modification to [HPAapplications@dfw.wa.gov](mailto:HPAapplications@dfw.wa.gov), but must send a check or money order for payment by surface mail. You should allow up to 45 days for the department to process your request.

### APPEALS INFORMATION





## HYDRAULIC PROJECT APPROVAL

Washington Department of  
Fish & Wildlife  
PO Box 43234  
Olympia, WA 98504-3234  
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If you wish to appeal the issuance, denial, conditioning, or modification of a Hydraulic Project Approval (HPA), Washington Department of Fish and Wildlife (WDFW) recommends that you first contact the department employee who issued or denied the HPA to discuss your concerns. Such a discussion may resolve your concerns without the need for further appeal action. If you proceed with an appeal, you may request an informal or formal appeal. WDFW encourages you to take advantage of the informal appeal process before initiating a formal appeal. The informal appeal process includes a review by department management of the HPA or denial and often resolves issues faster and with less legal complexity than the formal appeal process. If the informal appeal process does not resolve your concerns, you may advance your appeal to the formal process. You may contact the HPA Appeals Coordinator at (360) 902-2534 for more information.

**A. INFORMAL APPEALS:** WAC 220-660-460 is the rule describing how to request an informal appeal of WDFW actions taken under Chapter 77.55 RCW. Please refer to that rule for complete informal appeal procedures. The following information summarizes that rule.

A person who is aggrieved by the issuance, denial, conditioning, or modification of an HPA may request an informal appeal of that action. You must send your request to WDFW by mail to the HPA Appeals Coordinator, Department of Fish and Wildlife, Habitat Program, 600 Capitol Way North, Olympia, Washington 98501-1091; e-mail to [HPAapplications@dfw.wa.gov](mailto:HPAapplications@dfw.wa.gov); fax to (360) 902-2946; or hand-delivery to the Natural Resources Building, 1111 Washington St SE, Habitat Program, Fifth floor. WDFW must receive your request within 30 days from the date you receive notice of the decision. If you agree, and you applied for the HPA, resolution of the appeal may be facilitated through an informal conference with the WDFW employee responsible for the decision and a supervisor. If a resolution is not reached through the informal conference, or you are not the person who applied for the HPA, the HPA Appeals Coordinator or designee will conduct an informal hearing and recommend a decision to the Director or designee. If you are not satisfied with the results of the informal appeal, you may file a request for a formal appeal.

**B. FORMAL APPEALS:** WAC 220-660-470 is the rule describing how to request a formal appeal of WDFW actions taken under Chapter 77.55 RCW. Please refer to that rule for complete formal appeal procedures. The following information summarizes that rule.

A person who is aggrieved by the issuance, denial, conditioning, or modification of an HPA may request a formal appeal of that action. You must send your request for a formal appeal to the clerk of the Pollution Control Hearings Boards and serve a copy on WDFW within 30 days from the date you receive notice of the decision. You may serve WDFW by mail to the HPA Appeals Coordinator, Department of Fish and Wildlife, Habitat Program, 600 Capitol Way North, Olympia, Washington 98501-1091; e-mail to [HPAapplications@dfw.wa.gov](mailto:HPAapplications@dfw.wa.gov); fax to (360) 902-2946; or hand-delivery to the Natural Resources Building, 1111 Washington St SE, Habitat Program, Fifth floor. The time period for requesting a formal appeal is suspended during consideration of a timely informal appeal. If there has been an informal appeal, you may request a formal appeal within 30 days from the date you receive the Director's or designee's written decision in response to the informal appeal.

**C. FAILURE TO APPEAL WITHIN THE REQUIRED TIME PERIODS:** If there is no timely request for an appeal, the WDFW action shall be final and unappealable.

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## HYDRAULIC PROJECT APPROVAL

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Habitat Biologist      matthew.curtis@dfw.wa.gov  
Matthew Curtis      360-902-2578

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A handwritten signature in black ink, appearing to be "M. Curtis", written over a horizontal line.

for Director  
WDFW

**APPENDIX J**

**CITY OF TACOMA SHORELINE  
SUBSTANTIAL DEVELOPMENT  
PERMIT, NO. SHR2014-  
40000223511, DATED JULY 15,  
2015**



City of Tacoma  
Planning and Development Services Department  
747 Market St, Room 345  
Tacoma, WA 98402

# NOTICE OF DECISION

Date of Decision: 6/30/2015  
Last date to request  
reconsideration: 7/14/2015  
Decision Final: 7/15/2015

**Decision:** Approved, subject to conditions

**Proposal:**

Pier 4 Phase II Reconfiguration Project. Reconstruction and reconfiguration of pier at Husky Terminal, including demolition, removal and replacement of piling, cutback and dredging of channel, installation of stone columns, installation of new shoreline armoring and sheetpile, mooring dolphins, concrete pier, crane rails, and other associated equipment and development. This follows Phase I cleanup and removal of existing Pier (under EPA permitting).

**Applicant:** Port of Tacoma, Tim Ebner

**Location:** 1101 Port of Tacoma Road, 2275200610

**Application No:** SHR2014-40000223511

For further information regarding the proposal, **log onto the website at <http://tacomapermits.org> and select "Message Board"**. The case file may be viewed in Planning and Development Services, 747 Market Street, Room 345.

**Reconsideration:** Any person having standing may request reconsideration of the Director's decision, based upon errors of procedure or fact, by submitting a request in writing to Planning and Development Services at the address above.

**Appeal to Shoreline Hearings Board:** If no reconsideration request is timely filed, the decision shall become final and shall be transmitted to the Department of Ecology. Upon receipt of the final decision, Ecology shall conduct a 21-day appeal period. The Decision may be appealed by any person aggrieved by the granting, denying or rescinding of a permit on shorelines of the state pursuant to RCW 90.58.140, who may seek review from the shorelines hearings board by filing a petition for review.

Information on filing an appeal of a Shoreline Substantial Development Permit may be obtained by contacting the State of Washington Environmental and Land Use Hearings Office at [www.eho.wa.gov](http://www.eho.wa.gov) or PO Box 40903, Olympia WA 98504-0903, 360-664-9160, [eluho@eluho.wa.gov](mailto:eluho@eluho.wa.gov)

**Staff Contact:** Shirley Schultz, Principal Planner, 747 Market St, Room 345, (253) 591-5121, [shirley.schultz@cityoftacoma.org](mailto:shirley.schultz@cityoftacoma.org)

**Environmental Review:** Per SEPA, WAC, 197-11-800, the applicant / property owner, acting as Lead Agency for the project, issued the environmental determination for the project. For further information regarding SEPA, please contact the project applicant.

*To request this information in an alternative format or a reasonable accommodation, please call 253-591-5030 (voice). TTY or STS users please dial 711 to connect to Washington Relay Services.*



City of Tacoma  
Planning and Development Services Department  
747 Market St, Room 345  
Tacoma, WA 98402

## **NOTICE OF LAND USE DECISION**



**City of Tacoma**  
Planning and Development Services  
Report And Decision

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**SHORELINE SUBSTANTIAL  
DEVELOPMENT PERMIT FOR:**

**File No. SHR2014-40000223511**

Mark Rettmann  
Port of Tacoma  
PO Box 1837  
Tacoma, WA 98401-9443

**SUMMARY OF REQUEST:**

The applicant requests a shoreline substantial development permit for the Pier 4 Phase II Reconfiguration Project. The proposal includes reconstruction and reconfiguration of pier at Husky Terminal, including demolition, removal and replacement of piling, cutback and dredging of channel, installation of stone columns, installation of new shoreline armoring and sheetpile, mooring dolphins, concrete pier, crane rails, and other associated equipment and development. This follows Phase I cleanup and removal of existing Pier (under EPA permitting). The site is zoned "S-10" Shoreline District – Port Industrial and "S-13" Shoreline District – Marine Waters of the State, and is located on the Blair Waterway.

**LOCATION:**

1101 Port of Tacoma Road, parcel 2275200610

**DECISION:**

The request for a Shoreline Substantial Development Permit is **Approved**, subject to conditions.

**NOTE:** Reconsideration period closes **July 14, 2015**.

The effective date of this decision is **July 15, 2015**, provided no requests for reconsideration are timely filed as identified in APPEAL PROCEDURES of this Report and Decision.

**For additional information concerning this permit please contact:**

Shirley Schultz  
Planning and Development Services  
747 Market Street, Room 345, Tacoma, WA 98402  
253-591-5121 | [shirley.schultz@cityoftacoma.org](mailto:shirley.schultz@cityoftacoma.org)

## **SUMMARY OF RECORD**

The following exhibits and attachments constitute the administrative record:

Attachments:

- A. Vicinity Map
- B. Proposed Plan
- C. Technical Memorandum, Shannon Brenner, June 4, 2015

Exhibits:<sup>1</sup>

- A. JARPA, as revised January 13, 2015
- B. Land Use Application – Permit Narrative, September 17, 2014
- C. Biological evaluation, as revised February 12, 2015
- D. Port of Tacoma SEPA determination, May 15, 2014
- E. Project Impact Analysis, April 28, 2014 and Errata Letter, April 16, 2015
- F. Port of Tacoma response to comments, April 14, 2015
- G. Port of Tacoma mitigation proposal, June 5, 2015
- H. Applicable Regulations, *TSMP* and *TMC* 13.10

The Director enters the following Findings and Conclusions based upon the applicable criteria and standards set forth in the *Tacoma Municipal Code (TMC)*, *Tacoma Shoreline Master Program (TSMP)*, and *Washington Administrative Code (WAC)*, as well as the attachments and exhibits listed above.

## **FINDINGS**

### **Proposal:**

1. The Port is proposing to reconfigure and reconstruct Pier 4 to be in alignment with Pier 3 within the Husky Terminal. Once the project is completed, Piers 3 and 4 will have a combined length of 2,954 feet and will be capable of simultaneously berthing two ultra-large container ships (ULCS), 18,000 twenty-foot equivalent unit (TEU) ships that are approximately 1,300 feet long and 205 feet wide. The reconfigured Pier 4 will be able to accommodate up to eight 100-foot-gage cranes capable of loading ships that are 24 containers wide.
2. The purpose of the project is to improve Port operational efficiency and the ability to serve new, larger container ships than current pier sizes allow.
3. The work proposed under this shoreline permit will follow a “Phase 1”. Phase 1 of the project includes a US Environmental protection Agency (USEPA) cleanup to remove contaminated sediments and Phase 2 is the reconfiguration of Pier 4. This review does not include activities required for the cleanup action. The cleanup action does not require local permitting and USEPA requested comments from the City of Tacoma under a separate review.
4. *TMC* 13.10.2.4 requires applications to include a Joint Aquatic Resources Permit Application (JARPA) and technical reports addressing the ecological conditions of the site. The applicant submitted the following reports and supporting documents for review:

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<sup>1</sup> All Exhibits are contained in Planning and Development Services Department File No. SHR2014-40000223511 and are referenced and incorporated herein as though fully set forth.



- JARPA including Attachment F, dated January 13, 2015
  - SEPA Determination, dated May 15, 2014
  - Biological Evaluation, dated February 12, 2015
  - Land Use Application – Permit Narrative, September 17, 2014.
  - Project Impact Analysis, dated April 28, 2014 and Errata Letter, dated April 16, 2015.
  - Port of Tacoma response to comments, dated April 14, 2015.
  - Port of Tacoma mitigation proposal, dated June 5, 2015.
5. Work will include the following elements:
- Removal of a portion of the existing Pier 4 (approximately 29,000 square feet which remains after Phase 1) along with approximately 285 concrete piles;
  - Removal of approximately 25 additional piles associated with a fender system;
  - Installation of approximately 1,000 stone columns for site stabilization, up to 60 of which will be below Ordinary High Water;
  - Cut back the existing sloped shoreline to consist of approximately 500,000 cubic yards of dredging, backfill with rip rap, and other associated armoring;
  - Installation of approximately 1,450 concrete piles, a 1,325-foot sheetpile wall, and a 10-pile mooring dolphin;
  - Construction of a new 1,770 foot-long section of new Pier 4 and connection to Pier 3 (for a net increase of 81 linear feet of pier);
  - Installation of crane rails on the Pier; and
  - Associated upland improvements to include lighting, power service, a marine services building, and a water distribution system.
6. The result is a net reduction of overwater coverage and number of piles but an increase of 81 linear feet of pier and 201 sf of bed coverage due to the change in diameter of pile. The pier reconfiguration will reduce overwater coverage due to the overlap of the new pier footprint with the existing footprint and relocation of the pier inland.

### **Project Site:**

7. The subject site is located along the Blair Waterway in Commencement Bay in the S-10 Shoreline District – Port Industrial and S-13 Shoreline District – Waters of the State. Marine waters and shorelands extending 200 feet from the ordinary high water mark (OHWM) of Commencement Bay are regulated under *Tacoma Municipal Code (TMC)* 13.10 Shoreline Management. The site is referred to as the “Husky Container Terminal”.
8. The site is located on historical fill and has functioned as a terminal for the loading and unloading of containerized cargo since the mid 1950’s. The site is fully developed with a cargo pier and associated backlands (cargo handling area), including cranes/rails, utility infrastructure, and administrative facilities.
9. The Blair Waterway is dredged to maintain the shipping channel and lacks aquatic vegetation. The site is developed with an existing pier above a rip rap bulkhead with no riparian habitat. Vegetation is dominated by weedy species growing up through cracks in the pavement and along the rip rap edge. Due to the existing pier and paved surfaces, there is no off-channel habitat or functioning floodplain. There are two restoration/mitigation sites located to the north and south of the subject parcel, but this project will not impact these sites.
10. The project is being reviewed for impacts to critical areas and their associated buffers. *TMC* 13.10.2.4.2 allows staff to review the site and inventories to determine the presence of critical areas. Review of the project included a site visit to verify the conditions and critical

areas in the vicinity. Review of readily available information included the City of Tacoma govME maps, Washington Department of Fish and Wildlife inventories for Priority Habitat and Species, and National Marine Fisheries Service and U.S. Fish and Wildlife websites for federally listed species and Critical Habitat.

11. Activities in a critical area and associated buffer are regulated and there is a Fish and Wildlife Habitat Conservation Area and marine buffer located at the project site. *TMC* 13.10.6.4 designates critical areas and provides policies and regulations to protect critical areas. Critical areas include Fish and Wildlife Habitat Conservation Areas (FWHCAs) and the Blair Waterway is regulated as a FWHCA because federally listed species and State Priority Habitat and Species are present in the waterway. *TMC* 13.10.6.4.3 B.3 requires a 50-foot marine buffer for the S-10 Shoreline District to protect the marine shoreline.
12. The upland portion of the site is zoned S-10 Shoreline District – Port Industrial, and is designated as a “high intensity” environment by the *TSMP*.
13. The intent of the S-10 Port Industrial Area Shoreline District is to allow the continued development of the Port Industrial Area, with an increase in the intensity of development and a greater emphasis on terminal facilities within the City.
14. The purpose of the “high-intensity” environment is to provide for high-intensity water-dependent and water-oriented mixed-use commercial, transportation, and industrial uses while protecting existing ecological functions and restoring ecological functions in areas that have been previously degraded.
15. The in-water portion of the site is zoned “S-13” Shoreline District – Marine Waters of the State, and is designated as “aquatic” environment by the *TSMP*.
16. The intent of the “S-13” Shoreline District is to maintain water bodies for the use by the public for navigation, commerce and recreation purposes and to manage in-water structures in a consistent manner throughout the City’s shorelines. (*TSMP* Section 9.15.A)
17. The aquatic environment is designed to “protect, restore, and manage the unique characteristics and resources of the marine areas waterward of the ordinary high water mark.” (*TSMP* Section 5.5.2)

#### **Surrounding Area:**

18. The surrounding area is zoned “S-10” Shoreline District – Port Industrial and “S-13” Shoreline District – Marine Waters of the State. Inland from the site the area is zoned “PMI” – Port Maritime Industrial
19. The surrounding area is developed primarily with shipping container facilities designed for the movement of goods across the Port of Tacoma, as well as water-dependent high intensity industrial facilities. The area is largely covered with impervious surfaces and rail and vehicle infrastructure.

#### **Additional Information:**

20. The Port of Tacoma, as SEPA “lead agency” issued a SEPA Determination of Environmental Nonsignificance effective May 15, 2014. The Port of Tacoma determined that the project was unlikely to result in any adverse environmental impacts. (Exhibit “D”)
21. The *TSMP* provides the following policy guidance relative to port and industrial uses in the shoreline:
  - Expansion or redevelopment of water-dependent port and industrial facilities and areas should be encouraged, provided it results in no net loss of shoreline functions.

22. Specific regulations for moorage facilities are set forth in *TMC 13.10.8.6*. Pertinent regulations are as follows:
- There shall be no net loss of ecological functions as a result of development of moorage facilities and associated recreational opportunities.
  - Moorage facilities shall be located, designed, constructed, and operated so as to minimize impacts to shoreline resources and unnecessary interference with the right of adjacent property owners, public navigation of public waters, as well as adjacent shoreline or water uses.
  - Design and construction of all piers, wharves, docks, and floats is required to avoid, minimize, and mitigate for impacts to ecological processes and functions and to be constructed of approved materials.
  - Pier, wharf, dock, and float facilities shall be equipped with adequate lifesaving equipment such as life rings, hooks, and ropes.
  - Piers, wharves, docks, and floats shall be constructed so as not to interfere with or impair the navigational use of surface water.
23. In addition, specific regulations for all shoreline development are set forth in *TMC13.10.6*, related to the following:
- Setbacks
  - Signage
  - Parking
  - Archaeological and Cultural Preservation
  - Public access
  - Critical area and vegetation preservation
  - Views and Aesthetics
  - Water quality
24. With respect to these subjects, the Director would note that no deviations from required standards are proposed with the development. Further, no signage or parking is proposed with the development. Finally, no impacts to views will occur; the new cranes will be in keeping with other equipment at other cargo terminals in the Port of Tacoma.
25. The Port of Tacoma operates all contracts with an Unanticipated Discovery Plan for archaeological resources. No potential encounters have been identified in the project area.
26. The site is part of an Interlocal Agreement between the City of Tacoma and the Port of Tacoma relating to public access. The agreement was adopted August 6, 2013; the agreement includes the Pier 4 development and “credits” it with the previous development of the Dick Gilmur Kayak Launch on Marine View Drive. Thus the public access requirements for the project have been met.
27. With regards to critical areas, vegetation and water quality, the plans and project proposal were reviewed by Shannon Brenner, Environmental Specialist and subject matter expert for the Planning and Development Services Department. The Director would note that substantial weight is given to Ms. Brenner’s review of the proposal for potential effects on critical areas. Ms. Brenner’s Technical Memorandum is marked as Attachment “C”.
28. The following is the agreed mitigation for permanent impacts and temporary impacts that may occur during construction. In addition to the following mitigation, the project incorporates construction methods and best management practices to avoid, reduce, and minimize impacts. Details for construction techniques and best management practices are provided in the JARPA submitted for the project.

The following mitigation quantities exceed the square footage quantities for impacts from this project. Approximately 1,675 sf of structures located in intertidal areas will be removed, whereas, approximately 1,053 sf of the 81 additional lineal feet of pier are located in intertidal and shallow subtidal areas. The POT with agreement from WDFW, has proposed the additional mitigation with this proposal for work that was conducted for Pier 3 outside the parameters of the approved permit for that project.

- Removal of approximately 625 sf of creosote treated timber Arkema float located in intertidal area.
- Removal of 36 sf of concrete float located in intertidal area.
- Removal of 258 sf creosote treated timber float located in intertidal area.
- Removal of 4 12-inch steel pile (48 sf) at the Arkema float
- Removal of 42 creosote treated timber piling (672 sf) at Port Parcel 74
- Removal of a 54' x 25' building that extends overwater. Approximately 756 sf of the building is waterward of OHWM and shading intertidal areas.
- Removal of approximately 1,800 sf of impervious surface located in the marine buffer of Port parcel 74.
- Removal of approximately 41 lineal feet of bulkhead at Port parcel 74.
- Removal of marine debris within the intertidal area and Shoreline buffer at Port Parcel 74

29. The project will undergo additional review by US Army Corps of Engineers and the Washington State Department of Fish and Wildlife. The applicant has prepared a Biological Evaluation (BE) to meet permitting requirements of US Army Corp of Engineers and demonstrate compliance with Section 7 of the Endangered Species Act. The BE identifies Chinook Salmon (*Oncorhynchus tshawytscha*), Steelhead (*Oncorhynchus mykiss*), Bull Trout (*Salvelinus confluentus*), Southern Resident Orca (*Orcinus Orca*), Humpback Whale (*Megaptera novaeangliae*), Marbled Murrelet (*Brachyramphus marmoratus*), Boccaccio (*Sebastes paucispinis*), Yelloweye Rockfish (*Sebastes ruberrimus*), Canary Rockfish (*Sebastes pinniger*), and Pacific Eulachon (*Thaleichthys pacificus*) as potentially occurring near the project area and has determined that this proposal is Not Likely To Adversely Affect (NLTA) or will have No Effect (NE) on any of these species or their associated critical habitat.
30. Based upon Ms. Brenner's Technical Memorandum, the Director finds that, if constructed per the provided plans and with the proposed mitigation, the proposal requires no further review or mitigation under *TMC* 13.10.

#### **Public and Agency Comments:**

31. The application was determined to be complete for review on September 22, 2014.
32. Written notice of the application and copies of the project plans and the JARPA were originally transmitted to the reviewing local, state, and federal resource agencies on September 30, 2014. No comments were received. However, the project was reviewed and revised by other permitting agencies (Department of Fish and Wildlife, Corps of Engineers, etc.).
33. Public notice was sent to all owners of property within 400 feet of the site on September 30, 2014. No comments were received.

#### **Conclusion of Law as Finding of Fact:**

34. Any conclusion of law hereinafter stated which may be deemed a finding of fact herein is hereby adopted as such.

## **CONCLUSIONS**

### **Jurisdiction:**

1. The Planning Director has jurisdiction in this matter. See *TMC* Section 13.05.030.

### **Burden of Proof:**

2. The applicant bears the burden of proof to demonstrate the proposal's consistency with the policies of the *TSMP* and the Comprehensive Plan, including its implementing regulations set forth in *TMC* Chapter 13.10, with policies of the Shoreline Management Act ("SMA"), the criteria set forth in the *WAC* for the approval of Substantial Development Permits, and other applicable City ordinances.

### **Applicable Regulations:**

3. Moorage facilities and improvements thereto, in support of permitted upland uses, are permitted in both the "S-10" and "S-13" Shoreline Districts, subject to the issuance of a Shoreline Substantial Development Permit and consistency with development regulations and policies. See *TMC* 13.10; *TSMP*; *WAC* 173-27-150.
4. *WAC* 173-27-140 Review criteria for all development:
  - (1) No authorization to undertake use or development on shorelines of the state shall be granted by the local government unless upon review the use or development is determined to be consistent with the policy and provisions of the Shoreline Management Act and the master program.
5. *WAC* 173-27-150 allows that:
  - (1) A substantial development permit shall be granted only when the development proposed is consistent with:
    - (a) The policies and procedures of the act;
    - (b) The provisions of this regulation; and
    - (c) The applicable master program adopted or approved for the area. Provided, that where no master program has been approved for an area, the development shall be reviewed for consistency with the provisions of chapter 173-26 *WAC*, and to the extent feasible, any draft or approved master program which can be reasonably ascertained as representing the policy of the local government.
  - (2) Local government may attach conditions to the approval of permits as necessary to assure consistency of the project with the act and the local master program
6. Work occurring within the marine buffer and/or within marine waters is subject to review for marine shoreline and critical areas preservation. The applicant must demonstrate that they have followed mitigation sequencing for impacts using avoidance, minimization, and mitigation. See *TSMP* Sections 2.4.2 and 6.4.
7. Work within the aquatic environment is subject to review per the standards set forth in *TMSP* 5.5.2. In particular, all uses and modifications must preserve water quality, minimize interference with use of the waterway and shoreline, and protect overall environmental quality.

### **Conclusions:**

8. Any finding set forth above which may be deemed a conclusion is hereby adopted as such.

9. The project as described is generally consistent with the stated intent of the “S-10” and “S-13” Shoreline Districts, as well as with the objective of the shoreline environments in which the project site is located. See *TMC* 13.10.9.12 and 9.15; *TSMP*; Attachments “B” and “C”; Findings 1-6, 12-17.
10. The use and development, permitted within the “S-10” and “S-13” Shoreline Districts, is consistent with surrounding uses and facilitates the water-dependent uses at the site. It is the conclusion of this Director that the proposal is generally consistent with the policies of the SMA. The request is also generally consistent with the applicable provisions of the City’s Comprehensive Plan. See *TMC* 13.10. 9.12 and 9.15, *TMC* 13.10.8.6; *TSMP*; Exhibits “A-B”; Attachment “C”; Findings 12-19.
11. The project is consistent with the regulations specific to development in the “S-10” and “S-13” Shoreline District and also consistent with regulations specific to development of moorage facilities. See *TMC*13.10.9.12 and 9.15, *TMC*13.10.8.6; Attachments “A”-“C” ; Exhibits “A” and “B”; Findings 1-6, 12-17, 20-30.
12. The site supports a shipping terminal that is a water-dependent use requiring direct water access and cannot be relocated outside of the FWHCA or marine buffer. *TMC* 13.10.6.4.2.B Critical Area Buffer Modification, allows modification of a FWHCA and marine buffer when it is necessary to accommodate an approved water-dependent use. *TMC* 13.10.6.4.3.C Marine Shoreline Buffer Reductions, further allows for the reduction of a marine buffer for direct water access when the use is water-dependent. Attachment “C”; Findings 10-11, 27-30.
13. *TMC* 13.10.6.4.3.D Marine Shoreline Mitigation Requirements, requires shoreline buffer mitigation to comply with the applicable mitigation requirements of *TMC* 13.10.6.4.2 General Mitigation Requirements. *TMC* 13.10.6.4.2.C.2, requires modification of a buffer or FWHCA to avoid, minimize, rectify, and compensate for impacts.  
  
The buffer is currently paved and will be paved in the proposed condition. However, the project will create a larger pier that will increase bed coverage from piles and shading of intertidal habitat associated with juvenile salmon. The applicant asserts the impact is unavoidable because the reconfiguration and larger pier are necessary to accommodate ultra-large container ships for the long-term economic competitiveness of the terminal.  
  
The applicant has minimized impacts with the use of design elements and best management practices. The reconfiguration also utilizes areas that are already developed with a shipping terminal and will reduce the overall square footage of overwater coverage. The permanent impacts, from additional bed coverage from piles and intertidal shading, cannot be rectified and compensatory mitigation has been provided. Attachment “C”; Findings 27-30.
14. *TMC* 13.10.6.4.2.C.3.b.i gives preference for mitigation that is in-kind. The impacts are from new bed coverage and overwater coverage in intertidal areas. The mitigation will remove an equivalent amount of overwater structure, bulkhead, and debris from a shoreline providing an equivalent biological function. Attachment “C”; Finding 28.
15. *TMC* 13.10.6.4.2.C.3.b.i and *TMC* 13.10.6.4.2.C 3.c.i give preference for compensatory mitigation at larger habitat sites in areas that will provide greater critical area or shoreline function when the project is in a High-Intensity environment. *TMC* 13.10.6.4.4.C FWHCA Mitigation Requirements, further requires mitigation to be located within the same aquatic ecosystem as the area disturbed and achieve equivalent or greater biological functions.

The project site is in a High-Intensity environment. The mitigation site is located in the Hylebos Waterway along a lower gradient beach, not armored with riprap, and is located

near a large mudflat with the potential for use by juvenile salmonids. It is likely to provide equal or improved biological functions than mitigation located at the project site. Attachment "C"; Finding 30.

16. *TMC 13.10.6.4.4.B* requires activities within a FWHCA with which a state or federally listed species has a primary association to be consistent with the species located there and all applicable state and federal regulations and protected with the application of protection measures in accordance with a critical area report or habitat management plan. Activities in water bodies used by anadromous fish shall give special consideration to the preservation and enhancement of anadromous fish habitat.

The analysis of impacts and additional proposed mitigation addresses impacts to federal and state listed species known to occur in Commencement Bay. The project includes construction techniques and best management practices designed to meet regulatory requirements for the protection of listed species and will be required to meet in-water work restrictions to protect salmonids. The project is undergoing review and approval by state and federal agencies which will require additional review for state and federally listed species. Attachment "C"; Exhibit "C"; Finding 29.

17. Compliance with the conditions set forth and existing codes will ensure that the project meets the environmental protection measures required for all developments proposed within the City's shoreline. See *TMC 13.10.6.4*; Attachment "C"; Findings 20-30.

### **DECISION**

Based upon the above findings and conclusions, the Shoreline Substantial Permit is **Approved**, subject to the following conditions:

#### **Conditions:**

1. No construction materials or debris shall be allowed to enter waters of the State. Best Management Practices shall be used throughout the demolition and construction process.
2. All work waterward of the ordinary high water mark/line, will follow the restrictions and criteria approved by WDFW.
3. Best management practices and construction techniques outlined in the JARPA must be followed. Any changes or modifications must be approved prior to commencement of the activity.
4. Mitigation measures must be completed prior to the completion of the Pier 4 reconfiguration, to avoid temporal loss of habitat functions.
5. It is the applicant's responsibility to procure all necessary related permits, including but not limited to City of Tacoma building permits.

#### **Advisory Notes:**

The below notes are meant to provide additional information to the applicant relative to the specific development proposal. These notes are not conditions of the permit nor do they constitute a complete review of the project.

1. The decision set forth herein is based upon representations made and information submitted, including development plans and proposals, submitted to the Director. Any substantial change(s) or deviation(s) in such development plans, proposals, or conditions of



approval imposed shall be subject to the approval of the Director, and may require additional permitting and public notification and comment.

2. The City of Tacoma is not the only reviewing agency with jurisdiction over the project area. The Army Corps of Engineers, Washington State Department of Ecology and Washington State Department of Fish and Wildlife have requirements regarding work within regulated waters that may be applicable to the project. Please coordinate directly with these agencies to obtain project approval.
3. The authorization(s) granted herein is/are subject to all applicable federal, state and local laws, regulations, and ordinances. By accepting this/these approvals, the applicant represents that the developments and activities allowed will comply with such laws, regulations, and ordinances. If, during the term of the approvals granted, the developments and activities permitted do not comply with such laws, regulations, or ordinances, the applicant agrees to promptly bring such developments or activities into compliance.
4. This permit is only applicable to the proposed project as described above and based upon the information submitted by the applicant. Future activities or development within the regulated marine waters or buffer may be subject to further review and additional permits or exemptions as required in accordance with *TMC* 13.10.
5. This permit may be rescinded pursuant to *RCW* 90.58.140(8) of the Shoreline Management Act of 1971 and Section 13.10.2 of the *Tacoma Municipal Code* in the event the permittee fails to comply with any condition thereof.
6. Construction shall be commenced within two (2) years after the effective date of the permit. Local government may, however, authorize a single extension for a period not to exceed one year based on reasonable factors, if a request for extension has been filed before the expiration date. Authorization to conduct development activities shall terminate five years after the effective date of a shoreline permit, however, a single extension for a period not to exceed one year may be granted by local government if a request for extension has been filed before the expiration date.
7. Construction pursuant to this permit will not begin or is not authorized until twenty-one (21) days from the "date of filing" with the Washington State Department of Ecology, as that term is defined in *WAC* 173-27-130, or until all review proceedings initiated within twenty-one (21) days from the "date of filing" have been terminated.
8. The applicant shall apply for and receive approval of any required building permit from the City of Tacoma Planning and Development Services Department prior to any work.

ORDERED this 30<sup>th</sup> day of June, 2015

  
\_\_\_\_\_  
PETER HUFFMAN  
DIRECTOR, PLANNING AND  
DEVELOPMENT SERVICES DEPARTMENT

**FULL DECISION TRANSMITTED** this 30<sup>th</sup> day of June, 2015 via first class and electronic mail to the following:

Mark Rettmann, Port of Tacoma, PO Box 1837, Tacoma, WA 98401-9443

Washington Department of Fish and Wildlife, Matt Curtis, [matthew.curtis@dfw.wa.gov](mailto:matthew.curtis@dfw.wa.gov)  
Pierce County Office of the Assessor-Treasurer, Darci Brandvold, [dbrandv@co.pierce.wa.us](mailto:dbrandv@co.pierce.wa.us)

**SUMMARY OF DECISION TRANSMITTED** this 30<sup>th</sup> day of June, 2015 via first class and electronic mail to the following:

All property owners with 400 feet of the subject site  
New Tacoma Neighborhood Council  
Washington Department of Ecology, Shorelands and Environmental Assistance, Alex Callender  
Marine Advisory Council, President, 4702 South 19<sup>th</sup> Street, Tacoma, WA 98405  
Tahoma Audubon Society, Krystal Kyer, [kkyer@tahomaaudubon.org](mailto:kkyer@tahomaaudubon.org)  
Citizens for a Health Bay, [sbabcock@healthybay.org](mailto:sbabcock@healthybay.org)  
Puget Creek Restoration Society, [pcrs@pugetcreek.org](mailto:pcrs@pugetcreek.org)  
City of Tacoma Planning and Development Services: Shannon Brenner, Stephen Atkinson,  
Peter Huffman, Ian Munce

**NOTE:** Pursuant to *RCW 36.70B.130*, you are hereby notified that affected property owner(s) receiving this notice of decision may request a change in valuation for property tax purposes consistent with Pierce County's procedure for administrative appeal. To request a change in value for property tax purposes you must file with the Pierce County Board of Equalization on or before July 1<sup>st</sup> of the assessment year or within 30 days of the date of notice of value from the Assessor-Treasurer's Office. To contact the board, you may call 253-798-7415 or by e-mail at [www.co.pierce.wa.us/boe](http://www.co.pierce.wa.us/boe).

**ENDANGERED SPECIES ACT WARNING:**

The holder of this shoreline permit is responsible for compliance with the applicable provisions of the Endangered Species Act of 1973 (ESA) (16 U.S.C. 1531 et seq.), and this shoreline permit includes no representation or warranty of ESA compliance.

## **APPEAL PROCEDURES**

### **RECONSIDERATION:**

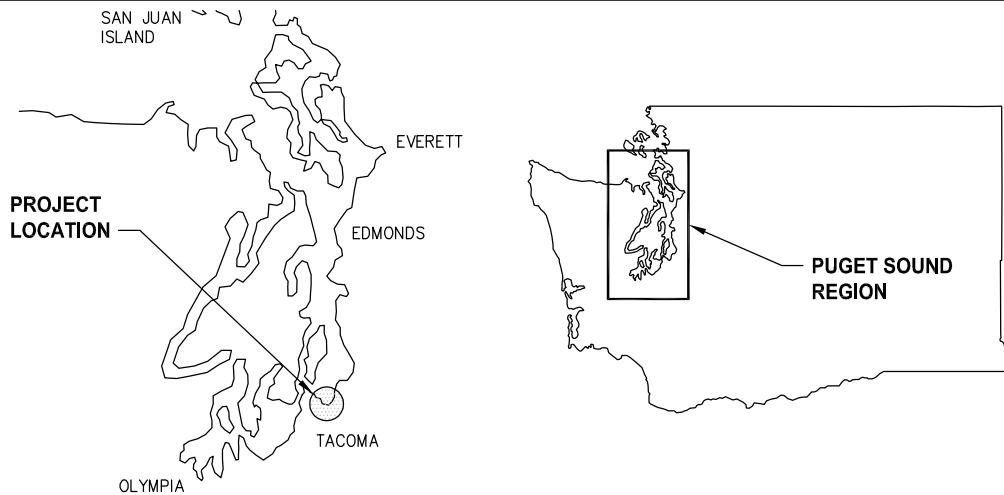
Any person having standing under the ordinance governing this application and feeling that the decision of the Director is based on errors of procedure or fact may make a written request for review by the Director within fourteen (14) days of the issuance of the written order. This request shall set forth the alleged errors, and the Director may, after further review, take such further actions as deemed proper, and may render a revised decision. A request for RECONSIDERATION of the Director's decision in this matter must be filed in writing with Planning and Development Services, Room 345, Third Floor, Tacoma Municipal Building, 747 Market Street, Tacoma, WA 98402, on or before **July 14, 2015**.

**Should no reconsideration be requested, this Decision will be considered final and will be mailed via certified mail to the Department of Ecology on July 15, 2015.**

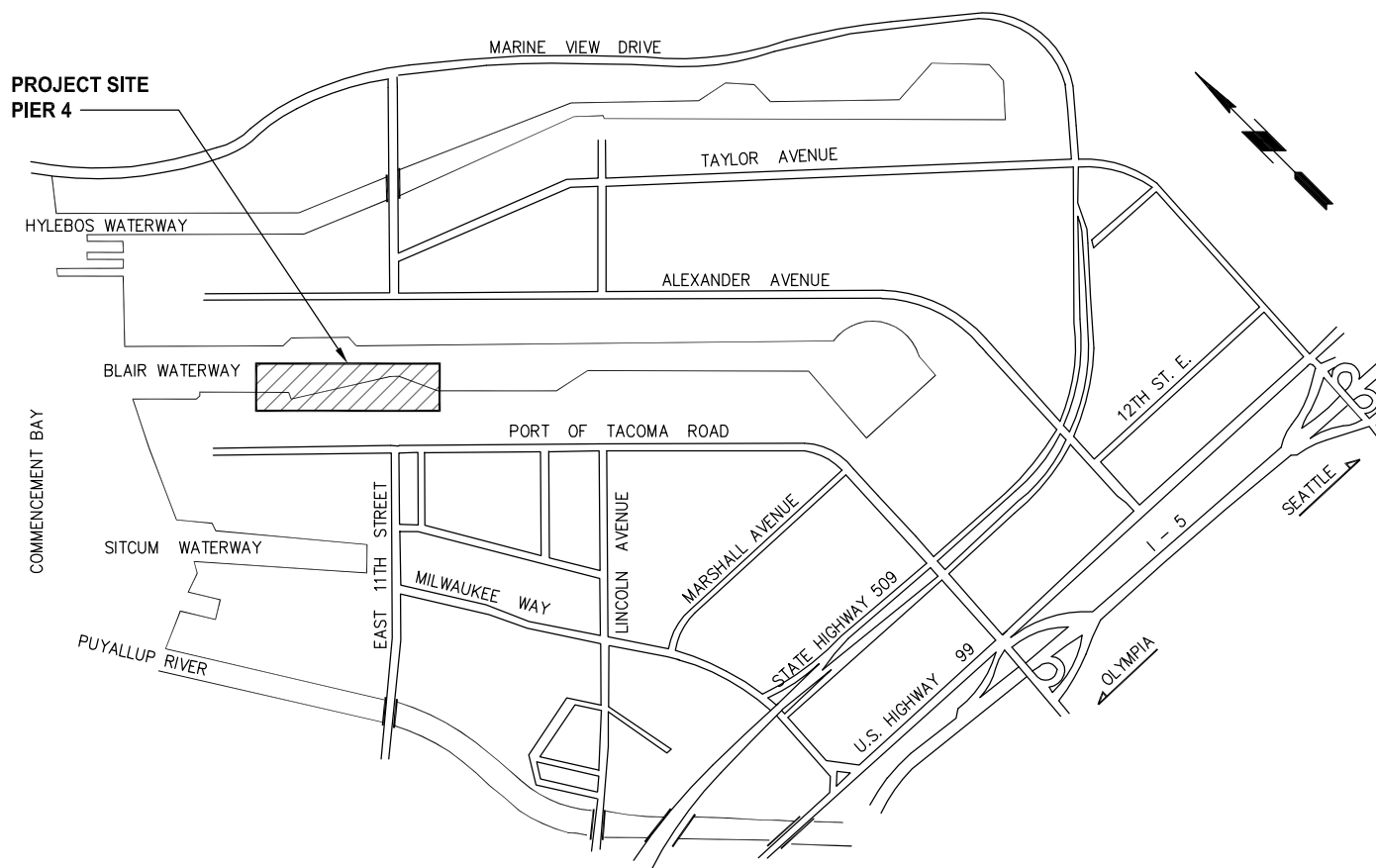
### **APPEAL TO SHORELINE HEARINGS BOARD:**

The decision of the Director of Planning and Development Services may be appealed by any person aggrieved by the granting, denying, or rescinding of a permit on shorelines of the state pursuant to *RCW* 90.58.140, who may seek review from the shorelines hearings board by filing a petition for review within twenty-one (21) days of the date of filing of the decision as defined in *RCW* 90.58.140(6), which states that the "date of filing" is "the date of actual receipt by the department of the local government's decision".

Information on filing an appeal of a Shoreline Substantial Development Permit may be obtained by contacting the State of Washington's Environmental and Land Use Hearings Office at [www.eho.wa.gov](http://www.eho.wa.gov), or PO Box 40903, Olympia WA 98504-0903, (360) 664-9160, email: [eluho@eluho.wa.gov](mailto:eluho@eluho.wa.gov)



PUGET SOUND REGION MAP



VICINITY MAP

NO SCALE

PORT OF TACOMA

PURPOSE: RECONFIGURE PIER 4 TO ALIGN WITH PIER 3 TO MAINTAIN TERMINAL COMPETITIVENESS AND TO WIDEN THE WATERWAY.

DATUM: VERTICAL PORT DATUM  
PROJECT SPECIFIC OHWM = +12.78'  
MHHW = +11.8'  
MLLW = 0.00'

ADJACENT PROPERTY OWNERS:  
PORT OF TACOMA, DNR/WASHINGTON STATE,  
TACOMA INDUSTRIAL PROPERTIES

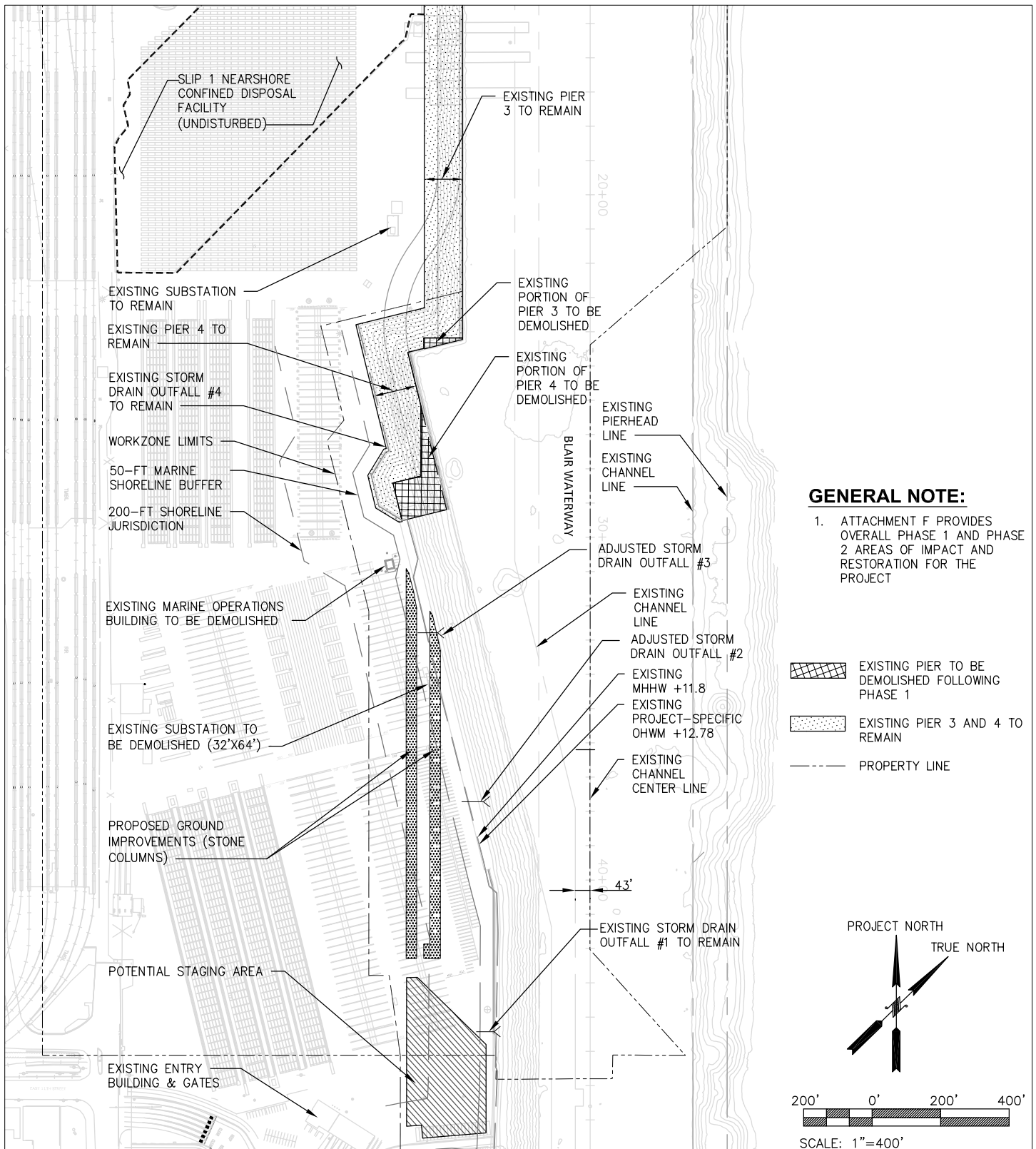
FIGURE 1 - VICINITY MAP



P.O. BOX 1837 TACOMA, WA 98401 (253)383-5841

PROJECT: PIER 4 PHASE 2 RECONFIGURATION  
ADDRESS: 1101 PORT OF TACOMA ROAD  
TACOMA, WA 98421  
PARCEL#: 2275200610  
LAT/LONG: 47.273069N 122.408736W  
SECT/TOWN/RANGE: SEC27 T21N R3E  
IN: BLAIR WATERWAY  
COUNTY OF: PIERCE  
STATE OF: WA  
APPLICATION BY: PORT OF TACOMA  
REFERENCE #: NWS-2014-456-WRD  
SHEET 1 OF 9

OCTOBER 2014



PURPOSE: RECONFIGURE PIER 4 TO ALIGN WITH PIER 3 TO MAINTAIN TERMINAL COMPETITIVENESS AND TO WIDEN THE WATERWAY.

DATUM: VERTICAL PORT DATUM  
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MLLW = 0.00'

ADJACENT PROPERTY OWNERS:  
PORT OF TACOMA, DNR/WASHINGTON STATE,  
TACOMA INDUSTRIAL PROPERTIES

**FIGURE 2 - SITE PLAN VIEW  
PRIOR TO CUTBACK**

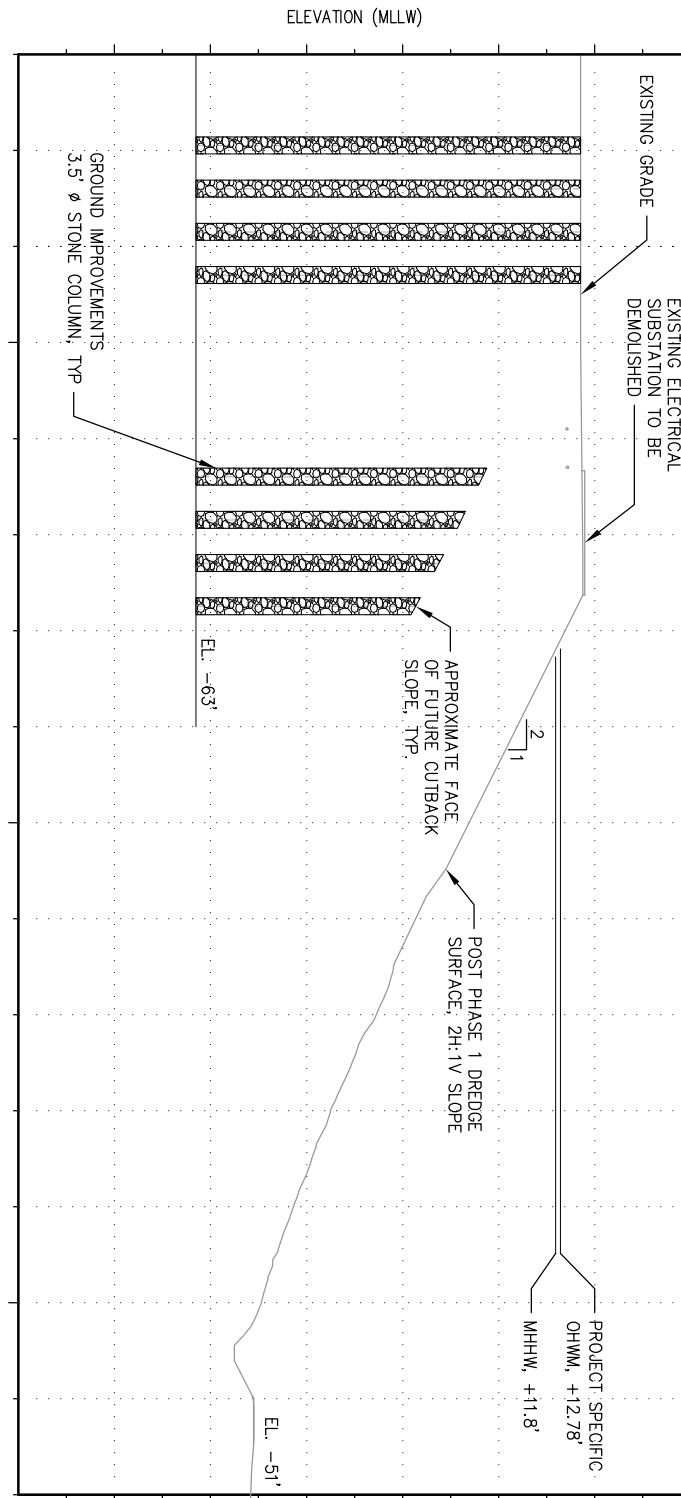


P.O. BOX 1837 TACOMA, WA 98401 (253)383-5841

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APPLICATION BY: PORT OF TACOMA  
REFERENCE #: NWS-2014-456-WRD  
SHEET 2 OF 9

OCTOBER 2014



SCALE: 1"=40'

PURPOSE: RECONFIGURE PIER 4 TO ALIGN WITH PIER 3 TO MAINTAIN TERMINAL COMPETITIVENESS AND TO WIDEN THE WATERWAY.

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MLLW = 0.00'

ADJACENT PROPERTY OWNERS:  
PORT OF TACOMA, DNR/WASHINGTON STATE,  
TACOMA INDUSTRIAL PROPERTIES

### FIGURE 3 - TYPICAL SLOPE AND WORK ELEMENTS PRIOR TO CUTBACK

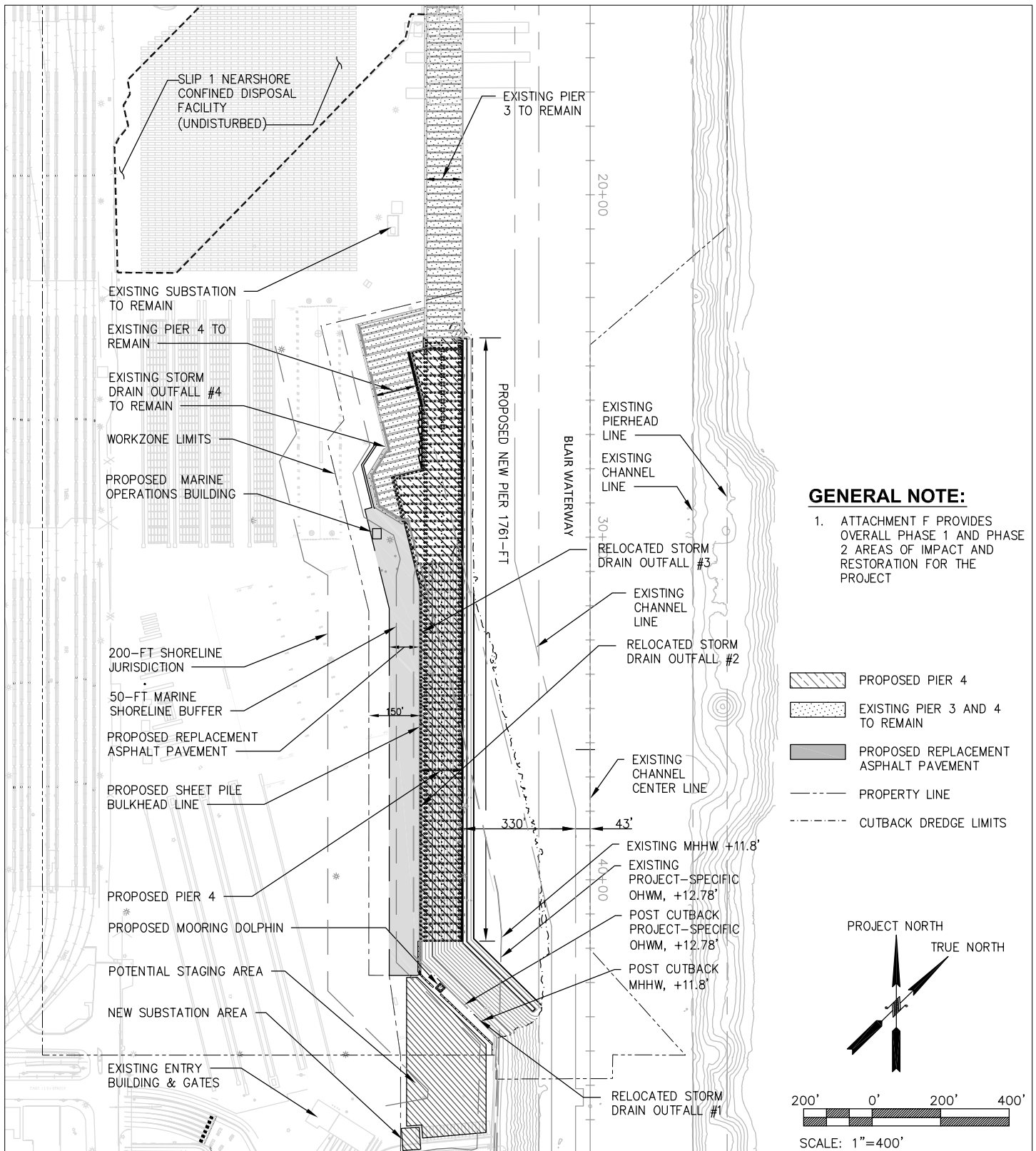


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APPLICATION BY: PORT OF TACOMA  
REFERENCE #: NWS-2014-456-WRD  
SHEET 3 OF 9

OCTOBER 2014





PURPOSE: RECONFIGURE PIER 4 TO ALIGN WITH PIER 3 TO MAINTAIN TERMINAL COMPETITIVENESS AND TO WIDEN THE WATERWAY.

DATUM: VERTICAL PORT DATUM  
PROJECT SPECIFIC OHWM = +12.78'  
MHHW = +11.8'  
MLLW = 0.00'

ADJACENT PROPERTY OWNERS:  
PORT OF TACOMA, DNR/WASHINGTON STATE,  
TACOMA INDUSTRIAL PROPERTIES

**FIGURE 4 - SITE PLAN VIEW  
AFTER CUTBACK**

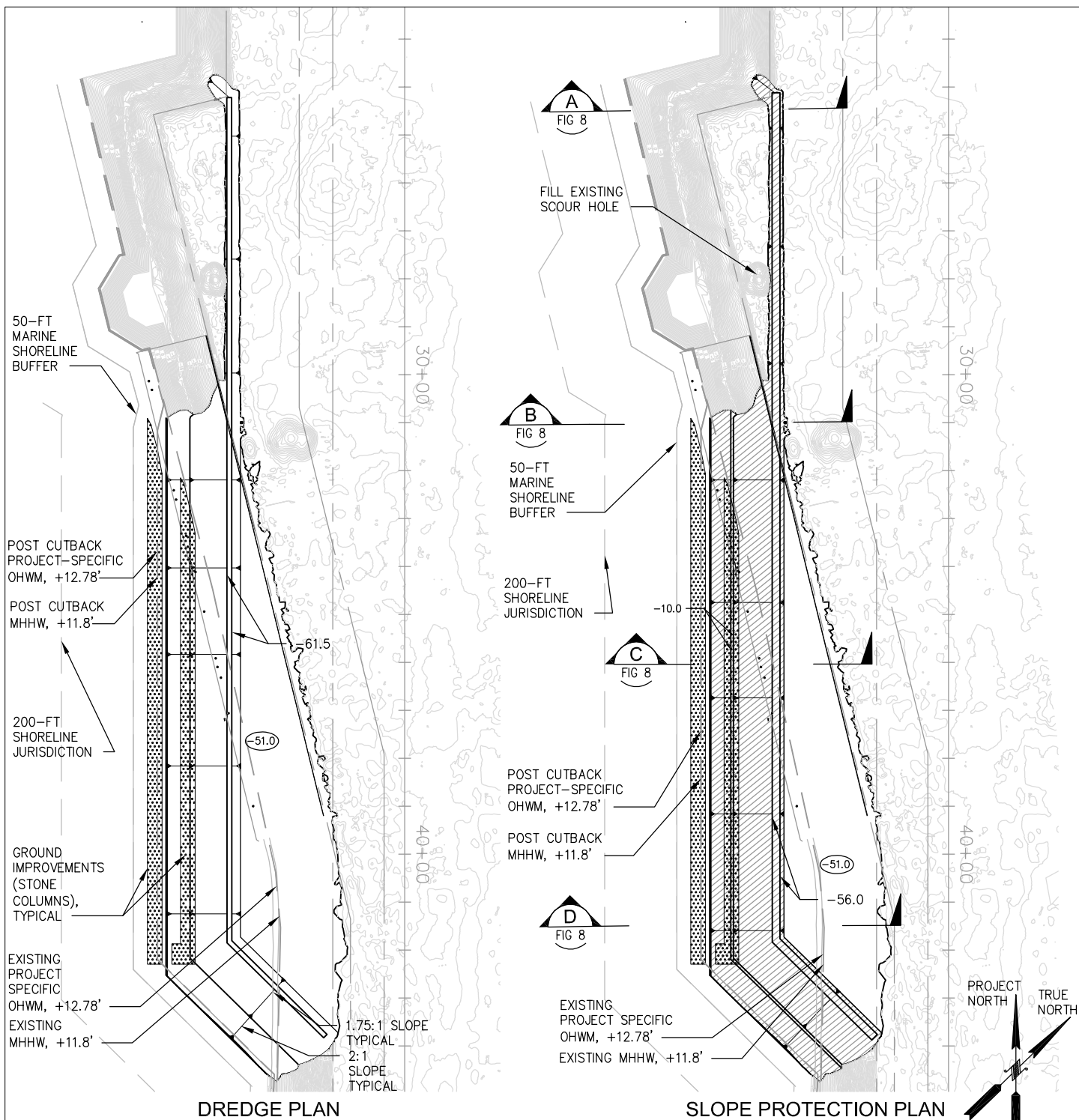


P.O. BOX 1837 TACOMA, WA 98401 (253)383-5841

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REFERENCE #: NWS-2014-456-WRD  
SHEET 4 OF 9

OCTOBER 2014





### SURVEY NOTE:

1. BATHYMETRIC DATA PROVIDED FROM FEBRUARY 2012 PIER 3 AND 4 POST-DREDGE SURVEY BY ETRAC ENGINEERING AND JUNE 2010 HYDROGRAPHIC CONDITION SURVEY BY GAHAGAN & BRYANT ASSOCIATES.



SLOPE PROTECTION  
LEVEL AREA ELEVATION

150' 0' 150' 300'  
SCALE: 1"=300'

PURPOSE: RECONFIGURE PIER 4 TO ALIGN WITH PIER 3 TO MAINTAIN TERMINAL COMPETITIVENESS AND TO WIDEN THE WATERWAY.

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ADJACENT PROPERTY OWNERS:  
PORT OF TACOMA, DNR/WASHINGTON STATE,  
TACOMA INDUSTRIAL PROPERTIES

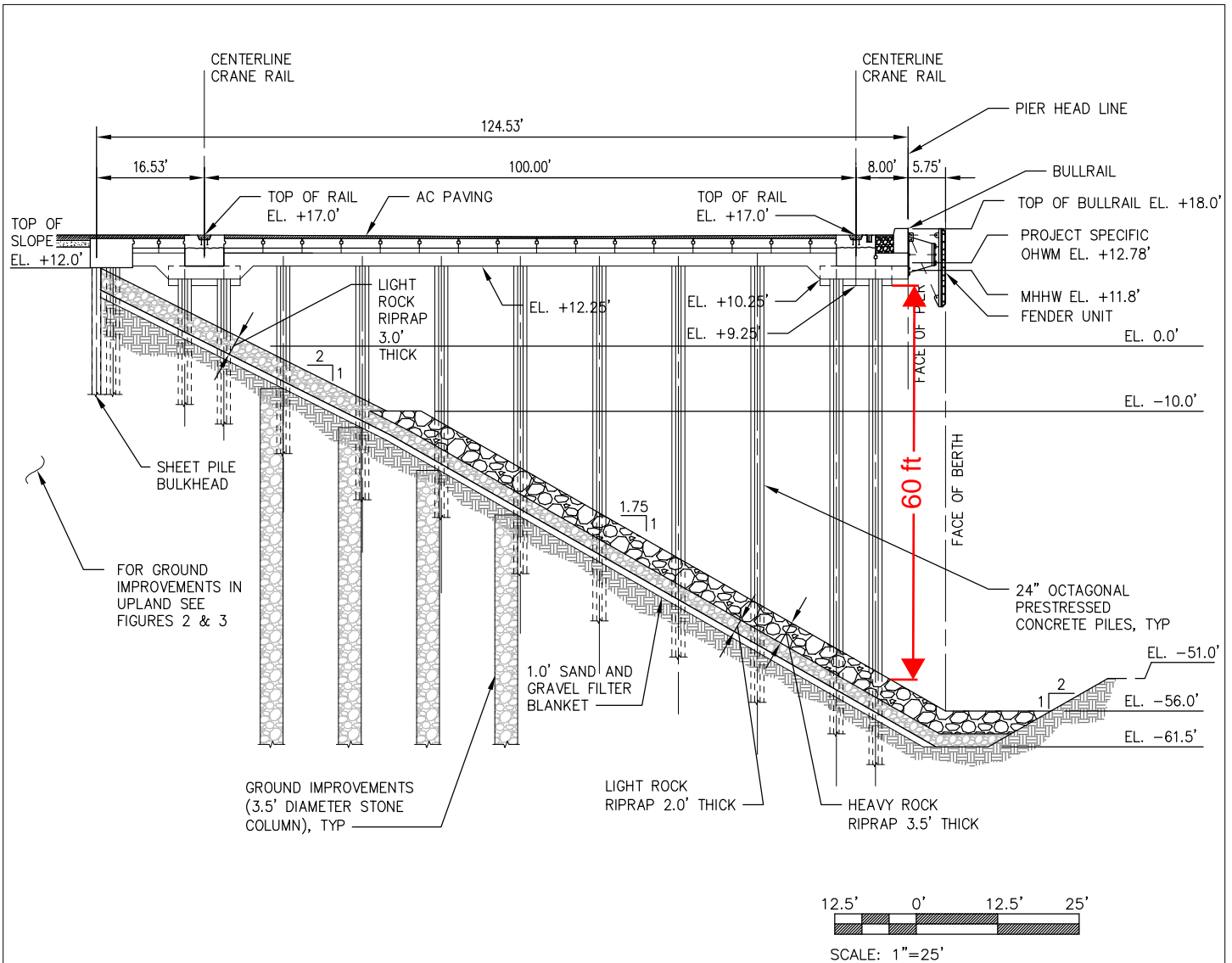
### FIGURE 5 - DREDGE AND SLOPE PROTECTION PLAN



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APPLICATION BY: PORT OF TACOMA  
REFERENCE #: NWS-2014-456-WRD  
SHEET 5 OF 9

OCTOBER 2014



PURPOSE: RECONFIGURE PIER 4 TO ALIGN WITH PIER 3 TO MAINTAIN TERMINAL COMPETITIVENESS AND TO WIDEN THE WATERWAY.

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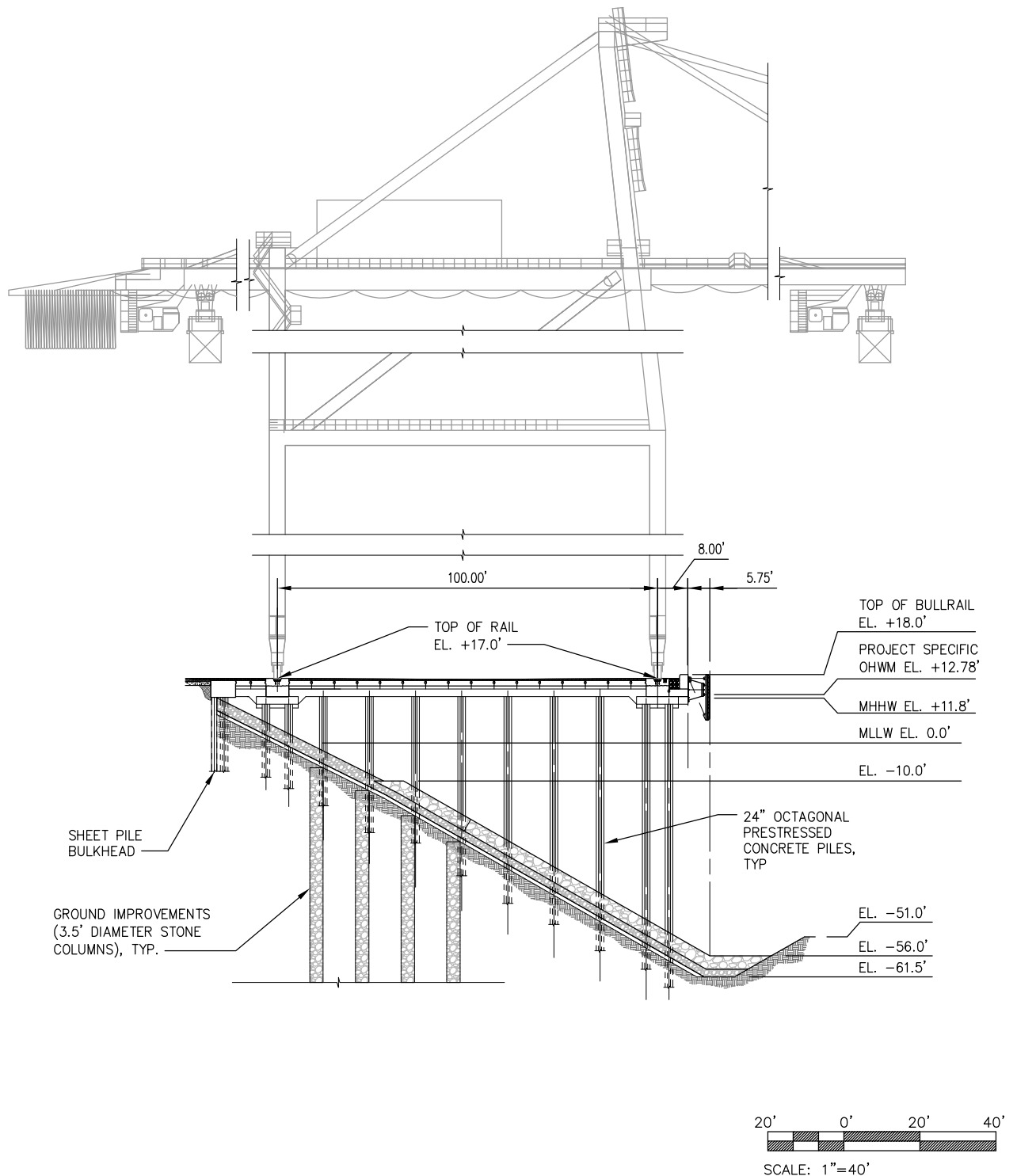
# FIGURE 6 - TYPICAL SLOPE AND WORK ELEMENTS AFTER CUTBACK

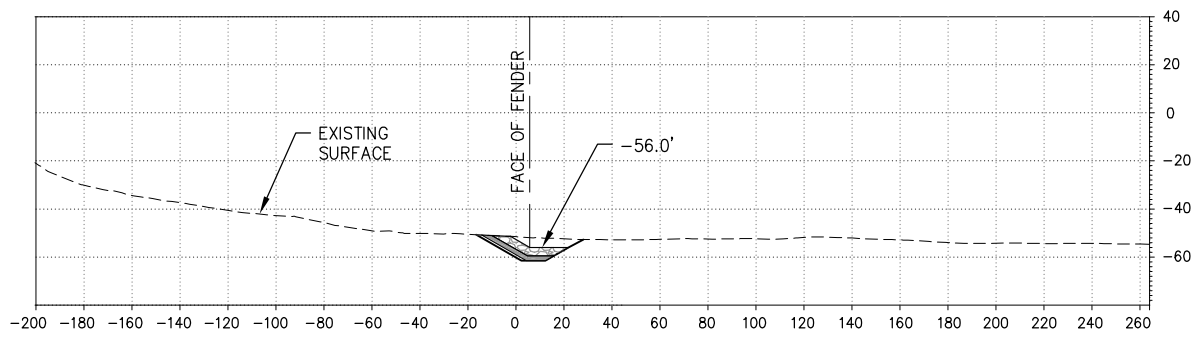


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APPLICATION BY: PORT OF TACOMA  
REFERENCE #: NWS-2014-456-WRD  
SHEET 6 OF 9

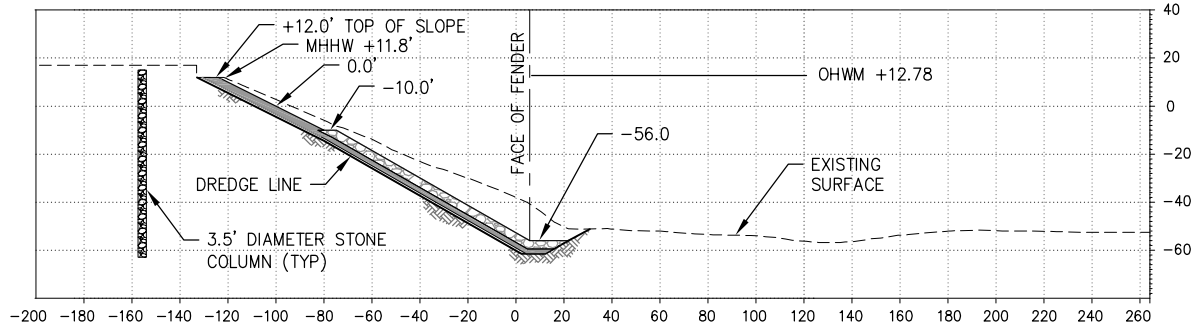
OCTOBER 2014





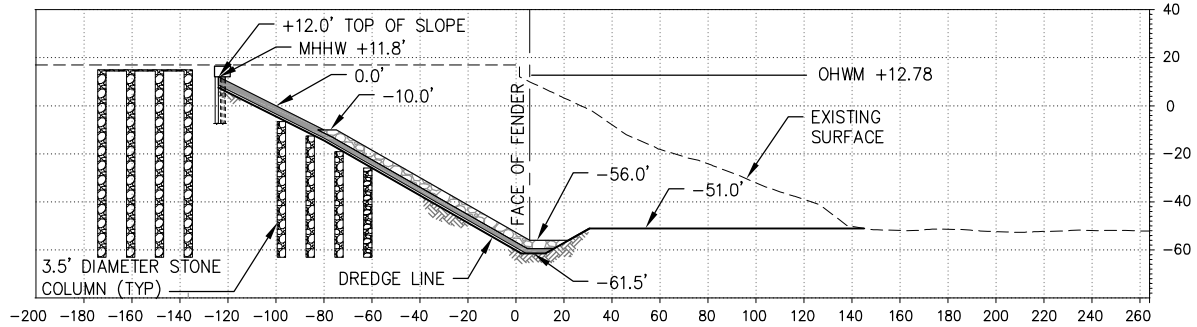
**SECTION A - STA 24+45**

SCALE: 1"=80'



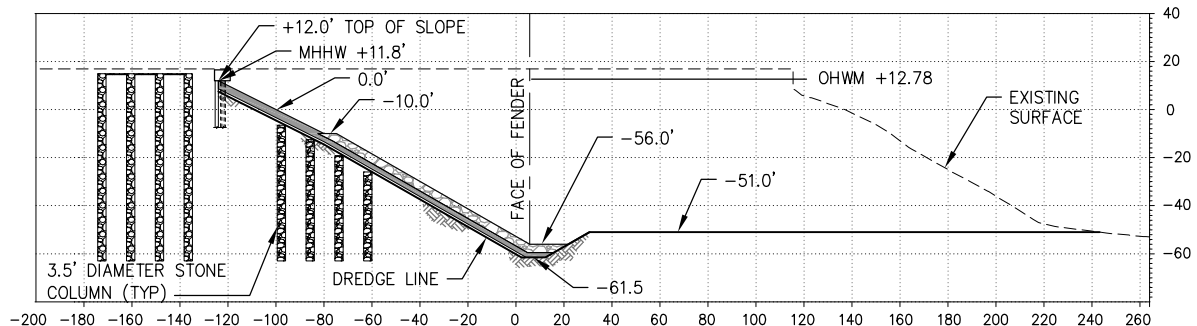
**SECTION B - STA 30+95**

SCALE: 1"=80'



**SECTION C - STA 36+05**

SCALE: 1"=80'



**SECTION D - STA 41+45**

SCALE: 1"=80'

PURPOSE: RECONFIGURE PIER 4 TO ALIGN WITH PIER 3 TO MAINTAIN TERMINAL COMPETITIVENESS AND TO WIDEN THE WATERWAY.

DATUM: VERTICAL PORT DATUM  
PROJECT SPECIFIC OHWM = +12.78'  
MHHW = +11.8'  
MLLW = 0.00'

ADJACENT PROPERTY OWNERS:  
PORT OF TACOMA, DNR/WASHINGTON STATE,  
TACOMA INDUSTRIAL PROPERTIES

## FIGURE 8 - SECTIONS

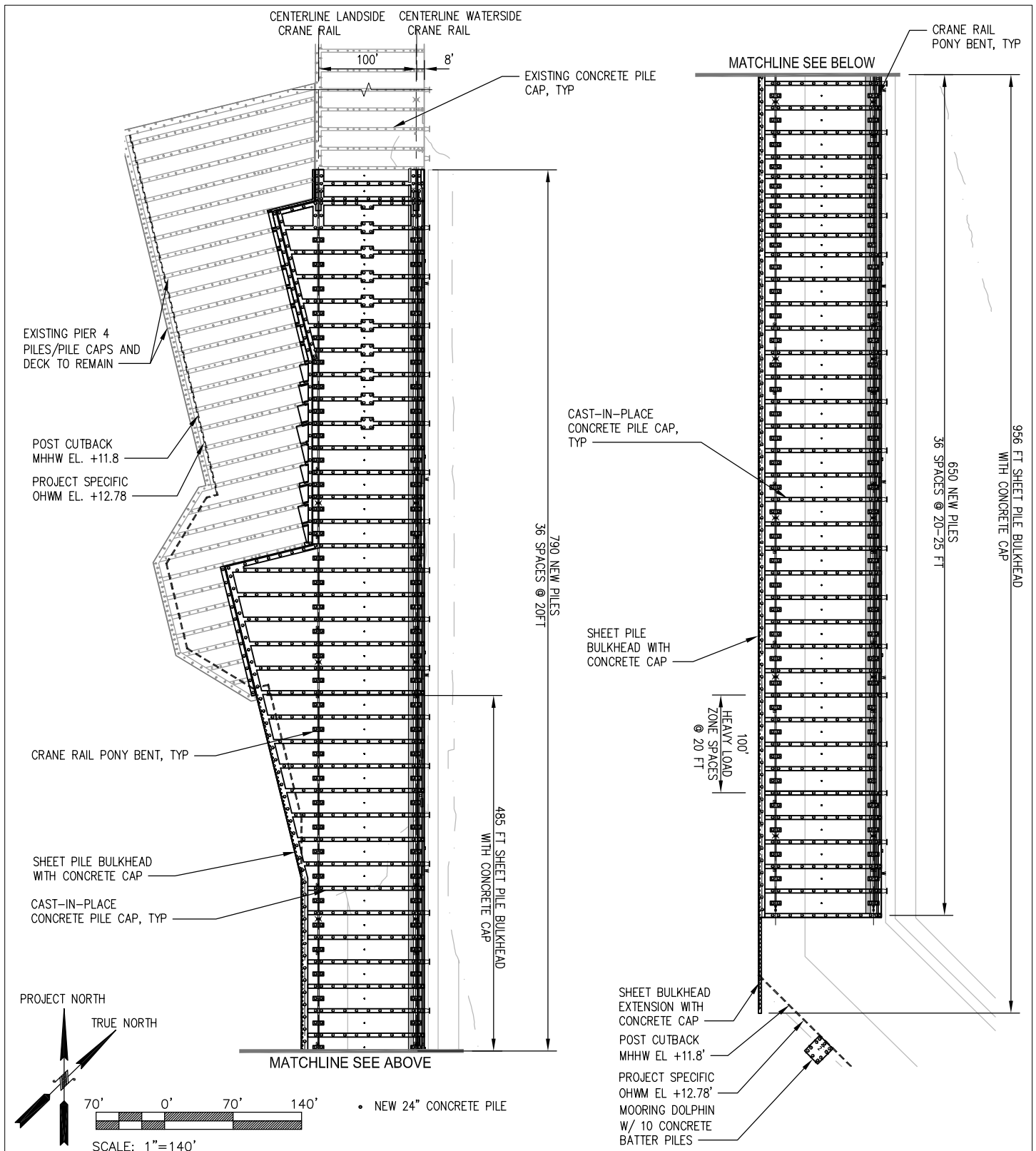


P.O. BOX 1837 TACOMA, WA 98401 (253)383-5841

PROJECT: PIER 4 PHASE 2 RECONFIGURATION  
ADDRESS: 1101 PORT OF TACOMA ROAD  
TACOMA, WA 98421

PARCEL#: 2275200610  
LAT/LONG: 47.273069N 122.408736W  
SECT/TOWN/RANGE: SEC27 T21N R3E  
IN: BLAIR WATERWAY  
COUNTY OF: PIERCE  
STATE OF: WA  
APPLICATION BY: PORT OF TACOMA  
REFERENCE #: NWS-2014-456-WRD  
SHEET 8 OF 9

OCTOBER 2014



PURPOSE: RECONFIGURE PIER 4 TO ALIGN WITH PIER 3 TO MAINTAIN TERMINAL COMPETITIVENESS AND TO WIDEN THE WATERWAY.

DATUM: VERTICAL PORT DATUM  
PROJECT SPECIFIC OHWM = +12.78'  
MHHW = +11.8'  
MLLW = 0.00'

ADJACENT PROPERTY OWNERS:  
PORT OF TACOMA, DNR/WASHINGTON STATE,  
TACOMA INDUSTRIAL PROPERTIES

**FIGURE 9 - PILE/PILE CAP PLAN**



P.O. BOX 1837 TACOMA, WA 98401 (253)383-5841

PROJECT: PIER 4 PHASE 2 RECONFIGURATION  
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REFERENCE #: NWS-2014-456-WRD  
SHEET 9 OF 9

OCTOBER 2014





City of Tacoma  
Planning and Development  
Services Department

## Technical Memorandum

**TO:** Shirley Schultz, Principal Planner, Building and Land Use Services

**FROM:** Shannon Brenner, Environmental Specialist, Building and Land Use Services

**SUBJECT:** SHR2014-4000243783, Pier 4 reconfiguration

**DATE** June 4, 2015

### **SUMMARY OF PROPOSAL AND RECOMMENDATION**

**Proposal:** The Port of Tacoma (POT) has applied for a Shoreline Substantial Development permit to allow for the reconfiguration of Pier 4. Pier 4 is located along the Blair Waterway. The reconfiguration is proposed to align Pier 4 with Pier 3 within the Husky Terminal creating a combined marginal pier 2,954 feet long capable of simultaneously berthing two ultra-large container ships.

**Conclusion:** It has been established that the proposed development within the FWHCA and its associated marine buffer meet the critical area policies and regulations of the Shoreline Master Program. The pier is a water dependent use requiring direct water access and cannot avoid all impacts. The project has minimized impacts and provided appropriate compensatory mitigation that should result in no net loss of ecological functions.

**Recommendation:** Approve, with conditions.

#### **Conditions:**

1. No construction materials or debris shall be allowed to enter waters of the State. Best Management Practices shall be used throughout the demolition and construction process.
2. All work waterward of the ordinary high water mark/line, will follow the restrictions and criteria approved by WDFW.
3. Best management practices and construction techniques outlined in the JARPA must be followed. Any changes or modifications must be approved prior to commencement of the activity.
4. Mitigation measures must be completed prior to the completion of the Pier 4 reconfiguration, to avoid temporal loss of habitat functions.

In addition, I would recommend the applicant be advised of the following:

- The applicant shall apply for and receive approval of any required building permit from the City of Tacoma Community and Economic Development Department prior to any work.
- This permit is only applicable to the proposed project as described above and based upon the information submitted by the applicant. Future activities or development within the regulated marine waters or buffer may be subject to further review and additional permits.
- The City of Tacoma is not the only reviewing agency with jurisdiction over the project area. The Army Corps of Engineers, Washington State Department of Ecology and Washington State Department of Fish and Wildlife have requirements regarding work within regulated waters that

may be applicable to the project. Please coordinate directly with these agencies to obtain project approval.

## **FINDINGS**

### **Site:**

1. The subject site is located along the Blair Waterway in Commencement Bay in the S-10 Shoreline District – Port Industrial. Marine waters and shorelands extending 200 feet from the ordinary high water mark (OHWM) of Commencement Bay are regulated under *Tacoma Municipal Code* (TMC) 13.10 Shoreline Management.
2. The site is located on historical fill and has functioned as a terminal for the loading and unloading of containerized cargo since the mid 1950's. The Blair Waterway is dredged to maintain the shipping channel and lacks aquatic vegetation. The site is developed with an existing pier above a rip rap bulkhead with no riparian habitat. Vegetation is dominated by weedy species growing up through cracks in the pavement and along the rip rap edge. Due to the existing pier and paved surfaces, there is no off-channel habitat or functioning floodplain. There are two restoration/mitigation sites located to the north and south of the subject parcel, but this project will not impact these sites.
3. The project is being reviewed for impacts to critical areas and their associated buffers. TMC 13.10.2.4.2 allows staff to review the site and inventories to determine the presence of critical areas. Review of the project included a site visit to verify the conditions and critical areas in the vicinity. Review of readily available information included the City of Tacoma govME maps, Washington Department of Fish and Wildlife inventories for Priority Habitat and Species, and National Marine Fisheries Service and U.S. Fish and Wildlife websites for federally listed species and Critical Habitat.
4. Activities in a critical area and associated buffer are regulated and there is a Fish and Wildlife Habitat Conservation Area and marine buffer located at the project site. TMC 13.10.6.4 designates critical areas and provides policies and regulations to protect critical areas. Critical areas include Fish and Wildlife Habitat Conservation Areas (FWHCAs) and the Blair Waterway is regulated as a FWHCA because federally listed species and State Priority Habitat and Species are present in the waterway. TMC 13.10.6.4.3 B.3 requires a 50-foot marine buffer for the S-10 Shoreline District to protect the marine shoreline.

### **Proposal:**

5. The POT is proposing to reconfigure Pier 4 to align Pier 4 with Pier 3 within the Husky Terminal creating a combined marginal pier 2,954 feet long capable of simultaneously berthing two ultra-large container ships. The project will be completed over 3 years in two phases.
6. TMC 13.10.2.4.2 requires application for a substantial development permit when there are activities in a marine buffer or FWHCA. The POT applied for a Shoreline Substantial Development permit to allow for the reconfiguration of pier 4. The proposal was reviewed for consistency with the TMC 13.10 in effect on September 22, 2014 when the application was determined complete
7. TMC 13.10.2.4 requires applications to include a Joint Aquatic Resources Permit Application (JARPA) and technical reports addressing the ecological conditions of the site. The applicant submitted the following reports and supporting documents for review:



- JARPA including Attachment F, dated January 13, 2015
  - SEPA Determination of Nonsignificance (DNS), dated May 15, 2014
  - Biological Evaluation, dated February 12, 2015
  - Port of Tacoma letter addressing SMP policies and regulations, dated September 17, 2014.
  - Project Impact Analysis, dated April 28, 2014 and Errata Letter, dated April 16, 2015.
  - Port of Tacoma response to comments, dated April 14, 2015.
  - Port of Tacoma mitigation proposal, dated June 5, 2015.
8. The reconfiguration will require demolition of the remaining portions of Pier 4. Ground improvements will then be installed and the slope will be cutback and reconstructed. New piles, pile caps, sheet pile, bulkhead, pier deck and other associated features will be installed. Final activities will include re-paving, construction of a marine building, substation, stormwater facilities, and mooring dolphin. The project will replace the existing shoreline armoring of rip rap with rip rap for the reconfigured pier.
9. Phase 1 of the project includes a US Environmental protection Agency (USEPA) cleanup to remove contaminated sediments and Phase 2 is the reconfiguration of Pier 4. This review does not include activities required for the cleanup action. The cleanup action does not require local permitting and USEPA requested comments from the City of Tacoma under a separate review.

#### **Proposed Impacts:**

10. Reconfiguration of Pier 4 will add 128,190 square feet of overwater coverage, 327 24-inch concrete piles, and 415 24-inch concrete piles. The project will also remove 159,640 sf of overwater coverage, 108 14-inch creosote treated piles, 1324 16.5-inch concrete piles, 21 20-inch steel pipe piles, and 7 20-inch steel piles. The result is a net reduction of overwater coverage and number of piles but an increase of 81 lineal feet of pier and 201 sf of bed coverage due to the change in diameter of pile. The pier reconfiguration will reduce overwater coverage due to the overlap of the new pier footprint with the existing footprint and relocation of the pier inland.
11. The project will undergo additional review by US Army Corps of Engineers and the Washington State Department of Fish and Wildlife. The applicant has prepared a Biological Evaluation (BE) to meet permitting requirements of US Army Corp of Engineers and demonstrate compliance with Section 7 of the Endangered Species Act. The BE identifies Chinook Salmon (*Oncorhynchus tshawytscha*), Steelhead (*Oncorhynchus mykiss*), Bull Trout (*Salvelinus confluentus*), Southern Resident Orca (*Orcinus Orca*), Humpback Whale (*Megaptera novaeangliae*), Marbled Murrelet (*Brachyramphus marmoratus*), Boccaccio (*Sebastes paucispinis*), Yelloweye Rockfish (*Sebastes ruberrimus*), Canary Rockfish (*Sebastes pinniger*), and Pacific Eulachon (*Thaleichthys pacificus*) as potentially occurring near the project area and has determined that this proposal is Not Likely To Adversely Affect (NLTA) or will have No Effect (NE) on any of these species or their associated critical habitat.

#### **Proposed Mitigation:**

12. The POT provided a letter addressing the regulations of the SMP, including mitigation sequencing. A project impact analysis prepared by Confluence Environmental Company was also provided that concluded the project was self-mitigating and would not result in permanent impacts. I provided comments to the POT asking for additional information to support this conclusion.

The POT provided additional information explaining that the shoreline in the area of impact (additional 81 lineal feet of pier) is armored and provides minimal habitat and is primarily a migratory corridor. They state that the creation of shallow subtidal (with overwater coverage) and

deep subtidal habitat is appropriate to mitigate impacts to the degraded intertidal habitat because the gain in shallow and deep subtidal habitat function offsets the minimal decrease in ripped intertidal habitat.

I agree that the intertidal habitat is degraded and the use of the area is likely limited to migratory salmonids. The existing and proposed conditions will be similarly degraded except for shading from the additional 81 lineal feet of pier. Shading from piers can alter substrates and vegetation and interferes with the migratory behavior of juvenile salmonids. However, the substrate and vegetation have already been altered at this location from the armoring of the shoreline, leaving the primary impact to the migration behavior of juvenile salmonids.

The impact analysis divided the project area into different habitat categories each assigned a habitat value. The project site in the existing and proposed conditions consists of degraded intertidal and shallow subtidal habitat, and deep subtidal habitat. The impact analysis gives a habitat value of 0.1 for degraded habitat and .30 for deep subtidal habitat. The values are taken from the Commencement Bay Natural Resource Damage Assessment (NRDA), Restoration Plan and Final Programmatic Environmental Impact Statement and the Hylebos Waterway Natural Resource Damage Settlement Proposal.

In my previous comments, I commented that the impact analysis does not capture the new shading impact because the habitat value of 0.1 is used for all degraded habitat regardless of the presence or absence of overwater coverage. Appendix C, of the Commencement Bay assessment, supports this and explains that the habitat value of 0.1 for degraded habitat is an arbitrary value that does not reflect gradations of impact.

I also commented that the increase in habitat value is, in-part, the result of the conversion of uplands (given no habitat value) to rip rap and overwater coverage (given a 0.1 habitat value). After further review of the basis for the habitat values, I believe the increase in habitat value is also inflated because the habitat value of 0.3 reflects the use of deep subtidal habitat by mature English sole.

The impact analysis uses habitat values based on two species meant to be representative of all fish species in Commencement Bay. The value of 0.3 for deep subtidal habitat is the result of combining deep subtidal habitat values for juvenile salmon and English sole. The assessment gives a habitat value of .05 specific to juvenile salmon for deep subtidal habitat, a value lower than that for degraded habitat (0.1). The higher value of 0.3 reflects the use of deep water by mature English sole.

Shading has not been identified as a direct impact for English sole but is considered an impact to juvenile salmon because it interferes with migration patterns, forcing juveniles to move from preferred shallow habitat to open water. The site specific impacts of this project are likely limited to the disruption of migratory behavior of juvenile salmon but the habitat values do not reflect the specific habitat preferences of juvenile salmon and instead consider those of English sole. For this site and the specific impacts associated with the project, I do not agree that the gain in shallow (with overwater coverage) and deep subtidal habitat function offsets the minimal decrease in ripped intertidal habitat.

13. TMC 6.4.4.B.6 requires projects located in a water body used by anadromous fish to give special consideration for the preservation and enhancement of anadromous fish habitat because it is a limiting factor in Commencement Bay. Deep water habitat is not lacking in Commencement Bay. Commencement Bay historically consisted of shallow mudflat and emergent tidal marsh which supported juvenile and adult salmon. The creation of waterways to accommodate shipping vessels

has converted the shallow intertidal habitat to deep subtidal habitat and added shading from piers. TMC 13.10.6.4.2.A requires the consideration of the cumulative impacts of the proposal. The creation of more shaded shallow subtidal habitat and deep subtidal habitat does not mitigate impacts to juvenile salmon and does not consider the ecological limitations of Commencement Bay.

14. After further discussions with the City and the Washington Department of Fish and Wildlife (WDFW), the POT proposed additional mitigation to compensate for impacts from the 81 additional lineal feet of pier and temporary impacts as a result of construction activities occurring outside of the typical in-water work window. The in-water work window is established by WDFW and limits the timing of work for the protection of out-migrating salmonids. In addition to the mitigation provided, work that is allowed to occur waterward and below the Ordinary High Water Line, outside of the typical in-water work window, will occur in the dry and include best management practices.
15. The following is the agreed mitigation for permanent impacts and temporary impacts that may occur during construction. In addition to the following mitigation, the project incorporates construction methods and best management practices to avoid, reduce, and minimize impacts. Details for construction techniques and best management practices are provided in the JARPA submitted for the project.

The following mitigation quantities exceed the square footage quantities for impacts from this project. Approximately 1,675 sf of structures located in intertidal areas will be removed, whereas, approximately 1,053 sf of the 81 additional lineal feet of pier are located in intertidal and shallow subtidal areas. The POT with agreement from WDFW, has proposed the additional mitigation with this proposal for work that was conducted for Pier 3 outside the parameters of the approved permit for that project.

- Removal of approximately 625 sf of creosote treated timber Arkema float located in intertidal area.
- Removal of 36 sf of concrete float located in intertidal area.
- Removal of 258 sf creosote treated timber float located in intertidal area.
- Removal of 4 12-inch steel pile (48 sf) at the Arkema float
- Removal of 42 creosote treated timber piling (672 sf) at Port Parcel 74
- Removal of a 54' x 25' building that extends overwater. Approximately 756 sf of the building is waterward of OHWM and shading intertidal areas.
- Removal of approximately 1,800 sf of impervious surface located in the marine buffer of Port parcel 74.
- Removal of approximately 41 lineal feet of bulkhead at Port parcel 74.
- Removal of marine debris within the intertidal area and Shoreline buffer at Port Parcel 74

### **Conclusions:**

16. The site supports a shipping terminal that is a water-dependent use requiring direct water access and cannot be relocated outside of the FWHCA or marine buffer. TMC 13.10.6.4.2.B Critical Area Buffer Modification, allows modification of a FWHCA and marine buffer when it is necessary to accommodate an approved water-dependent use. TMC 13.10.6.4.3.C Marine Shoreline Buffer Reductions, further allows for the reduction of a marine buffer for direct water access when the use is water-dependent.

17. TMC 13.10.6.4.3.D Marine Shoreline Mitigation Requirements, requires shoreline buffer mitigation to comply with the applicable mitigation requirements of TMC 13.10.6.4.2 General Mitigation Requirements. TMC 13.10.6.4.2.C.2, requires modification of a buffer or FWHCA to avoid, minimize, rectify, and compensate for impacts.

The buffer is currently paved and will be paved in the proposed condition. However, the project will create a larger pier that will increase bed coverage from piles and shading of intertidal habitat associated with juvenile salmon. The applicant asserts the impact is unavoidable because the reconfiguration and larger pier are necessary to accommodate ultra-large container ships for the long-term economic competitiveness of the terminal.

The applicant has minimized impacts with the use of design elements and best management practices. The reconfiguration also utilizes areas that are already developed with a shipping terminal and will reduce the overall square footage of overwater coverage. The permanent impacts, from additional bed coverage from piles and intertidal shading, cannot be rectified and compensatory mitigation has been provided.

18. TMC 13.10.6.4.2.C.3.b.i gives preference for mitigation that is in-kind. The impacts are from new bed coverage and overwater coverage in intertidal and shallow subtidal areas. The mitigation will remove an equivalent amount of bed coverage and overwater structure providing an equivalent biological function.
19. TMC 13.10.6.4.2.C.3.b.i and TMC 13.10.6.4.2.C 3.c.i give preference for compensatory mitigation at larger habitat sites in areas that will provide greater critical area or shoreline function when the project is in a High-Intensity environment. TMC 13.10.6.4.4.C FWHCA Mitigation Requirements, further requires mitigation to be located within the same aquatic ecosystem as the area disturbed and achieve equivalent or greater biological functions.

The project site is in a High-Intensity environment. The mitigation site is located in the Hylebos Waterway along a lower gradient beach, not armored with riprap, and is located near a large mudflat with the potential for use by juvenile salmonids. It is likely to provide equal or improved biological functions than mitigation located at the project site.

20. TMC 13.10.6.4.4.B requires activities within a FWHCA with which a state or federally listed species has a primary association to be consistent with the species located there and all applicable state and federal regulations and protected with the application of protection measures in accordance with a critical area report or habitat management plan. Activities in water bodies used by anadromous fish shall give special consideration to the preservation and enhancement of anadromous fish habitat.

The analysis of impacts and additional proposed mitigation addresses impacts to federal and state listed species known to occur in Commencement Bay. The project includes construction techniques and best management practices designed to meet regulatory requirements for the protection of listed species and will be required to meet in-water work restrictions to protect salmonids. The project is undergoing review and approval by state and federal agencies which will require additional review for state and federally listed species.

21. The project will replace the existing shoreline armoring of rip rap with rip rap for the reconfigured pier. This is allowed under TMC 8.2.2.A when the armoring is not necessary due to upland erosion due to drainage issues or vegetation loss and the development cannot be placed further from the shoreline. The structure cannot result in a loss of shoreline ecological functions.

The shoreline is currently armored and new armoring will not result in an ecological loss. The shipping terminal cannot be placed further from the shoreline and the armoring is the minimal amount needed. Vegetation is not an option as the pier shades the shoreline. The pier and piling must support a substantial amount of weight and the use of other natural methods, such as bioengineered shoreline stabilization, are not appropriate for a shipping terminal.

### **Applicable Policies and Regulations:**

#### **TMC 13.10.6.4 Marine Shoreline and Critical Areas Protection Intent**

The intent of this chapter is to provide policies and regulations that protect the shoreline environment as well as the critical areas found within the shoreline jurisdiction. These policies and regulations apply to all uses, developments and activities that may occur within the shoreline jurisdiction regardless of the Shoreline Master Program environment designation. They are to be implemented in conjunction with the specific use and activity policies and regulations found in this Master Program.

The Shoreline Management Act (SMA) mandates the preservation of the ecological functions of the shoreline by preventing impacts that would harm the fragile shorelines of the state. When impacts cannot be avoided, impacts must be mitigated to assure no-net-loss of ecological function necessary to sustain shoreline resources.

\*\*\*

#### **TMC 13.10.6.4.2.A General Regulations**

1. Shoreline use and development shall be carried out in a manner that prevents or mitigates adverse impacts so that no net loss of existing ecological functions occurs; in assessing the potential for net loss of ecological functions or processes, project specific and cumulative impacts shall be considered.

\*\*\*

#### **TMC 13.10.6.4.2.B. Critical Area Buffer Modification**

1. Modification of a critical area and/or marine buffer is prohibited except when:  
a. Modification is necessary to accommodate an approved water-dependent or public access use, including trails and/or pedestrian/bicycle paths; provided, that such development is operated, located, designed and constructed to minimize and, where possible, avoid disturbance to shoreline functions and native vegetation to the maximum extent feasible.

\*\*\*

#### **TMC 13.10.6.4.2.C Modification of a shoreline or critical area buffer is subject to the site review requirements in TSMP Section 2.4.2 General Mitigation Requirements**

1. If modification to a marine shoreline, wetland, stream, FWHCA, or buffer is unavoidable, all adverse impacts resulting from a development proposal or alteration shall be mitigated so as to result in no net loss of shoreline and/or critical area functions or processes.

2. Mitigation shall occur in the following prioritized order:

- a. Avoiding the adverse impact altogether by not taking a certain action or parts of an action, or moving the action;
- b. Minimizing adverse impacts by limiting the degree or magnitude of the action and its implementation by using appropriate technology and engineering, or by taking affirmative steps to avoid or reduce adverse impacts;
- c. Rectifying the adverse impact by repairing, rehabilitating or restoring the affected environment;



- d. Reducing or eliminating the adverse impact over time by preservation and maintenance operations during the life of action;
- e. Compensating for the adverse impact by replacing, enhancing, or providing similar substitute resources or environments and monitoring the adverse impact and the mitigation project and taking appropriate corrective measures;
- f. Monitoring the impact and compensation projects and taking appropriate corrective measures.

### 3. Type and Location of Mitigation

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#### c. High-Intensity and Downtown Waterfront Environments:

The preference for compensatory mitigation is for innovative approaches that would enable the concentration of mitigation into larger habitat sites in areas that will provide greater critical area or shoreline function.

\*\*\*

#### TMC 13.10.6.4.3.A Classification

1. Marine shorelines include all marine “shorelines of the state”, including commencement Bay and the Tacoma Narrows, as defined in RCW 90.58.030 within the City of Tacoma

\*\*\*

#### TMC 13.10.6.4.3.B. Marine Shoreline Buffers

1. A buffer area shall be maintained on all marine shorelines for all non-water-dependent and public access uses adjacent to the marine shoreline to protect and maintain the integrity, functions and processes of the shoreline and to minimize risks to human health and safety. The buffer shall be measured horizontally from the edge of the ordinary high water mark landward.

2. Buffers shall consist of an undisturbed area of native vegetation or areas reserved for priority uses (water-dependent uses and public access), including restoration established to protect the integrity, functions and processes of the shoreline. Required buffer widths shall reflect the sensitivity of the shoreline functions and the type and intensity of human activity proposed to be conducted nearby.

\*\*\*

#### TMC 13.10.6.4.3.C. Marine Shoreline Buffer Reductions

1. All uses and development within a reduced buffer remain subject to mitigation sequencing and any unmitigated impacts resulting from a buffer reduction are required to be compensated for consistent with TSMP 6.4.2(A) through (E) to achieve no net loss of ecological functions.

2. In all shoreline designations, water-dependent and public access uses and development may reduce the standard buffer such that direct water access is provided.

\*\*\*

#### TMC 13.10.6.4.4 Fish and Wildlife Habitat Conservation Areas (FWHCAs)

This section provides policies and regulations that apply to critical saltwater habitats as defined by WAC 173-26-221(2)(c)(iii). Kelp beds, eelgrass beds, herring spawning areas, smelt and sand lance spawning areas and other critical saltwater habitats are classified as fish and wildlife habitat conservation areas and are designated as “critical areas” in WAC 365-190-080(5)(a)(6). The guidelines for classifying critical areas also include commercial and recreational shellfish areas.

The Department of Fish and Wildlife has identified the following habitats of special concern: kelp beds, eelgrass beds, herring spawning areas, sand lance spawning areas, smelt spawning areas, juvenile salmonid migration corridors, rock sole spawning beds, rockfish settlement and nursery areas, and lingcod settlement and nursery areas. In addition, it's important to give special consideration to conservation or protection measures necessary to preserve or enhance anadromous fisheries, such as juvenile salmon (RCW 36.70A.172), some of which are classified as “Threatened” under the Endangered Species Act. Critical fish and wildlife habitat conservation areas include, but are not limited to, areas with which endangered, threatened, and sensitive species have a “primary association” (see WAC 365-190-080(5)(a)(i)). Critical Saltwater Habitats

include these “primary association” areas. Examples of “primary association” areas include, but are not limited to, the following:

- Shallow water/low gradient habitats along shorelines
- Migratory corridors that allow juvenile salmon to move within and between habitats (e.g., beaches, as well as eelgrass, kelp, etc.).

In addition, a diversity of shoreline habitats is essential for providing adequate functions for juvenile salmon.

\*\*\*

#### TMC 13.10.6.4.4.A. FWHCA Classification

1. Fish and Wildlife Habitat Conservation Areas (FWHCAs) shall include:

a. Lands containing priority habitats and species;

\*\*\*

#### TMC 13.10.6.4.4.B FWHCA Standards

1. Whenever activities are proposed within or adjacent to a habitat conservation area with which state or federally endangered, threatened, or sensitive species have a primary association, such area shall be protected through the application of protection measures in accordance with a critical area report and habitat management plan prepared by a qualified professional and approved by the City.

\*\*\*

3. Any activity proposed in a designated FWHCA shall be consistent with the species located there and all applicable state and federal regulations regarding that species. In determining allowable activities for priority habitats and species that are known or that become known, the provisions of the Washington State Hydraulic Code and Department of Fish and Wildlife’s (WDFW) Management Recommendations for Washington Priority Habitats and Species shall be reviewed.

6. All activities, uses and alterations proposed to be located in water bodies used by anadromous fish or in areas that affect such water bodies shall give special consideration to the preservation and enhancement of anadromous fish habitat.

\*\*\*

#### TMC 13.10.6.4.4.C. FWHCA Mitigation Requirements

1. All FWHCA mitigation shall comply with applicable mitigation requirements specified in TSMP Section 6.4.2 including, but not limited to, mitigation plan requirements, monitoring and bonding.

2. Where a designated FWHCA geographically coincides with a marine shoreline, stream or wetland, mitigation will comply with applicable mitigation requirements for those resources as described within this Program.

3. Mitigation sites shall be located to preserve or achieve contiguous wildlife habitat corridors, in accordance with a mitigation plan that is part of an approved critical area report, to minimize the isolating effects of development on habitat areas, so long as mitigation of aquatic habitat is located within the same aquatic ecosystem as the area disturbed.

4. Mitigation shall achieve equivalent or greater biological and hydrological functions and shall include mitigation for adverse impacts upstream or downstream of the development proposal site. Mitigation shall address each function affected by the alteration to achieve functional equivalency or improvement on a per function basis.

\*\*\*

#### TMC 13.10.8.2.2.A Regulations – Stabilization

\*\*\*

3. All shoreline stabilization measures shall be constructed to minimize damage to fish and shellfish habitat, and shall conform to the requirements of the Washington Department of Fish and Wildlife Hydraulics Code.



\*\*\*

9. Proposals for new, expanded, or replacement structural shoreline armoring permitted under this Program shall clearly demonstrate all of the following:

- a. The erosion is not being caused by upland conditions, such as the loss of vegetation and drainage;
- b. Nonstructural measures, such as placing the development further from the shoreline, planting vegetation, or installing onsite drainage improvements, are not feasible or not sufficient;
- c. The need to protect primary structures from damage due to erosion is demonstrated through a geotechnical report. The damage must be caused by natural processes, such as tidal action, currents, and waves;
- d. The erosion control structure will not result in a net loss of shoreline ecological functions.

10. When evaluating the need for new, expanded, or replacement structural shoreline armoring, the Director shall require the applicant to examine and implement alternatives to structural shoreline armoring in the following order of preference:

- a. No action (allow the shoreline to retreat naturally);
- b. Increased building setbacks and/or relocated structures;
- c. Use of flexible/natural materials and methods, vegetation, beach nourishment, protective berms or bioengineered shoreline stabilization.

11. The City shall require applicants for new, expanded, or replacement structural shoreline armoring to provide credible evidence of erosion as the basis for documenting that the primary structure is in imminent danger from shoreline erosion caused by tidal action, currents, or waves. The evidence shall:

- a. Demonstrate that the erosion is not due to landslides, sloughing or other forms of shoreline erosion unrelated to water action at the toe of the slope; and
- b. Include an assessment of on-site drainage and vegetation characteristics and their effects on slope stability.

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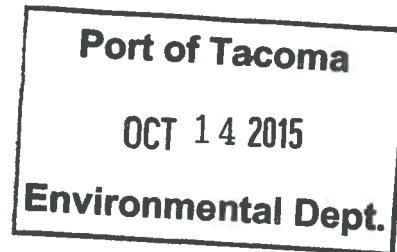
15. Shoreline stabilization structures shall be limited to the minimum size necessary.

**APPENDIX K**  
**COASTAL ZONE MANAGEMENT**  
**CONSISTENCY**  
**DETERMINATION DATED**  
**OCTOBER 13, 2015**



STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

PO Box 47775 • Olympia, Washington 98504-7775 • (360) 407-6300



October 13, 2015

Port of Tacoma  
ATTN: Mr. Tim Ebner  
PO Box 1837  
Tacoma, WA 98401-1837

RE: Coastal Zone Consistency for Corps Reference No. **NWS-2014-0456-WRD**  
Pier 4 (Terminal 4) Phase 2 Reconfiguration Project, Blair Waterway, Puget  
Sound, Pierce County, Washington

Dear Mr. Ebner:

On June 2, 2014, the Port of Tacoma submitted a Certification of Consistency with the Washington State Coastal Zone Management Program (CZMP) to the Department of Ecology (Ecology) for the project referenced above.

Pursuant to Section 307(c)(3) of the Coastal Zone Management Act of 1972 as amended, Ecology concurs with the determination that the proposed work is consistent with Washington's Coastal Zone Management Program (CZMP).

If you have any questions regarding Ecology's consistency determination please contact Lori Kingsbury at (360) 407-6926.

#### **YOUR RIGHT TO APPEAL**

You have a right to appeal this Order to the Pollution Control Hearing Board (PCHB) within 30 days of the date of receipt of this Order. The appeal process is governed by Chapter 43.21B RCW and Chapter 371-08 WAC. "Date of receipt" is defined in RCW 43.21B.001(2).

To appeal you must do all of the following within 30 days of the date of receipt of this Order:

- File your appeal and a copy of this Order with the PCHB (see addresses below). Filing means actual receipt by the PCHB during regular business hours.
- Serve a copy of your appeal and this Order on Ecology in paper form - by mail or in person. (See addresses below.) E-mail is not accepted.

You must also comply with other applicable requirements in Chapter 43.21B RCW and Chapter 371-08 WAC.



## ADDRESS AND LOCATION INFORMATION

Street Addresses	Mailing Addresses
<b>Department of Ecology</b> Attn: Appeals Processing Desk 300 Desmond Drive SE Lacey, WA 98503	<b>Department of Ecology</b> Attn: Appeals Processing Desk PO Box 47608 Olympia, WA 98504-7608
<b>Pollution Control Hearings Board</b> 1111 Israel RD SW STE 301 Tumwater, WA 98501	<b>Pollution Control Hearings Board</b> PO Box 40903 Olympia, WA 98504-0903

## CONTACT INFORMATION

Please direct all questions about this Order to:

Lori Kingsbury, Federal Permit Manager  
Department of Ecology  
Southwest Regional Office  
P.O. Box 47775  
Lacey, WA 98504-7775  
Loch461@ecy.wa.gov

## SIGNATURE

  
Perry J Lund, Unit Manager  
Shorelands and Environmental Assistance Program  
Southwest Regional Office

10/13/15  
Date

By Certified Mail 7012 2920 0000 1182 1758

cc: Olivia Romano, U.S. Army Corps of Engineers  
Mark Rettmann, Port of Tacoma  
Matthew Curtis, WDFW  
Shirley Shultz, City of Tacoma

e-cc: [ecyrefedpermits@ecy.wa.gov](mailto:ecyrefedpermits@ecy.wa.gov)  
Loree' Randall – Ecology, HQ/SEA

**APPENDIX L**

**CONTRACT FOR WASTE  
DISPOSAL BETWEEN THE PORT  
AND LRI, CONTRACT NO.  
070156, DATED OCTOBER 23,  
2015**

## CONTRACT FOR WASTE DISPOSAL

As of the date set forth below, the "Effective Date", this CONTRACT FOR WASTE DISPOSAL (this "Contract") is made by and between the PORT OF TACOMA, hereinafter referred to as "Port", and PIERCE COUNTY RECYCLING, COMPOSTING AND DISPOSAL, LLC d/b/a LRI, a limited liability company of The State of Washington and hereinafter referred to as "Contractor", with both also referred to herein as "Parties".

### RECITALS

1. The purpose of this Contract is to establish disposal rates for work authorized on a Project specific basis by individual purchase order entered into between the Port and Contractor (each a "Purchase Order") or between the Port's Construction Contractor and the Contractor from time to time ("Construction Contractor Process").
2. Contractor understands and agrees that Port is not assigning any work to Contractor pursuant to this Contract.
3. By entering into this Contract, Port is not encumbering any funds (federal, state or otherwise).

### 1. TERM OF THE CONTRACT

The term of this Contract shall commence on 10/23/15 and will extend for a period of two (2) years from that date (the "Initial Term"). Two (2), one (1) -year extension periods are available upon mutual agreement of both Parties ("Extension Term" and, together with the Initial Term, the "Term").

### 2. DISPOSAL OBLIGATION

Port is committed to a mutually beneficial arrangement established with Contractor by means of this Contract. Port agrees that all Port Acceptable Waste (as defined in Paragraph 7 herein and identified in Exhibit A) that Port generates, controls, or processes and identifies for disposal, and which is actually disposed of at a solid waste facility, shall be disposed of at Contractor's Facility, per Port's Purchase Order process or Construction Contractor Process as described herein. Notwithstanding the foregoing and subject to the requirements of Paragraph 6 herein, in the event that any volumes of Acceptable Waste exceed Contractor's daily disposal capacity and expressly subject to LRI timely providing the Port advance written notice of the exceedance as provided in Paragraph 6 herein, Port shall have the right to utilize alternative resources for the disposal of only that amount of Acceptable Waste that Contractor is unable to dispose of, but, in all cases, only after Port has engaged in a purposeful and good faith discussion with Contractor regarding Port's requirements and Port has received a timely written affirmation from Contractor no later than 14 days after the Port's Project

Manager's coordination with Contractor that Contractor is unable to dispose of the volume of Acceptable Waste for the reasons described above.

### **3. APPLICABLE RATES**

As used in this Contract, the term "applicable rates" will mean the rates cited in **Exhibit A** attached hereto as adjusted in accordance with Paragraph 4. The applicable rates established by this Contract will apply to all Purchase Orders issued from this Contract and contracts for the services described herein between LRI and the Port's Construction Contractors.

### **4. RATE ADJUSTMENT CALCULATIONS**

The rates set forth in Exhibit A shall be adjusted annually as follows. Contractor will submit its requested applicable rates to the Port Contract and Purchasing Office no later than ninety (90) days prior to November 1<sup>st</sup> of each subsequent year throughout the term hereof (the "annual adjustment date" on which date the adjusted rates shall become effective) with the first such adjustment effective November 1, 2017. Rate adjustments are limited to and shall be calculated based on the CPI-U, A423 Seattle-Tacoma-Bremerton, WA area, calculated on annual change December to December, "All Items" series title (not seasonally adjusted), index base period 1982-84=100 plus any changes to applicable taxes.

### **5. ADDITIONAL CONSIDERATIONS**

For Purchase Orders issued under this contract, Contractor shall:

- Coordinate with Port's Project Manager to discuss project details and establish project plan/schedule/requirements/invoicing.
- Within 14 days of the Port's Project Manager coordination described above, provide the Port written notice of Contractor's inability to accept the Port's expected volume of Acceptable Waste for that Project; if such notice is not timely given to the Port, Contractor shall be obligated to accept the Port's volume of Acceptable Waste for that Project, notwithstanding the language of Paragraph 2 herein.
- Coordinate billing efforts so invoice submittals to Port are complete, including all documentation as required. Invoicing requirements will be on a project specific basis.

Port shall:

- After providing at least fourteen days advance written notice to LRI, the Port Project Manager shall coordinate with Contractor to review the major aspects and requirements of each Project. The Port's Project Manager will manage project plan/schedule/requirements/invoicing.



- Provide notification if special funds (i.e., grants, etc.) will be utilized by Port and communicate unique reporting requirements during the Project Manager' coordination.

For contracts entered between the Port's Construction Contractor and the Contractor, the Contractor shall:

- Coordinate with Port's Project Manager prior to Project bid to discuss project details and establish project plan/schedule/requirements.
- Provide Port's Construction Contractor the applicable rates defined in this agreement for all Port Acceptable Waste.
- Provide Port's Construction Contractor with Contractor's standard Special Waste Disposal Agreement for execution by Contractor and the Port's Construction Contractor at the applicable rates set forth herein.
- Within 14 days of the Port's Project Manager coordination described above, provide the Port written notice of Contractor's inability to accept the Port's expected volume of Acceptable Waste for that Project; if such notice is not timely given to the Port, Contractor shall be obligated to accept the Port's volume of Acceptable Waste for that Project.

Port shall:

- After providing at least fourteen days advance written notice to LRI, the Port Project Manager shall coordinate with Contractor prior to bid to review the major aspects and requirements of each Project.
- Require that its Construction Contractors post a payment bond and/or use retainage in amounts sufficient to ensure that Contractor's service fees as set forth herein are paid.

## **6. WASTE ACCEPTED AT FACILITY**

During the Term, Port may, from time to time, provide to Contractor Acceptable Waste for disposal, and Contractor shall accept such Acceptable Waste, provided the Port has received a Waste Disposal Authorization ("WDA") from the Tacoma-Pierce County Health Department (TPCHD) where applicable to such Acceptable Waste. Prior to providing Contractor with Acceptable Waste, Port shall provide Contractor with the WDA where applicable describing the waste materials to be disposed. Only that waste material described in the WDA or the disposal of which is otherwise in accordance with all laws, regulations, and permits, shall be acceptable for disposal at its Facility ("Acceptable Waste"). Contractor will also review the WDA and approve acceptance of the waste.

The Port represents that the Waste delivered to Contractor at its Facility hereunder will

be Acceptable Waste and will not contain any unacceptable quantity of liquid wastes (as determined by Method 9095B (Paint Filter Liquids Test)), hazardous materials or substances, radioactive materials or substances, or toxic waste or substances, as defined by applicable federal, state, local or provincial laws or regulations. Any Waste which does not meet these requirements shall hereinafter be referred to as "Unacceptable Waste".

The Port and Contractor affirm that "Acceptable Waste" as defined herein expressly:

- (1) Excludes clean (non-regulated) waste and
- (2) Is specific to regulated waste ("Acceptable Waste"), and
- (3) Does not include either "Unacceptable Waste" or waste that the Port actually reuses or recycles
- (4) Includes regulated waste ("Acceptable Waste") from Port waterway dredging projects, so long as the distance between the dredge project and de-watering site is not greater than forty (40) roadway miles, and
- (5) Includes any waste that is required to go offsite to a regulated landfill, except and only as expressly excluded in (1), (3) and (4) of this Section 7.

## **7. RIGHTS OF REFUSAL/REJECTION**

The Port and or the Port's Construction Contractor shall inspect all Waste at the place(s) of origin and shall remove any and all Unacceptable Waste. Contractor has the right to refuse, or to reject after acceptance, any load(s) of Waste(s) delivered to its Facility that constitutes Unacceptable Waste. Contractor shall have the right to inspect all waste in order to determine whether the Waste is Acceptable Waste or Unacceptable Waste pursuant to this Contract and all applicable federal, state and local laws, rules and regulations. The word "Facility" shall mean the 304th Street Landfill (a/k/a the LRI Landfill and the PCRCD Landfill), located at 30919 Meridian Street East Graham, WA 98338. Conditioned specifically upon the Port's advance written approval, "Facility" may also mean any other properly licensed and permitted solid waste facility or facilities arranged by Contractor for the ultimate disposal of the Acceptable Waste.

## **8. PURCHASE ORDER MODIFICATION OR EXPANSION**

Any Purchase Order may be expanded as allowed below:

A one-time Purchase Order may be modified if the Port's bid upon which the Purchase Order was based reserved the right for additional orders to be placed within a specified period of time, or if the Project or body of work associated with a Purchase Order is still active. Such modifications must be mutually agreed upon by the Parties in writing, and shall be approved by the Port Contract and Purchasing Director or the Port's Purchasing Manager on behalf of Port. No other Port employee is authorized to make such modifications.

Expansions must be issued in writing from the Port Contract and Purchasing Office in a formal notice. The Port Contract and Purchasing Office will ensure the expansion

meets the following criteria collectively: (a) it could not be separately bid, (b) the change is for a reasonable purpose, (c) the change was not reasonably known to either Port or Contractor at time of project initiation or else was called out as a possibility in the bid (such as a change in environmental regulation or other law) to which the Purchase Order is based; (d) the change is not significant enough to be reasonably regarded as an independent body of work; (e) the change could not have attracted a different field of competition; and (f) the change does not vary the essential identity or main purpose of the contract, all as determined by the Port Contract and Purchasing Office in their sole determination, provided however, the Port may make exceptions for immaterial changes, emergency or sole source conditions, or for other situations as required in the opinion of the Port Contract and Purchasing Office.

The following changes are not considered an expansion of scope, including an increase or decrease in quantities ordered, the exercise of options and alternates in the bid, or ordering of work originally identified within the originating solicitation. Such changes shall be approved via a written order issued by the Port Contract and Purchasing Office to Contractor, and shall take effect upon written confirmation by Contractor acknowledging receipt of such written order.

## **9. INSURANCE REQUIREMENTS**

1. The Contractor shall procure and maintain during the life of this contract such insurance as shall protect it from claims or damages for bodily injury, including death resulting therefrom as well as from claims for property damage, which may arise from operations under this contract, whether such operations be by itself, its agents, or by anyone directly or indirectly employed by either of them.
2. Certificates of all insurance shall be filed with the Port of Tacoma naming the Port of Tacoma as additional insured.
3. The policies shall not be canceled or the amount thereof reduced, without the Contractor providing thirty (30) days prior written notice to the Port of Tacoma and
4. The Contractor shall also provide the Port prior written notice if the policy is not to be renewed at the scheduled expiration date.
5. The amount of such insurance shall not be less than:
  - a. Commercial General Liability Insurance, on an occurrence basis, including contractual liability and completed operations, in an amount of not less than One Million Dollars (\$1,000,000.00) for bodily injury, including sickness, disease, and death at any time resulting therefrom, sustained by any person and for property damage.
6. The Contractor shall procure and maintain insurance in accordance with the requirements of all applicable State and Federal Worker's Compensation Laws. Contractor shall furnish to the Port of Tacoma evidence of such insurance, including Employers Contingent Liability (Stop Gap) Insurance.

7. For contracts entered between the Port's Construction Contractor and the Contractor, the Contractor shall fulfill such insurance requirements as provided in Section 10 of the Contract.

## **10. MISCELLANEOUS PROVISIONS**

- A. Amendments: No modification of this Contract shall be effective unless in writing and signed by an authorized representative of each of Port and Contractor. Port shall issue change notices to Contractor, and such notices shall take effect under the signature of Port and upon written confirmation by Contractor acknowledging agreement to and receipt of the change notice.
- B. Conflict: In the event of conflict between contract documents and applicable laws, codes, ordinances or regulations, the most stringent or legally binding requirement shall govern and be considered a part of this contract to afford Port the maximum benefits.
- C. Liens, Claims and Encumbrances: All materials, equipment, or services shall be free of all liens, claims or encumbrances of any kind and if Port requests a formal release of same shall be delivered to Port.
- D. Binding Contract: This Contract shall not be binding until signed by both Parties. The provisions, covenants and conditions in this Contract shall bind the Parties, their legal heirs, representatives, successors, and assigns.
- E. Applicable Law/Venue: This Contract shall be construed and interpreted in accordance with the laws of the State of Washington. The venue of any action brought hereunder shall be in the Superior Court for Pierce County, Washington
- F. Remedies Cumulative: Rights under this Contract are cumulative and nonexclusive of any other remedy at law or in equity.
- G. Captions: All titles, including sections or subsections, are for convenience only and do not define or limit the contents.
- H. Severability: Any term or provision of this Contract found to be prohibited by law shall be ineffective to the extent of such prohibition without invalidating the remainder of the Contract.
- I. Waiver: No covenant, term, or the breach thereof shall be deemed waived, except by written consent of the Party against whom the waiver is claimed, and any waiver of the breach of any covenant, term or condition shall not be deemed to be a waiver of any preceding or succeeding breach of the same or any other covenant, term or condition. Neither the acceptance by Port of any performance by Contractor after the time the same shall have become due nor payment to Contractor for any portion of the Work shall constitute a waiver by Port of the breach or default of any covenant, term or condition unless otherwise this is expressly agreed to by Port, in writing. Port's failure to insist on performance of any of the terms or conditions herein or to exercise any right

or privilege or Port's waiver of any breach hereunder shall not thereafter waive any other term, condition, or privilege, whether of the same or similar type.

J. Entire Contract: This Contract, along with its Exhibits, attachments, work orders, subsequently issued change notices, and amendments constitutes the entire agreement between the Parties with respect to the Work. No verbal agreement or conversation between any officer, agent, associate or employee of Port and any officer, agency, employee or associate of Contractor prior to or following the execution of this Contract shall affect or modify any of the terms or obligations contained in this Contract.

K. Negotiated Contract: The Parties acknowledge that this is a negotiated Contract, that they have had the opportunity to have this Contract reviewed by respective legal counsel, and that terms and conditions are not construed against any Party on the basis of such Party's draftsmanship thereof.

L. No Personal Liability: No officer, agent or authorized employee of either Port or Contractor shall be personally responsible for any liability arising under this Contract, whether expressed or implied, nor for any statement or representation made herein or in any connection with this Contract.

M. Default: The Parties agree that in the event a suit is instituted for any default, the prevailing party shall recover its costs, expenses expended or incurred in connection therewith, and reasonable attorney's fees.

N. Independent Contractor: An independent contractor relationship is created by this contract. The Contractor or its employees or agents performing under this contract are not employees or agents of the Port of Tacoma. Conduct and control of the work will be solely with the Contractor.

O. Nondiscrimination: The Seller agrees not to discriminate against any client, employee or applicant for employment or services because of race, creed, color, national origin, sex, marital status, age or the presence of any sensory, mental or physical handicap with regard to, but not limited to the employment upgrading, demotion or transfer, recruitment or recruitment advertising, lay-off or termination, rates of pay or other forms of compensation, selection for training, or rendition of services. It is further understood and agreed that any Seller who is in violation of this clause or an applicable affirmative action program shall be barred forthwith from receiving awards of any purchase order from the Port of Tacoma unless a satisfactory showing is made that discriminatory practices or noncompliance has terminated and that a recurrence of such acts is unlikely.

## **11. ASSIGNABILITY**

The rights, obligations, and duties of the Parties as specified in this Contract may not be transferred or assigned without written approval of the Parties, which approval may not be unreasonably withheld.

## **12. INDEMNITY / HOLD HARMLESS CLAUSE**

A. The Contractor shall indemnify, defend and hold harmless the Port of Tacoma and its officers, employees and agents from and against any liability, claims, damages, losses, expenses or actions, including reasonable attorney's fees and costs, to the extent caused by or arising out of the activities of Contractor or its officers, employees, subcontractors, or agents under this Contract; or arising from the Contractor's, its' officer's, employee's, subcontractor's, or agent's failure to comply with the provisions of this Agreement or any applicable state, federal, local, law, statute, rule, regulation or act. This duty to indemnify, defend and hold harmless shall encompass, but not be limited to, any claims which include or allege negligence or willful misconduct of Contractor, its agents, officers or employees, except to the extent such claims arise out of the negligence or willful misconduct on the part of the Port of Tacoma, and this duty shall survive the termination or expiration of this Contract.

B. The Port of Tacoma shall indemnify, defend and hold harmless the Contractor and its officers, employees and agents from and against any liability, claims, damages, losses, expenses or actions, including reasonable attorney's fees or costs to the extent caused by or arising out of the activities of Port or its officers, employees, subcontractors, or agents under this Contract; or arising from the Port's, its' officer's, employee's, subcontractor's, or agent's failure to comply with the provisions of this Agreement or any applicable state, federal, local, law, statute, rule, regulation or act. This duty to indemnify, defend and hold harmless shall encompass, but not be limited to, any claims which include or allege negligence or willful misconduct of Port, its agents, officers or employees, except to the extent such claims arise out of the negligence or willful misconduct on the part of the Contractor, and this duty shall survive the termination or expiration of this Contract.

***[Remainder of Page Left Intentionally Blank; Signature Page Immediately Follows]***

IN WITNESS WHEREOF, in consideration of the terms, conditions, and covenants contained herein, or attached and incorporated and made a part hereof, the Parties have executed this Contract by having their authorized representatives affix their signatures below.

### EFFECTIVE DATE

The Parties have executed this Contract this 23 October, 2015.

**Pierce County Recycling  
Composting and Disposal, LLC  
d/b/a LRI**

**Port of Tacoma**

John Rodgers  
Signature

John Rodgers  
Print  
DIVISION VICE PRESIDENT  
Title

Sharon Rothwell 10/22/15  
Signature

Sharon Rothwell

Manager, Purchasing and Supplier Diversity

All communications in respects to this Contract shall include original or copy of information to the individuals above, at the following addresses:

PCRCD LLC d/b/a LRI  
17925 Meridian St E  
Puyallup WA 98375  
P) 253-847-7555  
F) 253-847-7713

Port of Tacoma  
attention:  
PO Box 1837  
Tacoma WA 98401-1837  
P) 253-592-6758  
F) 253-593-4570



## **EXHIBIT A**

### **ACCEPTABLE WASTE AND APPLICABLE RATES**

Rates effective October 23, 2015, subject to adjustment as stated herein.

1. Regulated Soil, Unsuitable Soil or Vector Waste (street/road sweepings, storm drain clean-out residue, etc.):
  - a. Baseline disposal pricing year 1 – \$20.67/ton +3.6% WA State Refuse Tax and any other applicable taxes.
2. Construction/Demolition Waste (non-recyclable or reusable waste associated with construction, demolition, and/or remodeling of Port buildings and structures):
  - a. Baseline disposal pricing year 1 – \$59.25/ton +3.6% WA State Refuse Tax and any other applicable taxes.
3. Asbestos Containing Material:
  - a. Baseline disposal pricing year 1 – \$131.56/ton +3.6% WA State Refuse Tax and any other applicable taxes.
4. Oversize Objects:
  - a. Subject to quote from Contractor based on size of objects and necessary mode of transportation.

#### **Pricing conditions:**

- The above pricing is subject to an annual adjustment on the annual adjustment date as explained in the Rate Escalation Calculations sections of the Contract.

# **SOLID WASTE DISPOSAL AGREEMENT**

## **(Port of Tacoma Construction Contractor Use Only)**

THIS SOLID WASTE DISPOSAL AGREEMENT (this “Agreement”) is made this \_\_\_\_ day of \_\_\_\_\_, 20\_\_ (the “Effective Date”), by and between \_\_\_\_\_ (“Customer”), and PIERCE COUNTY RECYCLING, COMPOSTING AND DISPOSAL, LLC doing business as LRI (“Owner”).

### **WITNESSETH:**

WHEREAS, Customer desires to obtain environmentally sound solid waste disposal services; and

WHEREAS, Owner operates a regional sanitary landfill and desires to provide disposal and other solid waste related services.

NOW, THEREFORE, FOR AND IN CONSIDERATION of the respective covenants herein contained, the parties have agreed as follows:

#### **1. Definitions.**

1.1 “Acceptable Waste” or “Waste” means any waste that is solid waste, as defined in Chapter 173-303 WAC, except Unacceptable Waste, as defined below.

1.2 “Customer” means \_\_\_\_\_.

1.3 “Owner” means Pierce County Recycling, Composting and Disposal, LLC, doing business as LRI.

1.4 “DOE” means Washington Department of Ecology.

1.5 “Delivery Date” means the date that Owner first receives Acceptable Waste for disposal pursuant to this Agreement.

1.6 “Disposal Site” means the LRI 304th Street Sub-title D Landfill or any alternate site chosen by Owner to receive Acceptable Waste.

1.7 “Free Liquid” means liquid in excess of twenty-five (25) gallons per contained load of Waste which readily separates from the solid portions of such Waste on delivery to the Disposal Site under ambient temperature and pressure (*i.e.*, liquid in the Waste load that causes the Waste to fail the “paint filter test” prescribed by the Environmental Protection Agency in its “Method 9095”).

1.8 “Hazardous Waste” means any material which:

(a) is required to be accompanied by a written manifest or shipping document describing the material as “hazardous waste” or “dangerous waste”, pursuant to the generator’s state, Washington or federal law, including, but not limited to, the Resource Conservation and Recovery Act, 40 CFR, Part 260-272, et seq. as amended, and all regulations promulgated thereunder and any such state equivalent or similar law;

(b) contains polychlorinated biphenyl or any other substance the storage, treatment or disposal of which is subject to regulation under the Toxic Substances Control Act, 40 CFR, Part 761, et seq. as amended, and all regulations promulgated thereunder and any such state equivalent or similar law;

(c) contains a radioactive material the storage or disposal of which is subject to state or federal regulation; or

(d) is designated under the generator’s state, Washington or federal law or regulation as a “dangerous waste”, “toxic waste”, “hazardous waste”, “extremely hazardous waste” or “acutely hazardous waste”.

1.9 “Road Legal” means the total gross weight combined with the axle configuration of the vehicles used by the transporter of Acceptable Waste that conforms to the laws of any state or province applicable to the delivery of Acceptable Waste to the Disposal Site.

1.10 “Special Waste” means any Waste which presents personnel safety hazards, creates odor or vector problems, generates excessive leachate, leads to excessive settlement, punctures or tears the landfill liner, poses a fire hazard or increases the toxicity of landfill leachate. Special Waste includes, without limitation, any Waste which:

(a) requires special handling or management practices;

(b) may be contaminated with Hazardous Waste;

(c) includes large dead animals, sewage sludges and grit, septage, industrial solid wastes and other materials which may be hazardous or difficult to manage by virtue of its character or volume; or

(d) must be managed in accordance with the provisions described in an approved Special Waste Application.

1.11 “Ton” is defined as a unit measurement equaling 2,000 pounds.

1.12 “TPCHD” means Tacoma – Pierce County Health Department.

1.13 “Transportation” means Acceptable Waste transportation services provided by LRI, if applicable.

1.14 “Unacceptable Waste” means any and all waste that is either:

(a) prohibited from disposal at a sanitary landfill by the generator's state, Washington, federal or local law, regulation, rule, code, ordinance, permit or permit condition;

(b) Hazardous Waste;

(c) Special Waste without a Special Waste Application, with related handling and disposal costs, approved in advance by Owner;

(d) waste which in Owner's sole discretion Owner considers to be unacceptable; or

(e) waste containing Free Liquid.

1.14 "WDA" means Waste Disposal Authorization issued by TPCHD

## 2. Term of Agreement.

2.1 Effective Date. This Agreement will be effective upon execution, as used herein, the "Effective Date."

2.2 Term. The term of this Agreement coincides with the term of the Port of Tacoma's contract with their Construction Contractor for the project identified therein. 2.3 Renewal Terms. Renewal terms for this Agreement shall coincide with the renewal terms specified within the Port of Tacoma's contract with their Construction Contractor for the project identified therein.

## 3. Scope of Service.

3.1 Operation. Beginning on the Delivery Date and continuing until termination of this Agreement, Customer (Port's Construction Contractor) shall deliver or have delivered, to the Disposal Site, and Owner (LRI) shall receive for disposal, 100% of Customer's Acceptable Waste arising from the contract between the Customer and the Port of Tacoma. Customer will conform to Owner's maximum number of trips per day for the delivery of Acceptable Waste as outlined in Owner's operating permits; insuring deliveries are made during the sites hours of operation.

3.2 Hours of Operation. The Disposal Site will remain open for disposal from 8 a.m. to 4:30 p.m. Monday through Friday. In addition, the Disposal Site will be open Saturdays, on occasion, as needed by Customer when scheduled in advance. These shall be the "hours of operation" for the purpose of this Agreement. The Disposal Site is closed New Years Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day.

3.3 Waste Type and Source. Customer warrants that it shall deliver only Acceptable Waste to Owner for Disposal at the Disposal Site.

3.4 Permit and Licenses. Customer shall at all times procure and maintain in effect all licenses and permits, and conditions thereto, for the generation of Acceptable Waste covered by this Agreement, required by DOE and any and all agencies that may have jurisdiction over Customer's operation.

3.5 Compliance with Applicable Laws. Owner will comply with all present and future federal, Washington state and local statutes and ordinances regulating the construction and operation of the Disposal Site for the disposal of Acceptable Waste, and with all other rules and regulations and amendments thereto imposed by all federal and state regulatory agencies having jurisdiction over the operation of the Disposal Site. Customer warrants that they are and shall remain in compliance with all State and Federal laws, permits and licenses concerning the generation of Waste covered by this Agreement.

3.6 Equipment to be Supplied by Owner. If Transportation services are to be provided by Owner pursuant to this Agreement,, Owner shall supply a sufficient number of trucks to transport Customer's Acceptable Waste from Customer's location known as \_\_\_\_\_ to the Disposal Site. It is agreed that Customer's Acceptable Waste deliveries will not exceed Owner's total maximum number of trips per day at the Disposal Site as outlined in Owner's operating permits.

3.7 Care of Equipment. If Transportation services are to be provided by Owner pursuant to this Agreement, Customer warrants that it will provide at all times a safe loading berth, which will be free of hazards. Customer shall exercise due care and diligence in the use and handling and loading of Owner furnished equipment and shall be responsible for all damage to such equipment.

3.8 Special Waste. Customer represents, warrants and covenants that the Waste delivered to Owner hereunder (i) will not contain any Special Waste that is not specifically described on (A) any application which is attached hereto or which is subsequently approved by Owner, and/or (B) any WDA issued by TPCHD (if required by TPCHD), (ii) will meet the material description as set forth in any application and otherwise in all significant respects and (iii) will not contain Unacceptable Waste. The parties may incorporate additional Special Waste as part of this Agreement if prior to delivery of such Waste to Owner, Customer has provided an application for such Waste and Owner has approved disposal of such Waste within the limitations and conditions contained in Owner's written notice of approval of Special Waste Disposal. Title to any and all (1) Special Waste (not specifically described on a Special Waste application submitted in connection herewith), and (2) Unacceptable Waste, handled or disposed of by Owner shall at all times remain with Customer and any agent of Customer (if an agent is involved).

3.9 Right to Refuse Unacceptable Waste. Owner shall only accept Acceptable Waste. Owner may, at its sole expense, sample and analyze any shipment of Customer's waste to determine if it is Acceptable Waste. Customer shall reimburse Owner for the taxes, assessments, costs, fees and charges incurred by Owner in testing, handling, loading, preparing, transporting, storing, dismissing, returning to Customer, disposing or caring for Unacceptable Waste received from Customer. Upon rejection by Owner, Owner will coordinate with Customer

in an effort to expedite proper disposition of all Unacceptable Waste. If Owner and Customer are unable to reach terms for the appropriate handling, transportation and disposal arrangements for all Unacceptable Wastes within forty-eight (48) hours after notice from Owner, Customer will promptly and safely take possession of Unacceptable Waste at the Disposal Site and remove it. If Customer does not remove such Unacceptable Waste within three (3) days after notification by Owner to take possession, then Owner shall have the right and authority, at the expense of Customer, to arrange for the proper handling, transportation and disposal of such Unacceptable Waste. Customer shall be responsible for, and bear all reasonable expenses and damages incurred by Owner, as a result of the Unacceptable Waste and in the reloading and removal of Unacceptable Waste disposed in the Facility.

4. Compensation to Owner.

4.1 Basic Disposal Price. The basic disposal price (the “Basic Disposal Price”) Customer shall pay to Owner for Acceptable Waste delivered to, and disposed of at, the Disposal Site shall be in accordance with The Contract for Waste Disposal between the Port of Tacoma and LRI, executed \_\_\_\_\_. The Basic Disposal Price does not include sales, use, refuse collection, solid waste taxes, or local program fees, if applicable, all of which shall be billed to and paid by Customer. If Transportation services are provided by Owner, an applicable Transportation rate will be added to and included in the Basic Disposal Price. Any changes in the current fees and taxes will be passed through to, and paid by, Customer.

4.2 Billings. Owner shall provide Customer with an invoice detailing the number of loads and tonnage of Customer’s Waste as received at the Disposal Site. Customer shall pay disposal charges to Owner based on using Owner’s certified scales at the Disposal Site to determine appropriate disposal charges to be billed to Customer. Customer shall pay each invoice within thirty (30) days of the date of the invoice, in legal tender at the time of payment, without further notice by Owner. Finance Charges on all past due accounts will accrue and be paid by Customer at the maximum rate allowed by law on all overdue amounts.

4.3 Books and Records. Owner will keep daily records of the weight or volume of Customer’s Waste received at the Disposal Site and charges therefore, and upon reasonable prior notice, Customer has the right to inspect the same.

4.4 Cost of Living Adjustment for Basic Disposal Price. The per Ton Basic Disposal Price shall be adjusted annually in accordance with the Contract for Waste Disposal between the Port and LRI, executed \_\_\_\_\_.

5. Insurance.

5.1 Insurance Coverage of Owner. Owner shall provide and maintain during active Disposal Site operations, Workers’ Compensation insurance for the Disposal Site, which shall meet the requirements of the State of Washington. This insurance shall cover all operations under this Agreement. Owner shall provide and maintain during the Term public liability insurance, to protect against claims arising out of Owner operations that may result in bodily injury, death or property damage suffered on or about the Disposal Site. Owner, upon request,

shall furnish Customer evidence that the insurance required is in force. The type and limits of liability of all insurance required herein shall be as set forth in **Exhibit A**, which is attached hereto and incorporated herein.

5.2 **Insurance Coverage of Customer.** Customer shall provide and maintain during this Agreement, Workers' Compensation insurance which shall meet the requirements of the State in which work is performed and such insurance shall cover all operations under this Agreement. Customer shall provide and maintain during the Term of this Agreement liability insurance to protect against any claim or demand concerning bodily injury, death or property damage arising out of Customer's operations. The policy or policies in force shall contain a provision that any nonrenewal in the insurance coverage must be preceded with notice in writing to Owner in accordance with the applicable provisions of such policies. Customer, upon request, shall furnish to Owner evidence satisfactory to Owner that the insurance required is in force. The type and limits of liability of all insurance required herein from Customer shall be as set forth in **Exhibit A**, which is attached hereto and incorporated herein.

5.3 **Coverage.** Insurance provided pursuant to this section shall be written on a claims made basis. All policies shall name the other party as an additional insured and both parties and their respective insurers shall waive subrogation against the other party.

6. **Indemnity.**

6.1 **Indemnification of Owner.** Customer shall fully and forever defend, indemnify and hold harmless Owner and its successors, assigns, officers, directors, members, managers and agents against and in respect of any and all costs, losses, damages, deficiencies, fines, penalties, expenses or liabilities (including court costs and reasonable attorneys' fees and expenses), threatened, suffered or paid, to the extent resulting from or arising out of (A) the breach of any representation or warranty made by Customer in this Agreement or in any certificate, document or instrument given pursuant hereto or in connection herewith; (B) any failure by Customer to perform or otherwise fulfill or comply with any undertaking, agreement or obligation on the part of Customer to be performed, fulfilled or complied with hereunder; (C) any claim by any third party of ownership of or any rights or interests in any Waste accepted by Owner; (D) any bodily injury, personal injury or property damage resulting from the actions of Customer; or (E) any act or omission for which Customer shall be found legally liable.

6.2 **Indemnification of Customer.** Owner shall fully and forever defend, indemnify and hold harmless Customer and its successors, assigns, officers, directors and agents against and in respect of any and all costs, losses, damages, deficiencies, expenses or liabilities (including court costs and reasonable attorneys' fees and expenses), threatened, suffered or paid, to the extent resulting from or arising out of (A) the breach of any representation or warranty made by Owner in this Agreement or in any certificate, document or instrument given pursuant hereto or in connection herewith; (B) any failure by Owner to perform or otherwise fulfill or comply with any undertaking, agreement or obligation on the part of Owner to be performed, fulfilled or complied with hereunder; (C) any bodily injury, personal injury or property damage resulting from the actions of Owner; or (D) any act or omission for which Owner shall be found legally liable.



7. Default.

7.1. Default; Termination. Customer shall be in default hereof if it fails to pay any invoiced amount in accordance with the terms set forth in Section 4. Either party shall be in default hereof if said party breaches this Agreement or fails to perform any of the covenants or conditions contained herein for thirty (30) days after the other party has given the breaching party written default notice; provided, however, that, if such failure or breach is of such nature as to not be curable within said thirty (30) day period, an event of default shall occur if the breaching or failing party shall have failed to commence curative action within the prescribed thirty (30) day period and prosecuted the same with due diligence to completion thereafter but in no event beyond sixty (60) days after receipt of the default notice. In any such event of default, the non-breaching party may: (i) terminate this Agreement and (ii) have recourse to any other right or remedy to which it may be entitled by law, including, but not limited to, the right to all damages or losses suffered as a result of such breach or default. In the event either party waives default by the other party, such waiver shall not be construed or determined to be a continuing waiver of the same or any subsequent breach or default.

7.2 Other Termination. The occurrence of any of the following events shall also constitute an event of default by Customer and shall give Owner the right to immediately terminate this Agreement:

- (a) A petition for reorganization or bankruptcy filed by or against Customer;
- (b) Failure by Customer to pay any amounts due to Owner.
- (c) Any breach by Customer of any of its obligations pursuant to the Agreement.

Customer shall be liable for and shall indemnify, defend and hold harmless Owner from any losses, claims expenses or damages incurred by Owner as a result of termination hereunder.

7.3 Right of Disposal. This Agreement does not grant any rights to dispose of Waste other than in accordance herewith. Owner reserves the right to immediately terminate access to the Disposal Site by Customer and Customer's personnel in the event of breach or violation by Customer of any of the terms of this Agreement, Owner's operating rules or payment policies or any applicable laws or regulations.

7.4 Access to Payment Bond/Retainage. In the event that Customer fails to pay Owner for disposal services as required by Paragraph 4 above, Customer agrees that Owner may be paid through access to the payment bond or retainage required pursuant to Paragraph 5 of the Contract for Waste Disposal between Owner and the Port of Tacoma executed \_\_\_\_\_.

8. Miscellaneous.

8.1 Continuing Compliance. Customer has a continuing obligation to inform Owner of any new information, or information not previously provided to Owner by Customer which may affect the acceptability of the Waste by Owner. Further, Customer shall comply with all Owner requests for evidence of Customer's continuing compliance with the terms of the Agreement including but not limited to the following: (i) providing new, updated Waste profiles on the Waste(s) offered for disposal or, (ii) providing appropriate certification that the Waste being offered for disposal is accurately reflected by the appropriate application or, (iii) re-sample the Waste at Customer's expense if reasonable cause exists as to its acceptability under the terms of this Agreement or, (iv) allow Owner to re-sample the Waste if reasonable cause exists as to its acceptability under the terms of this Agreement (and Customer shall be responsible for all costs and expenses associated with such sampling if such Waste is determined to be Unacceptable Waste), or (v) all of the above.

8.2 Force Majeure. The performance of this Agreement by either party, other than the obligation to pay any sums of money hereunder, may be suspended and the obligations hereunder excused or extended in the event, and during the period, that such performance is prevented, hindered or delayed by a cause or causes beyond the reasonable control of such party. Matters beyond the reasonable control of either party include, but are not limited to, default of another party, labor disputes, strike or lockout, acts of God, war, fire, explosion, national defense requirement, accident, riot, flood, sabotage, lack of adequate fuel, power, materials, labor, or transportation facilities, power failures, breakage or failure of machinery or apparatus, damage or destruction of the Disposal Site and its facilities, injunctions or restraining orders, and judicial or governmental laws, regulations, requirements, orders, actions, or inaction, including the revocation or suspension of or failure to obtain, for reasons beyond either party's reasonable control, any licenses or permits required for operation of the Disposal Site. In the event of disruption of services under any such circumstances, Customer and Owner shall make every reasonable effort to reopen their respective facilities as soon as practicable after the cessation of the cause of suspension of services, and will take all reasonable steps to overcome the cause of cessation of services.

8.3 Taxes and Changes in Regulations Requiring Expenditures. Customer shall pay any and all taxes, charges, fees, assessments and costs on its or Owner's storage, handling and Transportation of Waste from Customer's facilities, or use thereof which Customer may be required to pay or collect under any federal, state or local law or authority now in effect or hereafter passed. Customer shall not be responsible for the payment of any taxes, charges and assessments required to be paid by Owner under the Internal Revenue Code, as amended, or under any state or local income, gross receipts or property tax, as it relates to Owner operations. Notwithstanding the prior sentence, any taxes, charges, fees, and assessments pertaining to the collection, Transportation or disposal of Acceptable Waste which are not currently in effect as of the Effective date, costs arising from a change in law or regulation after the Effective date affecting Owner's services hereunder and additional costs to Owner from force majeure events shall be billed to and paid by Customer in accordance with Section 4.2.

8.4 Independent Contractor. Owner's service hereunder is rendered to Customer as an independent contractor, and neither Owner nor any of its employees is authorized to represent Customer's interest or to take any action for Customer's account. Customer shall

have no control over the employment, discharge, compensation of or services rendered by Owner's employees. Conversely, Customer shall not represent Owner's interest or take any action for Owner's account. Owner shall have no control over the employment, discharge, compensation of or services rendered by Customer's employees.

8.5 Separability. Should any provision of this Agreement become inoperable because of any change in statute, law, regulation, legal process or decision, or other reasons, the elimination of that provision shall not affect the operation of the balance of this Agreement, which shall continue in force unabated except in accordance with other termination provisions contained herein.

8.6 Assignment. Neither party shall assign its rights or obligations under this Agreement, in whole or in part, without the prior written consent of the other, which shall not be unreasonably withheld. This Agreement shall be binding upon and inure to the benefit of the successors and assigns of each of the parties hereto.

8.7 Specific Services. This is an Agreement for the performance of specific services described herein. Under no circumstances or conditions shall the operations of Disposal Site by Owner, in accordance with this Agreement, be deemed a public function, nor has Customer acquired an interest, ownership or otherwise in the real or personal property or improvements or fixtures at the Disposal Site by virtue of this Agreement.

8.8 Notices. All notices or other communications to be given hereunder shall be in writing and shall be deemed given when hand delivered or mailed by Registered or Certified United States mail return receipt requested:

To Customer: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

To Owner: Pierce County Recycling, Composting and Disposal, LLC  
dba LRI  
Attention: Division Vice President or District Manager  
17925 Meridian Street East  
Puyallup, WA 98375

Any changes of address by either party shall be by notice given to the other in the same manner as specified above.

8.9 Attorney's Fees. In the event of any litigation or arbitration between the parties hereto with respect to the subject matter hereof, the prevailing party shall recover its costs and expenses including reasonable attorney fees (including those on any appeal or in any bankruptcy action), witness and expert fees, and other costs, all of which shall be included in and as a part of the judgment or award rendered in such litigation or arbitration.

8.10 Arbitration. Any controversy, or claim, arising out of, or relating to, this Agreement, or the breach of this Agreement, shall be resolved in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association. All disputes shall be heard and decided by one arbitrator selected by both parties, unless either party makes a claim or claims which exceed \$50,000, in which event each party shall select one arbitrator and the two arbitrators so selected shall then select a third arbitrator. The arbitration result shall be final in accordance with the terms of RCW 7.04 et. Seq.

8.11 Applicable Law. The terms and conditions of this Agreement shall be construed in accordance with the laws of the State of Washington.

8.12 Paragraph Headings. The paragraph headings in this Agreement are inserted for convenience only and are in no way to be construed as part of this Agreement or as a limitation or enlargement of the scope or meaning of the particular sections or paragraphs to which they refer, and shall not affect the interpretation of any provisions of this Agreement.

8.13 Entire Agreement. This instrument embodies the whole Agreement of the parties hereto. There are no promises, terms, conditions or obligations referring to the subject matter other than those contained herein. No modification of this Agreement shall be effective unless made in writing and signed by both parties.

***[Remainder of Page Intentionally Left Blank;  
Signature Page Follows.]***

IN WITNESS WHEREOF, the parties have executed this Solid Waste Disposal Agreement by their duly authorized agents, as of the date first above written.

CUSTOMER:

\_\_\_\_\_

OWNER:

Pierce County Recycling Composting  
Disposal LLC, d.b.a. LRI

By: \_\_\_\_\_

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

Title: \_\_\_\_\_

By: \_\_\_\_\_

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

Title: \_\_\_\_\_

**EXHIBIT A**

**INSURANCE COVERAGE LIMITS**

	<u>Coverage</u>	<u>Limits of Liability</u>
A.	Workers' Compensation	Statutory
B.	Employer's Liability	\$1,000,000
C.	Comprehensive General Liability	\$2,000,000 each incident \$2,000,000 aggregate
D.	Automobile Bodily Injury	\$2,000,000 each incident
E.	Automobile Property Damage	\$2,000,000 each incident
F.	Excess Umbrella Liability	\$5,000,000 each occurrence