

CENWS-OD-TS-NR

MEMORANDUM FOR: RECORD

January 7, 2016

SUBJECT: DETERMINATION REGARDING THE SUITABILITY OF PROPOSED DREDGED MATERIAL FROM NORTHWEST ALLOYS LONGVIEW FOR OPEN-WATER FLOWLANE DISPOSAL IN THE COLUMBIA RIVER.

1. **Introduction.** This memorandum reflects the consensus determination of the Dredged Material Management Program (DMMP) agencies (U.S. Army Corps of Engineers, Washington Departments of Ecology and Natural Resources, and the Environmental Protection Agency) regarding the suitability of 20,000 cubic yards (cy) of dredged material adjacent to the Northwest Alloys (NWA) property in Longview, Washington for open-water disposal. Proposed disposal is in the flowlane area of the Columbia River between river miles (RM) 62 and 64.
2. **Background.** The NWA property is located on the Washington side of the Columbia River between river mile 63 and 65 (Figure 1). NWA is proposing maintenance dredging at NWA's dock 1 facility near Longview, Washington to ensure safe access for ocean-going vessels and river barges its facilities. Dock 1 is located on the Columbia River at approximately RM 63. The NWA site is a bulk products terminal that handles multiple products, including alumina.

The last maintenance dredging event occurred in 2011 under USACE Permit No. NWS 2010-1220. Dredging was conducted to a depth of -40 ft CRD with a 2-ft overdredge allowance in the area approximately defined by Area 1 (DMMU1) as defined in Figure 3.

The proposed dredging will remove up to 20,000 cy of sediment in Area 1 (DMMU1) and would achieve a target depth of -40 ft. The volume of sediment to be removed includes a 2-ft overdredge allowance up to -42 ft CRD. Dredging will be performed using a clamshell dredge and the material will be transported to the flow-lane disposal area by bottom-dump barge. Figure 3 shows potential flow-lane disposal sites identified near the NWA property between RM 60 to 66.

A 10-year maintenance permit is being sought for this work. The proposed dredge program area includes dredging areas 1, 2 and 3 (Figure 2). Area 2 (DMMU2 and DMMU3) and Area 3 (DMMU4) are not covered by this suitability determination.

3. **Project Summary.** Table 1 includes project summary and tracking information.

Table 1. Project Summary

Project ranking	Moderate
Characterized dredging volume	20,000 CY
Proposed dredging depth (ft CRD)	-40 ft plus 2 ft overdepth to -42 ft
SAP received	May 20, 2015
DMMP comments on 1 st draft	June 15, 2015
Revised SAP received	June 26, 2015

SAP approved	July 2, 2015
Sampling date	August 18, 2015
Draft Sediment Characterization Report (SCR) received	November 17, 2015
DMMP comments on 1 st draft SCR	December 8, 2015
Revised SCR received	December 17, 2015
SCR approved	January 7, 2016
DMMO tracking number	NWALY-1-A-F-371
EIM study ID	NWALY15
Recency Determination (moderate rank = 5 years)	August 2020

4. **Project Ranking and Sampling Requirements.** Area 1 sediments at the NWA property in Longview are currently ranked “moderate” (DMMP, 2014). For a moderate-ranked project with homogeneous sediment, the number of samples and analyses are calculated using the following guidelines (DMMP, 2014):

- Maximum volume of sediment represented by each field sample = 4,000 cy
- Maximum volume of sediment represented by each composite sample = 20,000 cy

Three cores were planned and collected from Area 1 (DMMU1). The number of planned field samples (3) was estimated based on July 2014 survey data; however, the 2015 field sampling revealed that additional shoaling had occurred. The sampling frequency therefore does not meet the DMMP requirements. However, given that the sediment sampled was relatively clean (Section 6), the DMMP agencies concur that the composite sample consisting of three field samples may represent the requested maximum dredge material volume of 20,000 CY.

5. **Sampling.** Sampling occurred August 18, 2015 at the three locations shown in Figure 3 and detailed in Table 2. Sediment cores were collected at each location using a vibracore and processed on-site on the NWA dock prior to deliver to the laboratory for analyses. All cores fully penetrated the dredge prism and Z-layer. Two composite samples were generated using the three cores: one for the dredge prism and one for the Z-layer (the Z-sample).

6. **Sediment Conventional, Grain Size and Chemical Analysis.**

Samples were analyzed by Analytical Resources, Inc. in Tukwila, Washington. All chemical and sediment conventional analytical results were subjected to data validation by D.M.D., Inc.; only minor quality control issues were reported. All data are considered sufficient and acceptable for regulatory decision-making, as qualified, under the DMMP program.

Sediment conventional and chemical analytical results (Table 3) show that the proposed dredged material is predominantly sand with approximately 10% fines (silt and clay). No chemicals were detected in exceedance of the DMMP screening level 1 (SL1) guidelines. Metals, PAHS, chlorinated hydrocarbons, phenols, pesticides, PCBs, and the miscellaneous extractables were either not detected or were detected at concentrations well below the SL1 in the composite sample for DMMU1.

Although the 2,4-DDx pesticides (2,4-DDE; 2,4'-DDD; 2,4'-DDT) were not measured and reported by

the laboratory, the 4,4'-DDx pesticides were all non-detect. This information, combined with the absence of any chlorinated pesticides or PCBs in the sample, suggests that the 2,4-DDx pesticides are most likely not present at levels of concern.

Organometallics. Bulk organotin analysis was not required for this project.

Dioxins/furans. Dioxins/furans analysis was not required for this project.

7. **Biological Testing.** There were no SL1 exceedances for the standard COCs. Bioaccumulation triggers (BTs) have not been set for freshwater sediments. Therefore, bioassays and bioaccumulation testing were not required.
8. **Sediment Exposed by Dredging.** Sediment exposed by dredging must either meet the State of Washington Sediment Quality Standards (SQS) (Ecology, 2013) or the State's antidegradation standard (DMMP, 2008). A two foot z-sample composite was collected from DMMU1 and analyzed by the laboratory. There were no chemical concentrations above the SL1 in either the dredge prism sample or the z-sample. Therefore, this project is in compliance with the State of Washington anti-degradation standard.
9. **Suitability Determination.** The chemical data provide no substantial evidence that contamination is present in the sediment material.

In summary, based on the results of the previously described testing, the DMMP agencies concluded that the **20,000 cubic yards of dredged material in DMMU 1 are suitable for open-water disposal.**

A pre-dredge meeting with DNR, Ecology, EPA and the Corps of Engineers is required at least 7 days prior to dredging. A dredging and disposal 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. Dredging, positioning, and disposal will all need to be addressed with enough detail to provide assurance to the agencies that the dredge plan will be properly implemented.

A Portland District Corps of Engineers agreement must be acquired for open-water disposal. Disposal at the selected flowlane site must be in accordance with Portland District procedures.

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 will provide input on the overall project. A final decision will be made after full consideration of agency input, and after an alternatives analysis is done under section 404(b)(1) of the Clean Water Act.

10. **References.**

Dalton Olmsted Fuglevand, 2015a. *Sampling and Analysis Plan for Northwest Alloys, Inc, Dock 1, Longview WA.* Prepared for Grette Associates. Revised June 2015.

Dalton Olmsted Fuglevand, 2015b. *Sediment Characterization Report for Northwest Alloys, Inc, Dock 1, Longview WA.* Prepared for Grette Associates. December 2015.

DMMP, 2008. *Quality of Post-Dredge Sediment Surfaces (Updated)*. A Clarification Paper Prepared by David Fox (USACE), Erika Hoffman (EPA) and Tom Gries (Ecology) for the Dredged Material Management Program, June 2008.

DMMP, 2014. *Dredged Material Evaluation and Disposal Procedures (User Manual)*. Prepared by the Seattle District Dredged Material Management Office for the Dredged Material Management Program, December 2014.

Ecology, 2013. *Sediment Management Standards – Chapter 173-204 WAC*. Washington State Department of Ecology, February 2013.

11. Agency Signatures.

signed copy on file in DMMO - Seattle District office

Concur:

Date Heather Fourie – U.S. Army Corps of Engineers, Seattle District

Date Erika Hoffman - Environmental Protection Agency

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

Date Celia Barton - Washington Department of Natural Resources

Copies furnished:

DMMP signatories
Danette Guy – USACE, Seattle District Regulatory
Glenn Grette – Project Manager, Grette Associates
Melora Shelton – Grette Associates

Table 2. Sample locations, depths, and sample descriptions

DMMU (Area)	Station	NAD83 Sample Collection Coordinates		Collection Date	Mudline Elevation (ft CRD)	Length of Sediment Core (ft)	Core depth (ft CRD)	Core Section (Field Sample) Designation and Depths (ft CRD)	Design Elevation (ft CRD)	Design Depth (including OD) (ft CRD)
		Latitude	Longitude							
1	1	46.13579	123.00332	8/18/2015	-39.0	5	-39.0 to - 44	Dredge Composite: -39 to -42; Z-layer: -42 to -44	-40.0	-42.0
	2	46.13619	123.00425	8/18/2015	-39.7	4.3	-39.7 to - 44	Dredge Composite: -39.7 to - 42; Z-layer: -42 to -44		
	3	46.13653	123.00490	8/18/2015	-39.5	4.5	-39.5 to - 44.4	Dredge Composite: -39.5 to - 42; Z-layer: -42 to -44		

Table 3. Chemical analysis results

Parameter	Units	Freshwater Guidelines		DMMU Composite	Z Sample
		SL1	SL2	Result	Result
Grain Size Classification					
Gravel (>2000 um)	%	--	--	0	0.1
Sand (2000 - 62.5 um)	%	--	--	88.3 - 90.9	85.8
Silt (62.5 - 3.9 um)	%	--	--	6.8 - 9.9	11.5
Clay (<3.9 um)	%	--	--	1.6 - 2.1	2.6
Fines (Silt + Clay)	%	--	--	8.4 - 12	14.1
Conventionals					
Total Solids	%	--	--	78.84	78.7
Preserved Total Solids	%	--	--	69.82	67.08
Total Volatile Solids	%	--	--	0.67	1.09
Total Organic Carbon	%	--	--	0.271	0.46
Ammonia	mg-N/kg	230	300	8.48	50.6
Total Sulfides	mg/kg	39	61	<1.4 U	<1.45 U
Metals					
Arsenic	mg/kg	14	120	6	7
Cadmium	mg/kg	2.1	5.4	0.2 U	0.3 U
Chromium	mg/kg	72	88	6.6	7.6
Copper	mg/kg	400	1,200	12.9	14.4
Lead	mg/kg	360	>1,300	0.91 J	1.16 J
Mercury	mg/kg	0.66	0.8	0.0106 J	0.03
Nickel	mg/kg	38	110	7	8
Selenium	mg/kg	11	>20	0.6 U	0.19J
Silver	mg/kg	0.57	1.7	0.4 U	0.4 U
Zinc	mg/kg	3,200	>4,200	22	26
Organic Contaminants					
1-Methylnaphthalene	ug/kg	--	--	<20 U	<20 U
2-Methylnaphthlaene	ug/kg	--	--	<20 U	<20 U
Acenaphthene	ug/kg	--	--	<20 U	16 J
Acenaphthylene	ug/kg	--	--	<20 U	<20 U
Anthracene	ug/kg	--	--	<20 U	5.9 J
Benz(a)anthracene	ug/kg	--	--	8.8 J	8.8 J
Benzo(a)pyrene	ug/kg	--	--	<20 U	<20 U
Benzo(a)fluoranthenes (b, j, k)	ug/kg	--	--	12 J	15 J
Benzo(g,h,i)perylene	ug/kg	--	--	8.8 J	<20 U
Chrysene	ug/kg	--	--	6.8 J	9.8 J
Dibenz(a,h)anthracene	ug/kg	--	--	<20 U	<20 U
Fluoranthene	ug/kg	--	--	15 J	53
Fluorene	ug/kg	--	--	5.9 J	12 J
Indeno(1,2,3-c,d)pyrene	ug/kg	--	--	<20 U	<20 U
Naphthalene	ug/kg	--	--	5.9 J	<20 U
Phenanthrene	ug/kg	--	--	11 J	76
Pyrene	ug/kg	--	--	14 J	44
Total PAHs	ug/kg	17,000	30,000	88.2	240.5
Phenols					
Phenol	ug/kg	120	210	13 J	<20 U

Parameter	Units	Freshwater Guidelines		DMMU Composite	Z Sample
		SL1	SL2	Result	Result
4-Methylphenol	ug/kg	260	2,000	<20 U	<20 U
Pentachlorophenol	ug/kg	1,200	>1,200	<98 U	<98 U
Phthalates					
Bis(2-ethylhexyl)phthalate	ug/kg	500	22,000	<49 U	63
Di-n-butyl phthalate	ug/kg	380	1,000	<20 U	<20 U
Di-n-octyl phthalate	ug/kg	39	>1,100	<20 U	<20 U
Chlorinated Hydrocarbons					
beta-Hexachlorocyclohexane	ug/kg	7.2	11	<0.5 U	<0.5 U
Organometallic Compounds					
Monobutyltin	ug/kg	540	>4,800	<3.7 U	<3.7 U
Dibutyltin	ug/kg	910	130,000	<5.3 U	<5.2 U
Tributyltin	ug/kg	47	320	<3.5U	<3.5 U
Tetrabutyltin	ug/kg	97	>97	<4.6 U	<4.6 U
Miscellaneous Extractables					
Benzoic acid	ug/kg	2,900	3,800	<200 U	84J
Carbazole	ug/kg	900	1,100	<20 U	<20 U
Dibenzofuran	ug/kg	200	680	<20 U	<20 U
Pesticides & PCBs					
4,4'-DDD	ug/kg	310 ^a	860 ^a	<1.0U	<1.0U
4,4'-DDE	ug/kg	21 ^a	33 ^a	<1.0U	<1.0U
4,4'-DDT	ug/kg	100 ^a	8,100 ^a	<1.0U	<1.0U
Dieldrin	ug/kg	4.9	9.3	<1 U	<1 U
Endrin ketone	ug/kg	8.5	>8.5	<1 U	<1 U
Aroclor 1016	ug/kg	--	--	<18U	<18U
Aroclor 1242	ug/kg	--	--	<18U	<18U
Aroclor 1248	ug/kg	--	--	<18U	<18U
Aroclor 1254	ug/kg	--	--	<18U	<18U
Aroclor 1260	ug/kg	--	--	<18U	<18U
Aroclor 1221	ug/kg	--	--	<18U	<18U
Aroclor 1232	ug/kg	--	--	<18U	<18U
Total PCBs (Aroclors)	ug/kg	110	2,500	<18U	<18U
Bulk Petroleum Hydrocarbons					
TPH-diesel	mg/kg	340	510	8.8	8.3
TPH-residual	mg/kg	3,600	4,400	14	36

Notes: a – These freshwater SLs are for the sum of 2,4'- and 4,4'-DDx.

J = estimated concentration
U = undetected
SL = screening level
Bold = Detected value
Shaded cell exceeds one or more criteria.

Figure 1. Site Location Map

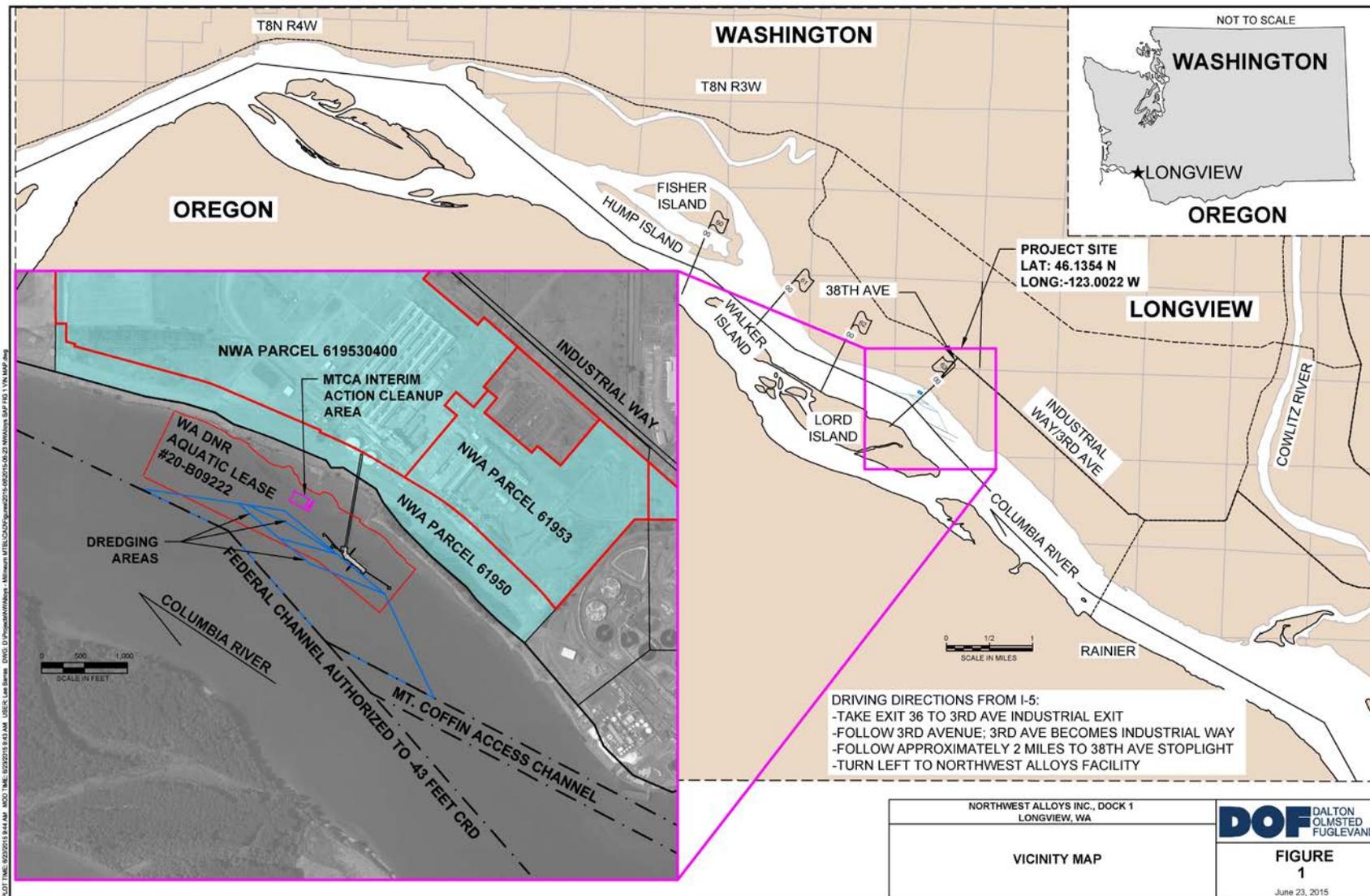


Figure 2. Sample Locations

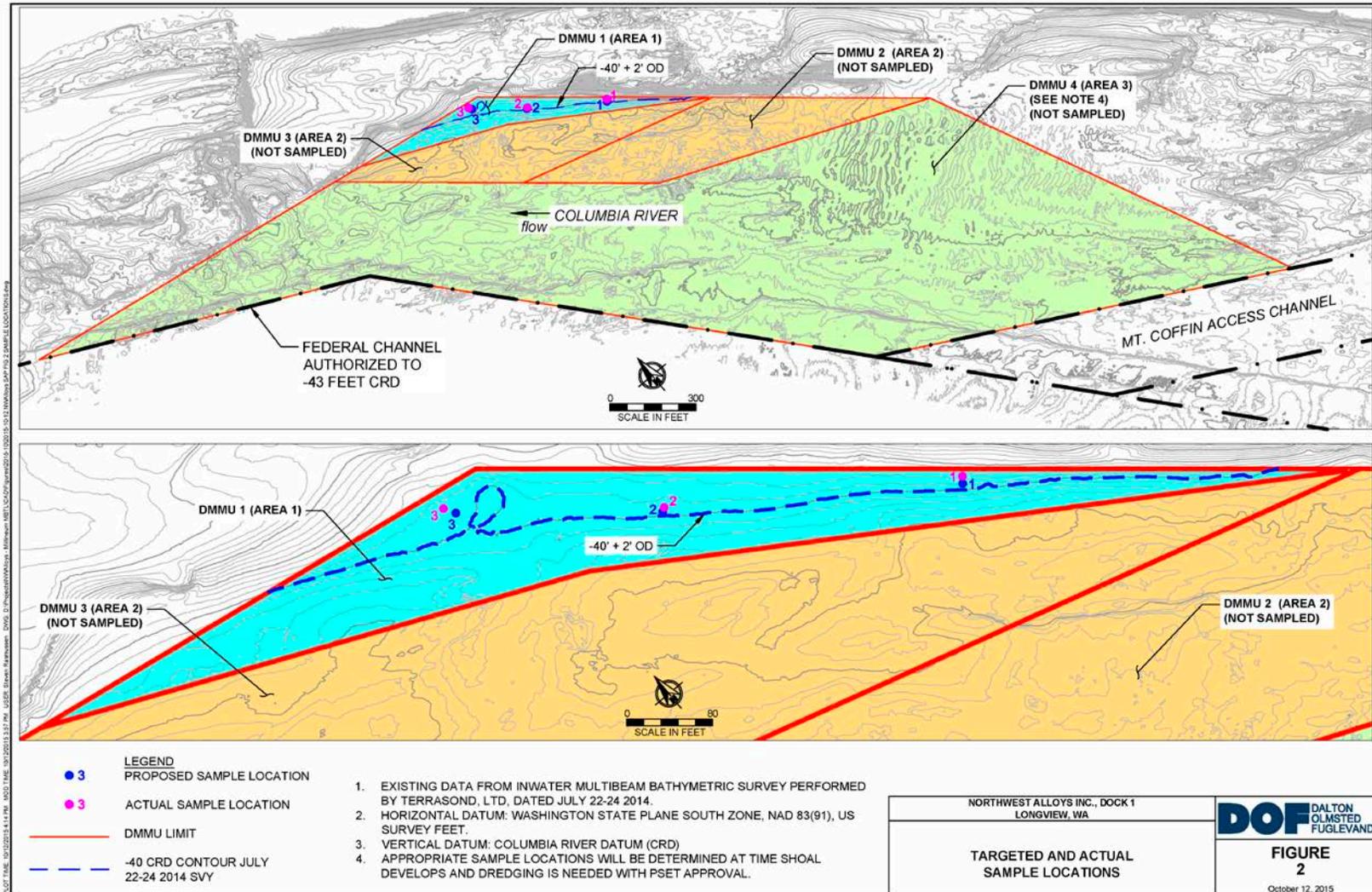


Figure 3. Disposal Site Location

