

APPENDIX F

MARINEWAY#3 REMEDIATION SUMMARY MEMO





MEMORANDUM

To: Erin McDonnell, Oregon DEQ, NWR Date: July 30, 2021
From: Cem Gokcora/Erik Bakkom Project No.: 1653.01.02
RE: Marine Way #3 Remediation Summary

This memorandum is prepared to discuss remediation work completed at Astoria Marine Construction Company (AMCCO) Marine Way#3, along with a summary of construction quality assurance protocol conducted by Maul Foster & Alongi, Inc. (MFA) and future use in response to the elevated concentrations of PCBs reported in the draft AMCCO Remediation Construction Completion Report.

REMEDIATION WORK

Sediment dredging work was performed by the Upland Contractor with a long reach excavator during low tide conditions. Dredge residuals control and water quality best management practices were combined by dredging to the required depth and then backfilling with clean sand prior to the returning tide. The Contractor dredged to the extents shown on the engineering design plans for Marine Way #3, except for a 5-foot-wide area along the southern boundary of the excavation that was found to contain essential supports for the dock that was to remain (discussed below).

The Marine Way #3 dredge area was completed in three daily dredge units. Each daily unit was dredged to the target depth of 3 feet (up to a maximum of 4 feet with the overdredge allowance), photographed, sampled (corresponding to the pre-designated sample aliquot locations), and then backfilled ahead of the returning tide. Daily dredge units were joined by exposing the backfill sand of the preceding daily dredge unit to ensure that all target material was removed.

The excavator bucket was cleaned prior to handling clean backfill sand by physically removing (shaking and brooming) excess sediment over the dredge area, minimizing the opportunity for cross contamination of clean sand. The final clean sand backfill thickness corresponds to the dredge depth, which ranges between 3.5 and 4.5 feet.

To document leave surface conditions, five aliquot sample locations were randomly generated and then mapped for the hotspot prior to conducting work. Individual aliquots were collected from the leave surface of the daily dredge area immediately before clean sand backfill placement. Sample aliquots were stored on ice while dredging of the area progressed prior to shipment to the laboratory.

The leave surface aliquots were field composited and sent to the analytical lab (Apex Laboratories, LLC of Tigard, Oregon) on August 26, 2020.

Excavated sediments were stockpiled in the closest of three on-site containment/dewatering cells. Excavated Marine Way # 3 material was blended with a stabilizing agent (Enviroblend CS) to address high concentrations of lead. Waste characterization samples were obtained from excavated sediment and submitted to Waste Management prior to disposal at the Hillsboro Subtitle D Landfill.

The design plan called for 420 cubic yards of sediment to be removed; based on field measurements, a total of 395 cubic yards of hotspot sediment was removed and disposed at Hillsboro Landfill.

TIMELINE

Marine Way #3 hotspot sediments were removed between August 21, 2020, and August 24, 2020. Sample aliquots were obtained from designated locations on each day of excavation. The leave surface aliquots were mixed on site and sent to the analytical lab (Apex Laboratories, LLC of Tigard, Oregon) on August 26, 2020. Enhanced monitored natural recovery sand was placed over the Marine Way #3 area on August 24, 2020.

On September 8, 2020, construction of the restored dike began. Because of the sensitivity of re-establishing the protective dike for the community, this work was a major focus of site activity. Dike restoration work was suspended after a week because the contractor's stockpile of material was over-saturated and smoke from the Oregon wildfires prevented adequate drying during construction. A significant engineering and management effort was dedicated to locating adequately dry sources of dike clay to allow the height of the dike to be raised to a protective elevation before the end of September.

Analytical results for the Marine Way #3 sediment hotspot excavation documentation sample were received on September 3, 2020, and then validated and tabulated by September 24, 2020. MFA discussed the results of the sediment hotspot removal documentation samples with the DEQ during a phone conversation to review project status in early October. MFA and DEQ agreed at that time to discuss the data further after review of the draft interim completion report text. The draft interim construction completion report was submitted to the DEQ on March 20, 2021.

DREDGE AND BACKFILL

The attached daily notes and photographs describe the following dredge progress for Marine Way #3:

- August 20, 2020—A temporary haul road was constructed with clean dike material to the east of the dredge area to support the long reach excavator
- August 21, 2020—The western third of the marine way hotspot was dredged and backfilled. The measured depths of excavation along the north and south edges of

dredging were over 48 inches. Two aliquots were collected per Sampling and Analysis Plan (SAP) prior to placement of clean sand backfill.

- August 22, 2020—The middle third of the marine way hotspot was dredged and backfilled. Measured depths of excavation varied between 40 and 42 inches along north and south edges of dredging. One aliquot was collected per the SAP.
- August 24, 2020—The eastern third of the marine way hotspot was dredged and backfilled. Measured depths of excavation were 38 inches along the north and south edge of dredging. Two aliquots were collected on the last day of dredging. The temporary haul road was removed after the clean sand backfill and EMNR sand placement.

The average excavation depth of the Marine Way #3 hotspot was 42 inches below the existing surface. Clean backfill was placed in each daily excavation to match existing grade. An additional 6 to 12 inches of EMNR sand were placed after completion of the excavation. The resulting clean sand cover thickness is 44 to 60 inches.

DREDGE EXTENT

During the pre-dredge inspection of the Marine Way #3 dredge boundary, AMCCO and the construction inspector noted that the extent of the southern dock structure extended into the planned dredge boundary by approximately 5 feet. Maintaining the planned dredge extent would have required demolition of the southern dock, which had not been planned and would have required significant site disturbance. MFA reviewed the condition with the DEQ on August 20 and it was agreed that the pile structures supporting the dock could remain in place. The contractor was instructed to excavate as close as possible to the north edge of the dock, without compromising the support structure.

The boundary adjustment reduced the dredge area by approximately 6 percent

SUPPORT PILINGS

Upland contractor had to remove the rail and wooden support beams (bents) prior to dredging. However, support pilings under the rails and bents could not be removed due to the low water conditions that were needed to complete the dredging work in the dry. After receiving approval from DEQ, the Contractor was instructed to excavate around the pilings, relying on handheld shovels to knock down residual sediment around the pilings so that they could be removed by the excavator before backfilling occurred. Left-in-place-pilings were covered with at least 12 inches of clean sand backfill, plus 6 to 12 inches of EMNR sand.

LEAVE SURFACE RESULTS

A documentation sample was collected from Marine Way #3 in accordance with the SAP. Five aliquots were collected from pre-determined locations, stored on ice, and then composited onsite prior to sending to the laboratory for analysis. See attached photos from CQA daily reports and figure for sampled material details. The excavated sediment at Marine Way #3 and leave surface materials were

of consistent color and texture and did not present outward signs of contamination (visible or olfactory).

Sediment leave surface results are tabulated in Table 1. The Marine Way #3 leave surface analytical results exceeded screening levels for copper, lead, and was over ecological sediment hot spot level for total PCBs (5,404 ug/kg ; screening level: 80 ug/kg).

FUTURE USE OF LEWIS & CLARK DOCKS AND MARINE WAYS

AMCCO's future use of the site will not involve activities that are dependent on the use of the former marine ways or dock structures on the Lewis & Clark River. Because nearshore maneuvering of commercial vessels will not be required, surface sediments will not be subject to disturbance or erosion by significant propwash. Due to the presence of residual contamination at the leave surface, AMCCO proposes to develop a commercial ship use/access restriction for the Lewis & Clark River frontage to ensure that future property owners are aware of and are expected to remain protective of the condition. Access restrictions for commercial ships will not apply to the remaining structures in the Pothole area.

DISCUSSION

Sediment samples in the Marine Way #3 hotspot excavation footprint are tabulated in Table 1. Review of these samples indicates that designation of the hotspot was driven by the presence of high concentrations of certain metals and tributyltin at the sediment surface. However, a deeper sample at SB-006 (1 to 2.5 feet below mudline), shows hotspot concentrations of tributyltin and total PCBs (3,300 and 3,605 ug/kg, respectively), but vertical bounding samples were not obtained during the remedial investigation (see Table 2). The feasibility study proposed achieving remedial goals by reducing contaminant mass through over excavating the hotspot concentrations to a depth of 1 foot below the sample, and then backfilling the area with clean sand. Upon inspection of sample records and dredge progress records summarized above, it is MFA's opinion that the SB-006 location was excavated on August 21 to a depth of more than 48-inches below the mudline.

The sediment excavation at Marine Way #3 has achieved the goal of significantly reducing contaminant mass. Metals and tributyltin contaminated surface sediment have been removed. Previously buried PCB contaminated sediments at depth were removed to a depth in excess of the target. PCB contaminated sediment that remains in place has been covered by 3.5 to 4.5 feet of clean sand backfill, plus 6 to 12 inches of EMNR sand. The leave surface is not expected to result in unacceptable risk to human health or ecological receptors for the following reasons:

- The Marine Way #3 area is depositional. The placed materials are not expected to erode, and it is anticipated that clean sediments will deposit in the area, further burying the remaining contamination.

- Bioturbation is typically limited to the top 4 inches in sediments. The placed backfill (38 to 48-inches) and EMNR (10 to 12 inches) sand materials significantly exceeds 4 inches, and therefore, mixing of and contact with the leave surface by receptors is not expected.
- As evaluated during the remedial investigation, there is little to no groundwater flux toward surface water. Where chemicals remaining in place exceed the screening or hotspot levels, the potential for long-term transport of contaminants through the clean backfill layer is significantly limited.
- Commercial ship use of the docks on the Lewis & Clark River will be prohibited through an institutional control limiting access, eliminating the potential for propeller induced scour of the sediment in the tide flats.
- By eliminating sediment scour due to commercial ship use, sediment deposition is expected to rapidly restore all areas of the tide flats along the Lewis & Clark River to match surrounding elevation, making the Marine Way #3 area inaccessible during all but the highest tide conditions.

Please let us know if you have any questions.

Attachments:

- Table 1—Leave Surface Sampling Results
- Table 2—RI Sampling Results
- Figure—Leave Surface Sampling Locations
- CQA Daily Reports and Photos

Table 1
Leave Surface Analytical Results for AMCCO Sediment Dredge Areas
AMCCO



Sample Name	Screening Level	Basis	Ecological Sediment Hot Spot Level	DREDGE AREA NORTH	MARINE WAY 1/2	MARINE WAY 3
Collection Date				7/22/2020	8/31/2020	8/24/2020
Collection Depth (ft bgs)				0.16-0.33	0.16-0.33	0.16-0.33
TCLP Metals (mg/L)						
Chromium	NV	-	NV	--	0.1 U	--
Lead	NV	-	NV	--	0.05 U	--
Mercury	NV	-	NV	--	0.007 U	--
Metals (mg/kg)						
Antimony	64	PH PEC	640	1.82 U	--	1.5
Arsenic	33	PEC	330	13.1	8.87	6.98
Barium	NV	-	NV	--	76.6	--
Cadmium	4.98	PEC	49.8	1.15	0.387 U	0.649
Chromium	111	PEC	1,110	42.9 J	22.9	31.2
Copper	149	PEC	1,490	130		702 J
Lead	128	PEC	1,280	66.5	11.6	202
Mercury	NV	-	NV	--	0.155 U	--
Nickel	48.6	PEC	486	28.8	--	12.6
Selenium	NV	-	NV	--	1.93 U	--
Silver	5	PH PEC	50	0.364 U	0.387 U	0.204 U
Zinc	459	PEC	4,590	231	--	264 J
PCBs (ug/kg)						
Aroclor 1016	NV	-	NV	17.8 U	17.8 U	197 U
Aroclor 1221	NV	-	NV	17.8 U	28.4 U	197 U
Aroclor 1232	NV	-	NV	17.8 U	17.8 U	197 U
Aroclor 1242	NV	-	NV	43.2 J	17.8 U	197 U
Aroclor 1248	NV	-	NV	17.8 U	17.8 U	197 U
Aroclor 1254	NV	-	NV	165 J	17.8 U	4640 J
Aroclor 1260	NV	-	NV	23.6 J	17.8 U	764 J
Total PCBs ^(a)	80	Site- Specific Bioaccumulation Model	800	231.8 J	ND	5,404 J

Table 1
Leave Surface Analytical Results for AMCCO Sediment Dredge Areas
AMCCO



NOTES:

Shading (color key below) indicates values that exceed screening criteria; non-detects ("U") were not compared with screening criteria.

Screening Level

Ecological Sediment Hot Spot Level

-- = not analyzed.

ft bgs = feet below ground surface.

J = estimated value.

mg/kg = milligrams per kilogram.

ND = non-detect.

NV = no value.

PCB = polychlorinated biphenyls.

PEC= probable effects concentration.

PH= Portland Harbor.

U = Result is non-detect.

ug/kg = micrograms per kilogram.

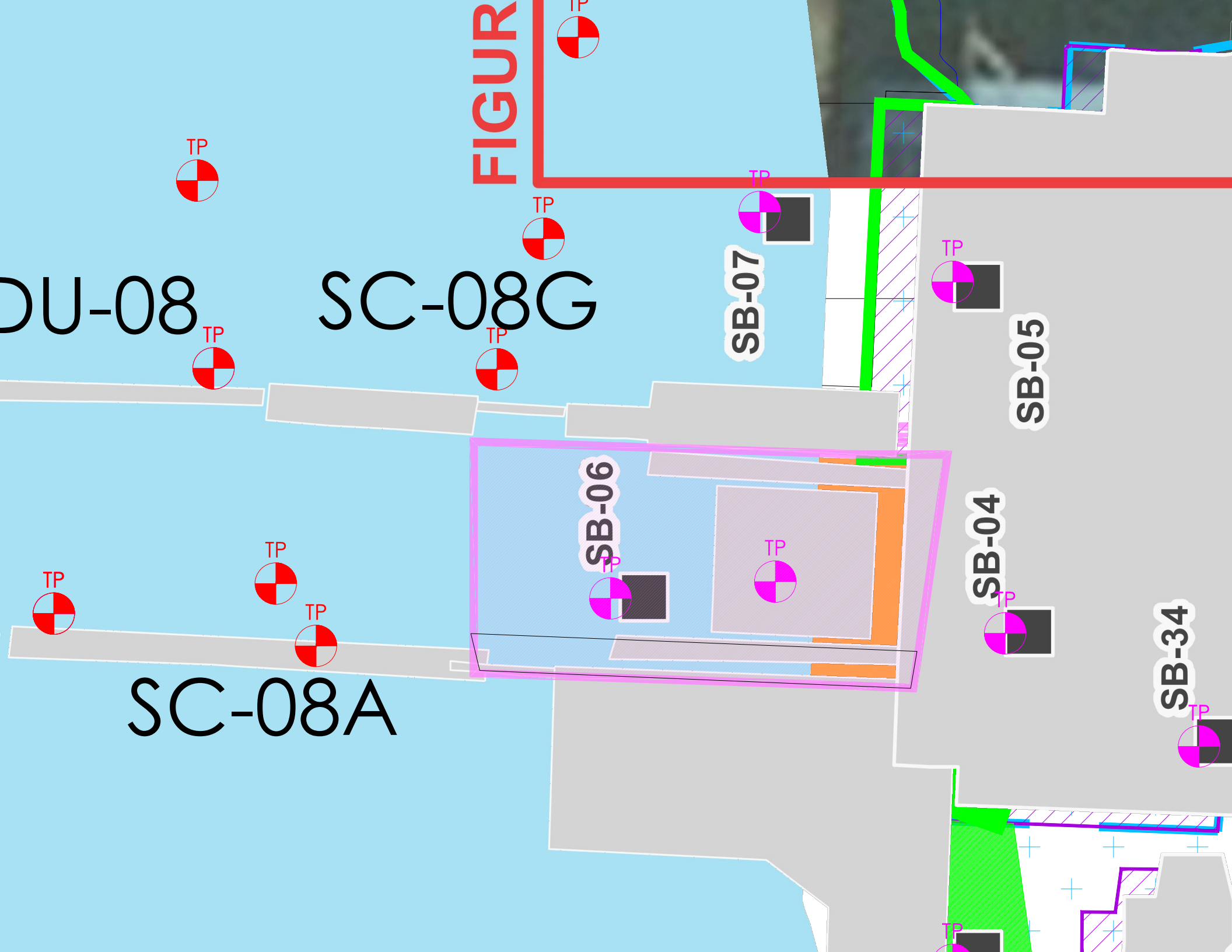
^(a)Total PCB is the sum of detected Aroclors.



Dock support structure,
pilings/beams are
approximately 5-10 feet apart

dredge boundary had been
drawn to the edge of dock

Walkway overlaying dock
support structure



Sample Location	Lewis and Clark River, Table A-5 Human Health Sediment Hot Spot Levels				Lewis and Clark River, Table A-6 Ecological Sediment Hot Spot Levels		SB-04	SB-06	
Sample Name							AMCCO-SB004	AMCCO-SB006-0_1	AMCCO-SB006-1_2.5
Collection Date							10/19/2013	10/22/2013	10/22/2013
Sample Type							SB	SB	SB
Depth							0-1	0-1	1-2.5
Depth Unit	Screening Level	Hot Spot Level	Screening Level	Hot Spot Level	ft	ft	ft		
Metals (mg/kg)									
Aluminum	NV	NV	NV	NV	7,980	7,350	3,390		
Antimony	NV	NV	64 ^(a)	640	1.65	1.47 U	2.13		
Arsenic	NV	NV	33 ^(b)	330	11.4	8.5	19.9		
Cadmium	NV	NV	4.98 ^(b)	49.8	4.16	1.28	1.02		
Chromium(Hexavalent)	NV	NV	NV	NV	--	0.26 J	--		
Chromium	NV	NV	111 ^(b)	1,110	176	646	140		
Copper	NV	NV	149 ^(b)	1,490	85,100	1,420	1,450		
Lead	15.5 ^(c)	NV	128 ^(b) /15.5 ^(c)	1,280	253	42.5	373		
Mercury	NV	NV	NV	NV	0.632	1.51	10.1		
Nickel	NV	NV	48.6 ^(b)	486	642	318	52		
Selenium	NV	NV	NV	NV	1.62 U	1.47 U	1.39 U		
Silver	NV	NV	5 ^(b)	50	4.76	1.32 U	1.25 U		
Zinc	NV	NV	459 ^(b)	4,590	8,550	1,830	3,700		
Organotins (ug/kg)									
Monobutyltin	NV	NV	NV	NV	1,200	170	20		
Dibutyltin	NV	NV	NV	NV	12,000	3,800	1,300		
Tributyltins	190 ^(d)	1,900	320 ^(e) /47 ^(f)	470	2,900	1,800	3,300		
Tetrabutyltin	NV	NV	NV	NV	15	23	9.6		
Dioxins (pg/g)									
1,2,3,4,6,7,8-HpCDD	NV	NV	NV	NV	--	4,140	4,140		
1,2,3,4,6,7,8-HpCDF	NV	NV	NV	NV	--	550	887		
1,2,3,4,7,8,9-HpCDF	NV	NV	NV	NV	--	53.5	57.8		
1,2,3,4,7,8-HxCDD	NV	NV	NV	NV	--	11.3	11.6		
1,2,3,4,7,8-HxCDF	NV	NV	NV	NV	--	17.5	21.6		
1,2,3,6,7,8-HxCDD	NV	NV	NV	NV	--	95.6	108		
1,2,3,6,7,8-HxCDF	NV	NV	NV	NV	--	6.86	9.28		
1,2,3,7,8,9-HxCDD	NV	NV	NV	NV	--	39.2	49.4		
1,2,3,7,8,9-HxCDF	NV	NV	NV	NV	--	0.339 J	0.525 J		
1,2,3,7,8-PeCDD	0.620 ^(g)	62	NV	NV	--	3.73 J	4.07 J		
1,2,3,7,8-PeCDF	NV	NV	NV	NV	--	0.897 J	1.69 J		

Sample Location	Lewis and Clark River, Table A-5 Human Health Sediment Hot Spot Levels				Lewis and Clark River, Table A-6 Ecological Sediment Hot Spot Levels		SB-04	SB-06	
Sample Name							AMCCO- SB004	AMCCO- SB006-0_1	AMCCO- SB006-1_2.5
Collection Date							10/19/2013	10/22/2013	10/22/2013
Sample Type							SB	SB	SB
Depth							0-1	0-1	1-2.5
Depth Unit							ft	ft	ft
2,3,4,6,7,8-HxCDF	NV	NV	NV	NV	--	4.12 J	7.06		
2,3,4,7,8-PeCDF	0.070 ^(g)	7.0	4.2 ^(f) / 0.245 ^(c)	42	--	1.09 J	1.95 J		
2,3,7,8-TCDD	0.0210 ^(g)	2.1	2.1 ^(f) / 0.295 ^(c)	21	--	0.954 J	4		
2,3,7,8-TCDF	NV	NV	NV	NV	--	3.12	2.7		
OCDD	NV	NV	NV	NV	--	52,100	57,900		
OCDF	NV	NV	NV	NV	--	3,480	7,120		
Total HpCDDs	NV	NV	NV	NV	--	7,000	7,660		
Total HpCDFs	NV	NV	NV	NV	--	3,010	5,290		
Total HxCDDs	NV	NV	NV	NV	--	905	2,340		
Total HxCDFs	NV	NV	NV	NV	--	555	1,050		
Total PeCDDs	NV	NV	NV	NV	--	295	1,230		
Total PeCDFs	NV	NV	NV	NV	--	30.6	54.6		
Total TCDDs	NV	NV	NV	NV	--	10.1	39.8		
Total TCDFs	NV	NV	NV	NV	--	7.28	14.8		
Dioxin TEQ ⁽ⁱ⁾	NV	NV	21.5 ^(h)	215	--	87	100		
PCB Congeners (ng/g)									
2-MonoCB-(1)	NV	NV	NV	NV	--	0.178	7.71		
3-MonoCB-(2)	NV	NV	NV	NV	--	0.0465 J	0.509		
4-MonoCB-(3)	NV	NV	NV	NV	--	0.096	3.08		
2,2'-DiCB-(4)	NV	NV	NV	NV	--	0.187	4.44		
2,3-DiCB-(5)	NV	NV	NV	NV	--	0.0075 U	0.222		
2,3'-DiCB-(6)	NV	NV	NV	NV	--	0.082	1.79		
2,4-DiCB-(7)	NV	NV	NV	NV	--	0.0165 J	0.523		
2,4'-DiCB-(8)	NV	NV	NV	NV	--	0.384	8.83		
2,5-DiCB-(9)	NV	NV	NV	NV	--	0.0228 J	0.58		
2,6-DiCB-(10)	NV	NV	NV	NV	--	0.0067 U	0.155		
3,3'-DiCB-(11)	NV	NV	NV	NV	--	0.072	0.06 U		
3,4-DiCB-(12)	NV	NV	NV	NV	--	0.0437 J	0.583		
3,4'-DiCB-(13)	NV	NV	NV	NV	--	0.0437 C J	0.583 C		
3,5-DiCB-(14)	NV	NV	NV	NV	--	0.0053 U	0.0082 U		
4,4'-DiCB-(15)	NV	NV	NV	NV	--	0.303	3.03		
2,2',3-TriCB-(16)	NV	NV	NV	NV	--	2.28	11.2		

Sample Location	Lewis and Clark River, Table A-5 Human Health Sediment Hot Spot Levels Lewis and Clark River, Table A-6 Ecological Sediment Hot Spot Levels				SB-04	SB-06	
Sample Name					AMCCO-SB004	AMCCO-SB006-0_1	AMCCO-SB006-1_2.5
Collection Date					10/19/2013	10/22/2013	10/22/2013
Sample Type					SB	SB	SB
Depth					0-1	0-1	1-2.5
Depth Unit	Screening Level	Hot Spot Level	Screening Level	Hot Spot Level	ft	ft	ft
2,2',4'-TriCB-(17)	NV	NV	NV	NV	--	2.3	10.1
2,2',5'-TriCB-(18)	NV	NV	NV	NV	--	4.29	19.2
2,2',6'-TriCB-(19)	NV	NV	NV	NV	--	0.31	1.78
2,3,3'-TriCB-(20)	NV	NV	NV	NV	--	8.47	32
2,3,4'-TriCB-(21)	NV	NV	NV	NV	--	3.45	13.4
2,3,4'-TriCB-(22)	NV	NV	NV	NV	--	1.91	7.84
2,3,5'-TriCB-(23)	NV	NV	NV	NV	--	0.0065 U	0.013 U
2,3,6'-TriCB-(24)	NV	NV	NV	NV	--	0.0058 U	0.016 U
2,3',4'-TriCB-(25)	NV	NV	NV	NV	--	0.365	1.97
2,3',5'-TriCB-(26)	NV	NV	NV	NV	--	0.79	4.32
2,3',6'-TriCB-(27)	NV	NV	NV	NV	--	0.189	0.923
2,4,4'-TriCB-(28)	NV	NV	NV	NV	--	8.47 C	32 C
2,4,5'-TriCB-(29)	NV	NV	NV	NV	--	0.79 C	4.32 C
2,4,6'-TriCB-(30)	NV	NV	NV	NV	--	4.29 C	19.2 C
2,4',5'-TriCB-(31)	NV	NV	NV	NV	--	7.31	26.7
2,4',6'-TriCB-(32)	NV	NV	NV	NV	--	1.23	0.016 U
2,3',4'-TriCB-(33)	NV	NV	NV	NV	--	3.45 C	13.4 C
2,3',5'-TriCB-(34)	NV	NV	NV	NV	--	0.117	0.43
3,3',4',-TriCB-(35)	NV	NV	NV	NV	--	0.0333 J	0.168
3,3',5'-TriCB-(36)	NV	NV	NV	NV	--	0.0052 U	0.013 U
3,4,4'-TriCB-(37)	NV	NV	NV	NV	--	1.32	4.66
3,4,5'-TriCB-(38)	NV	NV	NV	NV	--	0.0062 U	0.014 U
3,4',5'-TriCB-(39)	NV	NV	NV	NV	--	0.071	0.328
2,2',3,3'-TetraCB-(40)	NV	NV	NV	NV	--	9.59	23.6
2,2',3,4'-TetraCB-(41)	NV	NV	NV	NV	--	9.59	23.6
2,2',3,4'-TetraCB-(42)	NV	NV	NV	NV	--	6.09	24.7
2,2',3,5'-TetraCB-(43)	NV	NV	NV	NV	--	0.822	2.76
2,2',3,5'-TetraCB-(44)	NV	NV	NV	NV	--	19.9	88.1
2,2',3,6'-TetraCB-(45)	NV	NV	NV	NV	--	3.46	8.06
2,2',3,6'-TetraCB-(46)	NV	NV	NV	NV	--	1.31	3.26
2,2',4,4'-TetraCB-(47)	NV	NV	NV	NV	--	19.9 C	88.1 C
2,2',4,5'-TetraCB-(48)	NV	NV	NV	NV	--	3.83	9.95

Sample Location	Lewis and Clark River, Table A-5 Human Health Sediment Hot Spot Levels Lewis and Clark River, Table A-6 Ecological Sediment Hot Spot Levels				SB-04	SB-06	
Sample Name					AMCCO-SB004	AMCCO-SB006-0_1	AMCCO-SB006-1_2.5
Collection Date					10/19/2013	10/22/2013	10/22/2013
Sample Type					SB	SB	SB
Depth					0-1	0-1	1-2.5
Depth Unit	Screening Level	Hot Spot Level	Screening Level	Hot Spot Level	ft	ft	ft
2,2',4,5'-TetraCB-(49)	NV	NV	NV	NV	--	12.8	77.9
2,2',4,6'-TetraCB-(50)	NV	NV	NV	NV	--	2.98	8.29
2,2',4,6'-TetraCB-(51)	NV	NV	NV	NV	--	3.46 C	8.06 C
2,2',5,5'-TetraCB-(52)	NV	NV	NV	NV	--	20.4	129
2,2',5,6'-TetraCB-(53)	NV	NV	NV	NV	--	2.98 C	8.29 C
2,2',6,6'-TetraCB-(54)	NV	NV	NV	NV	--	0.0284 J	0.092
2,3,3',4'-TetraCB-(55)	NV	NV	NV	NV	--	0.0081 U	0.032 U
2,3,3',4'-Tetra CB-(56)	NV	NV	NV	NV	--	7.51	24.1
2,3,3',5'-TetraCB-(57)	NV	NV	NV	NV	--	0.0494 J	0.031 U
2,3,3',5'-TetraCB-(58)	NV	NV	NV	NV	--	0.413	2.59
2,3,3',6'-TetraCB-(59)	NV	NV	NV	NV	--	1.36	4.55
2,3,4,4'-TetraCB --(60)	NV	NV	NV	NV	--	1.8	3.36
2,3,4,5'-TetraCB-(61)	NV	NV	NV	NV	--	25.4	120
2,3,4,6'-TetraCB-(62)	NV	NV	NV	NV	--	1.36 C	4.55 C
2,3,4',5'-TetraCB-(63)	NV	NV	NV	NV	--	0.604	2.97
2,3,4',6'-TetraCB-(64)	NV	NV	NV	NV	--	8.76	27
2,3,5,6'-TetraCB-(65)	NV	NV	NV	NV	--	19.9 C	88.1 C
2,3',4,4'-TetraCB-(66)	NV	NV	NV	NV	--	14	60.8
2,3',4,5'-TetraCB-(67)	NV	NV	NV	NV	--	0.313	0.818
2,3',4,5'-TetraCB-(68)	NV	NV	NV	NV	--	0.136	1.41
2,3',4,6'-TetraCB-(69)	NV	NV	NV	NV	--	12.8 C	77.9 C
2,3',4',5'-TetraCB-(70)	NV	NV	NV	NV	--	25.4 C	120 C
2,3',4',6'-TetraCB-(71)	NV	NV	NV	NV	--	9.59	23.6
2,3',5,5'-TetraCB-(72)	NV	NV	NV	NV	--	0.199	2.48
2,3',5',6'-TetraCB-(73)	NV	NV	NV	NV	--	0.01 U	0.011 U
2,4,4',5'-TetraCB-(74)	NV	NV	NV	NV	--	25.4 C	120 C
2,4,4',6'-TetraCB-(75)	NV	NV	NV	NV	--	1.36 C	4.55 C
2,3',4',5'-TetraCB-(76)	NV	NV	NV	NV	--	25.4 C	120 C
3,3',4,4'-TetraCB-(77)	NV	NV	NV	NV	--	1.19	3.42
3,3',4,5'-TetraCB-(78)	NV	NV	NV	NV	--	0.0091 U	0.033 U
3,3',4,5'-TetraCB-(79)	NV	NV	NV	NV	--	0.141	0.962
3,3',5,5'-TetraCB-(80)	NV	NV	NV	NV	--	0.0076 U	0.028 U

Sample Location	Lewis and Clark River, Table A-5 Human Health Sediment Hot Spot Levels Lewis and Clark River, Table A-6 Ecological Sediment Hot Spot Levels				SB-04	SB-06	
Sample Name					AMCCO-SB004	AMCCO-SB006-0_1	AMCCO-SB006-1_2.5
Collection Date					10/19/2013	10/22/2013	10/22/2013
Sample Type					SB	SB	SB
Depth					0-1	0-1	1-2.5
Depth Unit	Screening Level	Hot Spot Level	Screening Level	Hot Spot Level	ft	ft	ft
3,4,4',5-TetraCB-(81)	NV	NV	NV	NV	--	0.024 J	0.039 U
2,2',3,3',4-PentaCB-(82)	NV	NV	NV	NV	--	2.19	6.93
2,2',3,3',5-PentaCB-(83)	NV	NV	NV	NV	--	9.14	59.7
2,2',3,3',6-PentaCB-(84)	NV	NV	NV	NV	--	6.46	33
2,2',3,4,4'-PentaCB-(85)	NV	NV	NV	NV	--	2.67	9.69
2,2',3,4,5-PentaCB-(86)	NV	NV	NV	NV	--	11.2	50.6
2,2',3,4,5'-PentaCB-(87)	NV	NV	NV	NV	--	11.2 C	50.6 C
2,2',3,4,6-PentaCB-(88)	NV	NV	NV	NV	--	3.03	13.4
2,2',3,4,6'-PentaCB-(89)	NV	NV	NV	NV	--	0.447	1.24
2,2',3,4',5-PentaCB-(90)	NV	NV	NV	NV	--	14.5	93.9
2,2',3,4',6-PentaCB-(91)	NV	NV	NV	NV	--	3.03 C	13.4 C
2,2',3,5,5'-PentaCB-(92)	NV	NV	NV	NV	--	3.07	19.7
2,2',3,5,6-PentaCB-(93)	NV	NV	NV	NV	--	1.23	89.4
2,2',3,5,6'-PentaCB-(94)	NV	NV	NV	NV	--	0.146	0.52
2,2',3,5',6-PentaCB-(95)	NV	NV	NV	NV	--	15.4	0.0071 U
2,2',3,6,6'-PentaCB-(96)	NV	NV	NV	NV	--	0.293	0.791
2,2',3,4',5'-PentaCB-(97)	NV	NV	NV	NV	--	11.2 C	50.6 C
2,2',3,4',6'-PentaCB-(98)	NV	NV	NV	NV	--	1.23 C	89.4 C
2,2',4,4',5-PentaCB-(99)	NV	NV	NV	NV	--	9.14 C	59.7 C
2,2',4,4',6-PentaCB-(100)	NV	NV	NV	NV	--	1.23 C	89.4 C
2,2',4,5,5'-PentaCB-(101)	NV	NV	NV	NV	--	14.5 C	93.9 C
2,2',4,5,6'-PentaCB-(102)	NV	NV	NV	NV	--	1.23 C	89.4 C
2,2',4,5',6-PentaCB-(103)	NV	NV	NV	NV	--	0.197	1.57
2,2',4,6,6'-PentaCB-(104)	NV	NV	NV	NV	--	0.0056 U	0.0068 U
2,3,3',4,4'-PentaCB-(105)	NV	NV	NV	NV	--	4.95	16.6
2,3,3',4,5-PentaCB-(106)	NV	NV	NV	NV	--	0.0069 U	0.015 U
2,3,3',4',5-PentaCB-(107)	NV	NV	NV	NV	--	0.939	6.78
2,3,3',4,5'-PentaCB-(108)	NV	NV	NV	NV	--	0.32	1.27
2,3,3',4,6-PentaCB-(109)	NV	NV	NV	NV	--	11.2 C	50.6 C
2,3,3',4',6-PentaCB-(110)	NV	NV	NV	NV	--	19.8	111
2,3,3',5,5'-PentaCB-(111)	NV	NV	NV	NV	--	0.0092 U	0.081
2,3,3',5,6-PentaCB-(112)	NV	NV	NV	NV	--	0.008 U	0.0057 U

Sample Location	Lewis and Clark River, Table A-5 Human Health Sediment Hot Spot Levels Lewis and Clark River, Table A-6 Ecological Sediment Hot Spot Levels				SB-04	SB-06	
Sample Name					AMCCO-SB004	AMCCO-SB006-0_1	AMCCO-SB006-1_2.5
Collection Date					10/19/2013	10/22/2013	10/22/2013
Sample Type					SB	SB	SB
Depth					0-1	0-1	1-2.5
Depth Unit	Screening Level	Hot Spot Level	Screening Level	Hot Spot Level	ft	ft	ft
2,3,3',5',6-PentaCB-(113)	NV	NV	NV	NV	--	14.5 C	93.9 C
2,3,4,4',5-PentaCB-(114)	NV	NV	NV	NV	--	0.278	0.887
2,3,4,4',6-PentaCB-(115)	NV	NV	NV	NV	--	19.8 C	111 C
2,3,4,5,6-PentaCB-(116)	NV	NV	NV	NV	--	2.67 C	9.69 C
2,3,4',5,6-PentaCB-(117)	NV	NV	NV	NV	--	2.67 C	9.69 C
2,3',4,4',5-PentaCB-(118)	NV	NV	NV	NV	--	14.5	74.3
2,3',4,4',6-PentaCB-(119)	NV	NV	NV	NV	--	11.2 C	50.6 C
2,3',4,5',5-PentaCB-(120)	NV	NV	NV	NV	--	0.0474 J	0.666
2,3',4,5',6-PentaCB-(121)	NV	NV	NV	NV	--	0.0086 U	0.0052 U
2,3,3',4',5'-PentaCB-(122)	NV	NV	NV	NV	--	0.161	0.432
2,3',4,4',5'-PentaCB-(123)	NV	NV	NV	NV	--	0.144	0.329
2,3',4',5,5'-PentaCB-(124)	NV	NV	NV	NV	--	0.32 C	1.27 C
2,3',4',5',6-PentaCB-(125)	NV	NV	NV	NV	--	11.2 C	50.6 C
3,3',4,4',5-PentaCB-(126)	NV	NV	NV	NV	--	0.0467 J	0.077
3,3',4,5,5'-PentaCB-(127)	NV	NV	NV	NV	--	0.0066 U	0.043 J
2,2',3,3',4,4'-HexaCB-(128)	NV	NV	NV	NV	--	1.98	7.73
2,2',3,3',4,5-HexaCB-(129)	NV	NV	NV	NV	--	15.7	51.2
2,2',3,3',4,5'-HexaCB-(130)	NV	NV	NV	NV	--	0.91	3.32
2,2',3,3',4,6-HexaCB-(131)	NV	NV	NV	NV	--	0.206	0.717
2,2',3,3',4,6'-HexaCB-(132)	NV	NV	NV	NV	--	5.62	22.2
2,2',3,3',5,5'-HexaCB-(133)	NV	NV	NV	NV	--	0.199	0.862
2,2',3,3',5,6-HexaCB-(134)	NV	NV	NV	NV	--	0.72	3.69
2,2',3,3',5,6'-HexaCB-(135)	NV	NV	NV	NV	--	5.27	16.7
2,2',3,3',6,6'-HexaCB-(136)	NV	NV	NV	NV	--	2.05	7.62
2,2',3,4,4',5-HexaCB-(137)	NV	NV	NV	NV	--	0.592	1.85
2,2',3,4,4',5'-HexaCB-(138)	NV	NV	NV	NV	--	15.7 C	51.2 C
2,2',3,4,4',6-HexaCB-(139)	NV	NV	NV	NV	--	0.25	1.04
2,2',3,4,4',6'-HexaCB-(140)	NV	NV	NV	NV	--	0.25 C	1.04 C
2,2',3,4,5,5'-HexaCB-(141)	NV	NV	NV	NV	--	2.65	6.31
2,2',3,4,5,6-HexaCB-(142)	NV	NV	NV	NV	--	0.019 U	0.032 U
2,2',3,4,5,6'-HexaCB-(143)	NV	NV	NV	NV	--	0.72 C	3.69 C
2,2',3,4,5',6-HexaCB-(144)	NV	NV	NV	NV	--	0.667	1.53

Sample Location	Lewis and Clark River, Table A-5 Human Health Sediment Hot Spot Levels Lewis and Clark River, Table A-6 Ecological Sediment Hot Spot Levels				SB-04	SB-06	
Sample Name					AMCCO-SB004	AMCCO-SB006-0_1	AMCCO-SB006-1_2.5
Collection Date					10/19/2013	10/22/2013	10/22/2013
Sample Type					SB	SB	SB
Depth					0-1	0-1	1-2.5
Depth Unit	Screening Level	Hot Spot Level	Screening Level	Hot Spot Level	ft	ft	ft
2,2',3,4,6,6'-HexaCB-(145)	NV	NV	NV	NV	--	0.007 U	0.0248 J
2,2',3,4',5,5'-HexaCB-(146)	NV	NV	NV	NV	--	2.18	9.62
2,2',3,4',5,6'-HexaCB-(147)	NV	NV	NV	NV	--	11.8	39.9
2,2',3,4',5,6'-HexaCB-(148)	NV	NV	NV	NV	--	0.023 U	0.165
2,2',3,4',5',6'-HexaCB-(149)	NV	NV	NV	NV	--	11.8 C	39.9 C
2,2',3,4',6,6'-HexaCB-(150)	NV	NV	NV	NV	--	0.014 U	0.059
2,2',3,5,5',6'-HexaCB-(151)	NV	NV	NV	NV	--	5.27 C	16.7 C
2,2',3,5,6,6'-HexaCB-(152)	NV	NV	NV	NV	--	0.013 U	0.062 U
2,2',4,4',5,5'-HexaCB-(153)	NV	NV	NV	NV	--	11.3	39.2
2,2',4,4',5,6'-HexaCB-(154)	NV	NV	NV	NV	--	0.231	1.22
2,2',4,4',6,6'-HexaCB-(155)	NV	NV	NV	NV	--	0.0076 U	0.0061 U
2,3,3',4,4',5'-HexaCB-(156)	NV	NV	NV	NV	--	1.54	5.74
2,3,3',4,4',5'-HexaCB-(157)	NV	NV	NV	NV	--	1.54 C	5.74 C
2,3,3',4,4',6'-HexaCB-(158)	NV	NV	NV	NV	--	1.31	4.26
2,3,3',4,5,5'-HexaCB-(159)	NV	NV	NV	NV	--	0.089	0.17
2,3,3',4,5,6'-HexaCB-(160)	NV	NV	NV	NV	--	0.014 U	0.023 U
2,3,3',4,5',6'-HexaCB-(161)	NV	NV	NV	NV	--	0.013 U	0.022 U
2,3,3',4',5,5'-HexaCB-(162)	NV	NV	NV	NV	--	0.092	0.135
2,3,3',4',5,6'-HexaCB-(163)	NV	NV	NV	NV	--	15.7 C	51.2 C
2,3,3',4',5',6'-HexaCB-(164)	NV	NV	NV	NV	--	0.984	4.01
2,3,3',5,5',6'-HexaCB-(165)	NV	NV	NV	NV	--	0.014 U	0.024 U
2,3,4,4',5,6'-HexaCB-(166)	NV	NV	NV	NV	--	1.98 C	7.73 C
2,3',4,4',5,5'-HexaCB-(167)	NV	NV	NV	NV	--	0.46	1.59
2,3',4,4',5',6'-HexaCB-(168)	NV	NV	NV	NV	--	11.3 C	39.2 C
3,3',4,4',5,5'-HexaCB-(169)	NV	NV	NV	NV	--	0.014 U	0.029 J
2,2',3,3',4,4',5'-HeptaCB-(170)	NV	NV	NV	NV	--	2.36	4.98
2,2',3,3',4,4',6'-HeptaCB-(171)	NV	NV	NV	NV	--	0.83	1.62
2,2',3,3',4,5,5'-HeptaCB-(172)	NV	NV	NV	NV	--	0.429	0.82
2,2',3,3',4,5,6'-HeptaCB-(173)	NV	NV	NV	NV	--	0.83 C	1.62 C
2,2',3,3',4,5,6'-HeptaCB-(174)	NV	NV	NV	NV	--	3.11	5.83
2,2',3,3',4,5',6'-HeptaCB-(175)	NV	NV	NV	NV	--	0.121	0.237
2,2',3,3',4,6,6'-HeptaCB-(176)	NV	NV	NV	NV	--	0.438	0.859

Sample Location	Lewis and Clark River, Table A-5 Human Health Sediment Hot Spot Levels Lewis and Clark River, Table A-6 Ecological Sediment Hot Spot Levels				SB-04	SB-06	
Sample Name					AMCCO-SB004	AMCCO-SB006-0_1	AMCCO-SB006-1_2.5
Collection Date					10/19/2013	10/22/2013	10/22/2013
Sample Type					SB	SB	SB
Depth					0-1	0-1	1-2.5
Depth Unit	Screening Level	Hot Spot Level	Screening Level	Hot Spot Level	ft	ft	ft
2,2',3,3',4,5',6'-HeptaCB-(177)	NV	NV	NV	NV	--	1.69	3.21
2,2',3,3',5,5',6'-HeptaCB-(178)	NV	NV	NV	NV	--	0.592	1.36
2,2',3,3',5,6,6'-HeptaCB-(179)	NV	NV	NV	NV	--	1.44	2.73
2,2',3,4,4',5,5'-HeptaCB-(180)	NV	NV	NV	NV	--	6.3	12.7
2,2',3,4,4',5,6'-HeptaCB-(181)	NV	NV	NV	NV	--	0.022 U	0.076
2,2',3,4,4',5,6'-HeptaCB-(182)	NV	NV	NV	NV	--	0.014 U	0.113
2,2',3,4,4',5',6'-HeptaCB-(183)	NV	NV	NV	NV	--	2.01	3.74
2,2',3,4,4',6,6'-HeptaCB-(184)	NV	NV	NV	NV	--	0.01 U	0.0059 U
2,2',3,4,5,5',6'-HeptaCB-(185)	NV	NV	NV	NV	--	0.022 U	0.019 U
2,2',3,4,5,6,6'-HeptaCB-(186)	NV	NV	NV	NV	--	0.011 U	0.0062 U
2,2',3,4',5,5',6'-HeptaCB-(187)	NV	NV	NV	NV	--	3.74	9.06
2,2',3,4',5,6,6'-HeptaCB-(188)	NV	NV	NV	NV	--	0.013 U	0.0082 U
2,3,3',4,4',5,5'-HeptaCB-(189)	NV	NV	NV	NV	--	0.106	0.215
2,3,3',4,4',5,6'-HeptaCB-(190)	NV	NV	NV	NV	--	0.47	0.852
2,3,3',4,4',5',6'-HeptaCB-(191)	NV	NV	NV	NV	--	0.096	0.195
2,3,3',4,5,5',6'-HeptaCB-(192)	NV	NV	NV	NV	--	0.019 U	0.016 U
2,3,3',4',5,5',6'-HeptaCB-(193)	NV	NV	NV	NV	--	6.3 C	12.7 C
2,2',3,3',4,4',5,5'-OctaCB-(194)	NV	NV	NV	NV	--	1.09	3.97
2,2',3,3',4,4',5,6'-OctaCB-(195)	NV	NV	NV	NV	--	0.423	0.997
2,2',3,3',4,4',5,6'-OctaCB-(196)	NV	NV	NV	NV	--	0.671	2.21
2,2',3,3',4,4',6,6'-OctaCB-(197)	NV	NV	NV	NV	--	0.065	0.111
2,2',3,3',4,5,5',6'-OctaCB-(198)	NV	NV	NV	NV	--	1.45	6.32
2,2',3,3',4,5,5',6'-OctaCB-(199)	NV	NV	NV	NV	--	1.45 C	6.32 C
2,2',3,3',4,5,6,6'-OctaCB-(200)	NV	NV	NV	NV	--	0.181	0.762
2,2',3,3',4,5',6,6'-OctaCB-(201)	NV	NV	NV	NV	--	0.2	0.812
2,2',3,3',5,5',6,6'-OctaCB-(202)	NV	NV	NV	NV	--	0.294	1.4
2,2',3,4,4',5,5',6'-OctaCB-(203)	NV	NV	NV	NV	--	0.817	4.19
2,2',3,4,4',5,6,6'-OctaCB-(204)	NV	NV	NV	NV	--	0.015 U	0.017 U
2,3,3',4,4',5,5',6'-OctaCB-(205)	NV	NV	NV	NV	--	0.072	0.179
2,2',3,3',4,4',5,5',6'-NonaCB-(206)	NV	NV	NV	NV	--	0.479	5.05
2,2',3,3',4,4',5,6,6'-NonaCB-(207)	NV	NV	NV	NV	--	0.068	0.603
2,2',3,3',4,5,5',6,6'-NonaCB-(208)	NV	NV	NV	NV	--	0.135	1.06

Sample Location	Lewis and Clark River, Table A-5 Human Health Sediment Hot Spot Levels				Lewis and Clark River, Table A-6 Ecological Sediment Hot Spot Levels		SB-04	SB-06	
Sample Name					AMCCO-SB004	AMCCO-SB006-0_1	AMCCO-SB006-1_2.5		
Collection Date					10/19/2013	10/22/2013	10/22/2013		
Sample Type					SB	SB	SB		
Depth					0-1	0-1	1-2.5		
Depth Unit	ft	ft	ft						
DecaCB-[209]	NV	NV	NV	NV	--	0.293	1.11		
Total PCBs (ND=0) ⁽ⁱ⁾	0.89 ^(g) /15 ^(d)	89/150	80 ^(f) /5.31 ^(c)	800	--	760	3605		

NOTES:

C = Coelution

ft = feet.

J = estimated value.

mg/kg = milligrams per kilogram.

NV = no value.

PAH = polyaromatic hydrocarbons.

PCB = polychlorinated biphenyls.

pg/g = picograms per gram.

SB = soil boring.

T = Result calculated

TCLP = toxic characteristic leaching procedure.

TEQ = toxic equivalency.

U = Result is non-detect to method detection limit or reporting limit.

ug/kg = micrograms per kilogram.

^(a)Portland Harbor probable effects level.

^(b)Probable effects concentration

^(c)Sediment Background

^(d)Site-specific Human Health Bioaccumulation Model (noncancer effects)

^(e)Sediment Management Standards cleanup screening level.

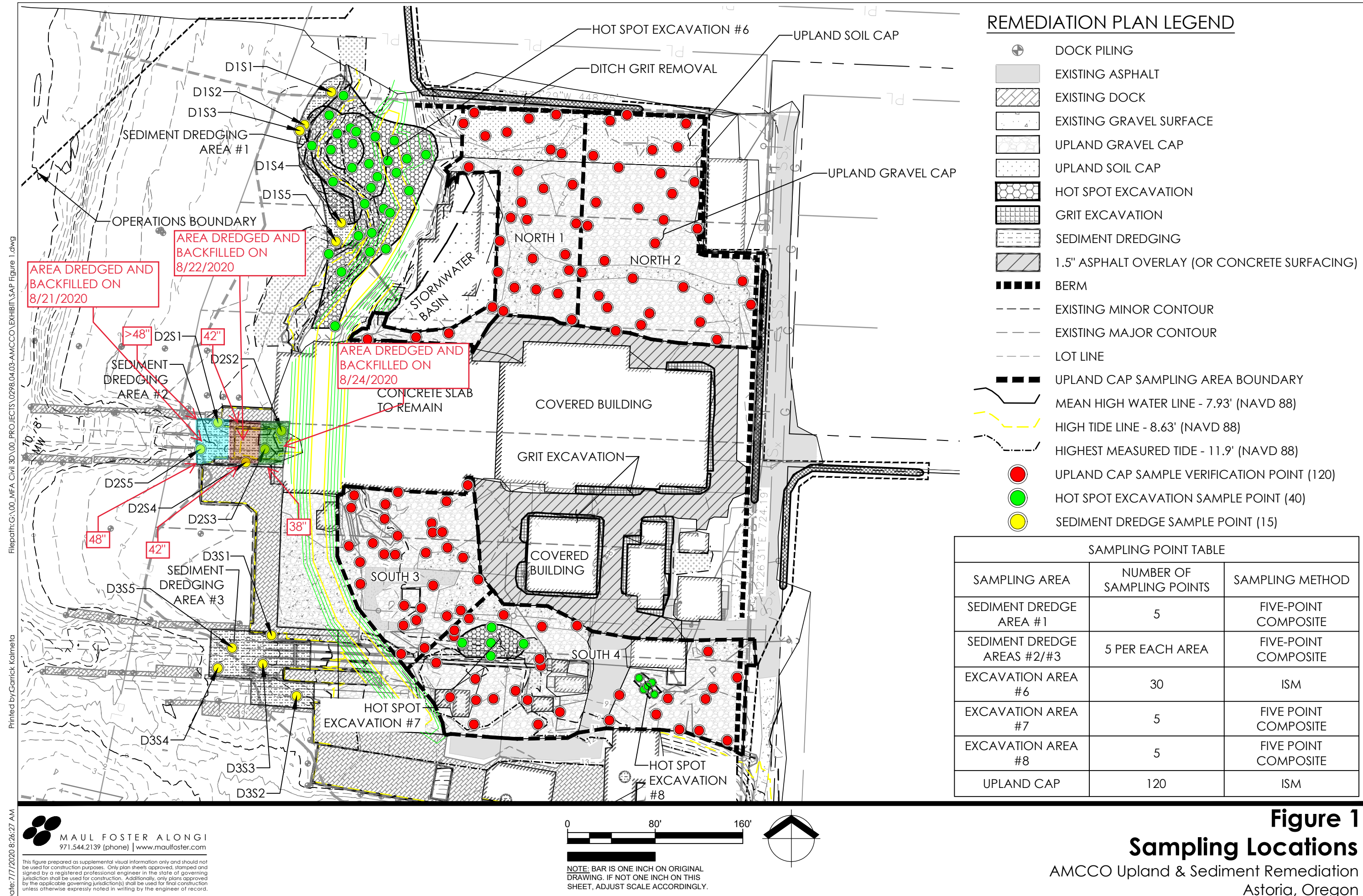
^(f)Site specific Bioaccumulation Model

^(g)Site-specific Human Health Bioaccumulation Model (cancer effects)

^(h)NOAA Squirt value probable effects level.

⁽ⁱ⁾Dioxin/Furan TEQ is the sum of 2,3,7,8-substituted congener concentrations multiplied by their TEF, based on Recommended Toxicity Equivalence Factors (TEFs) for Human Health Risk Assessments of 2,3,7,8-Tetrachlorodibenzo-p-dioxin and Dioxin-Like Compounds. Risk Assessment Forum, U.S. Environmental Protection Agency, Washington, DC. EPA/100/R-10/005. December 2010

^(j) Total PCBs is the sum of PCB congeners.



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Date: 7/7/2020 8:26:27 AM

CONSTRUCTION DAILY REPORT
AMCCO Upland and Sediment Remediation Project

Page 1 of 11

Daily Report Number:	AMCCO-082120-GRK				 MAUL FOSTER ALONGI 3140 NE Broadway Street Portland, OR 97232 971-544-2139					
Date:	8/21/2020									
Weather:	AM:		Overcast							
	PM:		Raining							
Temperature:	Min:		55 °F							
	Max:		65 °F							
24hr Precipitation:	.25"				Dust Conditions:	Light				
Completed by:	Garrick Kalmeta, EIT				Number of Contractor Employees					
Contractor:	Custom Excavating				Supervisory		Operators		Laborers	
					0		2		0	
Work Performed Today										
Location		Sub Location		Description of Work			Time Started		Time Ended	
In-Water Area		Marine Ways 3		Sediment Excavation and Handling			7:00		11:00	
In-Water Area		Marine Ways 3		Acquisition and Placement of Clean Sand			11:00		12:00	
CQA Officers on site:					GRK					
Additional Remarks:										
Custom Excavating began dredging the western extents of marine way 3 at 7:00 AM. Custom Excavating started work by removing top layer sediment, and then the wooden beams of the former rail support structure within the dredge area during Ebb tide (7-10 am), and completed dredging/backfilling of the western most 20 feet of dredge area by noon. All work was completed in dry. See the Sediment Excavation CQA Form for more info on today's dredging. Custom Excavating placed approximately 48 inches of clean sand layer over dredged section of marine way 3 (see Clean Sand Placement CQA Form for more information). Final placement of clean sand overlapped previously placed EMNR Sand Layer by couple feet. During in-water work, turbidity samples were collected every 2 hours at both upstream and downstream locations.										
Visual Turbidity Monitoring										
Calibration Record		Technician		GRK		Time				
Time		Water Depth @ Station (ft)		Turbidity (NTU)		Delta NTU (Down-Up)	Direction	Visual	Construction Activity	
		Upcurrent	Downcurrent	Upcurrent	Downcurrent					
Start						0				
+2 Hours	9:00 AM	8.6	10	17.68	19.28	1.6	Ebb Tide	No plumes visible	Sediment Excavation	
+4 Hours	11:00 AM	7.3	9	5.13	5.74	0.61	Flood Tide	No plumes visible	Clean Sand Placement	
+6 Hours										
+8 Hours										
+10 Hours										
Comments										
Monitoring went smoothly with no reported issues.										
Inspections and Tests										
Inspection/Test Type						Location			Form No.	
Leave Surface Soil Sampling (D2S1, and D2S5: 2 aliquot out of 5)						Marineway 3 dredge area			to be provided by Apex	
Additional Remarks:										

CONSTRUCTION DAILY REPORT
AMCCO Upland and Sediment Remediation Project

Daily Report Number:	AMCCO-082120-GRK		
Date:	8/21/2020	Completed by:	Garrick Kalmeta, EIT
Subcontractors Onsite			
Company Name:		Work Area	Employees
Additional Remarks:			
Visitors			
Time	Name(s)	Agency/Company	Remarks
Additional Remarks:			
Verbal Communications with Contractor			
Time	Name(s)	Remarks	Action Item?
Additional Remarks:			

CONSTRUCTION DAILY REPORT
AMCCO Upland and Sediment Remediation Project

Daily Report Number:	AMCCO-082120-GRK			
Date:	8/21/2020	Completed by:	Garrick Kalmeta, EIT	
Equipment Onsite				
Contractor	Equipment	Quantity	Used Today?	Hours Used
Custom Excavating	Excavator	1	Yes	5
Custom Excavating	Loader	1	Yes	5
Construction Issues Tracking				
Location	Description	Resolution		Action Item?
Additional Remarks:				
CQA Officer Signature	Date	Project Manager Review		
<i>GRK</i>	8/21/2020	Cem Gokcora 8/23/2020		

Daily Report Number:	AMCCO-082120-GRK		
Date:	8/21/2020	Completed by:	Garrick Kalmeta, EIT

Photos



Photo 1: Custom Excavating beginning dredging work at marine way 3. Long reach excavator is operating on a temporary operation pad that was constructed with clean dike material.



Photo 2: Custom Excavating removing top layer of sediment located above the marine way 3 rail support structure at the western most end of the dredge area

Daily Report Number:	AMCCO-082120-GRK		
Date:	8/21/2020	Completed by:	Garrick Kalmeta, EIT

Photos



Photo 3: Custom Excavating placing excavated sediment in the front loader



Photo 4: The top layer of sediment being removed in the western third portion of marine way 3

Daily Report Number:	AMCCO-082120-GRK		
Date:	8/21/2020	Completed by:	Garrick Kalmeta, EIT

Photos



Photo 5: Exposed rail support structure in the western portion of marine way 3



Photo 6: Custom Excavating removing sediment between the rail support structure

Daily Report Number:	AMCCO-082120-GRK		
Date:	8/21/2020	Completed by:	Garrick Kalmeta, EIT

Photos



Photo 7: Custom Excavating using a chainsaw to break up and remove the marine way 3 wooden rail support structure to access the lower sediment



Photo 8: A look at the previously placed EMNR sand layer west of marine way 3 dredge area during low tide

Daily Report Number:	AMCCO-082120-GRK		
Date:	8/21/2020	Completed by:	Garrick Kalmeta, EIT

Photos



Photo 9: Custom Excavating dredging between pilings in marine way 3



Photo 10: A look at the southern extents of the marine way 3 dredge area, along walkway platform

Daily Report Number:	AMCCO-082120-GRK		
Date:	8/21/2020	Completed by:	Garrick Kalmeta, EIT

Photos



Photo 11: A dredge depth of 4 feet at the southern extents of marine way 3 dredge area



Photo 12: Measured dredge depth of approximately 5 feet at the north edge of marine way 3 dredge area

Daily Report Number:	AMCCO-082120-GRK		
Date:	8/21/2020	Completed by:	Garrick Kalmeta, EIT

Photos



Photo 13: Custom Excavating backfilling marine way 3 dredge area with clean sand. Existing untreated pilings, that are approximately 18-inches apart, left in place and will have up to 18-24 inches of clean sand cover



Photo 14: Custom Excavating backfilling marine way 3 dredge area with clean sand

Daily Report Number:	AMCCO-082120-GRK		
Date:	8/21/2020	Completed by:	Garrick Kalmeta, EIT

Photos



Photo 15: The work area covered with clean layer of sand. Placement of clean sand overlapped previously placed EMNR Sand Layer by couple feet.

AMCCO Upland Sediment Remediation CQA



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Daily Sediment Excavation Inspection CQA Form

Form Number: DSE-082120-GRK

Date: 8/21/2020

Weather: Overcast

CQA Official: GRK

Approximate Stationing: N/A

Procedure	Task	Verification
Monitoring	Will sediment excavation work occur "in the dry"? (If No, ensure that turbidity curtain is in place prior to start of work)	Yes
	Is the subgrade surface in general conformance with the lines and grades shown on the plans?	Yes
	Is the subgrade surface smooth and free from protrusions, mounds, or dips?	Yes
	Has all excavated sediment been removed to the upland dewatering area or materials barge?	Yes
	Are previously backfilled areas free of spillage? (If No, ensure that contaminated sediment was overexcavated and backfilled prior to the incoming tide)	Yes
	Has sediment excavation been backfilled with clean sand prior to incoming tide?	Yes

Comments:

Custom Excavating managed to dredge a 22' segment at the most western portion of the marine way 3 dredge area, in the dry, before high tide conditions returned at 12:30 PM. Within that timeframe, Custom Excavating successfully dredged down 3 feet on the southern portion of the area, just below the existing marine way 3 dock, and dredged closer to 5 feet depth on the northern boundary of the dredge area. Similar to marine way 2, support pilings were present and could not be removed, so Custom Excavating dredged around the pilings and used manual labor and shovels to remove any residuals around the pilings before backfilling occurred. All other marine way 3 rail support structure's structural components (i.e. beams) were removed and placed upland before backfilling commenced. Before backfilling occurred, leave surface samples/aliquots D2S1 and D2S5 were obtained for the 5 point composite sampling. After field analyzing the sediment, it appears to be categorized as fine silt with high saturated water content and a higher blend of organic matter. Custom Excavating dredged past the extents shown on the plans on the west side of the dredge area to account for a 1:1 backslope. The clean sand backfill depth was equivalent to the dredge depth in all locations, which resulted in depths ranging from 3' to 5'. All of the left-in-place-pilings were covered with approximately 1' to 2' of clean sand as a result of the backfill depths. Any disturbed area within marine way 3 that was not dredged was covered with a minimum 4" layer of clean sand before the tide arrived. Before backfilling with clean sand, the excavator was thoroughly shaken out within the dredge area to minimize cross contamination of clean sand and excavated sediment. All excavated sediment was transported and placed in the north sediment containment area.

AMCCO Upland Sediment Remediation CQA



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Clean Sand Placement CQA Form

Form Number: CSP-082120-GRK

Date: 8/21/2020

Weather: Overcast

CQA Official: GRK

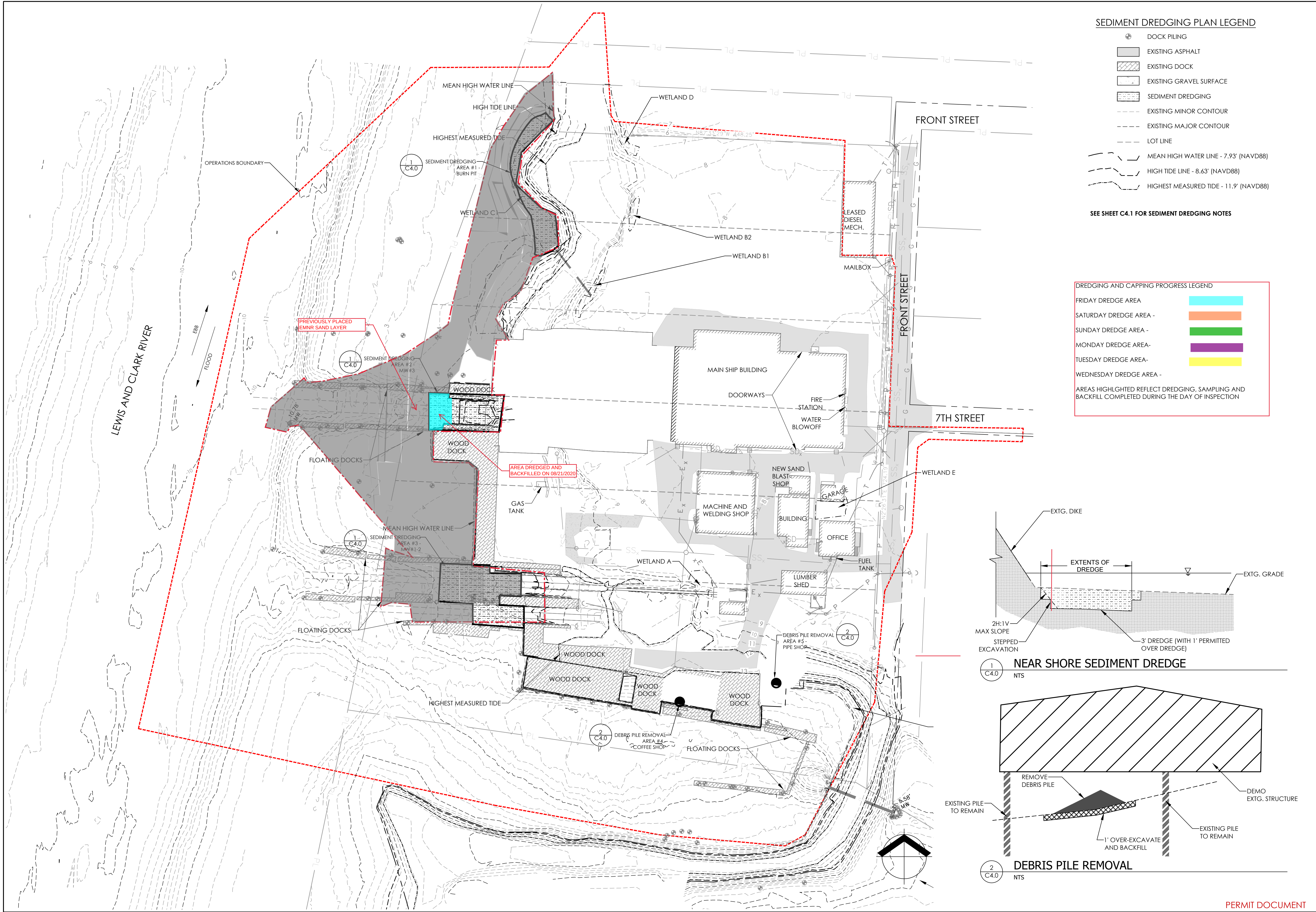
Approximate Coordinate Placement: N/A

Procedure	Task	Verification
Monitoring	Has the clean sand been sampled and analyzed in accordance with specifications, and approved by MFA for use?	Yes
	Has the clean sand been placed to the minimum thickness required by the plans? Has any material placed outside the tolerances described in the specifications been documented or removed?	Yes
	Has the clean sand been placed up to the plan-view extents shown on the plans?	Yes
	Has the clean sand been placed to generally conform with the grades and contours shown on the plans?	Yes

Comments:

Custom Excavating has backfilled the dredged portion of marine way 3 with roughly 140 CY of sand. They worked to favorable tide conditions until 12:00 PM, when the tides became too high to work. The 140 CY of clean sand covered a 950 SF area resulting in average clean sand layer thickness of 48". The placement of clean sand overlapped the previously placed EMNR Sand Layer by approximately 2 feet.

PLOTTED BY: Corrick Karmali
 FILENAME: G:\00_MFA CH 3D\00_PROJECT\0288\04\03_AMCCO\PLANS\00% Design\C4.0 SEDIMENT DREDGING PLAN.dwg
 PLOTTED ON: 2020-05-08 10:28 AM



MAUL FOSTER ALONGI
2001 NW 19TH AVE, SUITE 200
PORTLAND, OR 97209
PHONE: 971.544.2139
www.maulfooster.com

AMCCO UPLAND & SEDIMENT REMEDIATION PLAN

ASTORIA MARINE CONSTRUCTION CO.

ASTORIA, OREGON

ISSUE	DATE	DESCRIPTION
A	05/27/2020	100% DESIGN DOCUMENTS

PROJECT: 1653.01.01

DESIGNED: C. GOKKORRA

DRAWN: Z. PYLE

CHECKED: E. BAKKOM

SCALE

0 50' 100'

NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

SHEET TITLE

SEDIMENT DREDGING PLAN

SHEET

C4.0

Page 1 of 10

Daily Report Number:		AMCCO-082220-GRK		 MAUL FOSTER ALONG I 3140 NE Broadway Street Portland, OR 97232 971-544-2139					
Date:		8/22/2020							
Weather:		AM: Sunny							
		PM: Sunny							
Temperature:		Min: 52 °F							
		Max: 75 °F							
24hr Precipitation:		None		Dust Conditions:		Light			
Completed by:		Garrick Kalmeta, EIT		Number of Contractor Employees					
Contractor:		Custom Excavating		Supervisory		Operators		Laborers	
				0		2		0	
Work Performed Today									
Location		Sub Location		Description of Work		Time Started		Time Ended	
In-Water Area		Marine Ways 3		Sediment Excavation and Handling		7:30		13:00	
In-Water Area		Marine Ways 3		Acquisition and Placement of Clean Sand		13:00		15:00	
CQA Officers on site:									
GRK									
Additional Remarks:									
Custom Excavating began dredging the middle section of marine way 3 when the ebb tide commenced at 7:30 AM. Within that time, Custom Excavating managed to dredge and backfill a 40 feet section of marine way 3 (see daily sediment excavation CQA form and sand placement form for more information). During the work window, the water quality was being monitored every 2 hours (see below). Work ended at 3 PM when the high tide returned to the work area.									
Visual Turbidity Monitoring									
Calibration Record		Technician		GRK					
Time		Water Depth @ Station (ft)		Turbidity (NTU)		Delta NTU (Down-Up)	Direction	Visual	Construction Activity
		Upcurrent	Downcurrent	Upcurrent	Downcurrent				
Start	7:00 AM	12	14	8.35	7.13	-1.22	Ebb Tide	No plumes visible	Sediment Excavation
+2 Hours	9:00 AM	9.2	10	13.91	14.71	0.8	Ebb Tide	No plumes visible	Sediment Excavation
+4 Hours	11:00 AM	8	7.3	4.66	4.05	-0.61	Flood Tide	No plumes visible	Sediment Excavation
+6 Hours	1:00 PM	12	12	18.16	19.83	1.67	Flood Tide	No plumes visible	Clean Sand Placement
+8 Hours									
+10 Hours									
Comments									
Monitoring went smoothly with no reported issues.									
Inspections and Tests									
Inspection/Test Type						Location		Form No.	
Leave Surface Soil Sampling (D2S4: 1 aliquot out of 5)						Marineway 3 dredge area		to be provided by Apex	
Additional Remarks:									

CONSTRUCTION DAILY REPORT
AMCCO Upland and Sediment Remediation Project

Daily Report Number:		AMCCO-082220-GRK	
Date:		8/22/2020	Completed by: Garrick Kalmeta, EIT
Subcontractors Onsite			
Company Name:		Work Area	Employees
Additional Remarks:			
Visitors			
Time	Name(s)	Agency/Company	Remarks
Additional Remarks:			
Verbal Communications with Contractor			
Time	Name(s)	Remarks	Action Item?
Additional Remarks:			

CONSTRUCTION DAILY REPORT
AMCCO Upland and Sediment Remediation Project

Daily Report Number:	AMCCO-082220-GRK			
Date:	8/22/2020	Completed by:	Garrick Kalmeta, EIT	
Equipment Onsite				
Contractor	Equipment	Quantity	Used Today?	Hours Used
Custom Excavating	Excavator	1	Yes	8
Custom Excavating	Loader	1	Yes	8
Construction Issues Tracking				
Location	Description	Resolution		Action Item?
Additional Remarks:				
CQA Officer Signature		Date	Project Manager Review	
<i>GRK</i>		8/22/2020	Cem Gokcora	8/24/2020

Daily Report Number:	AMCCO-082220-GRK		
Date:	8/22/2020	Completed by:	Garrick Kalmeta, EIT

Photos



Photo 1: Clean sand-backfilled western most section of MW#3 dredge area



Photo 2: Custom Excavating removing wooden beams that had supported the former rail system for sediment excavation at the central portion of MW#3 dredge area

Daily Report Number:	AMCCO-082220-GRK		
Date:	8/22/2020	Completed by:	Garrick Kalmeta, EIT

Photos



Photo 3: Custom Excavating loading the front loader with excavated sediment to transport to north sediment containment cell



Photo 4: Custom Excavating dredging central portion of MW#3 dredge area

Daily Report Number:	AMCCO-082220-GRK		
Date:	8/22/2020	Completed by:	Garrick Kalmeta, EIT

Photos



Photo 5: Previously backfilled and EMNR layer placed at MW#2 dredge area



Photo 6: Previously EMNR Sand Layer placed area between MW#2 and MW#3

Daily Report Number:	AMCCO-082220-GRK		
Date:	8/22/2020	Completed by:	Garrick Kalmeta, EIT

Photos



Photo 7: Custom Excavating excavating sediment at MW#3 dredge area, left-in-place, non-treated pilings are approximately 2 feet apart, and sticking up approximately 2 feet from the bottom of the excavation



Photo 8: Depth of the southern dredged portion of MW#3, adjacent to walkway, measuring approximately 42 inches

Daily Report Number:	AMCCO-082220-GRK		
Date:	8/22/2020	Completed by:	Garrick Kalmeta, EIT

Photos

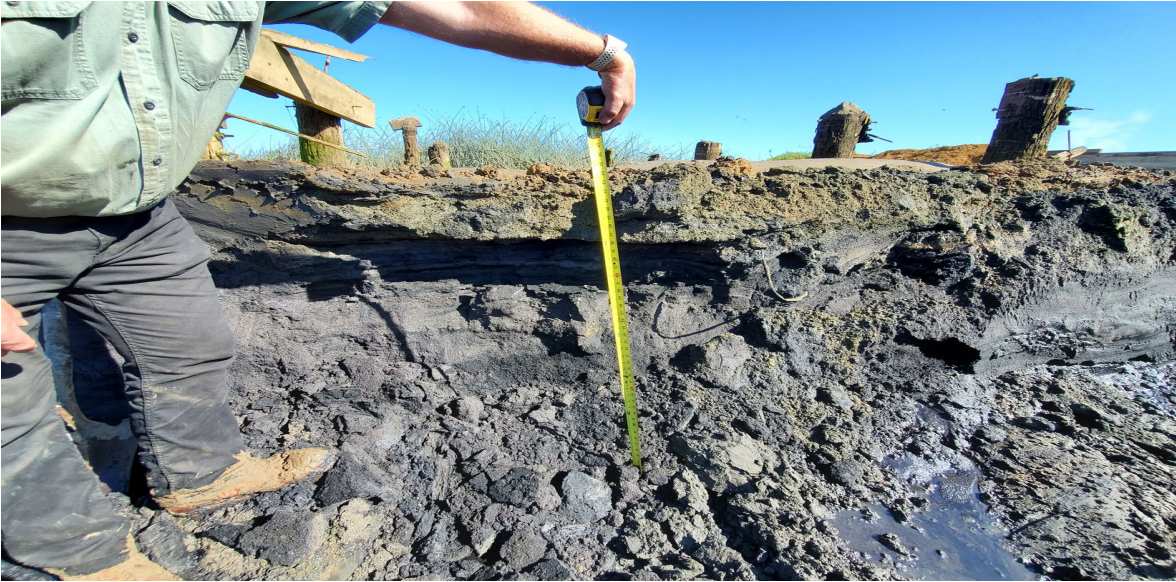


Photo 9: Measuring approximately 44-inches from the bottom of the excavation to the adjacent existing surface at north edge of MW#3 dredge area



Photo 10: Custom Excavating backfilling dredged section of MW#3 dredge area with clean sand

Daily Report Number:	AMCCO-082220-GRK		
Date:	8/22/2020	Completed by:	Garrick Kalmeta, EIT

Photos



Photo 11: Custom Excavating backfilling dredge area with clean sand



Photo 12: Front loader unloads excavated sediment to north sediment containment cell

Daily Report Number:	AMCCO-082220-GRK		
Date:	8/22/2020	Completed by:	Garrick Kalmeta, EIT

Photos



Photo 13: Custom Excavating dredging eastern portion of MW#3 dredge area, looking south from north section of existing dike wall



Photo 14: 2/3 of MW#3 dredge area final surface: backfilled and received EMNR Sand layer

AMCCO Upland Sediment Remediation CQA



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Daily Sediment Excavation Inspection CQA Form

Form Number: DSE-082220-GRK

Date: 8/22/2020

Weather: Overcast

CQA Official: GRK

Approximate Stationing: N/A

Procedure	Task	Verification
Monitoring	Will sediment excavation work occur "in the dry"? (If No, ensure that turbidity curtain is in place prior to start of work)	Yes
	Is the subgrade surface in general conformance with the lines and grades shown on the plans?	Yes
	Is the subgrade surface smooth and free from protrusions, mounds, or dips?	Yes
	Has all excavated sediment been removed to the upland dewatering area or materials barge?	Yes
	Are previously backfilled areas free of spillage? (If No, ensure that contaminated sediment was overexcavated and backfilled prior to the incoming tide)	Yes
	Has sediment excavation been backfilled with clean sand prior to incoming tide?	Yes

Comments:

Custom Excavating started dredging the central portion of marine way 3 dredge area at 7:30 am, and completed work before high tide conditions returned at 3:00 PM. Within that timeframe, Custom Excavating successfully dredged approximately 40 feet section of the central portion of the dredge area; excavated down 3 feet on the southern portion of the area, just below the existing marine way 3 dock, and dredged closer to 4 feet depth on the northern boundary of the dredge area. Similar to marine way 2, support pilings were present and could not be removed, so Custom Excavating dredged around the pilings and used manual labor and shovels to remove any residuals around the pilings before backfilling occurred. All other marine way 3 rail support structure's structural components (i.e. beams) were removed and placed upland before backfilling commenced. Before backfilling, leave surface sample/aliquot D2S4 was obtained for the 5 point composite sampling. The clean sand backfill depth was equivalent to the dredge depth in all locations, which resulted in depths of 4'. All of the pilings were covered with between 1.5' and 2' of clean sand as a result of the backfill depths. Any disturbed area within marine way 3 that was not dredged was covered with a minimum 4" layer of clean sand before the tide arrived. Other BMPs included residual dredged material being removed from the excavator bucket before clean sand was placed. All excavated sediment, approximately 160 cy, was transported and placed in the north sediment containment area.

AMCCO Upland Sediment Remediation CQA



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Clean Sand Placement CQA Form

Form Number: CSP-082220-GRK

Date: 8/22/2020

Weather: Sunny

CQA Official: GRK

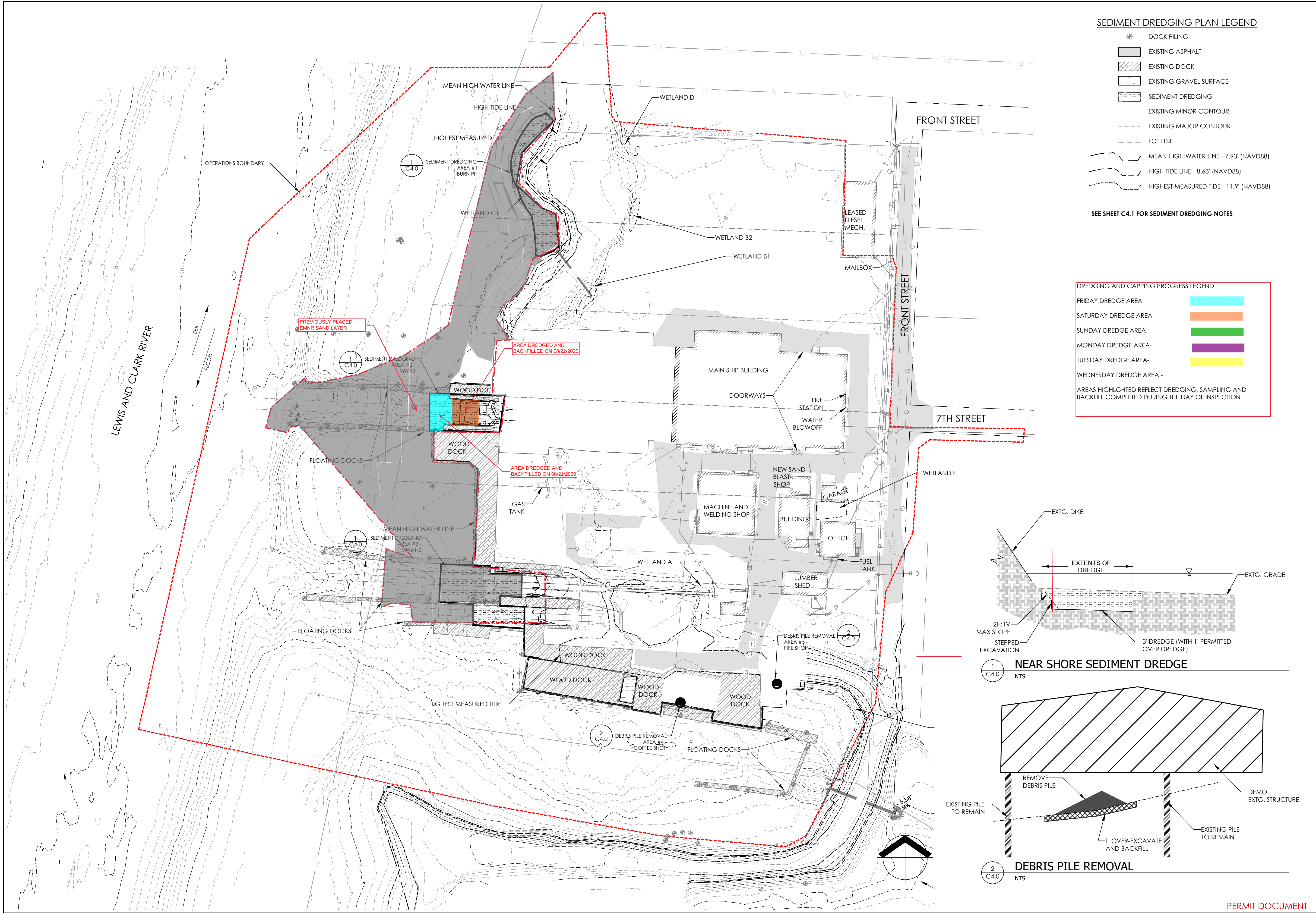
Approximate Coordinate Placement: N/A

Procedure	Task	Verification
Monitoring	Has the clean sand been sampled and analyzed in accordance with specifications, and approved by MFA for use?	Yes
	Has the clean sand been placed to the minimum thickness required by the plans? Has any material placed outside the tolerances described in the specifications been documented or removed?	Yes
	Has the clean sand been placed up to the plan-view extents shown on the plans?	Yes
	Has the clean sand been placed to generally conform with the grades and contours shown on the plans?	Yes

Comments:

Custom Excavating has backfilled the dredged portion of marine way 3 with roughly 180 CY of sand. They worked to favorable tide conditions until 3:00 PM, when the tides became too high to work. The 180 CY of clean sand covered a 1,080 SF area resulting in average clean sand layer thickness of 48 inches.

PLOTTED BY: Corrick Karmali
 FILENAME: G:\00_MFA CH 3D\00_PROJECT\0288\04\03_AMCCO\PLANS\00% Design\C4.0 SEDIMENT DREDGING PLAN.dwg
 PLOTTED ON: 2020-05-08 10:28 AM



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www.maulfooster.com

AMCCO UPLAND & SEDIMENT REMEDIATION PLAN

ASTORIA MARINE CONSTRUCTION CO.

ASTORIA, OREGON

ISSUE	DATE	DESCRIPTION
A	05/27/2020	100% DESIGN DOCUMENTS

PROJECT: 1653.01.01

DESIGNED: C. GOKCORRA

DRAWN: Z. PYLE

CHECKED: E. BAKKOM

SCALE

0 50' 100'

NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

SHEET TITLE

SEDIMENT DREDGING PLAN

SHEET

C4.0

CONSTRUCTION DAILY REPORT
AMCCO Upland and Sediment Remediation Project

Daily Report Number:		AMCCO-082420-GRK		 MAUL FOSTER ALONG I 3140 NE Broadway Street Portland, OR 97232 971-544-2139			
Date:		8/24/2020					
Weather:		AM: Mostly Sunny					
		PM: Mostly Sunny					
Temperature:		Min: 52 °F					
		Max: 68 °F					
24hr Precipitation:		None		Dust Conditions:		Moderate	
Completed by:		Garrick Kalmeta, EIT		Number of Contractor Employees			
Contractor:		Custom Excavating		Supervisory		Operators	
				0		2	
						Laborers	
						1	
Work Performed Today							
Location		Sub Location		Description of Work		Time Started	
In-Water Area		Marine Ways 3		Sediment Excavation and Handling		7:30	
In-Water Area		Marine Ways 3		Acquisition and Placement of Clean Sand		11:00	
CQA Officers on site: GRK							
Additional Remarks:							
Custom Excavating began dredging the eastern section of marine way 3 when the ebb tide commenced at 7:30 AM. Within that time, Custom Excavating managed to dredge and backfill a 15 foot section of marine way 3 (see daily sediment excavation CQA form and sand placement form for more information). During the work window, the water quality was being monitored every 2 hours (see below). The temporary work platform that was constructed with clean dike material (clay) was also removed. Dredge and backfill work were completed at marine way 3 dredge area by 3 PM, before the high tide returned. All work was completed in the dry.							
Visual Turbidity Monitoring							
Calibration Record		Technician		GRK		Time	
Time		Water Depth @ Station (ft)		Turbidity (NTU)		Delta NTU (Down-Up)	Direction
		Upcurrent	Downcurrent	Upcurrent	Downcurrent		
Start	8:00 AM	8	8	5	5.2	0.2	Ebb Tide
+2 Hours	10:00 AM	8	8.2	8.2	7.6	-0.6	Ebb Tide
+4 Hours							
+6 Hours							
+8 Hours							
+10 Hours							
Comments							
Monitoring went smoothly with no reported issues.							
Inspections and Tests							
Inspection/Test Type				Location		Form No.	
Leave Surface Soil Sampling (D2S2, and D2S3: 2 aliquots out of 5)				Marineway 3 dredge area		to be provided by Apex	
Additional Remarks:							

CONSTRUCTION DAILY REPORT
AMCCO Upland and Sediment Remediation Project

Daily Report Number:		AMCCO-082420-GRK	
Date:		8/24/2020	Completed by: Garrick Kalmeta, EIT
Subcontractors Onsite			
Company Name:		Work Area	Employees
Additional Remarks:			
Visitors			
Time	Name(s)	Agency/Company	Remarks
Additional Remarks:			
Verbal Communications with Contractor			
Time	Name(s)	Remarks	Action Item?
Additional Remarks:			

CONSTRUCTION DAILY REPORT
AMCCO Upland and Sediment Remediation Project

Daily Report Number:	AMCCO-082420-GRK			
Date:	8/24/2020	Completed by:	Garrick Kalmeta, EIT	
Equipment Onsite				
Contractor	Equipment	Quantity	Used Today?	Hours Used
Custom Excavating	Excavator	1	Yes	8
Custom Excavating	Loader	1	Yes	8
Construction Issues Tracking				
Location	Description	Resolution		Action Item?
Additional Remarks:				
CQA Officer Signature		Date	Project Manager Review	
<i>GRK</i>		8/24/2020	Cem Gokcora	8/25/2020

Daily Report Number:	AMCCO-082420-GRK		
Date:	8/24/2020	Completed by:	Garrick Kalmeta, EIT

Photos



Photo 1: Custom Excavating loading dump truck from south sediment containment cell to haul off excavated material to Hillsboro landfill



Photo 2: MW#3 progress view showing backfilled sand on the western two third, eastern third remaining to be dredged and backfill

Daily Report Number:	AMCCO-082420-GRK		
Date:	8/24/2020	Completed by:	Garrick Kalmeta, EIT

Photos



Photo 3: Custom Excavating started working on sediment excavation at the eastern third of MW#3 dredge area



Photo 4: Front loader unloading excavated sediment at north sediment containment cell

Daily Report Number:	AMCCO-082420-GRK		
Date:	8/24/2020	Completed by:	Garrick Kalmeta, EIT

Photos



Photo 5: Custom Excavating eastern third of MW#3 dredge area, excavating between existing pilings that are approximately 18-24" apart

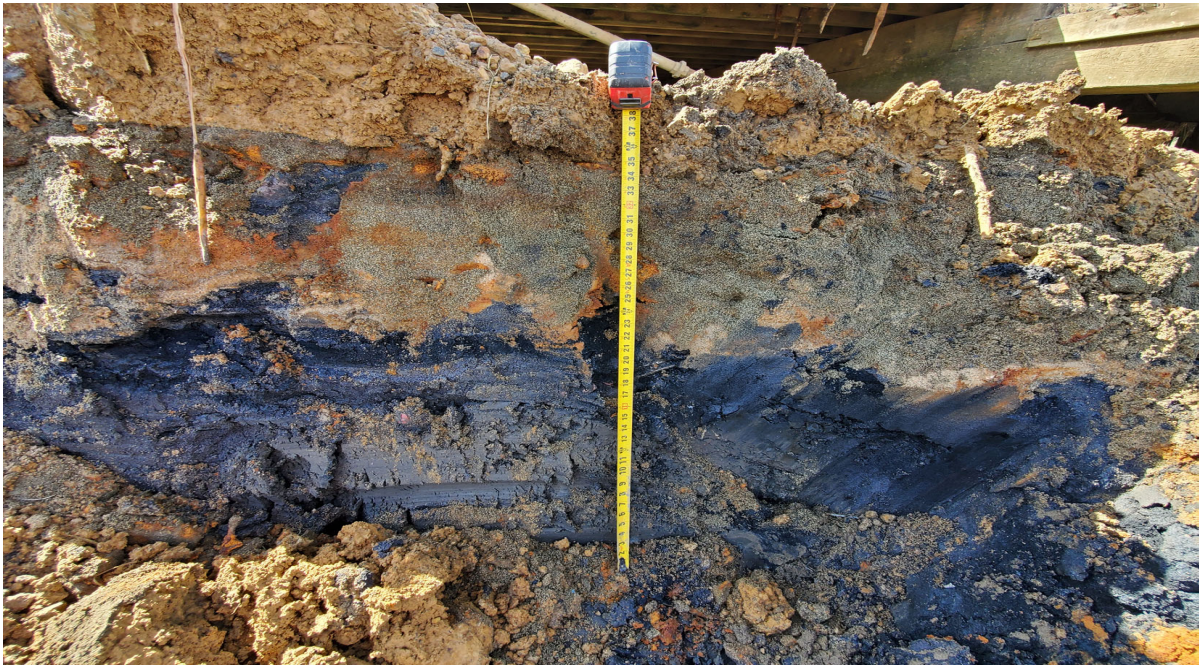


Photo 6: Measuring approximately 38-inches of excavation depth at south edge of dredge area, by walkway

Daily Report Number:	AMCCO-082420-GRK		
Date:	8/24/2020	Completed by:	Garrick Kalmeta, EIT

Photos



Photo 7: Custom Excavating removing sediment between existing pilings with the help of manual labor within the dredge boundary



Photo 8: Bottom of sediment excavation at MW#3, untreated pilings terminate approx. 18-24 inches from the bottom, will receive 24-30 inches of clean sand cover

Daily Report Number:	AMCCO-082420-GRK		
Date:	8/24/2020	Completed by:	Garrick Kalmeta, EIT

Photos



Photo 9: Custom Excavating backfilling eastern most section of the dredged area with clean sand, temporary clay work platform has been removed



Photo 10: Final Surfacing at MW#3 Dredge Area: dredge and backfill work completed

AMCCO Upland Sediment Remediation CQA



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Daily Sediment Excavation Inspection CQA Form

Form Number: DSE-082420-GRK

Date: 8/24/2020

Weather: Overcast

CQA Official: GRK

Approximate Stationing: N/A

Procedure	Task	Verification
Monitoring	Will sediment excavation work occur "in the dry"? (If No, ensure that turbidity curtain is in place prior to start of work)	Yes
	Is the subgrade surface in general conformance with the lines and grades shown on the plans?	Yes
	Is the subgrade surface smooth and free from protrusions, mounds, or dips?	Yes
	Has all excavated sediment been removed to the upland dewatering area or materials barge?	Yes
	Are previously backfilled areas free of spillage? (If No, ensure that contaminated sediment was overexcavated and backfilled prior to the incoming tide)	Yes
	Has sediment excavation been backfilled with clean sand prior to incoming tide?	Yes

Comments:

Custom Excavating completed dredge and backfill work at the remaining eastern 20 feet of marine way 3 dredge area, starting work at 7:30 am, and completing work before high tide conditions returned at 3:00 PM. Within that timeframe, Custom Excavating successfully dredged down 3 feet on the southern portion of the area, just below the existing marine way 3 dock, and dredged closer to 4 feet depth on the northern boundary of the dredge area. Similar to marine way 2, support pilings were present and could not be removed, so Custom Excavating dredged around the pilings and used manual labor and shovels to remove any residuals around the pilings before backfilling occurred. All other marine way 3 rail support structure's structural components (i.e. beams) were removed and placed upland before backfilling commenced. Before backfilling, leave surface samples/aliquots D2S2, and D2S3 were collected for the 5 point composite sampling. The clean sand backfill depth was equivalent to the dredge depth in all locations, which resulted in depths of 4'. All of the pilings were covered with between 1.5' and 2' of clean sand as a result of the backfill depths. Other BMPs included residual dredged material being removed from the excavator bucket before clean sand was placed. All excavated sediment, approximately 100 cy, was transported and placed in the north sediment containment area.

AMCCO Upland Sediment Remediation CQA



**MAUL
FOSTER
ALONGI**

Clean Sand Placement CQA Form

Form Number: CSP-082420-GRK

Date: 8/24/2020

Weather: Sunny

CQA Official: GRK

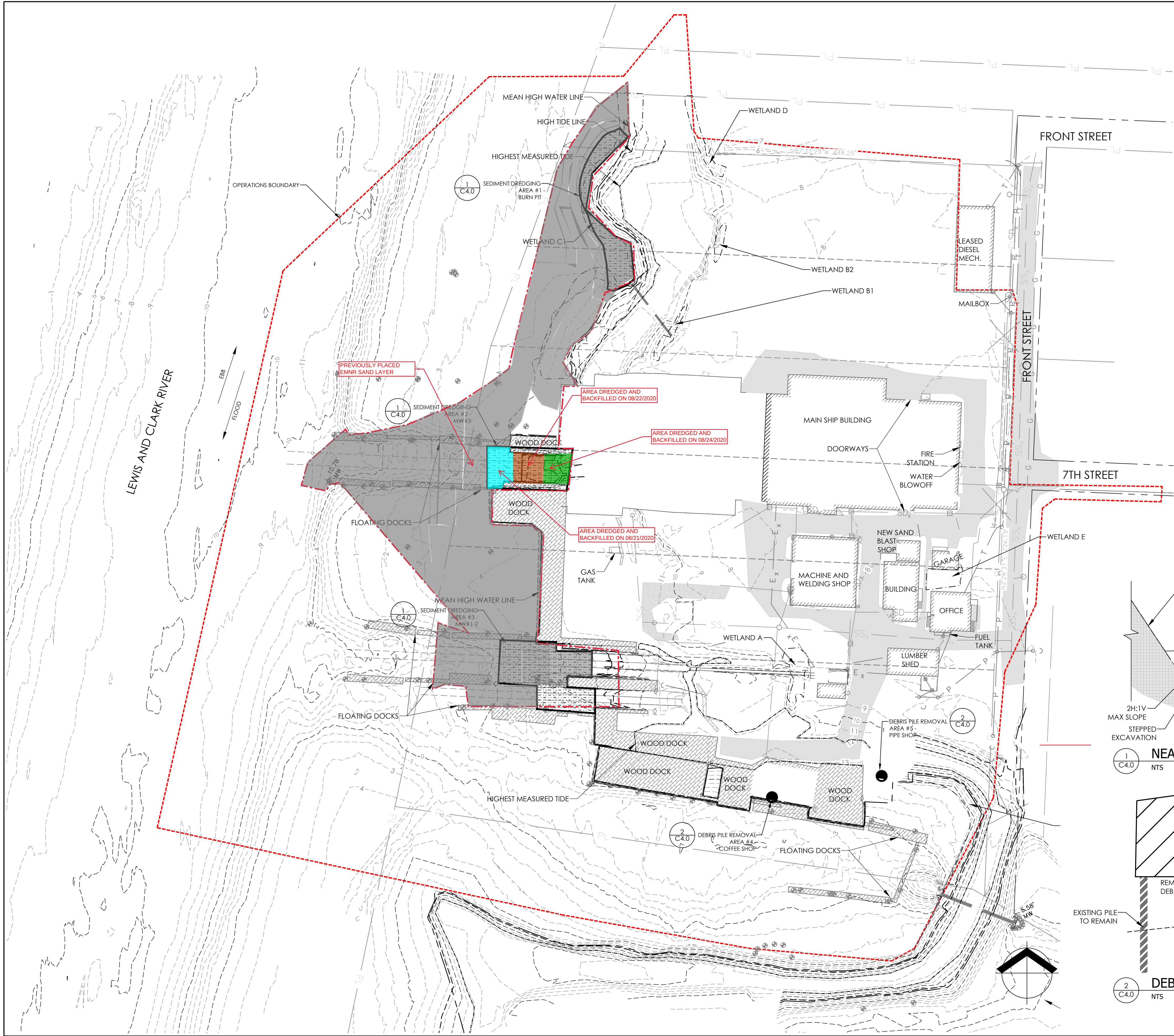
Approximate Coordinate Placement: N/A

Procedure	Task	Verification
Monitoring	Has the clean sand been sampled and analyzed in accordance with specifications, and approved by MFA for use?	Yes
	Has the clean sand been placed to the minimum thickness required by the plans? Has any material placed outside the tolerances described in the specifications been documented or removed?	Yes
	Has the clean sand been placed up to the plan-view extents shown on the plans?	Yes
	Has the clean sand been placed to generally conform with the grades and contours shown on the plans?	Yes

Comments:

Custom Excavating has backfilled the eastern most dredged portion of marine way 3 with roughly 110 CY of sand, and completed all dredge and backfill work at marineway 3 dredge area. They were able to complete the work before tide returns to the work area, by 3pm. The 110 CY of clean sand covered a 650 SF area resulting in average clean sand layer thickness of 54 inches.

PLOTTED BY: Corrick Karmali
 FILENAME: G:\00_MFA CH 3D\00_PROJECT\0288\04\03_AMCCO\PLANS\04% Design\C4.0 SEDIMENT DREDGING PLAN.dwg
 PLOTTED ON: 2020-05-08 10:28 AM



SEDIMENT DREDGING PLAN LEGEND

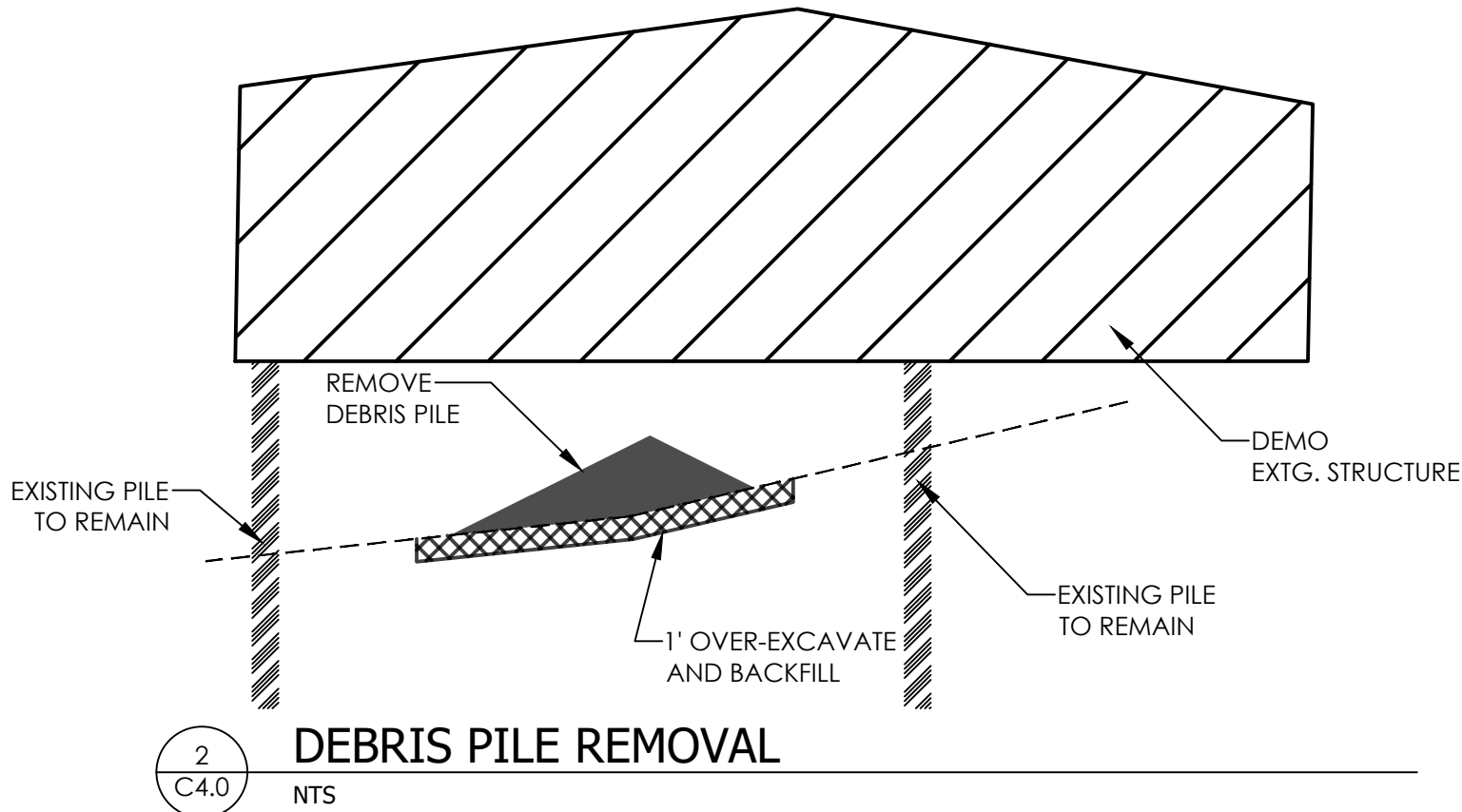
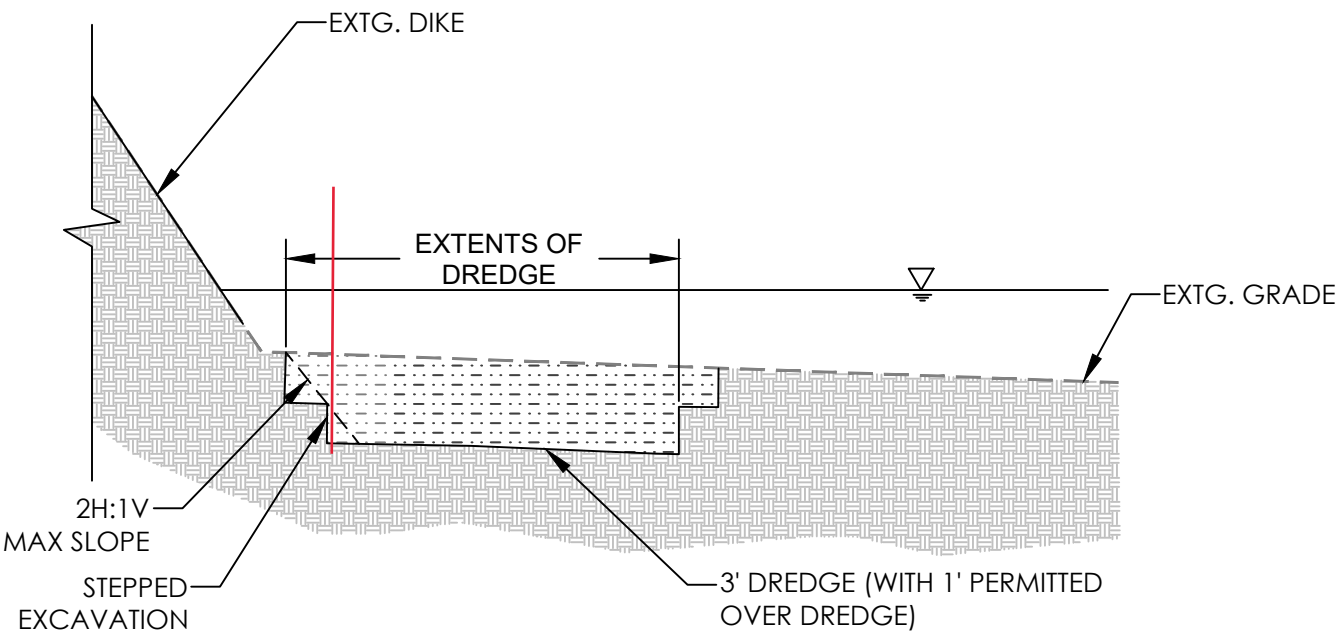
- DOCK PILING
- EXISTING ASPHALT
- EXISTING DOCK
- EXISTING GRAVEL SURFACE
- SEDIMENT DREDGING
- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- LOT LINE
- MEAN HIGH WATER LINE - 7.93' (NAVD88)
- HIGH TIDE LINE - 8.63' (NAVD88)
- HIGHEST MEASURED TIDE - 11.9' (NAVD88)

SEE SHEET C4.1 FOR SEDIMENT DREDGING NOTES

DREDGING AND CAPPING PROGRESS LEGEND

- FRIDAY DREDGE AREA
- SATURDAY DREDGE AREA -
- SUNDAY DREDGE AREA -
- MONDAY DREDGE AREA-
- TUESDAY DREDGE AREA-
- WEDNESDAY DREDGE AREA -

AREAS HIGHLIGHTED REFLECT DREDGING, SAMPLING AND BACKFILL COMPLETED DURING THE DAY OF INSPECTION



PERMIT DOCUMENT

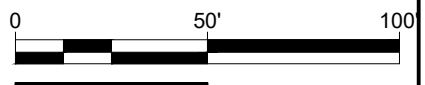


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 PORTLAND, OR 97209
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AMCCO UPLAND & SEDIMENT
 REMEDIATION PLAN

ASTORIA MARINE CONSTRUCTION CO.
 ASTORIA, OREGON

ISSUE	DATE	DESCRIPTION
A	05/27/2020	100% DESIGN DOCUMENTS

PROJECT: 1653.01.01
 DESIGNED: C. GOKCORRA
 DRAWN: Z. PYLE
 CHECKED: E. BAKKOM
 SCALE

NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.
 SHEET TITLE

SEDIMENT
 DREDGING PLAN

 SHEET

C4.0