

**NW Natural Pre-Remedial Design Data Gaps Sampling
US Moorings Project Area Second Phase PDI – Spring 2023
Field Change Request Form**

Project Name: US Moorings Project Area **Subconsultant:** Anchor QEA, LLC

Field Activity: Seepage Meter Deployment **Request Number:** 2

To: Hunter Young, U.S. Environmental Protection Agency **Date:** June 19, 2023

Field Change Request (FCR) Title: Relocation of Subsurface Sediment Sampling Locations

Description
<p>NW Natural recently completed the collection of surface sediment grabs at the US Moorings Project Area in accordance with the conditionally approved <i>Revised First Phase Pre-Design Investigation Data Summary Report and Second Phase Pre-Design Investigation Work Plan</i> (Work Plan). The sampling team performed reconnaissance of the forthcoming subsurface sediment locations to determine if there is sufficient water depth to deploy the coring equipment and the presence of marine equipment that may prohibit access to the target sampling locations.</p> <p>This reconnaissance identified four sampling locations (USMPDI-104, USMPDI-109, USMPDI-112, and USMPDI-113) where the water depths are insufficient to deploy a 20-foot coring assembly. However, review of Table G3-2 in Appendix G of the Work Plan identified that the proposed sampling interval for each of these locations is limited to 0 to 5 feet below mudline (and the deepest interval for all subsurface sediment locations outside of the navigation channel is 7 feet). This sampling interval can be achieved via deployment of a 15-foot coring assembly. Comparison of the measured water depths to the depth required to deploy the 15-foot coring assembly identified that locations USMPDI-104 and USMPDI-109 can be sampled at the proposed location, but locations USMPDI-112 and USMPDI-113 need to be slightly repositioned channel ward to deeper water depths.</p> <p>The reconnaissance also identified that access to locations USMPDI-102, USMPDI-103, and USMPDI-110 is obstructed by marine equipment owned by the adjacent landowner, Advanced American Construction (AAC). Anchor QEA has performed outreach on multiple occasions over the last few months to attempt to ensure access to the target sampling locations within the Department of State Lands property where NW Natural has a license to perform this sampling. The most recent outreach was on June 16, 2023, to notify AAC of the obstructions to the aforementioned locations and associated request to reposition its equipment for a short period to facilitate sampling access. AAC indicated that their equipment is frequently repositioned, so the Anchor QEA field team should field verify each day whether these locations are accessible and, if not, coordinate equipment repositioning to facilitate sampling access.</p>

Recommended Change
<p>NW Natural proposes that all subsurface sediment sampling outside of the navigation channel be collected using the 15-foot coring assembly rather than the 20-foot assembly identified in the Work Plan. As noted above, this assembly can achieve the deepest required sampling depth of 7 feet below mudline. The 20-foot assembly was only identified for these locations because this deeper assembly is necessary for the collection of the depth of contamination cores within the navigation channel. NW Natural further proposes that locations USMPDI-112 and USMPDI-113 be slightly repositioned as shown in the attached Figures 1 and 2 for both the dredge material dewatering treatment and stabilization evaluation and the waste disposal characterization evaluation, respectively. The revised sampling coordinates are identified in the attached revised Tables G3-2 and G3-3 from Appendix G of the Work Plan.</p> <p>NW Natural also proposes that subsurface sediment sampling at locations USMPDI-102, USMPDI-103, and USMPDI-110 be performed within the polygons shown in the attached Figures 1 and 2 due to the identified marine equipment obstructions. Anchor QEA developed these polygons based on review of the existing</p>

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subsurface sediment data in the vicinity of these locations and confirmed the expanded sampling areas will achieve the data quality objectives identified in the Work Plan. NW Natural will further coordinate with the U.S. Environmental Protection Agency (EPA) if Anchor QEA is unable to obtain access to sample within any of these areas and therefore is unable to complete the EPA-approved sampling.

Nik Bacher, Anchor QEA

Respondent Field Coordinator (or Designee)



Signature

June 19, 2023

Date

Approval:

Ryan Barth, Anchor QEA

Respondent Project Lead



Signature

June 19, 2023

Date

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Tables

Table G3-2
Proposed Second Phase PDI Dredge Material Barge Dewatering Treatment and Stabilization Evaluation Sampling Locations

Sample Location	Purpose	Easting (X) ¹	Northing (Y) ¹	Nearest First Phase PDI		ROD-Identified Region	Proposed Sampling Interval
				Sample Location	DOC		
USMPDI-102	Inform potential barge dewatering treatment requirements during remedial design to support discharge of the treated fluids back to the river in the construction area; determine the most optimum combination of amendment, dosage ratio, and cure time to allow any stabilized dredge materials to pass the paint filter test and meet the minimum structural strength required by the disposal facility.	7622154.41	707021.41	USMPDI-009	5 ft	NAV/FMD	Mudline to the bottom DOC (0 - 5 feet)
USMPDI-103		7622014.45	707149.29	USMPDI-004	7 ft	Intermediate	Mudline to the bottom DOC (0 - 7 feet)
USMPDI-104		7622887.63	706190.74	USMPDI-050	Unbounded ²	Intermediate	0-5 ft
USMPDI-105		7622958.49	706313.18	USMPDI-044	Unbounded	Intermediate	0-5 ft
				USMPDI-048	14 ft		0-5 ft
USMPDI-106		7622760.37	706447.46	USMPDI-038	Unbounded	Intermediate	0-5 ft
USMPDI-107		7622592.46	706626.39	USMPDI-026	11 ft	Intermediate	0-5 ft
USMPDI-108		7622418.62	706824.84	USMPDI-018	7 ft	Intermediate	Mudline to the bottom DOC (0 - 7 feet)
USMPDI-109		7622158.86	706818.72	USMPDI-015	Unbounded	Shallow	0-5 ft
USMPDI-110		7621993.24	707274.70	USMPDI-001	1 ft	Intermediate	0-5 ft
				USMPDI-002	Unbounded		0-5 ft
USMPDI-111		7623117.29	706292.40	USMPDI-054	7 ft	NAV/FMD	Mudline to the bottom DOC (0 - 7 feet)
USMPDI-112		7622479.97	706594.64	USMPDI-024	Unbounded	Shallow	0-5 ft
USMPDI-113		7622675.31	706320.69	USMPDI-031	Unbounded	Shallow	0-5 ft
	USMPDI-036			Unbounded	0-5 ft		
	USMPDI-037			Unbounded	0-5 ft		

Notes:

- Coordinates are in North American Datum of 1983 (HARN91) Oregon State Plane North, International Feet.
- If either of the bottom two samples exceeds ROD Table 21 RALs and PTW-highly toxic thresholds, the DOC will be considered unbounded.

DOC: depth of contamination

First Phase PDI: First Phase Pre-Design Investigation

FMD: future maintenance dredge

HARN91: High Accuracy Reference Network 91

NAV: navigation channel

PDI: pre-design investigation

PTW: principal threat waste

RAL: remedial action level

ROD: Record of Decision – Portland Harbor Superfund Site, Portland, Oregon

Table G3-3**Proposed Second Phase PDI Subsurface Sediment Waste Disposal Characterization Sampling Locations**

Sample Location	Purpose	Easting (X) ¹	Northing (Y) ¹
USMPDI-102	Pre-characterize wastes associated with dredging to determine appropriate dredged sediment waste handling and transport options and to complete the waste disposal classification evaluation.	7622154.41	707021.41
USMPDI-103		7622014.45	707149.29
USMPDI-104		7622887.63	706190.74
USMPDI-105		7622958.49	706313.18
USMPDI-106		7622760.37	706447.46
USMPDI-107		7622592.46	706626.39
USMPDI-108		7622418.62	706824.84
USMPDI-109		7622158.86	706818.72
USMPDI-110		7621993.24	707274.7
USMPDI-111		7623117.29	706292.4
USMPDI-112		7622479.97	706594.64
USMPDI-113		7622675.31	706320.69

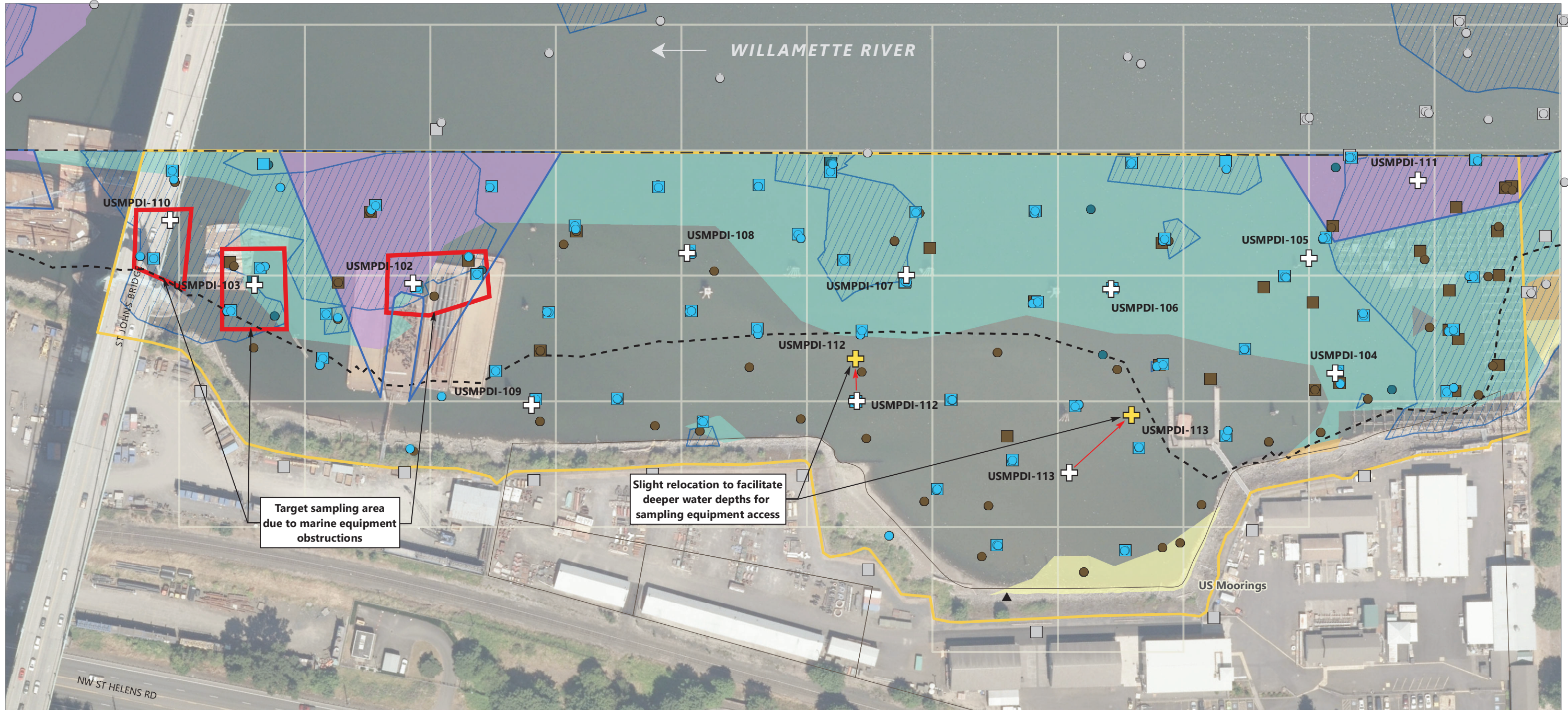
Notes:

1. Coordinates are in North American Datum of 1983 (HARN91) Oregon State Plane North, International Feet.

HARN91: High Accuracy Reference Network 91

PDI: pre-design investigation

Figures



LEGEND:

- Project Area Boundary
- Navigation Channel
- US Mooring's Property Boundary
- Post-ROD SMAs + First Phase PDI Data⁵
- Future Maintenance Dredging Area
- Approximate Shallow/Intermediate Zone Boundary
- Target Sampling Area Due to Marine Equipment Obstructions

Locations Outside Project Area

- Surface Sediment Location
 - Subsurface Sediment Location
- ROD SMA Technology**
- Cap
 - Dredge
 - Dredge in Nav-FMD
 - Dredge with Cap

Locations Inside Project Area

- Pre-RD Group Data Inside Project Area*
- Surface Sediment Location
 - Subsurface Sediment Location
- ROD Data Inside Project Area*
- Surface Sediment Location
 - Subsurface Sediment Location
 - Seep Sample Location

PDI Data Inside Project Area

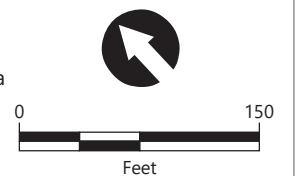
- Surface Sediment Location
- Subsurface Sediment Location
- Original Proposed Second Phase PDI Barge Dewatering Treatment and Stabilization Evaluation Sample Location
- Revised Proposed Second Phase PDI Barge Dewatering Treatment and Stabilization Evaluation Sample Location

NOTES:

1. Arrow indicates direction of flow of river.
2. Horizontal datum is NAD83 (HARN 91) Oregon State Plane North, International Feet.
3. Vertical datum is City of Portland (COP), Feet.
4. Aerial imagery from City of Portland 2018.
5. Sediment management areas developed using surface sediment data consistent with the ROD-identified methods using the post-ROD data set identified in the Pre-Design Investigation Work Plan and first phase PDI

results. Following the second phase PDI, the sediment management areas will be revised to include subsurface sediment data.

6. Sediment management areas include the revised 1,2,3,4,7,8-HxCDF PTW-highly toxic threshold of 0.4 µg/kg per EPA Errata #3 dated September 7, 2022.
7. Shown grid is in 150-foot by 150-foot dimensions to support remedial design data density determinations.

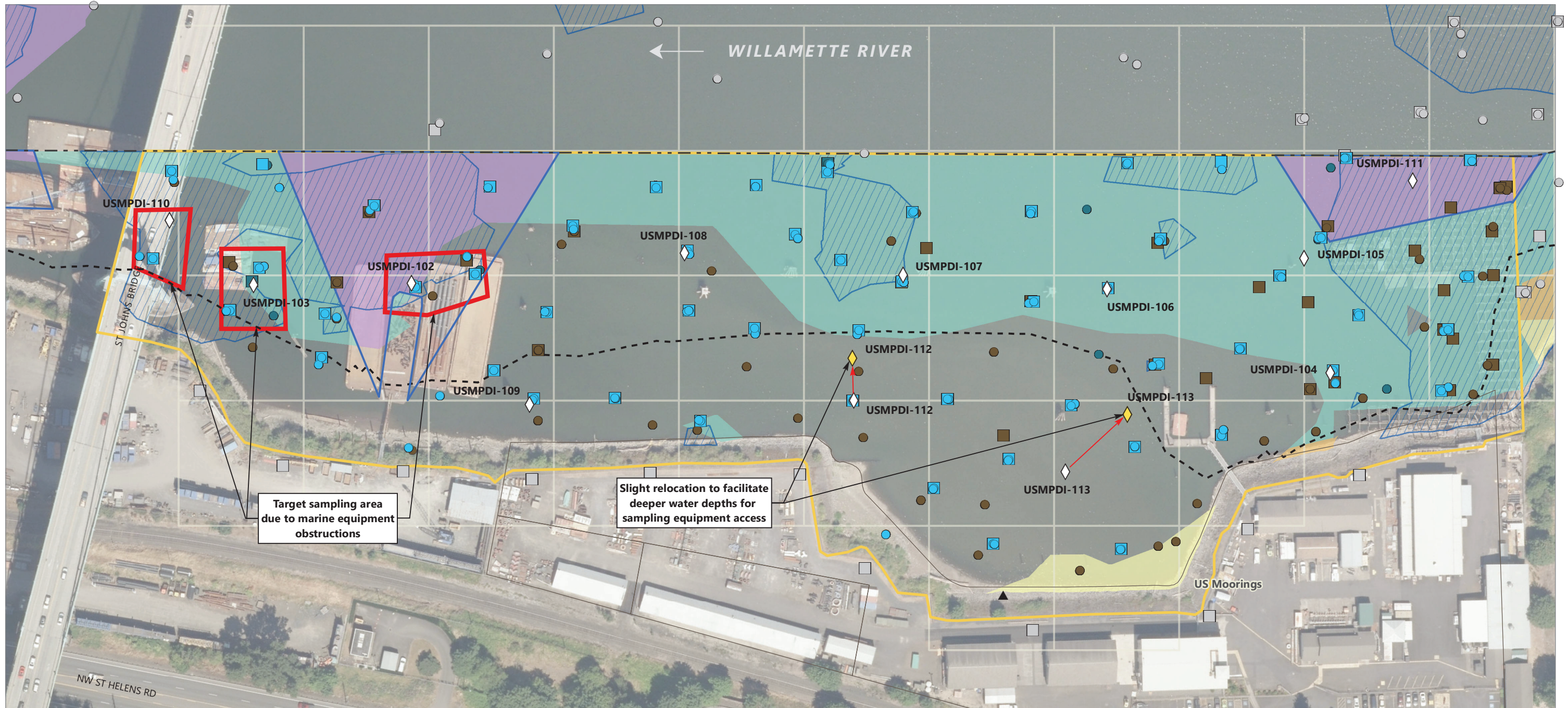


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Figure 1
 Revised Proposed Second Phase PDI Dredge Material Barge Dewatering Treatment and Stabilization Evaluation Sampling Locations

Field Change Request No. 2
 US Mooring's Project Area
USMS0038322



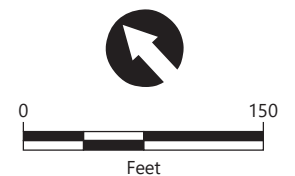
LEGEND:

- | | | | |
|--|---|--|--|
| <ul style="list-style-type: none"> Project Area Boundary Navigation Channel US Moorings Property Boundary Post-ROD SMAs + First Phase PDI Data⁵ Future Maintenance Dredging Area Approximate Shallow/Intermediate Zone Boundary Target Sampling Area Due to Marine Equipment Obstructions | <p>Locations Outside Project Area</p> <ul style="list-style-type: none"> Surface Sediment Location Subsurface Sediment Location <p>ROD SMA Technology</p> <ul style="list-style-type: none"> Cap Dredge Dredge in Nav-FMD Dredge with Cap | <p>Locations Inside Project Area</p> <p><i>Pre-RD Group Data Inside Project Area</i></p> <ul style="list-style-type: none"> Surface Sediment Location Subsurface Sediment Location <p><i>ROD Data Inside Project Area</i></p> <ul style="list-style-type: none"> Surface Sediment Location Subsurface Sediment Location Seep Sample Location | <p><i>PDI Data Inside Project Area</i></p> <ul style="list-style-type: none"> Surface Sediment Location Subsurface Sediment Location Original Proposed Second Phase PDI TCLP/RCRA Sample Location Revised Proposed Second Phase PDI TCLP/RCRA Sample Location |
|--|---|--|--|

NOTES:

1. Arrow indicates direction of flow of river.
2. Horizontal datum is NAD83 (HARN 91) Oregon State Plane North, International Feet.
3. Vertical datum is City of Portland (COP), Feet.
4. Aerial imagery from City of Portland 2018.
5. Sediment management areas developed using surface sediment data consistent with the ROD-identified methods using the post-

6. ROD data set identified in the Pre-Design Investigation Work Plan and first phase PDI results. Following the second phase PDI, the sediment management areas will be revised to include subsurface sediment data.
7. Sediment management areas include the revised 1,2,3,4,7,8-HxCDF PTW-highly toxic threshold of 0.4 µg/kg per EPA Errata #3 dated September 7, 2022.
7. Shown grid is in 150-foot by 150-foot dimensions to support remedial design data density determinations.



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Figure 2
Revised Proposed Second Phase PDI Waste Suitability Characterization Sampling Locations

Field Change Request No. 2
 US Moorings Project Area
USMS0038323