

Date: August 23, 2019

**To:** Lydia Emer, Administrator, Land Quality Division

**From:** Madi Novak, Northwest Region Cleanup Program

**Through:** Kevin Parrett, NW Region Cleanup Program Manager  
Paul Seidel, NW Region Cleanup Program Manager  
Mike Zollistch, Acting HQ Cleanup & Emergency Response Program Manager

**Subject:** Request for Orphan Site Designation – Willamette River, Upriver Reach, RM 16 – 26, ECSI#6220

The purpose of this memorandum is to request official designation of portions of the Willamette River sediment between approximately River Mile (RM) 16 and RM 26, known as the Upriver Reach, as an Orphan Site under Oregon Revised Statute (ORS) 465.381. This designation will enable DEQ to use the Orphan Site Account to fund site investigation activities in this area. ORS 465.381(6)(a) allows DEQ to use the Orphan Site Account for DEQ expenses at sites where the responsible party is “unknown or is unwilling or unable to undertake all required removal or remedial action.” As described in this memorandum, DEQ has determined that the party or parties liable for contamination in this area are currently unknown.

As explained further below, two areas in the Upriver Reach are identified as high priority areas for characterization. DEQ has determined that timely investigation of these areas is a priority because the areas have the highest concentrations of contaminants known in the Upriver Reach, there is potential that even higher concentrations exist nearby, and there is potential for significant exposure and risk to human health.

### **Background**

The Upriver Reach is the most upstream portion of the Lower Willamette River, starting near the Sellwood Bridge at RM 16 and extending to the Willamette Falls at approximately RM 26. The Upriver Reach flows through multiple municipalities and counties. Land use is largely residential and mixed use residential, with some parks and open spaces. Current industrial use in the Upriver Reach is limited to the Lake Oswego industrial area on the west shore between RMs 20 and 20.5, and near Willamette Falls at approximately RM 26, where papermaking facilities historically have been located.

While the Lower Willamette River is generally a wide, slow-moving segment that is tidally influenced, the Upriver Reach is narrower and faster moving than the downstream reaches. River bottom substrate in the Lower Willamette River vary widely in the Upriver Reach. However, there is a general trend from upstream to downstream with more, harder substrates in the upper portion between RMs 22 to 26, a marginal increase in sandy substrates between RMs 19 and 22, and a substantial increase in softer substrates, such as muddy sand and sandy mud, between RMs 16.6 and 19.

### **Summary of Site Issues**

In 2017 and 2018 DEQ led an effort to research and investigate possible sources of contamination in the lower Willamette River as part of a cooperative effort with the US Environmental Protection Agency. As part of that effort, DEQ reviewed readily available historical data to identify areas of elevated contaminant concentrations that may warrant additional investigation. Multiple sampling efforts had been conducted in the Upriver Reach for a variety of reasons. Data evaluated include the following:

- Sediment data assembled and collected by the Lower Willamette Group for the Portland Harbor remedial investigation.
- Water and tissue DEQ toxics monitoring program data.
- Dredge material and leave surface characterization reports submitted to the US Army Corps of Engineers between 2009 and 2015.
- US Geological Survey (USGS) sediment data reported in the Journal of the American Watershed Resources Association in 2014.

Based on the review of the available data, DEQ selected nine areas for additional characterization in the Upriver Reach (*DEQ, 2017. Work Plan, Upriver Reach Sediment Characterization, Lower Willamette River, Portland, Oregon. Oregon Department of Environmental Quality. October*). The results of the investigation indicated that, with few minor exceptions, concentrations of contaminants were low in the areas sampled (*DEQ, 2018. Final Field and Data report, Upriver Reach Sediment Characterization, Lower Willamette River, Portland, Oregon. Oregon Department of Environmental Quality. May 8*). DEQ conducted a follow up evaluation in one area of interest (RM 20 on the east shore), the results of which indicated that concentrations were below levels warranting further action.

Subsequent sampling was conducted by a number of Portland Harbor responsible parties as part of the Portland Harbor Superfund Site effort to document baseline (i.e., pre-remedial construction) conditions. Surface sediment analytical results were issued by the group in the Pre-Remedial Design Footprint Report (*Portland harbor Pre-RD AOC Group, 2019. Pre-Remedial Design Footprint Report, Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling, Portland Harbor Superfund Site, Portland, Oregon. Revised with EPA Comments. April 8*). Based on these data, DEQ identified surface sediment contamination in two discrete areas with elevated levels of PCBs, dioxins/furans, PAHs, and pesticides that warranted additional characterization: 1) RM 16 to 16.3 East, Offshore of Sellwood Riverfront Park and Oaks Amusement Park, and 2) RM 19.6 West, downstream of Tryon Creek confluence. Although existing data do not suggest any other areas of significant contamination in the Upriver Reach, additional areas could potentially be identified during the work plan scoping phase of the investigation. The initial phase of the work is likely to focus on the two priority characterization areas described below.

- 1) *RM 16 to 16.3 East, Offshore of Sellwood Riverfront Park and Amusement Park.* Two sediment samples (B458 and B457) collected in this area had elevated concentrations of multiple contaminants. Sample B458 is near a public use dock and two MS4 outfalls offshore of the Sellwood Riverfront Park. Sample B457 is just downstream of B458 and offshore of the Oaks Amusement Park parking area. A summary of elevated concentrations in these two samples is provided below:



- Elevated Total PCB concentration of 88.9 ug/kg (sample B457)
- Elevated DDx concentration of 36.76 ug/kg (sample B457) and 13.98 ug/kg (sample B458)
- Elevated dioxin/furan concentration of 13.3 ng/kg TEQ (sample B457) and 10.6 ng/kg TEQ (sample B458)
- Elevated benzo(a)pyrene – TEQ concentration of 128 ug/kg TEQ (sample B457)
- Elevated dieldrin concentration of 0.32 ug/kg (one of two detections in the reach)

Fish tissue concentrations of PCBs are also elevated in this area.

- 2) *RM 19.6 West Downstream of Tryon Creek Confluence.* One sediment sample (B471) was collected in what appears to be a depositional area, given the configuration of the river and the high percentage of fines in the sample. The sample was collected offshore of a residential area in an unincorporated area of Clackamas County, just south of the City of Portland and north of Lake Oswego. A summary of elevated contaminant concentrations in the sample is provided below:

- Elevated Total PCB concentration of 95 ug/kg
- Elevated benzo(a)pyrene – TEQ of 133 ug/kg
- Elevated dioxin/furan TEQ concentration of 12.3 ng/kg

The above contaminants are hydrophobic and bioaccumulative in nature and can therefore accumulate in the tissue of benthic invertebrates and fish and cause unacceptable risk to people, birds, and mammals through consumption. Tissue concentrations in portions of the Upriver Reach do indeed reflect accumulation of these chemicals, in particular near RM 16. Further, concentrations of benzo(a)pyrene are elevated above levels protective of people directly contacting sediment on the shore. Because these areas of the Upriver Reach are accessible to people, and, in the case of Sellwood Riverfront Park/Oaks Amusement park is an area of high use, timely assessment of sediment contamination is needed to evaluate whether the contamination warrants a removal or remedial action to protect human health and the environment.

#### **Site Owner/Operator Information**

As described further below, it is unclear if there is a source of contamination for these areas that can be associated with a particular potentially responsible party. However, the additional investigation may provide information helpful in identifying sources.

*RM 16 to 16.3 East, Offshore of Sellwood Riverfront Park and Oaks Amusement Park.* Potential sources of contamination could include historical industrial operations, outfall discharges, deposition from upriver, or upland historical or current land use (such as potential pesticide use). A former East Side Mill and Lumber Company facility is shown on a 1935 industrial map of Portland, and extends from RM 16.45 to 16.7 on the east side of the river. B458 is near the public use dock and two MS4 outfalls while no readily apparent potential sources were observed near B457 on aerials or during a site visit.

*RM 19.6 West Downstream of Tryon Creek Confluence.* Nearby sources of contamination are not apparent; adjacent upland land use is residential. However, the area is downstream of the Tryon Creek confluence with the Willamette River at approximately RM 20, downstream of Oak Lodge

and Tryon Creek Waste Water Treatment Plants, and also downstream of the Lake Oswego Industrial Area (located between RMs 20.1 and 20.3) that includes multiple DEQ cleanup sites. Any of these upriver sources have the potential to impact the RM 19.6 West depositional area. No outfall data in this area were readily available at the time DEQ reviewed the data, nor are any nearby sample data available to interpret the extent of the contamination.

The contaminated areas appear to be depositional in nature; therefore, the sources may be nearby, or may be upgradient. Sources of the contamination may be associated with historical industrial activities on the Willamette River, or activities in the uplands that result in contamination that is conveyed to the river through tributaries or outfalls. Because of the uncertainty associated with the source of contamination, DEQ has determined that the party or parties liable for contamination are unknown. However, the additional investigation in these areas may serve to identify potentially responsible parties.

### **Immediate Action is Critical**

DEQ has determined that timely investigation of these areas is a priority because they are the highest concentrations of contaminants known in the Upriver Reach, and:


- There is significant current human access and use at RM 16 to 16.3 along Sellwood Riverfront Park and Oaks Amusement Park. Children and adults are known to frequent the area and play on the beach, resulting in potentially significant exposure to contaminants.
- The concentrations at RM 19.6 are significantly higher than other upriver concentrations, and are above Portland Harbor remedial action levels. No other data have been collected nearby to evaluate the nature and extent of the contamination; therefore, there is a potential for even higher concentrations to be present nearby, or for a previously unknown source of contamination to result in an ongoing release.

DEQ recommends using funds from the Orphan Site Account to evaluate, design, and implement a sediment investigation to ensure that all potential sources have been adequately evaluated. EPA is looking to DEQ to identify sources of contamination upstream of the Portland Harbor cleanup site as part of the effort to protect against recontamination once cleanup is completed. EPA expects this upstream work to be done before the Portland Harbor cleanup begins in earnest. DEQ is prioritizing this work such that the in-water sampling can be completed before the in-water work period closes on October 31<sup>st</sup>

With the approval of the Orphan designation for this site, DEQ's Business Office will begin using the Orphan Site Account to pay for Account-eligible activities. This approval will also enable the transfer of any appropriate prior expenses from HSRAF to DEQ's Orphan Site Account. If further investigation identifies parties responsible for contamination who are able to pay Orphan costs that DEQ incurs at the site, DEQ will seek reimbursement of these costs from those parties.

Please sign below to approve this request for designation of the Willamette River – Upriver project as an Orphan Site, and to authorize use of the Orphan Site Account.

  
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Lydia Emer, Administrator  
Land Quality Division

  
\_\_\_\_\_  
Date



**Orphan Site Project Addition**  
**Accounting & Financial**

Orphan Site Name: Willamette River, Upriver Reach, RM 16 - 26

Cost Incurred<sup>1</sup>:

Direct Costs	\$0
LQ Indirect	<u>\$0</u>
Total Billable	\$0

Amount Invoiced: \$0  
Assessments \$0  
Amount Recovered: \$0

Amount to transfer to Orphan Site Account at this time:

Direct Costs	\$0
LQ Indirect at 91%	<u>\$0</u>
Total Orphan Costs	\$0

**Site Information**

ECSI Number: 6220

ECSI Site Names: Willamette River, Upriver Reach, RM 16 - 26

Existing project number to be declared orphan	
Business Office Number:	N/A
Business Office Title:	N/A
Billable Costs Included: <sup>1</sup>	\$0
Invoiced:	\$0
Received:	\$0
Transfer Previous Costs:	N/A
Special Transfer Instructions: <sup>2</sup>	N/A

Approved:

  
Land Quality Division Manager

<sup>1</sup> No costs have occurred..

<sup>2</sup> In accordance with IRS regulations, can only transfer costs incurred 18 months prior to bond issuance (as authorized by EQC)