Beneficial Use of Solid Waste Determination Evaluation Form

State of Oregon Department of Environmental Quality

Applicant: Portland Harbor Holdings II, LLC (PHH)

BUD-20120511: Solid Waste: Excavated Soil: Alder Creek Restoration Project
Summary of Proposed Beneficial Use:

PHH is proposing to construct a 64 acre habitat restoration project at the former site of Alder Creek Lumber Company, located on Sauvie Island. The Restoration Project will create a mosaic of tidal marsh and upland habitats for the benefit of salmonids and other species. In order to construct the Restoration Project, PHH will excavate approximately 450,000 cubic yards of historic fill, soils, and sediment from the floodplain, and relocate it within the project footprint to create the proposed mosaic of tidal channels, tidal marsh and upland habitats. The tidal marsh habitat complex will be constructed on the outboard side of the Sauvie Island Drainage Improvement Company (SIDIC) levee; the upland habitats will be constructed on the inboard side of the SIDIC levee.

In order to connect the restored tidal channels to the Willamette River and Multnomah Channel, PHH will excavate approximately 1,600 cubic yards of sediment from within the Restoration Project footprint, below the mean low water line, within Oregon Department of State Land property at three locations (one location in Multnomah Channel and two locations in the Willamette River). This sediment also will be used in the restoration of the upland habitat on the inboard side of the SIDIC levee.

Reviewer: Tim Spencer	Date: June 5, 2013 and updated June 28, 2013
Tier: ☐ One ☒ Two ☐ Three	

Beneficial Use of Solid Waste

Beneficial use of solid waste is a sustainability practice that may involve using an industrial waste in a manufacturing process to make another product or using a waste as a substitute for construction materials.

The environmental benefits of substituting industrial waste materials for virgin materials includes conserving energy, reducing the need to extract natural resources and reducing demand for disposal facilities.

Oregon Administrative Rules (OAR) 340-093-0260 to 0290 establish standing beneficial uses and a process for DEQ review of case-specific beneficial use proposals. Under these rules, DEQ may issue a beneficial use determination as an alternative to a disposal permit for proposals that meet the rule criteria. Once a beneficial use determination is issued, DEQ no longer regulates the waste as a solid waste, as long as the material is used in accordance with the approved beneficial use determination.

Beneficial Use Determination Evaluation Summary

☒ Yes, the Beneficial Use of this solid waste meets all the case-specific performance criteria listed below and is approved.

☐ No, the Beneficial Use of this solid waste does not meet all the case-specific performance criteria listed below and is not approved.

Notes: PHH submitted information necessary for DEQ to make a determination. DEQ evaluated this information against acceptable human health and ecological risk criteria and surface water and ground water interactions.

Case-Specific Beneficial Use Performance Criteria:

DEQ may approve an application for a case-specific beneficial use of solid waste only if all the following performance criteria are addressed: 1) Characterization of the solid waste; 2) Productive beneficial use of the solid waste; and, 3) The affect of the proposed beneficial use on public health, safety, and welfare or on the environment.

1) Characterization of the Solid Waste

Did the applicant characterize the solid waste and proposed beneficial use sufficiently to demonstrate compliance with the rules for case-specific beneficial use determinations (OAR 340-093-0280) by submitting required information for the appropriate tier? (See tier sections below for detailed characterization information.)

☒ Yes ☐ No

Notes: PHH provided the necessary description of the material and how it is proposed to be used.

Was the following information submitted for DEQ review and how adequate was it?

Tier 1 ☒ Applicable ☐ Not applicable

- Did the applicant provide an adequate description of the material proposed for beneficial use, the manner of generation and the estimated quantity to be used beneficially each year? ☒ Yes ☐ No

  Notes: The material includes native soil, imported soil fill, and sediment. The soil will be generated by excavating the restoration site about fifteen feet below existing grades. The quantity of soil intended for beneficial use will be approximately 450,000 cubic yards. Approximately 1,600 cubic yards of sediment will be removed from below the mean low water line within State Lands. The sediment material will be excavated from one location at the south shoreline of the Restoration Project on Multnomah Channel, and two locations from the east shoreline of the site on the Willamette River. Sediment excavation depths are expected to range from 0 to 5 feet below the surface.

- Did the applicant provide an adequate description of the proposed beneficial use and justify how the proposed use is beneficial? ☒ Yes ☐ No

  Notes: PHH proposes to use the soil and sediment as fill material to create an upland forested habitat to complement the salmon recovery project (see section 2 notes below) and for some levee maintenance activities within the Restoration Project footprint requested by SIDIC.

- Did the applicant provide a sufficient comparison of the chemical and physical characteristics of the material proposed for beneficial use with the material it will replace? ☒ Yes ☐ No

  Notes: the proposed fill material will be excavated soil from within the Restoration Project site and channel connections. This material containing low levels of hazardous substances will replace soil that would need to be imported from other borrow locations in the greater Portland area. DEQ reviewed the chemical analysis of the materials and determined that the material meets acceptable risk criteria for the proposed use. See discussion below.

- Did the applicant successfully demonstrate compliance of the proposed beneficial use with the performance criteria in OAR 340-093-0280 based on knowledge of the process that generated

the material, properties of the finished product, or testing?
☒ Yes ☐ No

Notes: See notes 2) and 3) below.

- If required, did the applicant provide any other DEQ required information to evaluate the proposal? ☒ Yes ☐ No

  Notes: In addition to the original application, the applicant provided a detailed technical memorandum dated May 4, 2012 including a summary of soil screening methods used to assess human health and ecological risk and an addendum to the BUD application (Addendum # 1) dated August 7, 2012.

Tier 2 ☒ Applicable ☐ Not applicable

- Did the applicant submit all the information required for a Tier 1 application?
  ☒ Yes ☐ No

  Notes: See notes for Tier 1.

- Did the applicant submit adequate sampling and analysis to make a determination of suitability for beneficial use? (Note: The analysis must provide chemical, physical, and biological characterization of the material proposed for beneficial use and identify potential contaminants in the material or the end product, as applicable.)
  ☒ Yes ☐ No

  Notes: PHH completed a comprehensive Phase II Site Assessment and a subsequent soil data analysis (Technical Memorandum, May 4, 2012). This analysis led to classification of the excavated soil into three distinct soil management units referred to as Unit 1, Unit 2 and unit 3. The sampling and analyses identified a number of hazardous substances that are discussed below. For characterization of the sediment to be excavated from Multnomah Channel and the Willamette River, PHH obtained sediment analytical data from Appendix A-3 of the August 2011 Portland Harbor Draft Final Remedial Investigation for surface and subsurface sediment sample locations located off-shore of the Alder Creek Mill site.

  PHH classified the following soil samples as "Unit 1:" soils with multiple exceedances of DEQ's Level II Screening Level Values (SLVs) for ecological receptors, or soils with elevated petroleum hydrocarbon concentrations associated with visible staining in soil. Unit 1 represents soil that can be placed at the upland forest restoration site, but would require capping with clean (Unit 2 or Unit 3) soils.

  PHH classified soils with no SLV exceedances into soil management "Unit 2," defined as soil that can be used as fill at the placement site and for levee maintenance without a capping requirement and as a cap for Unit 1 soils.

  PHH classified as Unit 3 soil samples that meet clean fill criteria. PHH proposes to make excess volumes of these soils available for beneficial use outside of the upland restoration area.

- When applicable, did the applicant provide a risk screening comparing the concentration of hazardous substances in the material to existing DEQ approved, risk-based screening level values, and demonstrate compliance with acceptable risk levels?
  ☒ Yes ☐ No

Notes: PHH provided a comparison of chemicals detected to screening levels (Tables 1-19 of the application) for upland ecological and human receptors. The applicant's screening against DEQ risk SLVs identified several compounds of potential concern including:

Metals. Lead, zinc, copper and mercury exceeded ecological screening values or background at several soil sample locations. Nickel and mercury exceeded SLVs at one sample location. In sediment samples, lead, mercury, and zinc exceeded SLVs.

Semi-volatile Organic Compounds (SVOCs). Dibenzofuran slightly exceeded the SLV for mammals in several soil samples. In one soil sample location (TP-10-04), several SVOC compounds exceeded SLVs for plants and invertebrates. Dibenzofuran also exceeded the SLV in sediment samples.

Pesticides. In sediment, total organochlorine pesticides and individual pesticides DDD, DDE, and DDT exceeded SLVs.

Soil and sediment materials with significant exceedances of SLVs were classified as Unit 1 soil and will be capped with clean (Unit 2 or Unit 3)) soils which do not have exceedances of SLVs.

- When applicable, did the applicant supply the location or type of land use where the material will be applied, consistent with the risk scenarios used to evaluate risk?
  ☒ Yes ☐ No

  Notes: PHH is the site owner. The Multnomah County Zoning Ordinance designates the Restoration Project site as Multiple Use Agricultural (MUA-20). The County has deemed the lumber mill operation a non-conforming lawfully established use in full compliance with the zoning ordinance. Future use will be natural upland forest and wetland/fisheries habitat but the zoning designation will remain the same.

  PHH evaluated screening level values (SLVs) for ecological receptors to determine environmental risk associated with upland placement of the soil and sediment materials. Human use of the soil placement site will be limited by a deed restriction or similar institutional controls. Accordingly, the primary human risk scenario is occupational (construction worker) exposure during soil and sediment excavation, hauling, and placement. PHH compared soil and sediment analytical data to DEQ risk-based concentration (RBC) levels protective of construction and excavation workers.

  Only Unit 1 soils exceeded these RBCs in some samples. Unit 1 soils will be capped with Unit 2 or Unit 3 soils to eliminate any future exposure pathway. During the excavation process itself, construction and excavation workers will wear appropriate personal protection equipment to minimize exposure to Unit 1 soils. The fact that Unit 1 soil is present only in relatively small quantities (about 2,100 cubic yards) will also limit potential exposure risks for workers.

- When applicable, did the applicant supply contact information of property owner(s) if this is a site-specific land application proposal, including name, address, phone number, e-mail, site address and site coordinates (latitude and longitude)? ☒ Yes ☐ No

  Notes: PHH is the applicant and property owner. Approximate site coordinates are in the application.

- Did the applicant supply an adequate description of how the material will be managed to minimize potential adverse impacts to public health, safety, welfare, or the environment?
  ☒ Yes ☐ No

Notes: The upland forest placement area is existing industrial land associated with the former Alder Creek Lumber Mill. PHH will move the Unit 1 soil and sediment material containing hazardous substances from a sensitive, near-shore environment that is subject to frequent flooding to a location inboard of the SIDIC levee and protected from flooding. Once in place this soil material will be capped with clean (Unit 2 or Unit 3) soil and planted with native vegetation. The fill area will be managed in perpetuity with a deed restriction or conservation easement.

As a consequence of PHH's proposed site management methods contaminant concentrations in the fill material will not pose an unacceptable risk to people and wildlife.

Tier 3 ☐ Applicable ☒ **Not applicable**

- Did the applicant submit all the information required for a Tier 1 & Tier 2 application? ☐ Yes ☐ No
- Did the applicant provide an adequate discussion of the justification for the proposal? ☐ Yes ☐ No
- Is there an estimated length of time that would be required to complete the project, if it is a demonstration? ☐ Yes ☐ No
- If it is a demonstration project, are their methods proposed to ensure safe and proper management of the material? ☐ Yes ☐ No

2) Productive Beneficial Use of the Solid Waste

Has the applicant demonstrated that the proposed beneficial use is a productive use of the material by providing information substantiating the criteria listed below?

☒ Yes ☐ No

Notes: See notes below.

- Did the applicant successfully identify or demonstrate a reasonably likely proposed beneficial use for the material that is not speculative? ☒ Yes ☐ No

This criterion consists of three parts.

1. Identified Use:
   Has the applicant clearly stated what the waste is going to be used for, that the waste is compatible with that use and the proposed quantity is necessary? ☒ Yes ☐ No
2. Reasonably Likely Use:
   Has the applicant identified, with supporting documentation, the timeframe within which this use is likely to occur (e.g., zoning info, master plan for development, letters from local jurisdictions, etc)?

☒ Yes ☐ No

3. Not Speculative:

For Land application - has this material been used at other sites for the same purpose, is the material feasible for use at this site for this purpose, or has the applicant identified a known potential for this use at this site?

☒ Yes ☐ No ☐ N/A

For uses other than land application - has the material been used in a product before, is the material feasible for use in a product, or has the applicant identified a known potential for use in this product?

☐ Yes ☐ No ☒ N/A

Notes: PHH has identified the intended use as fill material to create an upland forest habitat and for SIDIC levee maintenance within the Restoration project footprint. PHH requires a large volume of material (approximately 450,000 cubic yards) to establish appropriate grades and sufficient soil profile.

The value of the soil as fill material is not speculative. Similar soils are commonly used as construction fill material. DEQ's determination that the proposed use is beneficial relied on the following factors: 1) The history of industrial use at the site; 2) current land use that allows soil placement; 3) The common use of slightly contaminated soil as fill material; 4) PHH's need for fill material to develop an upland forest habitat; 5) SIDIC's request to utilize some of the clean material for levee maintenance within the Restoration Project Footprint; and 6) soil contaminant concentrations that do not pose unacceptable risk to people and wildlife.

- Is the use a valuable part of a manufacturing process, an effective substitute for a valuable raw material or commercial product, or otherwise authorized by the Department and does not constitute disposal? ☒ Yes ☐ No

  Notes: PHH has identified a need for fill material to develop upland forest habitat on a portion of the Restoration Project property. This area has been disturbed and existing grades on the interior of the SIDIC levee will not support a forest habitat complex benefitting salmon. SIDIC has identified a desire for fill material for levee maintenance. Without this fill, material would need to be imported from off site for levee maintenance. Placement at this location for this purpose would not constitute disposal under the beneficial use rules.

- Is the use in accordance with applicable engineering standards, commercial standards, and agricultural or horticultural practices? ☒ Yes ☐ No

  Notes: The soil material has appropriate properties for use as fill.

3) Effect of Proposed Beneficial Use on Public Health, Safety, Welfare and/or the Environment

Has the applicant demonstrated the proposed beneficial use will **not** create an adverse impact to public health, safety, welfare, or the environment, by providing information substantiating compliance with the criteria listed in the bullet list below? ☒ Yes ☐ No

Notes: See notes below.

- Has the applicant demonstrated that the material is not a hazardous waste under ORS 466.00?

  ☒ Yes ☐ No

Notes: Contaminant concentrations in the soil are well below hazardous waste criteria.

- Has the applicant demonstrated that until the time this material is used according to a beneficial use determination, the material will be managed, including any storage, transportation, or processing, to prevent releases to the environment or nuisance conditions?

☒ Yes ☐ No

Notes:

PHH will move contaminated soil from environmentally sensitive near-shore areas and sediment from Multnomah Channel and the Willamette River to an upland area within and over the SIDIC flood-protection levee.

DEQ's analysis indicates that the proposed beneficial use of the Restoration Project soil and sediment material will not pose a significant risk to groundwater or surface water quality and should provide water quality benefits because of the relocation of contaminated soil from near-shore areas and sediment from in water areas to the upland forest restoration area within the SIDIC levee. The site's natural hydrogeologic features are protective of groundwater and surface water beneficial uses because of the following characteristics:

- There are no down-gradient drinking water wells that could be impacted by the placement of this soil.
- The uppermost groundwater zone occurs in low-permeability fine-grained sediments resulting in very slow groundwater velocities and low potential for contaminant transport toward surface water resources or deeper aquifers.
- These fine-grained sediments would have a significant capacity to attenuate and absorb metals and other contaminants present in groundwater, hindering these chemicals from migrating to the salmon recovery habitat area and other sensitive near-shore environments.

In addition, the contaminants in the Restoration Project soils have low mobility in soil and therefore do not pose a significant risk to groundwater quality

- Has the applicant demonstrated that hazardous substances in the material, if any, meet one of the criteria in the bulleted list below? ☒ Yes ☐ No

  - Hazardous substances do not significantly exceed the concentration in a comparable raw material or commercial product;
  - Hazardous substances do not exceed naturally occurring background concentrations; or
  - Hazardous substances will not exceed acceptable risk levels, including persistence and potential bioaccumulation, when the material is managed according to a beneficial use determination.

Notes: DEQ's evaluation concludes that soil contaminant concentrations will not pose an unacceptable risk to human or ecological receptors if managed as proposed in the PHH beneficial use application.

- Has the applicant demonstrated that the proposed beneficial use will not result in the increase of a hazardous substance in a sensitive environment, such as a park, wildlife refuge or wetland?

☒ Yes ☐ No

Notes: Currently, the site soils and sediment are located in a sensitive environment, near the shoreline of Multnomah Channel and the Willamette River or within these surface water channels and will be moved to a more protective location within the Restoration Project.

- Has the applicant demonstrated that the proposed beneficial use will not create objectionable odors, dust, unsightliness, fire, or other nuisance conditions?

  ☒ Yes ☐ No

  Notes: The soil will remain in its current state until the restoration project commences. Once the project activities begin, the soil will be transported from the near-shore side of the SIDIC levee to the upland side using best management practices per the erosion and sediment control plan that was prepared as part of the NPDES-1200C construction stormwater permit coverage that has been assigned to the project (File Number 122100) for the site.

- Has the applicant indicated that the proposed beneficial use will comply with any other applicable federal, state, and local regulations?

  ☒ Yes ☐ No

  Notes: The applicant, PHH, will obtain several local, state and federal permits or regulatory approvals which may include:

Nationwide permit No. 27 under Sections 10 and 404 of the Clean water act (CWA) Section 7 consultation with NOAA and U.S. Fish and Wildlife Service (USFWS) Section 106 consultation with State Historic Preservation Office (SHPO) U.S. Environmental Protection Agency (EPA) consultation	U.S. Corps of Engineers (USACE)
CWA Section 10 authorization	USACE
Eagle permit (if nesting bald eagles are present and avoidance is impracticable)	USFWS
Compliance with CERCLA, Superfund, and Portland Harbor Natural Resources Damage Assessment	EPA and Oregon DEQ
Removal and Fill Permit Consultation with Oregon Department of Fish and Wildlife (ODFW) and SHPO	Oregon Department of State Lands (DSL)
CWA Section 401 Certification	DEQ
CWA Section 402 compliance, NPDES permit	DEQ
Temporary use permit with structure registration or long-term lease for activities within state lands	DSL
Willamette River Greenway permit	Multnomah County
Grading and Erosion permit	Multnomah County
Significant Environmental Concern permit	Multnomah County
Large Fills permit (to place excavated material)	Multnomah County
Property line adjustment	Multnomah County
Design Review Plan Approval	Multnomah County
Other permits or authorization as may be required to implement project	Federal, Start, and local regulatory agencies or bodies

4) Public Involvement Evaluation (Note: this is not a Beneficial Use evaluation criterion)
Determine a public involvement recommendation using the current, *Guidance to DEQ Solid Waste Program Staff and Managers on Public Notice & Participation.*

- Is public notice and participation being recommended for this application?
  ☒ Yes ☐ No

Notes: DEQ will provide a public notice and a 14 day notification period to determine if the local community has concerns about the beneficial use determination.

Update June 28, 2013

On Sept. 22, 2011, DEQ held a public information meeting related to the prospective purchaser agreement (PPA) that addressed the cleanup aspects of the Alder Creek Lumber Company property. All persons present at the meeting voiced support for the habitat restoration project.

On June 5, 2013 DEQ issued a public notice to open the beneficial use determination for public comment. On June 7, 2013 DEQ received an email message from Dorothy Shoemaker and on On June 18, 2013 DEQ received a letter from Paul Sherman of Wildlands, the beneficial use determination applicant. Their comment messages are attached. Summarized below are the comments received and DEQ's responses:

Comment 1: *The Aldercreek Lumber Mill was a PRP in the Portland Harbor Superfund Cleanup. The EPA was in charge of the in water part of the Superfund Cleanup, with the DEQ in charge of*

the onshore sources. The records were archived a few years ago. You should check with the EPA about how this was left, whether this site was in shape to do this soil beneficial use.

DEQ's response: The sale and transfer of the Alder Creek Lumber Company property to Portland Harbor Holdings II, LLC (Wildlands) was administered under a legally binding consent judgment/prospective purchaser agreement. Conditions of the consent judgment included requirements to conduct Phase 1 and Phase 2 environmental Assessments of the site. Wildlands conducted extensive sampling in potentially impacted environmental media to evaluate environmental risk and human health risk associated with the restoration project and proposed appropriate cleanup measures. DEQ's review of the site investigations and the associated soil management plan determined that the soil contaminant levels will not pose an unacceptable risk to human health or to the environment if managed as proposed in this beneficial use application.

Comment 2: ... *Wildlands is actively removing much of the residual organic material generated by the previous lumber mill operation from the site. Section 4(3)(e) of the application provides that Wildlands will address DEQ concerns regarding potential burial of a large mass of organic material during material placement for upland restoration by ensuring discrete layers of organic material are not buried within upland restoration areas.*

We would like to clarify that where these piles of residual organic materials are currently located some soil and organic material mixing will occur as part of the current removal process. Additionally, some of the surface soils on the property contain organics. It is our understanding that DEQ considers incidental amounts of organics entrained within the upland soils acceptable.

DEQ's response: DEQ agrees that complete removal of all organic material from the upland restoration soils is not feasible or necessary. Incidental amounts of organic material in the soil will not create the adverse environmental conditions of concern to DEQ that could develop in discrete layers of buried organics, namely, anaerobic decomposition of the organics. Such decomposition could produce methane and carbon dioxide and alterations in soil chemistry that could mobilize metals present in the fill soils. DEQ does not expect the scattered, incidental amounts of organic materials to create such conditions.