STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
Eastern Region Office
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June 11, 2024

Randy Hayden
Port of Pasco
PO Box 769
Pasco, WA 99301

Re: Further Action at the following contaminated Site:

Site Name:	Port of Pasco Big Industrial Park Lagoons
Site Address:	SE Road 36/ E Ainsworth St, Pasco
Cleanup Site ID:	15433
Facility/Site ID:	88749
VCP Project ID:	EA0362

Dear Randy Hayden:

The Washington State Department of Ecology (Ecology) received your request for an opinion on your independent cleanup of the Port of Pasco Big Industrial Park Lagoons facility (Site) under the Voluntary Cleanup Program (VCP)[1]. This letter provides our opinion. We are providing this opinion under the authority of the Model Toxics Control Act (MTCA), Chapter 70A.305[2] RCW.

Issue Presented and Opinion

Ecology has determined that further remedial action is necessary to clean up contamination at the Site.

This opinion is based on an analysis of whether the proposed actions meet the substantive requirements of MTCA, Chapter 70A.305 RCW, and its implementing regulations, Chapter 173-340 WAC (collectively "substantive requirements of MTCA"). The analysis is provided as follows.

[1] https://ecology.wa.gov/Spills-Cleanup/Contamination-cleanup/Voluntary-Cleanup-Program
[2] https://app.leg.wa.gov/RCW/default.aspx?cite=70A.305

Site Description

This opinion applies to the only Site described as follows. The Site is defined by the nature and extent of contamination associated with the following release:

- Heavy metals, dioxins, furans, and polybrominated diphenyl ethers (PBDEs) into the soil.
- Heavy metals and perfluoroalkyl substances (PFAS) into the groundwater.

Enclosure A includes a detailed description, history, and diagrams of the Site, as currently known to Ecology.

Please note a parcel of real property can be affected by multiple sites. At this time, we have no information that the parcel(s) associated with this Site are affected by other sites.

Basis for the Opinion

Ecology bases this opinion on information in the documents listed in **Enclosure B**. You can request these documents by filing a records request.[3] For help making a request, contact the Public Records Officer at publicrecordsofficer@ecy.wa.gov or call (360) 407-6040. Before making a request, check whether the documents are available on the Site webpage[4].

This opinion is void if any of the information contained in those documents is materially false or misleading.

Analysis and Opinion

Ecology has concluded that **further remedial action** is necessary to clean up contamination at the Site. That conclusion is based on the following analysis:

Characterizing the Site

Ecology has determined your characterization of the Site is sufficient to establish cleanup standards and select a cleanup action. The Site is described above and in **Enclosure A.**

The Site consists of two former wastewater treatment lagoons with approximately 1-2 feet of biosolids occurring at 13.5 feet below ground surface (bgs). Groundwater occurs between 9 and 11 feet bgs in an unconfined formation and flows to the south toward the Columbia River. The north and south lagoons have an approximate biosolids volume of 32,130 cubic feet and 62,400 cubic feet, respectively. Seven discrete biosolids samples were collected from each of the two lagoons and analyzed for fecal coliform. One

[3] https://ecology.wa.gov/About-us/Accountability-transparency/Public-records-requests
[4] https://apps.ecology.wa.gov/gsp/CleanupSiteDocuments.aspx?csid=15433

composite sample was developed for each lagoon and analyzed for organochlorine pesticides, Resource Recovery and Conservation Act (RCRA) 8 metals, nitrates, nitrogen, ammonia, dioxins, furans, polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), and polybrominated diphenyl ethers (PBDEs). Cadmium exceeded the MTCA Method A soil cleanup level in the south lagoon sample, while the dioxin and furan toxicity equivalency factor (TEF) exceeded the MTCA Method B soil cleanup level. DDE and PBDEs were detected in the south lagoon sample below their respective soil cleanup levels.

Additional sampling of the biosolids and soil beneath the lagoons indicated the dioxin and furan TEF exceeded MTCA Method B cleanup level for soils in the saturated zone. One upgradient and two downgradient monitoring wells were installed surrounding the lagoons and were sampled in February 2024. Arsenic and lead exceeded the MTCA Method A cleanup levels in MW1 and MW2.

Establishing cleanup standards

Ecology has determined the cleanup levels and points of compliance you established for the Site meet the substantive requirements of MTCA.

For soil, the cleanup level for cadmium was established using MTCA Method A and is based on protection of groundwater for drinking water use. For dioxins and furans, the cleanup level was established using MTCA Method B using the sum toxicity equivalency factors (TEFs) of seven dioxin congeners and ten furan congeners. The cleanup level is based on protection of groundwater in the saturated zone. Please see Ecology's Implementation Memorandum No. 13[5] for a list of the individual substances and their respective TEFs. For PDBEs, the cleanup levels were established using MTCA Method B and are based on protection of groundwater in the saturated zone. Please see Ecology's Cleanup Level and Risk Calculation (CLARC) data tables[6] for a list of the individual substances and their respective cleanup levels The point of compliance for soils is throughout the lateral and vertical extent of the Site. This is the standard point of compliance. The cleanup levels are as follows:

Contaminant	Cleanup Level (mg/kg)
Cadmium	2
Dioxins and furans	1.4×10^{-7}
PDBEs	See CLARC tables

mg/kg = milligrams per kilogram

[5] https://apps.ecology.wa.gov/publications/documents/1609044.pdf
[6] https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Contamination-clean-up-tools/CLARC

For groundwater, the cleanup levels for heavy metals were established using MTCA Method A and are based on natural background levels or applicable state and federal law. The cleanup levels for PFOA and PFOS are based on the Maximum Contaminant Levels (MCLs) for drinking water established by the United States Environmental Protection Agency (EPA) in April 2024. Please refer to the EPA website[7] for more information. The point of compliance for groundwater is throughout the Site from the uppermost level of the saturated zone extending vertically to the lowest most depth which could potentially be affected by the Site. This is the standard point of compliance. The cleanup levels are as follows:

Contaminant	Cleanup Level (µg/L)
Arsenic	5
Lead	15
PFOA	0.004
PFOS	0.004

µg/L = micrograms per liter

Implementing the cleanup action

Ecology has determined the cleanup action you implemented for the Site likely meets the substantive requirements of MTCA; however, further compliance monitoring is required as detailed in the next section. The cleanup action implemented is as follows:

- Engineering controls: The lagoons were backfilled and capped with clean imported soil and gravel, which serve as a barrier to direct contact with residual contaminated biosolids and soils.

- Institutional controls: An environmental covenant was recorded with Franklin County on September 26, 2022 under recording number 1966700 on the south lagoon to restrict land use to industrial and maintain the engineering controls.

- Groundwater monitoring: Three groundwater monitoring wells were installed and will be sampled quarterly until results from four consecutive quarters meet cleanup levels for all contaminants of concern.

Additional requirements

Ecology has determined the following actions will be required to demonstrate compliance with cleanup standards:

[7] https://www.epa.gov/sdwa/and-polyfluoroalkyl-substances-pfas

- Groundwater samples collected in February 2024 contained arsenic, lead, PFOA, and PFOS exceeding the MTCA cleanup levels or EPA MCLs. Groundwater sampling should continue to evaluate any trends in concentration and determine if further groundwater monitoring wells need to be installed to determine the extent of contaminated groundwater.

- Geochemical parameters such as dissolved oxygen, redox potential, pH, conductivity, and temperature can indicate the fate and transport of contaminants dissolved in groundwater. Please provide these data for the next groundwater sampling event and submit any geochemical data from the prior sampling event if available.

Limitations of the Opinion

Opinion does not settle liability with the state

Liable persons are strictly liable, jointly and severally, for all remedial action costs and for all natural resource damages resulting from the release or releases of hazardous substances at the Site. This opinion does not:

- Resolve or alter a person's liability to the state
- Protect liable persons from contribution claims by third parties.

To settle liability with the state and obtain protection from contribution claims, a person must enter into a consent decree with Ecology under RCW 70A.305.040(4).

Opinion does not constitute a determination of substantial equivalence

To recover remedial action costs from other liable persons under MTCA, one must demonstrate that the action is the substantial equivalent of an Ecology-conducted or Ecology-supervised action. This opinion does not determine whether the action you proposed will be substantially equivalent. Courts make that determination. *See* RCW 70A.305.080 and WAC 173-340-545.

Opinion is limited to proposed cleanup

This letter does not provide an opinion on whether further remedial action will actually be necessary at the Site upon completion of your proposed cleanup. To obtain such an opinion, you must submit a report to Ecology upon completion of your cleanup and request an opinion under the Voluntary Cleanup Program (VCP).

State is immune from liability

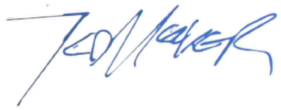
The state, Ecology, and its officers and employees are immune from all liability, and no cause of action of any nature may arise from any act or omission in providing this opinion. *See* RCW 70A.305.170.

Contact Information

Thank you for choosing to clean up the Site under the VCP. As you conduct your cleanup, please do not hesitate to request additional services. We look forward to working with you.

For more information about the VCP and the cleanup process, please visit our webpage [8]. If you have any questions about this opinion, please contact me by phone at 509-342-5564 or e-mail at ted.uecker@ecy.wa.gov.

Sincerely,



Ted M. Uecker
ERO Toxics Cleanup Program

tmu:rl

Enclosures (2): A – Site description, history, and diagrams
B – List of Site documents

cc: Tracy Friesz, Port of Pasco
Yancy Meyer, BMEC
Brent Bergeron, BMEC
Nicholas Acklam, Ecology

[8] https://www.ecy.wa.gov/vcp

Enclosure A

Site Description, History, and Diagrams

Site Description

The Site is part of the 370-acre Big Pasco Industrial Center, which is located along the Columbia River in Pasco, WA. The two former sewage lagoons are located at SE Road 36 and E Ainsworth Ave, approximately 650 and 920 feet from the river. The south lagoon has an average biosolids depth of two feet, with approximately 62,400 cubic feet of biosolids. The north lagoon has an average biosolids depth of one foot, with approximately 32,130 cubic feet of biosolids. Depth to groundwater at the Site is approximately 9-14 feet below ground surface (bgs). Site soils generally consist of sands and silts to deeper sand and gravel to approximately 50 feet bgs, underlain by the competent silt of the Ringold Formation.

Site History

In January 2021, the two sewage lagoons were sampled to characterize the waste with the intent to decommission and develop the area into a gravel parking lot. Fourteen total biosolids samples were collected, seven from each lagoon, and were considered representative of the entire vertical biosolids column. The discrete samples were analyzed for fecal coliform, while composite samples were analyzed for organochlorine pesticides, RCRA 8 metals, nitrates, nitrogen, ammonia, dioxins, furans, polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), and polybrominated diphenyl ethers (PDBEs). Analytical results for the south lagoon samples indicated that the dioxin and furan toxicity equivalency factor (TEF) exceeded MTCA Method B cleanup levels for both direct contact and protection of groundwater. Cadmium exceeded the MTCA Method A cleanup level, and PDBEs and DDE were present below regulatory thresholds. Beginning in 2021, both lagoons were filled with clean imported soil and gravel to a minimum of 6 feet above the biosolids surface and compacted. An environmental covenant was filed with Franklin County on September 26, 2022 under recording number 1966700. The covenant restricts the site to industrial land use and activities that would compromise the soil cap, and details instructions for operation and maintenance of the engineered controls.

In January 2023, Ecology issued a Further Action opinion requesting additional characterization of the biosolids, soil, and groundwater. In November 2023, Blue Mountain Environmental completed eight direct-push soil borings (SB1-SB3 in the north lagoon and SB4-SB8 in the south lagoon) and installed three monitoring wells (MW1-MW3) around the two lagoons. Five biosolids samples and eight soil samples were collected from the borings at depths ranging from 13.5-22.5 feet bgs. Depth to groundwater ranged from 9 to 11 feet bgs.

The biosolids samples were analyzed for total petroleum hydrocarbons (TPH), volatile

organic compounds (VOCs), and polyfluoroalkyl substances (PFAS), while the soil samples were analyzed for TPH, VOCs, dioxins and furans, PDBEs, and RCRA 8 metals. Groundwater samples were analyzed for TPH, VOCs, PFAS, and metals. Results indicated that dioxins and furans and PDBEs in soil exceeded the Method B cleanup levels for the saturated zone. No other soil or biosolid analyses exceeded cleanup levels. For groundwater, samples collected from MW1 and MW2 exceeded Method A cleanup levels for arsenic and lead, and also exceeded the EPA MCL for PFOS and PFOA while not exceeding the MTCA Method B groundwater cleanup levels.

Source: BMEC, 2021-2024, Coho Environmental, 2021

Site Diagrams

Cleanup Site ID: 15433 **Facility/Site ID: 88749** **VCP Project ID: EA0362**	**FIGURE 1 – SITE VICINITY MAP**	**Port of Pasco** **Big Industrial Park Lagoons** **SE Road 36/East Ainsworth Avenue** **Pasco, Washington 99301**

Cleanup Site ID: 15433 Facility/Site ID: 88749 VCP Project ID: EA0362	**FIGURE 3** SOIL BORINGS AND MONITORING WELLS NOVEMBER 2023	Port of Pasco Big Industrial Park Lagoons SE Road 36/East Ainsworth Avenue Pasco, Washington 99301

Enclosure B

List of Site Documents

Blue Mountain Environmental and Consulting Co., Inc., Subsurface Investigation at Port of Pasco Big Industrial Park Lagoons, March 5, 2024.

Blue Mountain Environmental and Consulting Co., Inc., Scope of Work for Subsurface Investigation, Port of Pasco Big Industrial Park Lagoons, April 24, 2023.

Ecology, Environmental Covenant 1966700, September 26, 2022.

Blue Mountain Environmental and Consulting Co., Inc., CSID No. 15433, Big Pasco Industrial Park Lagoons Operation and Maintenance Plan, March 15, 2022.

Coho Environmental, Terrestrial Ecological Evaluation, Port of Pasco Big Industrial Center Lagoons, June 2021.

Blue Mountain Environmental and Consulting Co., Inc., Biosolids Sample Analysis Report, Big Pasco Industrial Center, February 2021.