



# Oregon

Tina Kotek, Governor

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Re: PDX Fuel Facility – Contaminated Media Management Plan  
Portland International Airport  
ECSI # 3324

The Oregon Department of Environmental Quality (DEQ) Cleanup Program reviewed the ***Contaminated Media Management Plan*** (CMMP) prepared by Burns & McDonnell on behalf of the PDX Fuel Company and dated June 27, 2024 (Revision Draft). The CMMP outlines proposed management of environmental media related to upcoming PDX Fuel Facility Improvements Phase II, notably including demolition of existing fuel farm facilities and construction of new facilities including new above-ground storage tanks (ASTs), secondary containment features, and a new operations building.

We have reviewed the document at the request of the Port of Portland, as part of ongoing DEQ oversight of environmental issues/activities completed under a long-standing voluntary agreement with the Port. Proposed work and environmental management are of particular relevance given historical fuel spills and detections of petroleum hydrocarbons in soil and groundwater at the fuel facility, and its proximity to the historical fire training areas and location within the related per- and polyfluoroalkyl substances (PFAS) groundwater plume.

Ongoing PFAS investigation at Portland International Airport (PDX) is being performed by the Port on a voluntary basis, as PFAS are not currently regulated as hazardous substances by DEQ. Rulemaking is underway to add perfluorooctane sulfonic acid (PFOS) and perfluorooctanoic acid (PFOA) to DEQ's list of regulated substances, expected to be completed in 2025. In the meantime, the US Environmental Protection Agency (EPA) regulates PFAS (PFOS and PFOA specifically) as hazardous substances and promulgated drinking water standards (maximum contaminant levels [MCLs]) for PFAS. EPA has also issued Regional Screening Levels (RSLs) for multiple media.

DEQ is providing the comments below, in both General and Specific categories, on content presented in the CMMP. An Errata section is also provided to specify typographical errors that should be corrected. We would be happy to discuss the comments at your convenience. Given

the nature of the work, comments will be shared with DEQ Water Quality (related to 1200C permit) and Portland Water Bureau (related to pile installation) personnel.

### **General Comments**

1. DEQ has reviewed the CMMP from the perspective of both regulated contaminants (notably, petroleum hydrocarbons and their associated constituents) and to-be-regulated contaminants (PFAS). Note that contaminant screening methods (e.g., sheen, odor) outlined are not sufficient for detecting or observing PFAS.
2. As noted in CMMP figures, the fuel facility expansion is planned for the area south of the existing facility in close proximity to the current and former fire training areas, where high concentrations of PFAS have been observed. The expansion area is located in an area where groundwater is known to be contaminated and soil contamination is likely.
3. Deep foundation piles are apparently necessary to meet seismic stability rules for the construction of three new jet fuel ASTs, with piles to be installed to 131 feet below ground surface (bgs) into the Columbia River Sand Aquifer (CRSA)—an aquifer of regional significance and in hydraulic connection with the Columbia River. Based on provided information, we cannot rule out the potential that construction activities will exacerbate the vertical extent of existing, significant contamination. See Specific Comments for Section 4.5. We also note that Table 2-1 specifies that pile installation is scheduled to begin in August 2024; in the absence of definitive information to confirm that exacerbation of existing contamination will not occur, DEQ may require additional testing of aquifers in the future.
4. We have several concerns regarding proposed soil and groundwater management procedures, as articulated in Sections 4 and 5 of the CMMP. See Specific Comments below.
5. DEQ recommends sampling of shallow groundwater wells within the footprint of the current and expanded fuel facility footprint prior to the start of pile work to document contaminant conditions prior to the start of work, similarly to what was done for the PDX terminal expansion project.
6. DEQ Cleanup issued a Conditional No Further Action determination for the fuel facility, Environmental Cleanup Site Information #5848, in 2020. DEQ's decision was based, in part, on completion of and future adherence to a CMMP prepared by Menzies Aviation and approved by DEQ. A copy of the 2020 CMMP is included with this letter. The 2024 CMMP must fully comply with this document unless otherwise approved by DEQ. Please add a section to the submittal discussing the requirements of the pre-existing CMMP, and how proposed new work will be met.

Further, and as documented in DEQ's 2020 decision-making, petroleum-contaminated soil (PCS) exceeding DEQ risk-based concentrations for construction workers remains: within the vicinity of existing AST #2 beneath the tank farm floor impermeable barrier, and at the former location of the slop tank LUST. This PCS could not be excavated

previously because of structural concerns for adjacent tank farm features. The Port should consider addressing this contamination when accessible during construction work.

### **Specific Comments**

Executive Summary. Petroleum hydrocarbons and PFAS are identified as contaminants of potential concern, the latter associated with the nearby fire training area where aqueous film-forming foam (AFFF) was historically used. Two comments:

1. Please discuss whether other contaminants (e.g., metals, polychlorinated biphenyls, or pesticides) are potentially present and/or have been detected by historical analytical measurements.
2. Bulk fuel facilities have been identified by EPA, the State of California, and others as users of PFAS, either for fire suppression/training or for fuel vapor suppression. Please discuss whether PFAS may be associated with the fuel facility, past or present. We recommend review of Materials Safety Data Sheets (MSDS) in completing this evaluation, with results to be shared with DEQ.

Section 1.0. Please include the cited 1200-CA Construction Stormwater Discharge Permit (2024) or provide separately. Regarding soil reuse (5<sup>th</sup> bullet of Section 1), please note that reuse of soil with known or suspected contaminants is generally not approved by DEQ. See additional comments for Sections 4 and 5 below.

Section 2.1. Please discuss whether demolition activities including those for Tanks Nos. 1, 2, and 3 will involve removal of fire suppression systems/equipment that either historically or currently contain AFFF or other PFAS-containing formulations. If so, please discuss how these materials will be disposed of. We further note that site grading is proposed to begin in February 2025, during the rainy season. If true, large volumes of stormwater (and shallow groundwater) may require management and disposal. .

Section 2.1.1. Installation of structural piles beginning in August 2024 is unlikely to provide sufficient time for DEQ review, consideration of comments, and potential changes to the CMMP. See General Comment #3 above.

Section 2.1.1.1. Regarding proposed screening levels (bulleted):

1. Reference to “Columbia Slough” screening levels needs clarification, and reference in Table 3 citation to “7” is unclear. Values in the Notes portion of Table 3 appear to be derived from DEQ RBC tables for human health and screening values for aquatic receptors rather than upland receptors. Please clarify.
2. For human health exposure, please consider EPA RSLs for soil and water in addition to MCLs.

Section 2.2.1. Expand discussion to include beneficial uses of aquifers potentially impacted by the project. The CRSA is a productive regional aquifer with beneficial uses including drinking water and recharge to the nearby Columbia River. The fine-grained Overbank Deposits (particularly their lowermost portion) are important because they inhibit the downward migration of shallow groundwater contaminants. Penetration of the Overbank Deposits and upper CRSA,

as proposed in pile installation, is a significant concern to DEQ and the Portland Water Bureau, which holds nearby water rights.

### Section 2.3.

1. Historical data indicate that petroleum impacts are fairly common in the current fuel facility area, and that residual, non-remediated non-aqueous phase liquid (NAPL) may be present in some areas. Given this and the likelihood of PFAS being present in soil and groundwater in the expansion area, it is prudent to consider environmental media as contaminated unless shown otherwise through sampling and analysis.
2. The CMMP should include a figure illustrating, and provide a discussion of, soil and groundwater PFAS concentrations in both the current and expanded fuel facility areas. Existing figures do not present soil results and groundwater results (isoconcentration contours in Apex Figure 5) are difficult to read. Also, Figure 5 contours are based on values that have been superseded by the EPA MCLs presented in Table 1 of the CMMP. PFAS discussion should be expanded in this section to, for example, reference PFAS concentrations in groundwater in relation to EPA MCLs. Based on data presented in the Apex figure, parts of the existing fuel facility appear to fall within the 700 ng/L (PFOS+PFOA) isoconcentration contour, and the expansion area within the 7,000 ng/L contour.
3. Please discuss any available sampling results for contaminants other than petroleum hydrocarbons and PFAS.

Section 3.3. As indicated above, we recommend baseline sampling of monitoring wells within the current and future facility footprint (and perhaps downgradient of the footprint), prior to initiation of work. Note that the Oregon Water Resources Department has direct oversight for installation and abandonment of monitoring wells in the state, while DEQ is consulted on active Cleanup projects such as PDX.

### Section 3.4.

1. See DEQ comments for Section 4 regarding management and disposal of known or suspected contaminated media.
2. Please identify the proposed recipient of material including gravel (from “old drives”) and demolition debris.

### Section 4.0

1. There are numerous references to potential actions using language like “may be” and “as needed” that are important for characterizing, managing, and disposing of media. This uncertainty is concerning. We recommend providing concrete management actions that shall be implemented.
2. DEQ generally does not approve “reuse” of soil and groundwater media if environmental contamination is present, particularly near or within the water table aquifer. Given the historical use of the fuel facility expansion area and its proximity to the fire training area,

DEQ is unlikely to approve the reuse of excavated soil in the CMMP without strong evidence that those soils are unimpacted.

3. DEQ is unlikely to approve of soils as “unimpacted” based on criteria presented in Section 4.1.1 (no visible staining, odor, and photoionization detector readings below 50 ppm) *given previous sampling results from the current and proposed future use areas* as PFAS contaminants would not be detected by the provided criteria.
4. Free product or other high-concentration (hot spot) contamination, to the extent encountered, should be removed and appropriately disposed. This includes petroleum NAPL that may accumulate in excavation areas that encounter the water table.
5. Measures proposed for stockpiling appear, on initial appraisal, inadequate. Stockpiling of saturated soil is not approved by DEQ, nor is mixing of unsaturated and saturated soil.

Section 4.2. Please consider whether PFAS were ever used at the fuel facility in considering appropriate management of solid waste including crushed concrete, asphalt, etc.

Section 4.2.1.

1. Environmental media with known or suspected contamination (including PFAS) should be characterized *in a sufficient manner to support appropriate management and disposal*. At this time, DEQ Cleanup recommends disposal of PFAS-impacted media at either a Subtitle C landfill or Subtitle D with a liner and leachate collection system.
2. In general, DEQ recommends multi-point composite or incremental sampling to support waste profiling (management and disposal).
3. Please consider pre-characterization sampling to determine appropriate management of soil. As noted elsewhere in this comment set, shallow groundwater should be assumed contaminated unless otherwise characterized.

Section 4.2.2. As described in Section 4.3.1, soils within the project area are presumed impacted by PFAS; as such, analytical testing should include PFAS.

Section 4.3. See comments above. Based on the likelihood of PFAS and petroleum being present, DEQ would not consider soil or groundwater to qualify as Clean Fill without confirmatory testing. Clean Fill Screening Levels for PFAS do not currently exist, and DEQ considers the detection of any level of PFAS to disqualify material for use as Clean Fill. Further, excavated soil should be replaced at the same depth as originated.

Section 4.4. Temporary berming appears to be a short-term measure but will not prevent contaminated groundwater (and potential NAPL) to infiltrate clean excavation backfill on a long-term basis. Its value is therefore not entirely clear. More explanation would be helpful. Other measures beyond temporary berming, such as pumping, should be available for use.

Section 4.5.

1. The following information is lacking in this critical section of the CMMP:
  - a. The number, location, spacing, and depth of piles, particularly in relation to existing shallow and deeper groundwater data (PFAS).

- b. Method of installation (more detailed), diameter of piles (indicated as 12.75" at Torque Down Pile website [Substructure Support, Inc.]<sup>1</sup>, and more definitive information on preventing cross-contamination. Ideally, piles would be installed using conductor casing or another drilling method in which the (known) zone of contamination is isolated as the pile is advanced.
2. As noted in our General Comments, DEQ recommends baseline groundwater sampling prior to the start of pile installation work.

#### Section 5.0.

1. DEQ recommends estimating the worst case (i.e., largest) dewatering volume that may be encountered based on excavation extents and depths in order to plan accordingly.
2. See previous DEQ comments regarding the location of work within the more highly-concentrated portion of the PFAS plume, which is of significance regarding groundwater management and disposal. For example, concentration and volume of contaminated groundwater should be considered in designing and installing a carbon filtration system.
3. There is mention of a DEQ Environmental Management Plan application to be submitted separately from the CMMP. The purpose of this document is unclear (Executive Summary indicates that CMMP *is* the Environmental Management Plan); please clarify.

Section 5.1.1. Wastewater characterization and “dispersal” plan as currently identified in this section are not approved by DEQ. Waters being “free of obvious sheen or odor” is not sufficient as PFAS can only be detected via analytical testing. Ground application is unlikely to be approved by DEQ Cleanup, and if so, would require analytical testing to confirm that wastewater is unimpacted and considerations to ensure existing contamination is not further mobilized by infiltrating water.

Section 5.2. Please provide to DEQ the Stormwater Pollution Prevention Plan appended or in addition to the CMMP. Given that site grading and construction are indicated as starting in Winter 2025, both higher groundwater levels and abundant stormwater would be expected during the construction period.

Figures. Show the location of the “Original and Former Fire Training Facilities” in relation to both the current and future fuel facility. Modify Apex Figure 3 or include a new figure illustrating both the current and expanded facility in relation isoconcentration contours.

#### **Errata**

1. Section 2.1.1.1, third bullet: “7”?
2. Section 4.4, second bullet: “Chapter” not identified.

After you have had an opportunity to review these comments, we recommend a discussion with DEQ and the Port of Portland to discuss next steps. Please contact me at (503) 229-5417 or [dan.hafley@deq.oregon.gov](mailto:dan.hafley@deq.oregon.gov) if you have questions in the meantime.

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<sup>1</sup> <http://www.substructuresupport.com/>

Respectfully,



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Att: 2020 Contaminated Media Management Plan

Ec: Sarah Van Glubt, DEQ Cleanup  
Brian Church, DEQ Cleanup  
Heidi Nelson, DEQ Cleanup  
DEQ Water Quality  
Blake Hamalainen, Port of Portland  
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Cc: ECSI# 3324 and 5848