



Portland General Electric
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October 18, 2024

Mr. Wesley Thomas, P.E.
Oregon Department of Environmental Quality
Northwest Region Portland Office
700 NE Multnomah St., Ste. 600
Portland, OR 97232

Re: RM 13.1 and 13.5 Inspection Reports and RM 13.1 Sediment Characterization Report.

Dear Wesley:

This letter provides response to DEQ's May 7, 2024 comments on the IMMP, RM 13.1 and 13.5 Reports, and the RM 13.1 2023 Sediment Characterization Report. Revisions have been made to the reports and are identified in the formal responses provided herein. DEQ comments are provided below in regular font, with corresponding PGE comments provided in italics.

IMMP Comments:

In addition to the review comments provided herein, DEQ requests that PGE amend the IMMP definition for a significant seismic event for the River Mile 13.5 and 13.1 sediment caps. The IMMP defines a significant seismic event as an earthquake greater than magnitude 6. As we communicated in our recent correspondence¹ related to cap monitoring at the Station L site (ECSI 0151), the methods for measuring or determining whether a magnitude 6 earthquake has occurred are not clearly established. DEQ requests that PGE adopt the following definition for a significant local seismic event: A 72-year earthquake (50% chance of exceedance in 50 years), which corresponds with a measured peak ground acceleration of 0.044 g recorded at National Strong Motion Project [NSMP] Station 2172². If desired, PGE may calculate a site-specific peak ground acceleration value representative of the 72-year earthquake (50% chance of exceedance in 50 years) with the U.S. Geological Survey (USGS) Unified Hazard Tool³ using the Dynamic Conterminous U.S. 2014 edition and site-specific subsurface data.

¹ DEQ. 2024. Letter to Jacob Neal (Portland General Electric Company). Regarding: 2021 Station L Cap Monitoring Report, ECSI# 151. April 18.

² NSMP Station 2172 (<https://earthquake.usgs.gov/monitoring/nsmp/stations.php>) is located at Portland State University Cramer Hall (1721 SW Broadway, Portland, Oregon 97201)

³ <https://earthquake.usgs.gov/hazards/interactive/>



PGE Response: The IMM⁴ will be updated to match the description above. This change will be noted the next (Year 10) submittals of the RM 13.1 and RM 13.5 Inspection Reports. The current inspection reports will not be updated.

River Mile 13.5 Year 7 Isolation Cap Inspection Report Comments

1) Evaluation of the Results. DEQ has the following comments:

a) This section discusses portions of the cap with a thickness less than the design minimum. The text indicates that “the majority” of these areas are “just” under the 2.63-foot minimum thickness, although one location has less than 2 feet of cap thickness. As shown on Figure 3, a portion of the isolation cap is approximately 0.5-foot thick (less than 20% of the design minimum). Please revise the text to provide a more quantitative description of areas with cap thicknesses less than the design minimum. We recommend a table that identifies the approximate area of cap with a thickness between the following ranges: 2.5-2.63 ft, 2-2.5 ft, 1.5-2 ft, 1-1.5 ft, 0.5-1 ft. In addition, please create a figure showing (or identify in an existing figure) the areas where cap thickness is less than the design minimum.

PGE Response: A table was inserted in the text with provides the square footage of areas below the design thickness, using the DEQ suggested thickness ranges. A new figure (Figure 9) shows each of these areas.

b) The last paragraph of this section states that even though the cap thickness is less than the design minimum of 2.63 ft, the isolation layer thickness was designed to be protective for a minimum of 100 years. The cap thickness in one area is less than 20% of the design minimum, suggesting that the performance life within that area could be significantly shorter than 100 years. DEQ requests additional lines of evidence to support the conclusions about protectiveness in areas that have experienced significant loss of cap material. These lines of evidence should include discussion of the contaminant of concern concentrations in the samples nearest the apparent erosion.

PGE Response: Additional discussion was added regarding the cap design thickness and the contaminant transport modeling results used in cap design, as well as a description of concentrations for risk driver COCs in samples near areas below the cap design thickness are discussed.

⁴ AECOM. 2018. River Mile 13.5 and 13.1 Cap Inspection, Monitoring, and Maintenance Plan. Prepared for Portland General Electric Company. June 22.



River Mile 13.1 Year 5 Isolation Cap Inspection Report Comments

1) Table 1, Post Construction Inspections and Appendix B. The river elevation at the Morrison Bridge Gage⁵ on August 9, 2023 at 12:50 pm is 2.95 feet, or 7.97 feet North American Vertical Datum of 1988 (NAVD 88).

PGE Response: The table and text have been updated to with those values. This will be updated in the RM 13.5 Year 7 Isolation Cap Inspection Report as well.

2) Year 5 Isolation Cap Inspection Activities, Visual Shoreline Monitoring, and Inspection. DEQ has the following comments:

a) As noted above, the water level at the time of the inspection was 7.97 feet NAVD 88, which is approximately 3 feet higher than the IMMP requirement.

PGE Response: The water level was updated to 7.97 feet NAVD 88. This will be updated in the RM 13.5 Year 7 Isolation Cap Inspection Report as well.

b) The last paragraph states that no damage to the cap from debris or human activity was observed during the visual inspection. DEQ clarifies that during the inspection, DEQ and PGE observed a small fire pit created within the armor stone in one location. Based on our observation, the fire pit did not pose a threat to cap integrity, but we request that the report note its presence.

PGE Response: This information was added to item #4 on the Inspection, Monitoring and Maintenance Plant (IMMP) Monitoring Observations page.

3) Evaluation of the Results, Physical Conditions. The last bullet of this section discusses cap areas where the isolation material includes carbon amendments. Since the portion of the cap with carbon amended sand has different thickness requirements compared to the CETCO mat (24

inches versus 12 inches, respectively), DEQ requests that the report discuss these two areas separately.

⁵ USGS Station 14211720 (<https://waterdata.usgs.gov/monitoring-location/14211720/>) is located at the Morrison Bridge.



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PGE Response: The carbon amended sand area and the CETCO mat area were broken into two different sections. The cap thickness figure showing both of these areas was also made into two separate figures.

4) Figures 5 and 6. DEQ has the following comments:

a) Please include a representative cross section parallel with the shoreline that follows the approximate boundary between the shoreline armor and cap body armor.

PGE Response: A new cross section E-E' was added for this area. It is labeled on Figures 5 and 6.

b) Please identify the location of Outfall 33.

PGE Response: The Outfall 33 location was added to both figures.

5) Figure 12. DEQ recommends adding a note to the figure that areas within the “emergency fill area” consist of between 2 and 16 feet of clean sand overlain by the cap, and the additional clean sand is not included in the cap thickness analysis.

PGE Response: A note with that information was added to this figure, which is now Figure 13.

6) Figure 13. Please revise the callout to clarify that the lowest cap thickness is 0.4 foot, and not 0.04 foot or 0 foot.

PGE Response: The elevation labels, now on Figures 14 and 15, have been corrected. The text has been updated to discuss inaccuracies in the baseline elevation survey data and how that is impacting cap thickness measurements.

River Mile 13.1 IMMP 2023 Surface Sediment Characterization Field Report Comments

1) General. DEQ has the following general comments regarding the surface weighted average concentration (SWAC) calculation methodology:

a) Please list the areas assigned to each of the four characterization areas (S-100 through S-400).



PGE Response: The square footage of each characterization area, including polygons from historical sampling, are provided in a new Table 5.

b) Please clarify if/how the 2010 historical Thiessen polygons were used to calculate the 2023 SWACs. If the historical polygons were not used to calculate the 2023 SWACs, please remove them from Figures 2a through 2f.

PGE Response: The historical polygons are used in the 2023 SWAC calculations, for coverage in areas not covered by the cap or the four new characterization areas (S-100 through S-400). The historical polygon areas were updated on Figures 2a through 2f to only show the extent of the polygons that were used in the SWAC calculations.

c) Please include backup worksheets for the SWAC calculations in an Appendix.

PGE Response: A new Table 5 was added that provides the backup calculations for the 2023 SWACs.

2) Table 3, Sediment Sample Results Compared to Screening Criteria and Reference Values. Clarify whether the SS-100 and SS-500 samples (i.e., duplicates) were averaged before calculating the overall average concentration.

PGE Response: The calculation for the overall average concentration in Table 5 has been revised so that sample concentrations for S-100 and S-500 are averaged to obtain a single value representing S-100. Then the overall average concentration is calculated for S-100 through S-400. A new footnote was added to the table to document this. Previously, all five concentrations were used for the average. Using the new method, average concentrations declined for 69 of the 100 results, including for risk drivers lead, arsenic, Total PCBs, Total DDx, and Total PAHs. The average concentration for Total Dioxin/Furan TEQ-Mammalian increased slightly, but not above any criteria. Of the remaining 30 results that increased, only two PAHs (Benzo(k)fluoranthene and Dibenzo(a,h)anthracene) resulted in an additional criteria exceedance. SWAC results were not impacted, as the higher of the S-100 or S-500 concentration was used for those calculations.

This table was also replaced in the RM 13.1 Year 5 Isolation Cap Inspection Report.



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Please contact me with any questions or concerns regarding the modified reports or this response to DEQ comments letter at 503-863-6300.

Sincerely,

Jacob Neal

Senior Environmental Specialist

Portland General Electric.