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SUPERFUND &
EMERGENCY
MANAGEMENT DIVISION

MEMORANDUM

DATE: March 23, 2023

SUBJECT: Groundwater Pathway Source Control Evaluation Report
Crawford Street South Site, Portland, OR
ECSI #2363
December 16, 2022

FROM: Laura Hanna, RG LH
Remedial Project Manager

TO: Kevin Dana
Cleanup Project Manager
Oregon Department of Environmental Quality

Following are the U.S. Environmental Protection Agency's (EPA) comments on the document titled *Groundwater Pathway Source Control Evaluation*, Crawford Street South Site, dated December 16, 2022 and prepared by GeoEngineers on behalf of Crawford Street Corporation. The Crawford Street South Site (site) is located at 8524 North Crawford Street in Portland, Oregon and is listed as Oregon Department of Environmental Quality (DEQ) Environmental Cleanup Site Information (ECSI) No. 2363. The site is located adjacent to the Willamette River between river mile (RM) 5.5 and 6.0 east and is within the Portland Harbor Superfund Site (PHSS) Cathedral Park Project Area. The site has a source control program through a consent order with DEQ.

EPA understands the purpose of the source control evaluation (SCE) report is to summarize the results of the SCE related to identification, evaluation, and verify control of potential sources of groundwater contamination that may reach the Willamette River. EPA's review focuses on evaluating whether the information provided is sufficient to conclude whether sources of groundwater contamination to the project site have been addressed such that no additional characterization or source control measures are needed.

EPA comments are categorized as: "Primary," which identify concerns that must be resolved to achieve the assessment's objective; "To Be Considered," which, if addressed or resolved, would reduce uncertainty, improve confidence in the document's conclusions, and/or best support the assessment's objectives; and "Matters of Style," which substantially or adversely affect the presentation of the technical information provided in the SCE Report.

Primary Comments

1. The SCE report does not discuss the four seeps identified on the riverbank between MW-2 and MW-10 (Bridgewater Group, Inc, 2015). Seep sampling performed in 2007 showed elevated concentrations relative to the Record of Decision (ROD) Table 17 groundwater cleanup levels (CULs) (EPA 2017 and EPA 2020).

While infiltrated stormwater may contribute to the seep discharge, data for the seep sampling should be presented in the SCE for comparison to the Table 17 CULs for groundwater (EPA 2020)[1].

2. The report should evaluate whether four quarters of monitoring are sufficient to adequately characterize the variations in groundwater conditions identified in the SCE. Contrary to the statements regarding groundwater flow direction in Section 2.6.2 as being generally flat and towards the river, several of the groundwater elevation contour maps show groundwater flow reversals from the river towards the upland. Additional data analysis and data collection are needed to support the conclusions of the SCE. Depending on the time of year that groundwater samples are collected, potential river inflow and/or groundwater mounding from stormwater infiltration could result in higher or lower groundwater concentrations than would be expected for a typical upland to river groundwater flow framework. A source control decision with respect to fate and transport of contaminants in the groundwater pathway cannot be completed without a better understanding of the groundwater characteristics and hydraulic flow.

3. The report concludes that arsenic concentrations detected in groundwater above the PHSS CUL are consistent with regional background concentrations. There is no currently agreed upon set of background concentrations for metals in groundwater in the PHSS. Conclusions in the SCE report which are based on background metals concentrations should instead be compared directly to the ROD Table 17 CULs (EPA 2020).

To Be Considered

1. Exceedance Quotients (EQs) for chemicals of potential concern (COPCs) are not relevant to the CULs established in the ROD Table 17 for the purposes of providing evidence to support a source control decision. Results should be compared directly to the ROD CULs.

2. Section 2.5 Groundwater Monitoring, pages 5 and 6: Consider whether it is relevant to discuss monitoring wells located in or near areas of observed stormwater ponding; similar to what is presented for well MW-10 in the 2021 Interim Stormwater Source Control Measures Work Plan (GeoEngineers, 2021).

3. 3.5.1.1. Dioxin/Furan TEQ, TCDD. This section should be revised to present data and evaluations that follow rules per the Portland Harbor Data Management Plan (EPA 2021). The comparisons made are inappropriate to support the conclusions in this section. The evaluation of Dioxin/Furan TEQ presented is partially based upon tabulating values using non detected values as "zero" which is contrary to the general summation rules of the Portland Harbor Data Management Plan (EPA 2021).

4. The discussion of concentration "trends" for COPCs discussed in Section 4.1 is not valid. A data set consisting of four quarters of monitoring is insufficient to determine a meaningful trend in concentration, especially given the highly variable hydraulic flow regime as noted in Primary Comment #2 above. When sufficient data have been collected, statistical trend analysis (e.g., Mann-Kendall or similar) of the data should be performed using the EPA Groundwater Statistical Tool (EPA 2018) or equivalent to appropriately evaluate concentration trends at the site.

Matters of Style

1. Section 3.5.4 Concentration Trends, Dioxins/Furans: Suggest adding "not" to the following sentence as indicated: "Inspection of the plots does not indicate a correlation between the TEQ concentration and groundwater elevation (i.e., the TEQ does ***not*** increase when the groundwater is within the riverbank fill) supporting that the fill is not acting as an ongoing source of dioxin/furans to groundwater."

[1] ROD Table 17 was modified in an errata memorandum that can be found on EPA's website: https://semspub.epa.gov/work/10/100200076.pdf. The Errata #2 Table 17 supersedes the ROD Table 17.

References

Bridgewater Group, Inc, 2015. *Data Gap Analysis and Sampling and Analysis Plan, Source Control Evaluation, Crawford Street, Portland, Oregon*. October 29, 2015.

EPA. 2017. *Record of Decision Portland Harbor Superfund Site Portland, Oregon*. January.

EPA. 2018. *Groundwater Statistical Tool. OSWER 9283.1-46*. Washington, DC. Updated Version 2. September.

EPA. 2020. *Memorandum re: Errata #2 for Portland Harbor Superfund Site Record of Decision ROD Table 17*. To Portland Harbor file. Office of Environmental Cleanup, USEPA Region 10, Seattle, Washington. January 14.

GeoEngineers. 2021. *Interim Stormwater Source Control Measures Work Plan, Crawford Street South site – ECSI No. 2363*. December 2, 2021.