



# Oregon

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August 29, 2025

*via email delivery*

Samantha Hopman,  
Siltronic Corporation  
7200 NW Front Avenue  
Portland, Oregon 97210

Subject: *Siltronic Operable Unit Groundwater Source Control Evaluation Report*  
Siltronic Corporation  
Portland, Oregon  
ECSI No. 183

Dear Samantha Hopman:

The Oregon Department of Environmental Quality (DEQ) reviewed the February 2025 *Siltronic Operable Unit Groundwater Source Control Evaluation Report*<sup>1</sup> prepared by Maul Foster & Alongi, Inc. (MFA) on behalf of Siltronic Corporation (Siltronic). The Source Control Evaluation (SCE) Report was prepared pursuant to the 2023 Consent Order (DEQ No. LQVC-NWR-23-02) and evaluates groundwater migrating to the Willamette River from water-bearing zones beneath the Siltronic Operable Unit (SOU), excluding groundwater plumes originating offsite. The SOU encompasses the approximately 44-acre southern portion of the Siltronic property located at 7200 Northwest Front Avenue in Portland, Oregon.

DEQ requests Siltronic revise the SOU groundwater SCE report to more clearly evaluate whether direct discharges from the FWBZ and AWBZ represent a potential recontamination risk to the Willamette River. Please revise to address DEQ's comments on the SOU SCE and resubmit the revised report within 90 days.

## General Comments

- 1) The Siltronic OU SCE incorporates several lines of evidence, including the evaluation of in-river groundwater data. As was discussed in our August 2025 meeting DEQ is in general agreement with the conclusions presented in the report, but believes more analysis is needed to support the position that polycyclic aromatic hydrocarbons (PAHs) from the FWBZ are not a significant driver for in-river contamination. DEQ requests Siltronic revise the OU SCE to incorporate a conceptual site model (CSM) -based evaluation to discuss PAH source control, including, but not limited to, the following lines of evidence:
  - a) Groundwater pathway from the FWBZ to the river, including vertical migration, seasonality effects, and stratigraphy. Revised cross-sections (as noted below in general comment #4c) should be incorporated to bolster this discussion.

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<sup>1</sup> MFA. 2025. Siltronic Operable Unit Groundwater Source Control Evaluation Report, Siltronic Property, Portland, Oregon. February 12.

- b) PAH attenuation properties and attenuation potential between water bearing zones.
  - c) Permeability and conductivity of the FWBZ.
- 2) DEQ agrees that comparing in-river and upland data provide an important line of evidence for evaluating the source control status for the Siltronic OU; however, the comparison of in-river and upland data should be improved (notably for PAHs). The comparison of in-river and upland data presented in the Siltronic OU SCE is too general and simplistic to adequately support the Siltronic OU SCE conclusions. DEQ requests Siltronic revise the Siltronic OU SCE with a more robust and location-specific comparison of upland and in-river data. DEQ has the following recommendations:
- a) Identify relatively co-located subsurface sediment and in-water groundwater locations in areas where the FWBZ may discharge. Compare estimated theoretical dissolved PAH concentrations in subsurface sediment cores and measured in-water groundwater concentrations. To the extent possible, subsurface sediment and in-water groundwater data should represent the same depth intervals below the mudline. Dissolved PAH estimates should consider sample-specific total organic carbon concentrations and literature partitioning coefficients. The comparison of dissolved PAHs estimates and measured in-water groundwater concentrations should consider potential uncertainty. For example, dissolved PAH estimates calculated from partitioning kinetics would not include colloidal PAHs or PAHs bound to dissolved organic carbon and could be biased low. A range or literature partitioning coefficients may also contribute to uncertainty in estimates of dissolved PAH. By comparison, elevated turbidity in in-river groundwater samples may create a high bias.
  - b) Compare estimated dissolved PAH concentrations in subsurface sediment and in-river groundwater to upland groundwater in the nearest or most representative monitoring well. For example, estimated dissolved PAHs from sediment core 116, in-river groundwater from GW 221, and groundwater from NWN-10-26 and RP-07-30 could be compared.
  - c) Discuss the comparisons described above to assess the likelihood that upland groundwater is contributing to the in-river groundwater and sediment concentrations reported in the RM 7Wb PDI, or if sediment contamination co-located with the in-river groundwater samples are the likely source of measured in-river groundwater impacts.
- 3) DEQ recommends further discussion of upland groundwater data used to support the Siltronic OU SCE. For example, the Siltronic OU SCE Figure 6-2 presents maximum concentrations of benzo(a)pyrene. DEQ notes that benzo(a)pyrene measured in NWN-10-26 in November 2016 (shown on Figure 6-2) may not represent typical or current conditions. Benzo(a)pyrene measured in a duplicate sample collected in November 2016 was an order of magnitude lower, and benzo(a)pyrene measured in NWN-10-26 over the most recent four groundwater monitoring sampling events are two orders of magnitude lower than the sample result shown on Figure 6-2. While DEQ agrees that assessing maximum contaminant of concern (COC) concentrations in the Siltronic OU SCE is a conservative approach, we recommend also assessing the central tendency of current COC concentrations.
- 4) The Siltronic OU SCE presents hydrogeologic information that potentially conflicts with the *Revised Siltronic Operable Unit Remedial Investigation Report*<sup>2</sup> (Siltronic OU RI). Hydrogeologic cross sections along the shoreline presented in Figure 2-9 and 2-10 of the Siltronic OU RI show the WS-52-

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<sup>2</sup> Maul Foster & Alongi, Inc. 2024. Revised Siltronic Operable Unit Remedial Investigation Report, Siltronic Property, Portland, Oregon. October 25.

20 well screen either several feet above the base of the fill or situated on the surface of the fill. Appendix D of the Siltronic OU SCE shows the WS-52-20 extending below the base of the fill. The Siltronic OU SCE appears to consider groundwater elevations measured in WS-52-20 representative of the FWBZ (dry- and wet-weather FWBZ groundwater elevation maps [Figures 5-1 and 5-2] include groundwater elevations at WS-52-20), suggesting that Siltronic can feasibly collect samples from this well. DEQ has the following comments:

- a) Clarify whether analytical data are available for WS-52-20.
- b) To resolve uncertainty about groundwater quality within the FWBZ, the Siltronic OU SCE should incorporate available groundwater data from WS-9-34 and RP-11-30, located on the Gasco OU. As shown on Figures 5-1 and 5-2 of the Siltronic OU SCE, Fill WBZ groundwater north of WS-52-20 flows towards these monitoring wells before discharging to the Willamette River. Therefore, DEQ considers data from these monitoring wells sufficiently representative of FWBZ from the Siltronic OU near WS-52-20.
- c) Provide revised cross sections from the Siltronic OU RI clarifying the hydrogeology near WS-52-20.
- d) Estimate the lateral extent of the dewatered portion of the FWBZ during the dry-season based on 1) dry season groundwater elevations and 2) the estimated Upper Silt surface elevation.

### Specific Comments

- 1) **Section 2.2.2, Gasco.** The last paragraph states that NW Natural is conducting source control evaluations and measures for the Gasco OU, some of which physically overlap with the Siltronic OU. For clarification, NW Natural is completing a source control evaluation for Doane Creek. The Doane Creek source control evaluation will reference sample results collected from portions of Doane Creek located on the Siltronic OU. However, DEQ has not required NW Natural to implement any source control measure that overlaps with the Siltronic OU. Revise this paragraph to clarify what, if any, of NW Natural's source control work physically overlaps with the Siltronic OU.
- 2) **Section 2.3.1, NWN Segment 3 Riverbank, Doane Creek, and Riverbank Source Control Evaluation.** Revise the first paragraph to clarify the following:
  - a) The area designated as Segment 3 refers to an upland shoreline segment that includes portions of the Gasco OU and extends across the entire Siltronic OU. DEQ designated these shoreline segments to prioritize upland non-aqueous phase liquid (NAPL) and groundwater source control work. NW Natural is responsible for NAPL and groundwater source control work for the portion of Segment 3 located within the Gasco OU. Siltronic is responsible for NAPL and groundwater source control work for the portion of Segment 3 located within the Siltronic OU.
  - b) The draft *Gasco OU Segment 3 – Alluvium WBZs Source Control Evaluation*<sup>3</sup> (Segment 3 SCE) is not limited to sources and compounds potentially related to former manufactured gas plant (MGP) operations on the Siltronic property. The Segment 3 SCE addresses NAPL and groundwater sources potentially related to former MGP operations and other releases associated with the Siltronic facility within the portion of Segment 3 within the Gasco OU.

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<sup>3</sup> Anchor QEA. 2024. Gasco OU Segment 3 – Alluvium WBZs Source Control Evaluation, Gasco OU, ECSI No. 84. Prepared for NW Natural. August 13.

- 3) **Section 2.3.4, 2020 Revised Stormwater Source Control Evaluation.** As noted in this section, DEQ drafted a proposed source control decision based on our review of the 2020 Stormwater SCE Report which was shared with Siltronic and added to the administrative file. However, the drafted proposed source control decision has not been finalized or importantly, shared with the Portland Harbor Technical Coordination Team (TCT) and, thus, should not be considered a decision document. It does represent DEQ's current assessment of the stormwater pathway but in draft form. The summary in this section provides an accurate description of the source control measures and evaluations completed for the site but does not present the performance monitoring data in sufficient detail for it to be fully considered by the TCT in their review of this report. DEQ has provided this Report to the TCT for review, however, it should not be concluded that it represents a full review of the stormwater pathway by DEQ's TCT partners.
- 4) **Section 6, Source Control Evaluation.** Revise the first sentence to clarify that the purpose of the Siltronic OU SCE is to determine whether groundwater has the potential to 1) recontaminate Portland Harbor Superfund Site (PHSS) sediment at concentrations above remedial action levels (RALs) or principal threat waste (PTW) thresholds, and/or 2) impair long-term PHSS remedial action objective attainment.
- 5) **Section 6.1, Methodology.** DEQ has the following comments:
  - a) The first paragraph concludes that additional attenuation is expected between riverbank monitoring wells and the Willamette River such that concentrations are likely lower at the point of compliance. The assumption that groundwater attenuation will occur between the top of the riverbank and the point of discharge is only true if there are no additional sources of contamination within riverbank soils and sediments. Further, the Siltronic OU SCE does not present a fate and transport evaluation that would support the conclusion that COC concentrations likely attenuate to below Table 17 groundwater cleanup levels. Either delete the statement about likely attenuation between the top of riverbank and point of compliance or include additional evaluations to support it.
  - b) COCs should also be compared to PHSS Record of Decision Table 17 cleanup levels.
  - c) The Siltronic OU SCE incorporates a data screening process to remove data that are not representative of current conditions consistent with a data screening process presented in the draft *Deep Lower Alluvium WBZ Source Control Evaluation*<sup>4</sup> (DLA SCE). The DLA SCE supports its data screening approach with a CSM that low concentrations of COCs measured in the DLA WBZ are a result of contaminant drag down during well installation. Groundwater contamination at the Siltronic OU does not have a similar CSM. Rather, the Siltronic OU RI describes releases largely associated from placement of deleterious fill during site redevelopment, and generally stable groundwater concentrations. While DEQ believes that frequency of exceedances, recency of exceedances, and exceedance ratios are useful lines of evidence, we do not approve screening out groundwater data based on frequency of exceedances. Revise the Siltronic OU to include recent data with exceedance ratios greater than 1, even if exceedances occur in less than 20% of samples.
  - d) DEQ does not agree with the rationale for prioritizing remedial action objective (RAO) 8. Delete the line of evidence described in the first bullet of the 4<sup>th</sup> paragraph. COCs that do not exceed

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<sup>4</sup> Anchor QEA. 2023. Deep Lower Alluvium WBZ Source Control Evaluation, Prepared for NW Natural. November 2.

RAO 8 preliminary remediation goals but do exceed other relevant SLVs should be retained for further evaluation.

- e) DEQ does not approve considering stormwater samples collected from Outfall 002 and 004 as representative of ambient or background sources.

6) **Section 6.6, Organochlorine Pesticide DDx.** DEQ has the following comments:

- a) DEQ did not approve the groundwater fate and transport analysis presented in the Gasco OU Source Control Addendum because the analysis did not account for contamination between the top of riverbank and the point of discharge making the estimate of contaminant retardation unreliable. Revise this section to evaluate how the presence of existing contamination in soil and sediment would affect estimated contaminant retardation estimates (e.g., competition for sorption onto organic carbon).
- b) With respect to comparing upland DDx groundwater data to in-river data, DEQ recommends estimating theoretical porewater concentrations expected in equilibrium with DDx contamination in sediments then assessing the likelihood that DDx in groundwater constitutes a plume discharging to the river.

7) **Section 6.10, Outfall Preferential Pathway.** DEQ has the following comments:

- a) This section should more consistently and systematically discuss groundwater quality along the Doane Creek/Outfall 22C alignment and identify areas where groundwater elevations have the potential to overlap with Doane Creek or the Outfall 22C pipe. Where groundwater overlaps with Doane Creek or the Outfall 22C pipe, compare concentrations of groundwater COCs with COC concentrations measured at the Outfall 22C. DEQ notes that the discussion of DDx references the groundwater data in Table 6-5, but these data are excluded from discussions of other COCs (e.g., PAHs).
- b) This section relies heavily on a comparison between dry weather flow samples collected at the OF-22C outfall and North Doane Pond. However, the comparability of these data is not clear. The Siltronic OU SCE should discuss differences in the datasets (e.g., temporal changes, seasonal differences, data quality).
- c) DEQ notes that we anticipate a revised Doane Creek Source Control Evaluation that includes additional discussion of dry weather flow in the coming months. The revised Siltronic OU SCE should incorporate and discuss relevant conclusions from the Doane Creek Source Control Evaluation.

8) **Section 7, Findings and Conclusions.** This section concludes that any remedial action in the river is likely to also address any potential contributions from Siltronic OU groundwater. DEQ believes this conclusion is true only to the extent that the in-water remedy includes capping. The RM 7Wb project area *Draft Basis of Design Report*<sup>5</sup> proposes dredging sediments above RALs and PTW thresholds in the RM 7Wb project area adjacent to the Siltronic OU.

9) **Figures.** Revise the Siltronic SCE to include a plan view figure showing all monitoring wells, not just wells with data used in the Siltronic OU SCE.

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<sup>5</sup> WSP USA, Inc. 2024. Draft Basis of Design Report, Portland Harbor Superfund Site, RM7Wb Project Area. October.

10) **Figures 5-1 and 5-2, Dry and Wet Seasons Fill Water-Bearing Zone Groundwater Evaluations.**

Revise these figures to include groundwater elevations at RP-11-30.

11) **Figure 5-7, Groundwater Discharge Areas.** This figure would be improved by adding in-river seepage rate measurements provided in the RM 7Wb *Final Pre-Design Investigation Evaluation Report*<sup>6</sup>.

Separately, EPA has reviewed the SOU SCE report and provided comments. EPA's comments are enclosed and should be considered.

Please contact me at 971-269-7916 or by email at [Amber.Lutey@deq.oregon.gov](mailto:Amber.Lutey@deq.oregon.gov) if you have any questions.

Sincerely,



Amber Lutey, R.G.  
Project Manager  
Northwest Region Cleanup Section

Att: EPA Comments

Cc: Amanda Wozab, DEQ  
Wesley Thomas, DEQ  
David Lacey, DEQ  
Robert Melrose, Siltronic  
Myron Burr, Restoration Strategies  
Courtney Savoie, MFA  
Michael Murray, MFA  
Audrey Hackett, MFA  
Phil Wiescher, MFA  
Dana Domenighini, MFA  
Christian Sifford, MFA  
David Rabbino, Jordan Ramis  
Laura Hanna, EPA

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<sup>6</sup> WSP USA Inc. 2023. Final Pre-Design Investigation Evaluation Report, Portland Harbor Superfund Site, RM7Wb Project Area. December.




## REGION 10

SEATTLE, WA 98101

August 15, 2025

### **MEMORANDUM**

**SUBJECT:** Comments on the Siltronic Operable Unit Groundwater Source Control Evaluation  
Siltronic Property, Portland, Oregon  
ECSI # 183  
February 12, 2025

**FROM:** Laura Hanna, RG, Remedial Project Manager   
Superfund and Emergency Management Division, EPA

**TO:** Amber Lutey, RG, Project Manager  
NWR Cleanup, Oregon Department of Environmental Quality

The following are the U.S. Environmental Protection Agency's (EPA's) comments on the document titled Siltronic Operable Unit Groundwater Source Control Evaluation (SOU GW SCE). The SOU GW SCE was prepared by Maul Foster & Alongi, Inc. (MFA) for Siltronic Corporation (Siltronic). The SOU is an approximately 44-acre parcel at the southern end of Siltronic's approximately 80-acre property located at 7200 NW Front Avenue in Portland, Oregon and listed as Environmental Cleanup Site Information (ECSI) #ECSI 183. The SOU is located adjacent to the Willamette River upland of the River Mile 7 West remedial design project areas within the Portland Harbor Superfund Site (PHSS).

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

### **Primary Comments**

1. **Soil Leaching to Groundwater Pathway:** Per EPA Primary Comment 5 on the SOU Remedial Investigation (RI) Report (EPA 2024), include an evaluation of the soil leaching to groundwater pathway in the SCE.

2. **Section 4.2.2.6 Dioxins/Furans:** Per DEQ General Comment 3 on the SOU RI (DEQ 2024), dioxins/furans are most likely sourced from the dredge spoils that filled in the site. The text should be revised to reflect this, instead of noting that dioxins/furans are co-located with manufactured gas plant (MGP) residuals and Rhône Poulenc Agricultural Company plume contaminants of interest (COIs).
3. **Section 6.1 Methodology, pages 32-33:** Contaminants of Concern (COCs) should also be compared to PHSS Record of Decision (ROD) Table 17 cleanup levels (CULs). EPA notes screening levels for RAO 8 are significantly higher than the Table 17 CULs for some COCs.
4. **Section 6.4.1 PAHs, page 35-36:** EPA has the following comments on this section:
  - a. Per Primary Comment 3, revise this section to compare against ROD Table 17 CULs.
  - b. EPA doesn't believe the conclusions of this section are sufficiently supported. Accordingly, more lines of evidence that pull from the Site conceptual site model (CSM) need to be provided to support conclusions that PAHs are not from the sources present in the fill. Some examples of CSM evidence to pull from for the multiple lines of evidence evaluation approach include:
    - i. Fill groundwater hydrodynamics, including flow pathways, low hydraulic conductivity and limited saturation within the fill zone.
    - ii. A comparison of nearshore well PAH concentrations against upland wells screening the source areas and any evidence of PAH attenuation over the length and temporal pathway of the PAH plume both vertically and horizontally within deeper water bearing zones (Alluvium).
5. **Section 6.6 Organochlorine Pesticide DDx, AGWBZ, page 44:** EPA has the following comments on this section:
  - a. Revise or clarify if DDx or DDD was meant to be discussed in the temporal trend evaluations paragraph. Currently DDx is only discussed in that paragraph, despite the section noting earlier that only DDD would be evaluated. There is also a Mann-Kendall graph for DDD at RP-24-73.
  - b. Include a conclusion on whether source control measures are needed for DDx or its isomers in the AGWBZ.
6. **Section 6.8 Dioxins and Furans, page 46:** Per Primary Comment 2, dioxins/furans are most likely sourced from the dredge spoils that filled in the site. EPA disagrees with the Siltronic's conclusion that the TCDD TEQ in the FWBZ is unrelated to fill materials.
7. **Section 7 Findings and Conclusions, page 60:** EPA has the following comments on this section:



- a. The first bullet point should be removed as a line of evidence. EPA's interest is porewater COC concentrations and their impact on RAOs. The magnitude of the Willamette River flow is irrelevant.
- b. EPA believes a more comprehensive multiple lines of evidence approach is needed to support conclusions that some of the COIs are the result of ambient concentrations. See also EPA's comment on Section 6.4.1 (item b).
- c. EPA finds the final statement in this section unclear as the in-water remedy has yet to be settled on. If natural attenuation is being argued for, then that should be explicitly stated.

### **To Be Considered**

1. **4.2.3.1 TPH, page 24:** Considering the prevalence of total petroleum hydrocarbon (TPH) onsite, consider revising the text to identify the off-site source of the AGWBZ TPH.
2. **Appendix D:** Consider including a plan view figure of the cross-section.
3. **Appendix H:** Consider revising the figures to include a line or other indicator of the ROD Table 17 CUL values to help with reading of the graphs.

### **Matters of Style**

1. **Section 7 Findings and Conclusions, page 52:** EPA discourages the use of adjectives such as 'exceedingly low' as presented in the last bullet, especially when applied to CULs from the ROD which are based on a risk assessment.

### **References**

EPA. 2024. *Comments on the Siltronic Operable Unit Remedial Investigation Report*.

DEQ. 2024. *Siltronic Operable Unit Remedial Investigation Report*.

cc: David Lacey, DEQ  
Wes Thomas, DEQ  
Hunter Young, EPA  
Scott Coffey, CDM Smith  
Katie Young, CDM Smith