Oregon
Tina Kotek, Governor

Department of Environmental Quality
Northwest Region Portland Office
700 NE Multnomah St Ste 600
Portland, OR 97232-4100
(503) 229-5263
FAX (503) 229-6957
TTY 711

September 6, 2024

Via Electronic Mail

Noelle Wooten
Baker, Donelson, Bearman, Caldwell & Berkowitz, PC
101 South Tryon Street
Suite 3600
Charlotte, NC 28280
(nwooten@bakerdonelson.com)

Re: DEQ Comments on Draft Pre-Design Investigation Phase 1 Work Plan
Boise St. Helens/White Paper
Cleanup Program ID No. 0014

Dear Noelle Wooten:

The Department of Environmental Quality (DEQ) is preparing this letter to provide comment on the report entitled *Draft Pre-Design Investigation Phase 1 Work Plan* (PDI Work Plan) regarding the former Boise White Paper Mill property at 1300 Kaster Road in St. Helens, Oregon, which was prepared by AECOM on behalf of OfficeMax LLC (OfficeMax) on August 9, 2024. The PDI Work Plan proposes investigations to address data gaps in the Sediment and Riverbank Areas to define the footprint of the Sediment Management Areas (SMAs), refine the site-specific conceptual site model (CSM), and generally support remedial design (RD).

DEQ also reviewed two associated documents:

- Draft Phase 1 Field Sampling Plan, Pre-Design Investigation, dated August 9, 2024
- Draft Quality Assurance Project Plan, Pre-Design Investigation, dated August 9, 2024

The Field Sampling Plan (FSP) and Quality Assurance Project Plan (QAPP), although submitted under separate cover, comprise Appendix A and B, respectively of the PDI Work Plan. DEQ has the following comments on the PDI Work Plan:

General Comments

1) DEQ understands that additional riverbank soil sampling is likely to occur during the Phase 2 PID but notes the Phase 1 sampling of riverbank soil is limited to the top foot of soil. OfficeMax is encouraged to collect data concerning the vertical extent of contamination in riverbank soils (e.g., archived samples collected at one-foot intervals to a depth of 5 feet bgs) as part of the PDI Phase 1. In the event primary and/or secondary

COCs are detected at elevated concentrations, archived samples would be available for additional analysis to vertically bound the contamination in riverbank soils.

2) DEQ recommends that OfficeMax take advantage of available opportunities to collect information regarding the vertical extent of contamination in the Sediment Areas through advancement of sediment cores, especially in Sediment Area 2 where SMAs are likely to be concentrated. Information regarding subsurface sediment conditions will be important to evaluating chemical stability and recontamination potential in areas where RALs have been historically exceeded.

3) DEQ concurs with the proposed surface sediment sampling approach for Sediment Area 2, which includes the immediate analysis of 50 discrete sediment samples for comparison to RALs to define SMAs. For the following reasons, DEQ's preferred approach for Sediment Areas 1 and 3 would likewise involve analysis of discrete surface sediment samples:
    a. Discrete sediment data better support RD and post-remedy long-term performance monitoring.
    b. In accordance with the March 2023 ROD, hot spots do not define SMAs where active remediation will occur. However, screening of composite samples against RALs is inadequate to characterize the magnitude and extent of hot spots, which is important to ensuring that the worst hot spots are treated or removed and also to determining future sediment sampling locations for long-term performance monitoring.
    c. Analysis of discrete samples would provide an appropriate baseline of surface sediment conditions against which data collected as part of future long-term performance monitoring would be compared.

4) Notwithstanding General Comment 3, DEQ is agreeable to the proposed composite sampling scheme for Sediment Areas 1 and 3 with a modification. The composite sediment sample data for those Subareas should be screened against one-half the RALs for primary COCs, with concentrations equal to or exceeding this value triggering analysis of the discrete sediment samples. In accordance with the March 2023 ROD, active remediation areas will continue to be defined by RAL exceedances in surface sediment. See also Specific Comment 22c.

5) The March 2023 ROD defines "surface sediment" (see ROD Table 10) as 0 to 30 cm. The PDI Work Plan, FSP, and QAPP defines "surface sediment" as 0 to 10 cm. All references to surface sediment as 0 to 10 cm in these documents must be changed to 0 to 30 cm to be consistent with the March 2023 ROD.

6) DEQ notes that the PDI Work Plan uses the term "minor COCs" instead of "secondary COCs" as defined in Table 10 of the March 2023 ROD. Please change the terminology to be consistent with the ROD.

Specific Comments

1) **Section 1.1.2 Upstream ECSI Sites.** As a general clarification, while DEQ was agreeable in principle to the redrawing of the boundaries for Sediment Subareas SA-1E, SA-1D, SA-1C, and SA-1B due to overlap with former Pope and Talbot Area 2 Dock Priority Action Area (PAA), the appropriateness of those changes will be determined by the results of the PDI at the Pope and Talbot site. As a result, DEQ is not able to rule out the need for further assessment upstream of Subarea SA-1E in the future. Please revise this section to acknowledge these nuances.

2) **Section 1.2 Key Terminology, Contaminants of Concern, Cleanup Levels, Remedial Action Levels, and Remedial Action Objectives**. DEQ has the following comments.
    a. Remedial action levels (RALs) are not used to identify hot spots. As demonstrated by Figures 20 through 23 in the March 2023 ROD the risk-based concentrations based on bioaccumulation risk used to define hot spots for human health pathways are many orders of magnitude lower than the RALs. DEQ would agree that the RALs define the worst of hot spots in the Sediment Areas that should be prioritized for removal or treatment in accordance with the Hazardous Substance Remedial Action Rules. Please revise accordingly.
    b. The language describing Localized Erosion Areas (LEAs) as "…areas of potential erosion…" is confusing since they were identified based on clear indications of ongoing erosion during field inspections. Please revise the text to remove the ambiguous language.

3) **Section 1.4.1 Remedial Technology.** DEQ concurs that the Sediment Areas are, overall, depositional in nature. However, as shown in Figure 5, localized areas of scour are evident in the central portions of Subareas SA-1E, SA-1D, and SA-1C. In addition, an extensive area of near-shore scour occupies much of Subareas SA-2E, SA-2D and a portion of Subarea SA-2C in Sediment Area 2 upstream of the former wastewater outfall. Please revise the language in this section to note these areas.

4) **Section 1.4.2 Engineering and Institutional Controls.** DEQ has the following comments.
    a. DEQ notes the December 2020 Oregon Health Authority (OHA) advisory applies to *resident* fish, shellfish, and crayfish. Please revise accordingly.
    b. If determined to be necessary to protect the integrity of the remedy and acceptable by the City of St. Helens and Department of State Lands (DSL), institutional controls including speed limits for watercraft and prohibitions on anchoring/spudding within SMAs may be considered.

5) **Section 1.4.3 Performance Monitoring.** Why are benthic toxicity evaluations not proposed for year 15? Please clarify.

6) **Section 1.5.1 PDI General Objectives.** In addition to the stated goal of refining the SMA footprint, the list of objectives for PDI Phase 2 should include supporting physical and chemical stability evaluations as needed and CapSim modeling. Please revise.

7) **Section 1.5.1.1 SMA Objective.** DEQ has the following comments.
    a. DEQ does not agree with the proposal, at this time, to exclude the 2009 incremental sampling method (ISM) surface sediment samples and the 2014 Subarea composite surface sediment samples from the project dataset. The 2009 data in particular identified a hot spot of PCB contamination in one of three incremental samples collected from Sediment Area 2, which the 2014 investigation was not able to reproduce. Replacement would result in a loss of information regarding a possible super-enriched pocket of PCB contamination in Sediment Area 2. Please retain.
    b. Regarding the 2002 and 2005 discrete surface sediment samples, DEQ acknowledges that the data are quite old. However, replacement should be based on clear, established, and mutually agreeable criteria such as (for example) the historical detections in surface sediment are isolated, the samples with elevated concentrations are bounded by more recent "clean" sediment samples, and there are trends in bathymetry favoring deposition over time. Please revise to propose criteria for replacement of the historic discrete sediment data.

8) **Section 1.5.1.2 CSM Objective.** This section does not indicate how the estimated four discrete samples per Subarea identified for grain size analysis would be selected or what evaluations the data would support in RD. Please clarify.

9) **Section 1.5.1.3 RD Objective.** The list of data gaps to be addressed in Phase 2 to support RD does not include Trident probes to identify conductivity/temperature differentials indicative of groundwater discharge zones or seepage meters to determine specific discharge. The conclusions regarding source control presented in the March 2023 ROD and likelihood of recontamination of the remedy should be tested during the PDI. Please comment on the inclusion/omission of these items in the PDI Work Plan Phase 2.

10) **Section 2.1.2 Land Uses.** DEQ questions the statement that "There are no specific commercial or industrial uses of the Project area…". While DEQ understands that the Cascade Tissue Group suspended operations in 2023, the City of St. Helens intends to use the upland Mill site as a commercial/industrial business park in the future, which could include a future top of bank trail and result in increased pressure to access the Multnomah Channel (https://www.sthelensoregon.gov/waterfront/page/industrial-business-park). Please revise the language in this section to acknowledge this likely future use.

11) **Section 2.1.3 Navigational Requirements.** DEQ understands the federally authorized navigation channel that runs parallel to the Sediment Areas is not maintained and maintenance dredging has not occurred in at least 12 years. However, the current situation might not be consistent with the City's future plans for the upland Mill site and existing dock structure. OfficeMax should consult with the City of St. Helens regarding its development and future use plans.

12) **Section 2.2.1 Site Topography and Bathymetry.** The discussion provided in this section cites evidence for up to 2 feet of sediment deposition across much of Sediment

Areas 1 through 3 and patterns consistent with migrating bedforms riverward of the Sediment Areas. However, the discussion does not discuss the significant areas of apparent scour in the nearshore of the southern portion of Sediment Area 2 and in the central portions of the Subareas comprising Sediment Area 1. Please revise to provide more thorough description of the data summarized in Figure 5.

13) **Section 2.2.2 Presence of In-Water Structures and Debris.** DEQ has the following comments.
    a. Where pilings will be removed or cut at the mudline within the SMA footprint, please indicate if a sand cover will be placed following removal.
    b. For areas outside of SMAs (i.e., where MNR is the recommended remedial technology), OfficeMax should evaluate if there are obstructions/debris that would affect long-term sediment deposition. If such features are identified, please comment on whether OfficeMax plans to remove them.

14) **Section 2.2.4.2 Hydrogeology.** DEQ has the following comments.
    a. DEQ appreciates information regarding monitoring wells MW-1, MW-3, and MW-5 installed along the margins of the wastewater treatment lagoon. If OfficeMax has access to depth to water data and/or analytical data for these City of St. Helens wells (i.e., at least for MW-3 and MW-5), please include as an Attachment to the PDI Work Plan and discuss in this section as appropriate.
    b. Beyond seeps in the Riverbank Area, please discuss if there are any known or suspected zones of groundwater discharge to sediment or surface water in Sediment Areas 1 through 3.

15) **Section 2.3 Riverbank Erodibility.** Please comment on the basis for the proposal to limit riverbank soil sampling to a depth of 1-foot bgs. Does this depth relate to a maximum anticipated depth of erosion in erodible bank segments?

16) **Section 2.5.2 Receptors and Exposure Scenarios.** Please remove the language referencing "DEQ acknowledgement" that protection of mammals and birds is an important goal of the remedial action.

17) **Section 3.1 Subsurface Sediments.** In addition to data gaps identified in previous sections of the PDI Work Plan, locations where subsurface contamination is not vertically bounded should be identified for consideration as part of the PDI Phase 2 activities.

18) **Section 3.1.1 Sediment Area 3.** The apparent downward trend in PCB and dioxin/furan concentrations may be a result of the different sample collection methods. ISM samples from 2009 are more likely to characterize locations with higher concentrations than composite samples in 2014

19) **Section 3.1.2 Sediment Area 2.** The 2009 sediment samples are referred to as composite samples, but it is important to distinguish them as ISM samples. The reason that 2014 sediment sample concentrations are lower than those in 2009 could be because the ISM samples use more subsamples and sample mass to characterize the sediment areas and are

therefore better able to detect areas of higher concentrations. It may not be that concentrations in sediment have decreased. It is also important to note that the 2014 composites consisted of a limited number of biased subsample locations, resulting in large unsampled areas within the Sediment Area subareas that did not occur with the ISM samples. Please revise accordingly.

20) **Section 3.4 Groundwater.** DEQ has the following comments.
    a. DEQ acknowledges the March 2023 ROD included a preliminary determination that groundwater was unlikely to pose a recontamination risk to the Sediment Area. However, the existing groundwater data are limited and were collected 10 years ago. The PDI should include evaluation of groundwater to test the preliminary determination regarding adequacy of source control. In conjunction with the PDI Phase 2 activities, current groundwater conditions should be identified as a data gap and at a minimum, groundwater samples should be collected from the riverbank monitoring wells MW-9, MW-10 and MW-12.
    b. Please include analytical data for monitoring wells MW-1, MW-3 and MW-5 if provided to OfficeMax by the City of St. Helens.

21) **Section 4 Data Gaps and PDI Scope of Work.** DEQ has the following comments.
    a. Please add sampling of groundwater monitoring wells MW-9, MW-10 and MW-12 to the list of tasks for PDI Phase 2.
    b. Although OfficeMax acknowledges that groundwater discharge to Multnomah Channel sediments is a potentially viable exposure mechanism, DEQ notes that the list of general tasks listed for PDI Phase 2 in this section or listed more specifically in Section 4.2 does not include deployment of conductivity/temperature probes to identify groundwater discharge zones or seepage meters to measure specific discharge. Please provide discussion regarding whether such testing would be part of the PDI Phase 2 or explain their omission.

22) **Section 4.1.1.2 Proposed Scope.** DEQ has the following comments.
    a. While DEQ understands the PDI Phase 2 is anticipated to include cores for subsurface sediment sampling, OfficeMax is encouraged to take advantage of available opportunities to collect data regarding the vertical extent of contamination, especially in areas likely to be incorporated into SMAs. During the PDI Phase 1, OfficeMax should consider targeted sediment cores to fill data gaps in the vertical extent of contamination in Sediment Area 2.
    b. DEQ requests that at least for Sediment Areas 1 and 2, OfficeMax prepare a figure showing the proposed discrete sediment sampling samples overlain on the bathymetric changes between 2010 and 2024 as presented in Figure 5.
    c. Composite sampling can dilute concentrated pockets of contamination. Therefore, for Sediment Areas 1 and 3, DEQ requests that one-half of the RALs for primary COCs be used for screening against the composite sediment data to identify Subareas where the archived discrete samples will be analyzed. Any detected concentrations in a Subarea composite sample equal to or exceeding one-half the RAL would trigger analysis of the discrete samples collected from that Subarea

for primary COCs. See also General Comment 4. Comment also applies to Table 11.

d. What criteria will be used to determine which discrete sediment samples will be analyzed for grain size (approximately 40% of the dataset)? Please clarify.
e. Please provide additional discussion regarding how the discrete sediments samples identified for secondary COC analysis will be determined based on analysis of the PDI Phase 1 dataset. To further test the conclusion that secondary COCs are collocated with the primary COCs, DEQ's preference is that the 50 discrete surface sediment samples collected from Sediment Area 2 would be analyzed for secondary COCs. An alternative approach would be to analyze discrete sediment samples for Subareas from Sediment Area 2 where the detected concentrations of any secondary COCs in the composite samples are equal to or exceed 5X the CL.

23) **Section 4.1.2.2 Proposed Scope.** DEQ has the following comments.
a. Please provide discussion regarding the basis for limiting the depth of riverbank soil samples to the interval of 0 to 1 feet bgs. Delineation of contamination in riverbank soils (i.e., if found), especially in bank segments determined to be erodible, should be completed both laterally and vertically. DEQ recommends collecting and archiving one-foot soil samples to at least a depth of 5 feet bgs or planning to collect vertical delineation samples during the PDI Phase 2. See also General Comment 1.
b. How were the riverbank soils samples identified for grain size analysis (i.e.,70% of samples) determined? Please clarify.
c. While acknowledging that the final riverbank soil sample locations will be necessarily dependent on site-specific factors (e.g., access and safety), DEQ encourages OfficeMax to collect the samples as systematically as possible to avoid additional biases that could complicate future interpretation of the results.

24) **Section 5 Project Schedule and Deliverables.** In planning the PDI Phase 2 activities, DEQ respectfully requests that OfficeMax prepare a schedule that accommodates reasonable review periods (i.e., at least 8 weeks) for the PDI Phase 2 scoping document and PDI Work Plan Phase 2.

25) **Figures 14 through 16 Total PCBs, Total D/F TEQ for Mammals and Total D/F TEQ for Fish in Subsurface Sediment.** DEQ has the following comments.
a. Inspection of these figures shows that the existing subsurface sediment data is inconsistent in vertical distribution. A significant number of cores have data from only the bottom intervals, leaving a gap in sediment data coverage between the surface sediment samples and the bottom of core sediment samples. Furthermore, the maximum sampling depth in the cores is variable, ranging from as shallow as 2 to 3 feet bss to as deep as 11 to 13 feet bss. DEQ encourages OfficeMax to consider this information, in conjunction with analytical data for the discrete surface sediment samples, to inform the location of sediment cores during the PDI Phase 2.
b. Please clarify if the depths shown in the core symbols represent original collection depth or corrected collection depth.

26) **Figures 17A through 17C Proposed PDI Phase 1 Discrete Surface Sediment Sample Locations.** DEQ has the following comments.
    a. Please superimpose the grid defining the proposed locations of the discrete surface sediment samples on these figures. Please also show the locations of previous discrete and composite subsample locations for comparison.
    b. DEQ appreciates the efforts of OfficeMax to reduce bias in the sampling approach and target more near-shore locations for the PDI Phase 1. However, in Subareas SA-1E, SA-1A, SA-3C and SA-3A, DEQ notes areas with apparent low data density along the eastern (riverward) boundaries of these subareas. Please check the grid spacing is accurate to ensure sufficient coverage in these subareas.

Field Sampling Plan, Appendix A General Comment

27) DEQ notes that the first 25 pages of the FSP consists of a duplicate copy of the FSP text followed by flysheets for figures, tables and appendices (i.e., containing no content). Following this, the full FSP and all associated attachments are presented. Please remove the duplicate pages from the FSP.

Field Sampling Plan, Appendix A Specific Comments

28) **Section 2.1.1 Discrete Surface Sediment Samples.** Discrete surface sediment samples are proposed to be collected from the interval of 0 to 10 cm, which is not consistent with Table 10 in the March 2023 ROD, which defines surface sediment as being the interval from 0 to 30 cm. DEQ's expectation is that the surface sediment grab samples will be obtained from 0 to 30 cm in accordance with the ROD. Comment also applies to Tables A-2 and A-4. See also General Comment 5.

29) **Section 2.1.2 Composite Surface Sediment Samples**. DEQ has the following comments.
    a. In addition to equal mass goals for the discrete archived samples, each of the 10 subsamples that contribute to the subarea composite should be homogenized separately and all be of equal mass.
    b. The target mass of each of the 10 discrete subsamples and total composite mass should be identified in the sampling plan and remain consistent across subareas. For example, the target mass of each of the subarea composites should be at least 1000 grams. In this case the target mass for each subsample would be 100 grams each for the 10 discrete subsamples at 0-30 cm depth, resulting in a total mass of 1000 grams per subarea.
    c. The laboratory processing of the 1000 grams of sediment from each subarea should be consistent with incremental methods to obtain representative aliquots for chemical analysis. These methods should be presented in the work plan and may include subsampling of a slab cake consistent with DEQ and ITRC guidance.
    d. A field duplicate composite sample should be collected for one Subarea by creating an additional offset systematic grid containing 10 discrete subsamples. The Subarea selected for the field duplicate should have the potential for

significant variability (e.g., Subarea SA-1E). This should be added to Section 2.1.2 and Section 2.4.1.1 of the QAPP.

30) **Section 2.1.3 Chemical and Physical Testing.** DEQ has the following comments.
   a. While acknowledging that SMAs will be defined based on comparison to RALs in accordance with the ROD, DEQ requests that Subareas be selected for analysis of the archived discrete sediment samples based on screening against one-half the RALs for primary COCs. Any detected concentrations of primary COCs in a Subarea composite sample equal to or exceeding one-half the RAL would trigger analysis of the discrete samples collected from that Subarea for primary COCs. Comment also applies to Table A-2. See General Comment 4 and Specific Comment 22c.
   b. It is not clear from this section how the discrete sediment samples identified for secondary COC analyses would be determined. Please clarify. DEQ's preference is that the discrete sediment samples collected from Sediment Area 2 (or a subset thereof based on screening the Subarea composite data against trigger values equivalent to or greater than 5X the CLs) would also be analyzed for secondary COCs. See also see Specific Comment 22e.
   c. Please clarify how the discrete sediment samples identified for grain size analysis (40%) would be selected. Please also comment on whether the discrete sediment samples will be analyzed for TOC and ammonia/sulfides to evaluate potential impacts from buried wood waste.

31) **Section 2.2.2 Chemical and Physical Testing.** DEQ has the following comments.
   a. Please provide additional discussion regarding the basis for the decisions to analyze up to 70% of the discrete soil samples, and up to 40% of the discrete sediment samples, for grain size. How were these percentages determined?
   b. How were the discrete soil samples identified for grain size analysis listed in Table A-8 determined? Please clarify.

32) **Section 3.1.3.1 Power Grab.** In accordance with Table 10 of the March 2023 ROD, the project-specific penetration goal should be 30 cm. Comment also applies to Sections 3.1.3.2, 3.1.3.3, and 3.1.4 and Tables A-2 and A-4.

33) **Procedure 3-52 Sediment Petroleum Sheen Evaluation, Attachment A-1.**
   a. The framework presented in Table 1 seems biased toward only identifying a moderate to heavy sheen or fresh petroleum. Slight petroleum sheens should not be discounted, especially considering that sediments are likely to be weathered. Based on the % coverage criteria in Section 6.1.2.3, slight petroleum sheens should be further analyzed using the Oil-in-Soil™ method and subsequent test method as appropriate.
   b. Slightly positive results using the Oil-in-Soil ™ method should be further analyzed using the UV Screening method.
   c. In summary, slight observations of petroleum sheen coupled with a slightly positive result in either of the follow-up tests should be considered a positive indication of petroleum sheen in sediment.

Draft Quality Assurance Project Plan, Appendix B – Specific Comments

34) **Table B-3 PDI Phase 1 Data Quality Objectives**. Surface sediment should be defined as 0-30 cm consistent with the March 2023 ROD.

35) **Table B-4 Laboratory Quality Control Criteria for Sediment Samples Table B-5 Laboratory Quality Control Criteria for Riverbank Soil Samples**. Please express the units for dioxin/furan and PCB congeners in nanograms per kilogram (ng/kg) consistent with the convention for units established in Table 10 of the March 2023 ROD.

36) **Table B-6 Laboratory Quality Control Criteria for Water Samples**. Due to the fact that the PDI Phase 1 does not include collection of water samples, DEQ did not perform a detailed review of Table B-6. However, a preliminary review indicates some changes to the PALs or PAL references may be appropriate. Please resubmit Table B-6 as part of documents related to the future PDI Work Plan Phase 2.

DEQ appreciates OfficeMax's submittal of this PDI Work Plan Phase 1 and associated documents related to collection of information needed to define SMAs and otherwise support RD for the Sediment Area cleanup. DEQ understands OfficeMax desires to initiate data collection in October 2024. Please prepare a Response to Comment and revise the PDI Work Plan Phase 1 in accordance with the provided comments. Please also provide a red-line strike-out version of the revised PDI Work Plan Phase 1 to facilitate DEQ's review. Please contact me at 503-863-0810 or by email at jeff.schatz@deq.oregon.gov if you have questions or wish to discuss these comments further.

Sincerely,

Jeff K. Schatz, R.G.
Project Manager and Hydrogeologist
Northwest Region Cleanup Program

cc: Erin McDonnell, DEQ (erin.k.mcdonnell@deq.oregon.gov)
Nicky Moody, AECOM (nicky.moody@aecom.com)
Kevin Parrett, DEQ (kevin.parrett@deq.oregon.gov)
Jennifer Peterson, DEQ (jenn.l.peterson@deq.oregon.gov)
Mike Poulsen, DEQ (mike.poulsen@deq.oregon.gov)
Katie Daugherty, DEQ (katie.daugherty@deq.oregon.gov)

(jks:JKS)