STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
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July 13, 2018

Allan Gebhard
Barr Engineering Company
4300 MarketPointe Drive, Suite 200
Minneapolis, MN 55435

RE: Comments on Second Draft Remedial Investigation Work Plan, Sampling and Analysis Plan and Quality Assurance Project Plan for Boise Cascade Mill Site

- Site Name: Boise Cascade Mill
- Site Address: 805 North 7th Street, Yakima, WA 98901
- Facility/Site ID No.: 450
- Cleanup Site ID No.: 12095

Dear Mr. Gebhard:

The Department of Ecology has reviewed the Second Drafts of the Remedial Investigation (RI) Work Plan, Sampling and Analysis Plan (SAP) and Quality Assurance Project Plan (QAPP) for the Yakima Mill Site dated December 2017.

Ecology has shared many of its concerns during telephone calls to discuss some of the details of these documents in April, June, and July. However, Mary Monahan, the Ecology Project Coordinator personally apologizes for the exceedingly long period of time it has taken to review the documents. Moving forward, the timelines laid out in the Agreed Order will be adhered to.

Remedial Investigation Work Plan

Section 2.1.5 Surface Water

Ecology's original comment (dated July 17, 2017) on this section asked:
"*Since the Yakima River seems to be both gaining and losing in the stretch adjacent to the Yakima Mill Site, what does this mean for the groundwater movement in relation to the river flow? Ecology expects a more thorough discussion and analysis.*"

RESPONSE: Whether the Yakima River is gaining or losing in the reach adjacent to the Site will not significantly affect groundwater movement across the Site...

Ecology's original comment stands and needs to be addressed. Please review the Landau 2015 Agency Review Supplemental Remedial Investigation Report Closed City of Yakima Landfill, Figure 17. This figure clearly depicts groundwater from the Boise Cascade Mill Site discharging to the Yakima River. It is important to understand the gaining and losing reaches and the groundwater discharge to the Yakima River in order to characterize any contaminant discharge to this fish-bearing surface water body. The Remedial Investigation of this Site would be incomplete without investigation of this potential contaminant pathway and future point of compliance for groundwater. The relationship between groundwater and surface water at the Site must be evaluated more thoroughly for the remedial investigation to be useful.

Ecology expects the next draft to provide a thorough discussion and analysis.

4.1 Physical Setting, Geology and Hydrogeology

Please note that the Site is west of and adjacent to the Yakima River and that the relationship between the groundwater and surface water will need to be evaluated during the remedial investigation process.

Ecology expects the next draft to discuss the relationship between surface water and groundwater.

Preliminary Conceptual Site Model

The preliminary conceptual site model (CSM) is not meant to be a reiteration of past environmental studies or comparison of data previously found in site investigations, but a concise document illustrating sources of contamination and contaminants of potential concern, sensitive receptors (current and future, human and ecological), and migration pathways and exposure routes based on site geology and fate and transport. Features such as groundwater to surface water pathways should be noted as complete migration pathways, and all of the possible exposure routes for this pathway should be included. This entire section should be rewritten.

Ecology has listed a few pathways below. Please ensure the next draft includes an appropriate simple figure illustrating the conceptual site model.

Soil-Direct contact,—Complete pathway
Groundwater-ingestion, direct contact—Complete pathway
Groundwater-surface water—Complete pathway
Soil-groundwater—complete pathway
Soil Vapor-receptor—complete pathway
TEE-potential exists for need for TEE CULs

Please ensure the next draft includes an appropriate simple figure illustrating the conceptual site model.

5.0 Data Gap Analysis

At this point, there is not enough justification to remove the Machine Shop Pit. Please ensure the next draft includes this feature.

AREAS OF CONCERN-Text in Workplan and Table 1

There is a general lack of consistency between text in the workplan and text in Table 1. For example, the workplan may refer to two figures, while Table 1 may only refer to one figure for the same Area of Concern (AOC). In addition, the column labeled COCs tries to be inclusive by naming all COCs in the leading box and designating abbreviations for future 'shorthand' use, but again, lacks consistency with the text. Reconsider what Table 1 is being used for, as it is somewhat redundant yet inconsistent with the workplan text. In addition, it doesn't consider much of the vertical portion of the sampling rationale and design. The MTCA soil direct contact point of compliance is 15 feet below ground surface, while the soil protection of groundwater point of compliance is throughout the soil column to groundwater. There are a number of AOCs where vertical sampling is only planned to be conducted to a few feet below ground surface, with no mention of soil point of compliance or Phase 2 investigation. Additionally, some but not all of the lab methods are mentioned, and there are no footnotes describing why this is so.

Please ensure the next draft shows clear consistency between documents and tables.

6.3.2 Soil Investigation Activities

This section states that soils will be screened for odor, sheen and other visible signs of contamination, but doesn't address how soils will be screened for contaminants that do not readily exhibit field effects.

Please ensure the next draft includes an updated section to clearly state the intervals that will be sampled for every area that metals and herbicide/pesticides are planned to be sampled BEFORE heading out to the field-this should be clearly spelled out in the RI workplan and the SAP. If adjustments are needed, they can be recorded in the field notes. In addition, the SAP refers to an SOP for soil screening that does not take into account soils with COCs that do not readily field screen, such as metals, pesticides/herbicides.

It's not appropriate to select sites 'at random' (AOC 6), you must describe how the sites will be determined other than just "chosen when mobilized in the field".

The next draft must articulate appropriate sampling protocols.

General lack of agreement between documents

Example 1: The workplan states that test pit samples will be collected from either the pit or the excavator bucket, while the SAP states that all test pit samples will be collected from the excavator buckets. Which is correct? Please revise according.

Example 2: The attached Standard Operating Procedure (SOP) for development of wells states that samples will not be collected from wells for at least seven days after development, yet the SAP states that samples will not be collected for at least 48 hours after development. Which is correct? Please revise accordingly.

Example 3: Stabilization Criteria tables between Barr's SOPs disagree with one another, and also disagree with the one written in the SAP. To avoid any confusion for your sampling crew and the data reviewers, please choose ONE group of stabilization criteria for groundwater and use throughout the project. Please ensure the next draft has one group of stabilization criteria.

Example 4: When discussing AOCs in the different documents and Table 1 in the Workplan and SAP, each discussion says something slightly different. Please reconcile and be consistent when discussing AOCs. There is no order of hierarchy for these documents; they must be consistent to avoid confusion by the user.

There are many more inconsistencies like the preceding four examples, such as different kinds of boring log forms, different kinds of test pit forms, multiple types of chain of custody forms, lack of mention of silica gel cleanup use for soil samples in the Workplan but not in the SAP, to mention a few. These types of inconsistencies can make this document very hard to use in the field and at the office, as there are so many contradictions.

Ecology expects the next set of draft documents to have matching procedures, forms, and protocols.

Sampling and Analysis Plan

2.2 sampling design

The next draft should include the rationale for field screening fill soil, as fill soil can contain metals and pesticides/herbicides that are not readily field screened. The next draft should also include a plan for fixed interval sampling at areas requiring sampling for these COCs. The next draft should provide a purpose and more clarity for Table 1. In addition, all of these descriptions include the addition of silica gel cleanup for petroleum sampling; this detail was omitted in the Workplan and must be reconciled.

AOC7

Please add sampling of the settled solids in the Recycle Pond, as they will have to be removed or remediated if found to be impacted.

AOC 25

Please include a discussion of how geochemical parameters will be measured. Ecology recommends that geochemical parameters be measured by laboratory methods.

Quality Assurance Project Plan

The Measurement Quality Objective (MQO) for pH doesn't agree with the stated groundwater stabilization parameters. Please reconcile.

Metals (aqueous) says nothing about temperature, contradicts all other holding times/preservation tables in the SAP and Workplan; another lack of consistency. Please correct

Holding time and preservation table for the DRO is different in the QAPP than in the SAP and RI; please reconcile.

Hold times in different data evaluation SOPs conflict with one another. Please review all documents carefully for consistency and reconcile accordingly

There are extra documents included in the QAPP appendices, including Wisconsin State analytical protocols for water and soils. Please refine and remove any documents that are not specific to this project.

Please discuss the timeline for disposal of contaminated materials generated by the remedial investigation.

The SOP documents that Barr has provided do not agree with one another, in particular when it comes to groundwater stabilization criteria. Please choose ONE set of stabilization criteria for the entire project to avoid confusion.

In general, Ecology found these documents to be redundant, yet inconsistent. The RI Workplan, SAP and QAPP are intended to make the entire project more straightforward and easier to understand. The vast number of inconsistencies within and between these documents made it difficult and confusing to review. Please ensure the next drafts of the documents have more clarity.

Please know that Ecology is prepared to create and finalize these documents if comments are not addressed appropriately. *(See Section VII (Subsection I). Work to be Performed in Agreed Order No. DE 13959).*

Thank you for your continued commitment to cleaning up this site.

Regards,

Mary Monahan
Project Coordinator
Department of Ecology