



MEMORANDUM


Project No.: 180357

March 6, 2019

To: Dale Myers, Washington Department of Ecology

cc: Doug Steding, Northwest Resource Law
Russ Shropshire, Leidos
Jon-Erik Magnus, Rogers Joseph O'Donnell

From:


William Goodhue, LHG
Principal Hydrogeologist
cgoodhue@aspectconsulting.com


Andrew Yonkofski
Project Scientist
ayonkofski@aspectconsulting.com

Re: Submittal of Final Remedial Investigation Work Plan and Responses to Ecology's Draft Work Plan Comments and Recommendations
Texaco Strickland Cleanup Site - 6808 196th Street Southwest in Lynwood, WA
Ecology Agreed Order 14315

Aspect Consulting, LLC (Aspect) is pleased to submit the enclosed final Remedial Investigation Work Plan (RIWP) for the Texaco Strickland Cleanup Site (the Site), located at 6808 196th Street Southwest in Lynwood, Washington (the Subject Property). Submittal of this document satisfies the RIWP preparation requirement of Section VII.A of the Site Agreed Order 14315. Per our conversation on February 6th, Ecology established a final RIWP delivery deadline of March 8, 2019. This submittal complies with that deadline.

We have also prepared the responses below to Ecology's comments and recommendations on the Agency Review Draft RIWP. Ecology's comments were received by email on January 29, 2019. Comments and recommendations concerning the evaluation of comingling of releases, source(s) of benzene, and the use of silica-gel cleanup were provided in the body of Ecology's January 29, 2019 email. Suggested redlines to the Agency Review Draft RIWP were also provided by Ecology.

The following responses address Ecology's specific comments/recommendations and include notations as to how these comments/recommendations have been addressed in the final RIWP.

Ecology Comment #1 (from Ecology's 1/29/19 email): *"Evaluation of potential comingling of two separate on-property petroleum releases (as described in Ecology's 2014 Opinion Letter) should be identified as a data gap in the Work Plan, and directly addressed in the investigation report. The placement of wells and borings appears sufficient to address this data gap, but with some revisions to the analytical program:*

- *Sample analyses using Method NWTPH-Dx need to be performed without silica gel cleanup. The Work Plan does not clearly indicate if silica gel cleanup was intended.*



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- *The Work Plan and SAP/QAPP text need to clearly indicate that silica gel cleanup will not be performed.*
- *Tables E-1, E-3, and E-4 in the SAP/QAPP need to be modified to indicate that silica gel cleanup will not be performed.*
- *The Work Plan provides for up to three soil sample analyses at each boring which will be selected based on the field observations. **Ecology recommends** that this include analysis of shallow soil samples (in addition to at least one deeper sample) where oil-range petroleum impacts are observed to facilitate evaluation of comingling of on-property releases.”*

Response #1: The potential comingling of two separate on-property petroleum releases has been added as an identified data gap in Section 5 of the final RIWP. Specific language was added to the SAP/QAPP text and tables indicating that all NWTPH-Dx analyses will be performed without Silica Gel Cleanup. The text in Section E2.1 of the SAP/QAPP has been updated to indicate that shallow soil samples will be analyzed for TPH-O in areas where oil-range petroleum historically has been documented.

Ecology Comment #2 (from Ecology’s 1/29/19 email): *“Evaluation of potential comingling of on-property releases with releases from the adjoining dry cleaner’s, in particular regarding evaluation of the source(s) of benzene, should be identified as a data gap in the Work Plan. The placement of wells and borings also appears sufficient to address this data gap, but with some revisions to the analytical program and possibly additional sampling locations:*

- *Samples collected in the southwestern portion of the Site need to be analyzed for halogenated VOCs (HVOCs) in addition to the petroleum-related VOCs (BTEX, MTBE, EDB, EDC) identified in the Work Plan. This includes, but is not necessarily limited to, MW-14, MW-16, and MW-18 for soil and groundwater. Any location where field screening suggests the possible presence of solvent-related impacts also needs to include analysis of HVOCs.*
- *An additional monitoring well located along the southern property margin between the proposed MW-16 and MW-17 locations **is recommended** and would provide better characterization of potential off-property contaminant migration.*
- *Installation of additional down-gradient wells on the south-adjoining property (i.e., south of the proposed MW-18 and between previous borings B-01 and B-02), if possible, **is recommended** and would allow for better characterization of down-gradient contaminant migration and comingling of on-property and off-property releases [including potential source(s) of benzene].”*

Response #2: The potential comingling of Site petroleum releases and releases of chlorinated and potential petroleum-based solvents from Slater’s One Hour Cleaners has been added to Section 5 of the final RIWP. Language was added to both the final RIWP and SAP/QAPP indicating that soil and groundwater samples collected from the western portion of the property will be analyzed for HVOCs.

One additional proposed monitoring well, MW-19, has also been added between proposed monitoring wells MW-16 and MW-17 (see Figure 5). This additional well should assist in characterizing potential comingling between the Site petroleum releases and Slater’s One Hour

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Cleaners solvent releases. With the addition of proposed well MW-19, the planned coverage of soil borings and monitoring wells is expected to be sufficient to delineate the lateral extents of petroleum releases to soil and groundwater at the Site.

Ecology Comment #3: *“Address vertical extent of soil and groundwater impacts. If vertical extent is not a data gap, document this conclusion. Include cross sections as illustrations, if appropriate.”*

Response #3: Information regarding the current understanding of the vertical extent of impacts to soil and groundwater has been added to Section 4.1.1 of the final RIWP. While the vertical extents of soil contamination have been previously documented to extend to between approximately 17.5 feet bgs and 20 bgs, the targeted depth of explorations in the final RIWP was increased to 25 feet bgs to provide additional characterization.

Groundwater petroleum impacts have been confirmed to be present in an unconfined aquifer with nominal seasonal water level variation. For petroleum releases, these conditions are generally favorable to development of a shallow water table groundwater plume. Since appreciable vertical migration of contaminants in the Site aquifer is not a concern, the final RIWP does not include deeper aquifer assessment as a data gap.

Miscellaneous Comments and Responses (from the Ecology’s comments on the Agency Review Draft RIWP):

- *Insert Rose diagram from Figure 7A of 8-17-2011 CRA report onto Figures 3, 4, 5, and 6 to illustrate groundwater flow directions and relationship to proposed sampling locations.*
 - The Rose diagram from Figure 7A of CRA’s 2011 RI was added to the appropriate final RIWP Figures.
- *Show historical and proposed soil borings and monitoring wells on one figure, so relationships between soil and groundwater data can be visualized.*
 - Figures 5 and 6 (Proposed Soil Borings and Proposed Monitoring Wells) have been combined into one figure (Figure 5).
- *The SAP does not include a section describing monitoring well construction procedures, for either direct-push or hollow-stem auger drilling methods.*
 - Monitoring well construction procedures have been added as Section E2.2.1 of the SAP/QAPP.
- *Specify diameter of casing and screen. / Given seasonal submersion of the MW-8 well screen, 10-ft-long screens allowing for 1 ft of seasonal water-level fluctuation may be insufficient to assure that screens always straddle the water table and provide sufficient depth for collection of groundwater samples. Suggest using 15-ft-long screens.*

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- Casing and screen size are specified as 2" diameter. Screen lengths were adjusted to 15 feet in length in the final RIWP.

Recent Data of Potential Relevance to the RIWP - Environmental Associates October 24, 2018 Report on Chri-Mar Apartments Property

On February 19, 2019, Ecology forwarded Strickland and CEMC a copy of the report titled *Characterization of On-Site Contamination, Chri-Mar Apartments*, dated October 24, 2018 and prepared for FWAK, LLC. This report documented the results of soil and groundwater sampling completed in September 2018 on the Chri-Mar Apartments property. The report presented analytical data for chlorinated volatile organic compounds, but the laboratory unfortunately did not include quantification of petroleum-related volatile organic compounds.

By copy of this memorandum, Strickland and CEMC are requesting that Ecology contact FWAK, LLC and ask them to have ESN Northwest and Friedman and Bruya, Inc. release the September 2018 laboratory data. Aspect can then have the laboratories expand the soil and groundwater analytical reports to include results for petroleum-related volatile organic compounds. These data will be shared with Ecology and integrated into the current working conceptual Site model. Depending on the relevance of these new data to the scope of the final RIWP, Strickland and CEMC may elect to prepare an RIWP addendum for Ecology's approval.

Attachments

Attachment A - Final Remedial Investigation Work Plan for Texaco Strickland Cleanup Site - 6808
196th Street Southwest in Lynwood, WA
Ecology Agreed Order 14315

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