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August 3, 2018

Electronic Copy

Ms. Tasya Gray, LG
DOF Dalton, Olmsted & Fuglevand
10827 NE 68th St., Suite B
Kirkland, WA 98033

Re: Ecology comments on the *Data Gaps Work Plan, Response to Comments*, dated May 18, 2018, prepared by Dalton Olmsted Fuglevand (DOF).

- **Site Name:** Taylor Way and Alexander Avenue Fill Area (TWAAFA)
- **Site Address:** 1500 Block Taylor Way E, Tacoma, Washington,
- **Draft Agreed Order:** DE 14260
- **Facility/Site No.:** 1403183
- **Cleanup Site ID No.:** 4692

Dear Ms. Gray:

Thank you for submitting the above-referenced response to our comment letter dated February 7, 2018, on the draft Data Gaps Work Plan (work plan) for our review. Below are Ecology's responses to your responses (numbered according to the original comment number).

A. Thank you for agreeing to incorporate Ecology's comment numbers 1, 3, 5a, 5g, 6a, 7, 8, 10-19, 21.b.ii, 21d, 21.e.ii, 21.e.iii, 21h, 22, 23b, 24b, 24c, 24g, 24h, 24i.v, 27, 29-39, 41-44, 45b, and 46-64.

B. Response to comment 2: Thank you for agreeing to add a section to the work plan that summarizes previous interim remedial actions at the Site. However, Ecology does not agree with your recommendation to not collect soil samples from the area of historical sample SEA-14 because it would require penetrating the HDPE liner placed in 1987. It is necessary to collect samples in this area to define the extent of tetrachloroethylene (PCE) and trichloroethylene (TCE) concentrations remaining in soil at the Site for the Remedial Investigation and Feasibility Study (RI/FS) so that a final cleanup remedy can be determined. Penetration of the HDPE liner is not of significant concern because this liner represents an interim measure and may not even be intact after 31 years. It is more important to gather the information needed to implement the final remedy. Therefore, the requested sample collection in this area shall be added to the work plan.

C. Response to comment 4: Ecology does not agree with this response because it seems to limit auto fluff constituents of concern (COCs) to only those compounds that were previously found above screening levels during the PSC RI. As noted in your response, "auto fluff is not always a consistent, homogeneous by-product." Therefore, in the work plan, COCs for auto fluff shall include arsenic, cadmium, chromium, copper, lead, mercury, nickel, selenium, zinc, benzene, toluene, ethylbenzene, and total xylenes (BTEX), PCE, TCE, bis(2-ethylhexyl) phthalate (DEHP), butyl benzyl phthalate (BBP), naphthalene, and polychlorinated biphenyls (PCBs) as indicated in our comment. These COCs represent the compounds that will be analyzed for in characterizing auto fluff at the Site.

D. Response to comment 5b: It is not clear whether the planned revision of Figure 3A will include all of the specific locations mentioned in our comment. It is our expectation that all of these locations will be included in the estimated extent of solvent-lime waste.

E. Response to comment 5c: Ecology's comment requested that the results be discussed in the text and also shown on the tables. The response just mentions adding them to the tables. Please discuss them in the text also.

F. Response to comment 5d: This response is unclear. Apparently, DOF does not agree with the waste lime sludge extent shown on historical maps because "source information from boring logs," was used that were "not necessarily available when these earlier maps were created." This suggests that there is still disagreement between Ecology and DOF regarding the estimated extent of lime solvent sludge at the Site. Putting the historical maps in an appendix will not resolve this issue. We recommend that draft figures be provided to Ecology for review in advance of the revised work plan submittal. If there continues to be disagreement on this then additional sampling may be necessary to answer this question. Additionally, several CleanCare well logs were not included in Appendix A; these include CCW-1C, -2C, -5B, 6B, and 7B. Several of these indicate solvent lime waste. Please add these well logs to Appendix A.

G. Response to comment 5e: In addition to being tabulated, these locations need to be included in the estimated extent of lime solvent sludge.

H. Response to comment 5f: The response is incorrect is stating that this information was included on Figure 3A. The current version of Figure 3A does not show the gypsum lime waste that is present in the vicinity of PMW-4a and -4b.

I. Response to comment 6b: Ecology's comment requested that the results be discussed in the text and also shown on the tables. The response just mentions adding them to the tables. Please discuss them in the text also.

J. Response to comment 9: As noted in our comment, the locations of wastes that were observed on the Hylebos Marsh parcel need to be on a text figure and this area will need to be characterized by collecting soil and groundwater samples. It is not sufficient to simply add Figure 2-4 from that report in an Appendix. Also, the note following the response appears to imply that the referenced information from the Floyd/Snider (2008) Phase I Environmental Site Assessment (Tacoma Pierce County Health Department Site

Hazard Assessment, and reported EPA asbestos removal) sufficiently characterizes the locations and/or former locations of these wastes. Ecology does not agree; soil and groundwater samples are still needed. Proposed locations of these samples need to be included in the work plan.

K. Response to comment 20, Conceptual Site Model: It will not be acceptable to merely summarize and/or reference the conceptual site model (CSM) sections from the earlier RI documents for portions of the Site. The conceptual site model in these earlier documents are lacking and/or incomplete for several reasons including the fact that they only included part of the Site and/or that they did not incorporate the current state of the art for dense non-aqueous phase liquid (DNAPL) characterization. Ecology's current CSM comment shall be incorporated in the work plan.

L. Response to comment 21a: The response seems to miss the point of Ecology's comment that additional sampling is needed to characterize the Hylebos Marsh parcel. The revised work plan needs to propose sampling locations to assess the areas on the Hylebos Marsh parcel that have not yet been characterized (such as the railroad ballast stock pile area that was reported to contain petroleum hydrocarbons, and the other waste disposal areas where drums, paint cans, and car tires were observed, and the observed "leachate from car parts observed entering the swamp to west northwest of Poligen property"). These observations cannot be minimized or dismissed because of "age and lack of specificity regarding precise locations." Ecology agrees that actual soil and groundwater data should be relied on. However, there must be a good faith effort to obtain it during this work from the best estimate of where these previous locations were. See also comment "J" above. Also, the boring log for well SB-2A noted "refuse encountered," in the 7.0 to 8.5 feet depth interval. Therefore, a methane investigation consistent with ASTM Standard E2993-16, *Standard Guide for Evaluating Potential Hazard as a Result of Methane in the Vadose Zone*, shall also be necessary for the Hylebos Marsh area.

M. Response to comment 21b.i: We do not believe we have misunderstood Figure 3A. It is obvious that it shows very few locations where lime samples were analyzed to see if solvents were present. However, it is important for the conceptual site model to map the extent of solvent lime sludge at the Site and determine the residual concentrations remaining, particularly if groundwater is impacted by chlorinated solvents. If the PLPs are unwilling to rely on the other sources of information mentioned in Ecology's comments to prepare estimated solvent lime sludge extent or if there are doubts about the extent and/or residual concentrations in certain areas, then the work plan shall include a systematic sampling of the lime-based fill in order to determine the extent of solvent lime sludge.

N. Response to comment 21b.iii: Ecology agrees to review the data before requiring additional downgradient wells (except for the two deeper deep aquifer wells).

O. Response to comment 21c: There still is a data gap for PCBs in the RI because the laboratory reporting limits for previous groundwater samples exceed the current total PCBs screening value of 7E-06 micrograms per liter (µg/L) and the current acceptable laboratory reporting limit (0.01 µg/L). The PSC (2005) RI states that PCBs were

detected from wells in areas known to be impacted by auto fluff (CTMW-6, -13, and -17). Sampling for PCBs is necessary from all shallow wells in the monitoring network to determine if PCBs soil concentrations are impacting groundwater.

P. Response to comment 21d: The semi-volatile organic compounds (SVOCs) DEHP, BBP, diethyl phthalate (DEP), and hexachlorobutadiene (HCBD) are not mentioned in the footnote from the 1514 Taylor Way Interim Action Work Plan but still need to be discussed in Section 2.3.1.

Q. Response to comment 21e.i: Ecology agrees that two deeper deep aquifer wells (plus one deeper deep aquifer boring) are sufficient for the initial phase of characterizing the deeper portion of the deep aquifer. However, the response is not clear regarding the locations of these wells and the screened interval. The response simply states that these wells will be screened at depths "deeper than historical investigations have previously investigated." Additional detail is needed regarding the investigation depths and how the screened interval for the deeper boring and wells will be determined. Add the following to the work plan:

   a. The deeper deep aquifer boring and wells shall be installed to a depth of at least 60 feet below grade (fbg). Installation depths deeper than 60 fbg may be necessary if sampling data suggests that contamination extends below this depth.

   b. Depth-discrete groundwater samples shall be collected within the deep aquifer in higher transmissive water-bearing units at approximately 10-foot intervals and/or at major lithology changes, starting just below the current deep aquifer monitoring interval. Based on examination of the cone penetrometer logs referenced in comment 10a, it is estimated that a minimum of three-to-four depth-discrete groundwater samples will be collected at each location.

   c. Soil samples shall be collected from fine-grained units for possible VOCs analysis. The purpose of this would be to verify if these units are storing and releasing contaminants via diffusion unto adjacent higher transmissive portions of the aquifer. (*See* also previous comment 20 regarding the conceptual site model).

   d. Locations of the two deeper deep aquifer wells shall be downgradient of the solvent lime waste area. Specifically, Ecology recommends that these wells be located: 1) southwest of CTMW-9, near Alexander Avenue, and 2) at the southernmost end of Assessor's Parcel No. (APN) 0321352053.

   e. The deeper deep aquifer boring shall be near CCW-2C. This boring would only need to be completed as a monitoring well if groundwater concentrations indicate that it is necessary to monitor at a deeper level than current well CCW-2C.

   f. Ecology shall be consulted and shall approve final well completion depths and screen intervals.

R. Response to comment 21f: See above comment Q.

S. Response to comment 21g: Ecology agrees that the data from the first round of SVOCs from the existing and new wells will be evaluated prior to conducting additional SVOC groundwater sampling. However, since depth-discrete sampling is already planned at three locations for VOCs, adding SVOCs to the constituent list will not be unreasonable. Therefore, SVOCs shall also be included in the constituent list for the depth-discrete groundwater samples. To achieve more representative samples for SVOC analyses, it is acceptable for the laboratory to filter these samples through a 0.70 µm (micron) glass fiber filter prior to analysis.

T. Response to comment 23a: The response to this comment simply mentions well inspection and repair/abandonment tasks. Winter stormwater management to facilitate sampling needs to also be added as a task.

U. Response to comment 24a: See above comment Q.

V. Response to comment 24d: Additional characterization may be needed in this area if it appears that it is causing elevated metals concentrations in groundwater.

W. Response to comment 24e and 24f: Thank you for providing the graphical summary of historical groundwater elevations in the Hylebos Marsh wells. We have reviewed it and agree that wells SB-1A, -2A, -2, and -3A can be retained. We also agree with your proposed decommissioning of SB-3 and replacement with a new deep well. However, the new SB-3 well shall be located near the current location of SB-4 instead of its current location. This location is preferred because it will improve the coverage of deep aquifer groundwater elevation data for preparing contour maps.

In addition to SB-3, two other existing wells need to be decommissioned: SB-1 and SB-4. SB-1 needs to be decommissioned and replaced because the sand pack interval bridges the confining layer. Installation of these new deep wells should occur following the review of the results of the deeper deep aquifer depth-discrete sampling. If groundwater contamination is detected in the deeper deep aquifer samples, then depth-discrete sampling shall be necessary during well installation to determine the appropriate screened intervals for replacement wells SB-1 and -3. SB-4 needs to be decommissioned because it is screened within a clay unit.

X. Response to comment 24i.i: Ecology agrees that initially, the proposed deep well near PZ-8 can be installed and the requested new well near PZ-9 can be postponed. The location of new well SB-3 (near SB-4) satisfies the requested additional deep well near PZ-7. As stated in the above comment, installation of these new deep wells should occur following the review of the deeper deep aquifer depth-discrete sampling results. If groundwater contamination is detected in the deeper deep aquifer samples, then depth-discrete sampling shall be necessary during well installation to determine the appropriate screened intervals for the new deep wells.

Y. Response to comment 24i.ii: Installation of the new deep well on the 1514 Taylor Way interim action area should occur following the review of results of the deeper deep aquifer depth-discrete sampling. (See also below comment EE regarding the location of

this well.) If groundwater contamination is detected in the deeper deep aquifer samples, then depth-discrete sampling shall be necessary during well installation to determine the appropriate screened intervals for all new deep wells.

Z. Response to comment 24i.iii: It is not exactly clear where the proposed location of this well is. Please indicate this on a figure.

AA. Response to comment 24i.iv: A deeper deep aquifer well shall be installed at this location (see comment Q, above).

BB. Response to comment 24j: Please see comment Q, above.

CC. Response to comment 24k: Please see comment K, above.

DD. Response to comment 25: Please see comments J, L, and W, above.

EE. Response to comment 26: The response does not state that the work plan shall include a provision stating that additional wells shall be installed if requested by Ecology to fill remaining data gaps. Please add this as stated in our original comment.

The response references Figures 2 and 3 for proposed well locations. Please add the well numbers that will be used for these wells to the figures so that they can be referred to more easily.

Ecology does not agree with the Figure 3 proposed deep well location at the southeast corner of former ProLogis parcel APN 0321267005. This well shall instead be located south of the new southern building (Building "B") on the 1514 Taylor Way interim action area and near the stormwater pond. Please also include a table that lists the following information for the proposed wells: boring/well number, aquifer, target depth, discussion/comments (include purpose of well, installation sequence, types of samples that will be collected during well installation, and note if this is a replacement well), and estimated screened interval. Please also add to the table the Stericycle wells that need to be replaced.

Monitoring well CTMW-23 and piezometer PZ-4 were damaged during construction in 2016 and abandoned. Ecology's approval of the abandonment said that CTWM-23 and PZ-4 should be replaced following the abandonment. These wells have not yet been replaced. Since these wells are part of the monitoring network for the Site, their replacement will need to be included in the work plan.

FF. Response to comment 28: The response is inadequate in that it only agrees to perform a site inspection and prepare a "protocol" that can be followed. Revise the work plan to clearly state that a Tier II assessment shall be performed that includes collecting sub-slab, indoor air, ambient air, and methane samples from selected Site buildings. Differential pressure measurements shall also be collected as part of the methane investigation. Sampling shall also include the collection of short-term TCE exposure concentrations.

GG. Response to comment 40: See above comment FF.

HH. Response to comment 45a: See above comments regarding the additional wells that are needed.

If you have any questions, please contact me at (360) 407-6247 or via e-mail at steve.teel@ecy.wa.gov.

Sincerely,

SSTeel

Steve Teel, LHG
Cleanup Project Manager/Hydrogeologist
Toxics Cleanup Program
Southwest Regional Office

By certified mail: 9489 0090 0027 6066 4665 34

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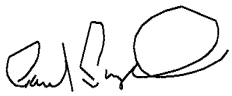

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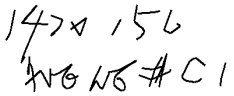

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