STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
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May 31, 2017

Mr. Chris LaVerdiere
Fife RV Center
3410 Pacific Highway East
Fife, WA 98404

Re: Further Action at the following Site:

- **Site Name:** Fife RV Center
- **Site Address:** 3410 Pacific Highway East, Fife WA 98404
- **Facility/Site No.:** 7907
- **Cleanup Site No.:** 13173
- **VCP Project No.:** SW1565

Dear Mr. Laverdiere:

The Washington State Department of Ecology (Ecology) received your request for an opinion on your independent cleanup of the Fife RV Center facility (Site). This letter provides our opinion. We are providing this opinion under the authority of the Model Toxics Control Act (MTCA), Chapter 70.105D RCW.

Issue Presented and Opinion

Is further remedial action necessary to clean up contamination at the Site?

YES. Ecology has determined that further remedial action is necessary to clean up contamination at the Site.

This opinion is based on an analysis of whether the remedial action meets the substantive requirements of MTCA, Chapter 70.105D RCW, and its implementing regulations, Chapter 173-340 WAC (collectively "substantive requirements of MTCA"). The analysis is provided below.

Description of the Site

This opinion applies only to the Site described below. The Site is defined by the nature and extent of contamination associated with the following release:

- Total Petroleum Hydrocarbons and related constituents into the Soil and Ground Water.

Please note the parcel of real property associated with this Site is also located within the projected boundaries of the Asarco Tacoma Smelter facility (# 89267963). At this time, we have no information that the parcel is actually affected. This opinion does not apply to any contamination associated with the Asarco Tacoma Smelter facility.

Basis for the Opinion

This opinion is based on the information contained in the following documents:

1. *Supplemental Phase II*, Associated Earth Sciences, Inc. (AESI), January 24, 2014.
2. *Remedial Excavation Report*, Aerotech Environmental Consulting, Inc. (Aerotech), November 11, 2016.
3. *Groundwater Monitoring Well Installation Report*, Aerotech Environmental Consulting, Inc., November 17, 2016.
4. *Groundwater Monitoring Report: First Quarterly Sampling* – November 2016, November 18, 2016.

This opinion is void if any of the information contained in those documents is materially false or misleading.

Analysis of the Cleanup

Ecology has concluded that **further remedial action** is necessary to clean up contamination at the Site. That conclusion is based on the following analysis:

1. Characterization of the Site.

Aerotech is requesting an opinion on a remedial excavation completed at the Site in 2016. Ecology has determined your characterization of the Site is not sufficient to establish cleanup standards and select a cleanup action.

The Site is at the location of a former gasoline station reported to have operated from the 1960s to 1980s. The Site, as currently known, includes a portion of Pierce County Tax Parcel 0320111067, and is depicted in the remedial excavation report as extending into the Interstate-5 off-ramp right of way.

AESI, January 2014 Supplemental Phase II Assessment.
On December 19, 2013, AESI advanced soil borings EB1 through EB10 at the Site. Soil samples were obtained at up to 11 feet below ground surface (bgs), and groundwater samples were all obtained between 4 - 5 feet bgs. Contamination was detected at depths of between 4 – 7.5 feet bgs. Because silica gel was used on all analytical samples without additional supporting information, Ecology interprets the results obtained as lower bounding estimates of actual contamination.

AESI additionally summarized a 2004 investigation at the Site that was not part of the Site record. AESI indicates that the 2004 investigation detected soil and groundwater contamination. For the 2004 investigation five soil borings are reported to have been advanced at the Site. The release of contamination was not reported to Ecology in 2004 or as a result of the 2013 investigation.

During the 2013 investigation, soil and groundwater samples were collected and analyzed. Groundwater samples reported to the Environmental Information Management System Database (EIM) detected diesel range total petroleum hydrocarbons at concentrations up to 6,000 µg/L, heavy oil-range total petroleum hydrocarbons up to 350 µg/L, gasoline range total petroleum hydrocarbons up to 49,000 µg/L, benzene up to 1,100 µg/L. Additional petroleum related constituents were also detected. Soil samples reported to EIM detected ethylbenzene up to 660 mg/kg, gasoline range total petroleum hydrocarbons up to 2,000 mg/kg, benzene up to 1.8 mg/kg, lead up to 12.3 mg/kg, and other related petroleum constituents.

Aerotech, October and November 2016 Remedial Excavation and Well Installation
In October 2016, Aerotech advanced additional test pits, and excavated potentially contaminated soil at the Site. Aerotech reports that previous analytical results and samples collected during remedial excavation were used to determine final extents of excavation, but that excavation was limited by Site conditions. The excavations are reported to have removed soil from an approximately 1,920 square foot area, to depths of up to 10 feet bgs. Aerotech reports excavating and removing 1,685 tons of soil to an appropriate off-site disposal facility, and collecting 84 performance and confirmational soil samples from excavation sidewalls and bottom. Performance soil samples were analyzed for volatile organic carbons, gasoline, diesel and heavy-oil range total petroleum hydrocarbons and related constituents.

Performance sampling detected up to 6,090 mg/kg gasoline range total petroleum hydrocarbons, 4.6 mg/kg benzene, 25 mg/kg toluene, 66,000 mg/kg ethylbenzene, and 230 mg/kg total xylenes. Aerotech reports that the excavations were limited to the northwest by a bio-swale, and to the southwest by a downward slope and drainage area. No soil or groundwater samples were obtained from the bio-swale or the downward slope. Contamination is reported left in place at the Site.

In November, 2016, after remedial excavation, Aerotech installed six monitoring wells (MW-1 through MW-6) at the Site in the general vicinity of the former service station, and in presumed up and downgradient directions of shallow groundwater flow.

Soil samples obtained during monitoring well installation were analyzed for gasoline range total petroleum hydrocarbons, benzene, ethylbenzene, toluene and total xylenes. Analytical results from the soil samples detected up to 13,000 mg/kg gasoline range total petroleum hydrocarbons, 9.3 mg/kg benzene, 470 mg/kg ethylbenzene, 2.6 mg/kg toluene, and 5.4 mg/kg total xylenes.

Aerotech, November 2016- February 2017 Groundwater Monitoring
Groundwater has been monitored twice since well installation, once in November 2016 and once in February 2017. Analytical results from groundwater samples detected up to 42,000 µg/L gasoline range total petroleum hydrocarbons, 9.3 mg/kg benzene, 470 mg/kg ethylbenzene, 2.6 mg/kg toluene, and 5.4 mg/kg total xylenes.

VCP Application, January 5, 2017
The January 5, 2017 VCP application submitted for this Site provides the following information relevant to the remedial investigation:

A. It is not known if contamination extends off-Property[1].
B. It is not known if contamination poses a threat or potential threat to existing drinking water sources[2].
C. It is not known if business operations have resulted in any other spills or other unpermitted releases on the source property[3].

[1] VCP Application, Part 2, Page 5.
[2] VCP Application Part 2, Page 8.
[3] VCP Application Part 3, Page 10.

D. Information indicating a release occurred at the Site has been available since January 2014 and possibly 2004. The release was reported when the Site entered the VCP in January, 2017.

Comments:

1. Ecology appreciates the permanent removal of contaminated soils conducted as an interim action at the Site. Permanent removal of contaminated soils above cleanup screening levels is an appropriate action to reduce contamination in the environment.
2. Ecology also appreciates the installation and regular monitoring of the six monitoring wells at the Site. A monitoring well network is appropriate for the Site, and continued sampling will provide needed information for the Site cleanup.
3. Based on the information provided in the VCP application, additional work is necessary at the Site. The Site remedial investigation will need to include determination of whether contamination extends off-Property, and if contamination poses a threat or potential threat to existing drinking water sources.
4. With the information provided, it is not currently possible for Ecology to determine that the remedial excavation, conducted as an interim action, meets MTCA minimum standards for site cleanup. Contamination at concentrations above MTCA Method A screening levels was left in place in soil and groundwater at the Site at the end of remedial construction. Contamination may extend off-Property into the bioswale and drainage areas. The remedial investigation and feasibility study has not yet been completed to demonstrate through fully supported disproportionate cost analysis that additional remediation is appropriate.
5. It has not been determined if soil and groundwater contamination is confined to the Property, which would allow use of a model remedy and remove the requirement for a feasibility study and disproportionate cost analysis to address remaining contamination above cleanup levels. Contaminant concentration isopleth maps provided for Ecology's review show contaminated soil above cleanup standards in the drainage area and bioswale in the south and west of the known Site, outside of marked property boundaries in Site figures. The assumptions used to determine isopleth maps are not clear.

Additional remedial investigation is needed to the west of the known Site in the bioswale, and to the southwest of the known Site downslope in drainage. The lateral and vertical extents of Site contamination need to be fully investigated for the remedial investigation. Water levels in the bioswale are reported as consistent with water levels in the nearby contaminated groundwater monitoring wells, illustrating the need to evaluate the connectivity of contaminated groundwater and surface water in this area of the Site[4].

6. Diesel and heavy-oil range total petroleum hydrocarbons were reported in 2013 at this Site. AES reviewed laboratory sample chromatograms and determined that the diesel represented *"overlap from the elevated gasoline TPH detections and are not indicative of diesel"*[5]. Ecology has not reviewed the relevant chromatograms or made this determination. Please provide the laboratory chromatograms from 2013 for Ecology's review, and provide the specific confirmation samples obtained from later investigations, on a location by location basis, to confirm that diesel and heavy oil range TPH are not present at the Site.
7. Please confirm all samples where silica gel cleanup was used, and update the EIM database with an indicator for all samples where silica gel cleanup was used. The use of silica gel cleanup for sample analysis has not been adequately supported at this Site.
8. Please evaluate the vapor pathway throughout the Site.
9. Please report the specific samples where required testing for petroleum releases has been carried out as required in MTCA Table 830-1 (WAC 173-340-900). Until Ecology reviews diesel chromatograms for the Site and makes a determination regarding the past presence of diesel and heavy oil range total petroleum hydrocarbons, please report required testing for gasoline, diesel and heavy oil range organics. Please include persistent carcinogenic PAHs and naphthalenes (the sum of 1-methyl naphthalene, 2-methyl naphthalene and naphthalene), EDB, EDC, MTBE and total lead. Please ensure that detection limits used are sufficient to resolve appropriate screening levels.
10. Additional regular groundwater monitoring is necessary at the Site. Please continue to regularly monitor the existing monitoring well network.

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[4] Groundwater Monitoring Well Installation Report – November 2016, Page 5
[5] AES Phase II, Former Freddie's Casino Property, January 24, 2014, Page 6.

11. The submitted terrestrial ecological evaluation exposure analysis (Table 749-1) estimated approximately 2.0 acres of contiguous undeveloped land within 500 feet of the Site. The exposure analysis may need to be updated based on the final lateral extent of the Site as determined in the remedial investigation.

12. In addition to the contour maps provided, delineated isopleth geologic cross sections are needed for this review to evaluate the vertical distribution of contamination with respect to surface features such as the bioswale and the drainage area. Geologic cross sections should include the locations and depths of remaining contamination, infrastructure limiting additional remediation, groundwater levels, screened well intervals and confirmational samples obtained from excavation extents for this investigation. Cross sections should include the bioswale and drainage to the south and west to better understand the Site's interaction with surficial soils and surface water. Additional geologic cross sections including borings and wells, sample depths and analytical results will be necessary to make a determination that additional remediation is not practicable under MTCA, whether through the model remedy process, if determined appropriate, or through the feasibility study/disproportionate cost analysis. The remedial alternative selected for the Site will need to address Site connectivity with the bioswale and drainage areas.

    Please indicate the specific confirmational samples used to define the contamination limits in both horizontal and vertical extents. Affirmatively indicate where insufficient data are available to delineate contamination extents with confidence. Confirmational soil samples detected concentrations greater than MTCA Method A screening levels at the lower excavation extents, including at sample locations P25-10 (350 mg/kg TPH-G), TP9-10 (240 mg/kg TPH-G), MW4-10.5 (150 mg/kg TPH-G). Other soil sample locations such as Location MW-3 report 13,000 mg/kg TPH-G from a sample obtained between 3.5 and 4.5 feet bgs. Confirmational soil samples detected concentrations greater than MTCA Method A screening levels at the lateral extents of investigation.

13. From the low resolution plan view figures provided for this review, it is difficult for Ecology to identify the locations and depths of remaining contamination at the Site.

Please submit all figures using 11 x 17 or larger format with high resolution and font sizes greater than 10 point. Please do not provide low resolution scanned copies that are difficult to interpret in smaller formats, or that are not legible. Scanned, small size low resolution formats and figures are difficult to read and result in additional Ecology review time and associated costs. Low resolution figures or text will result in rejection of future reports.

2. Establishment of cleanup standards.

Ecology has determined the cleanup levels and points of compliance established for the Site do not meet the substantive requirements of MTCA. MTCA Method A screening levels have been used to evaluate the Site, and for determining the locations for remedial excavation. It is not clear where required testing for petroleum constituents from MTCA Table 830-1 was conducted. Additional remedial investigation is needed in the bioswale and drainage areas to determine how they are impacted, which may also impact cleanup level determination and the final lateral and vertical extents of the Site. The vapor pathway has not yet been evaluated. Points of compliance need to be determined.

3. Selection of cleanup action.

Ecology has determined the cleanup action you selected for the Site does not meet the substantive requirements of MTCA. An interim action was conducted to reduce contamination at the Site. Monitoring wells have been installed. Areas of contaminated soil above MTCA Method A screening levels remain at the Site. The Site may extend beyond current investigation limits. A remedial investigation and feasibility study has not been submitted for review, nor has the Site been demonstrated to qualify for a model remedy.

4. Cleanup.

Ecology has determined the cleanup you performed does not meet any cleanup standards at the Site. The remedial excavation and confirmational monitoring conducted as an interim action removed 1,865 tons of potentially contaminated soil from the Site. Monitoring wells have been installed and groundwater monitoring has appropriately begun.

Limitations of the Opinion

1. Opinion does not settle liability with the state.

Liable persons are strictly liable, jointly and severally, for all remedial action costs and for all natural resource damages resulting from the release or releases of hazardous substances at the Site. This opinion **does not**:

- Resolve or alter a person's liability to the state.
- Protect liable persons from contribution claims by third parties.

To settle liability with the state and obtain protection from contribution claims, a person must enter into a consent decree with Ecology under RCW 70.105D.040(4).

2. Opinion does not constitute a determination of substantial equivalence.

To recover remedial action costs from other liable persons under MTCA, one must demonstrate that the action is the substantial equivalent of an Ecology-conducted or Ecology-supervised action. This opinion does not determine whether the action you performed is substantially equivalent. Courts make that determination. *See* RCW 70.105D.080 and WAC 173-340-545.

3. State is immune from liability.

The state, Ecology, and its officers and employees are immune from all liability, and no cause of action of any nature may arise from any act or omission in providing this opinion. *See* RCW 70.105D.030(1)(i).

Contact Information

Thank you for choosing to clean up the Site under the Voluntary Cleanup Program (VCP). After you have addressed our concerns, you may request another review of your cleanup. Please do not hesitate to request additional services as your cleanup progresses. We look forward to working with you.

For more information about the VCP and the cleanup process, please visit our web site: www.ecy.wa.gov/programs/tcp/vcp/vcpmain.htm. If you have any questions about this opinion, please contact me by phone at (360) 407-6528 or e-mail at Adam.Harris@ecy.wa.gov.

Sincerely,

Adam Harris, LHG
SWRO Toxics Cleanup Program

AH: kb

By Certified Mail: [91 7199 9991 7037 0287 2226]

cc: Alan Blotch, Aerotech
Rob Olsen, TPCHD
Matt Alexander, Ecology
Nicholas Acklam, Ecology