STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
15 W Yakima Ave, Ste 200 • Yakima, WA 98902-3452 • (509) 575-2490

June 15, 2015

Russell Shropshire
Leidos Engineering, LLC
(Formerly SAIC Energy, Environment & Infrastructure, LLC)
18912 North Creek Parkway, Suite 101
Bothell, WA 98011

Re: Further Action at the following Site:

- **Site Name:** Alders Chevron
- **Site Address:** 1702 East Yakima Avenue, Yakima
- **Facility/Site No.:** 511
- **VCP Project No.:** CE0391

Dear Mr. Shropshire:

The Washington State Department of Ecology (Ecology) received your request for an opinion on your independent cleanup of the Alders Chevron 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 in this letter. The Site is defined by the nature and extent of contamination associated with the following releases:

- Petroleum hydrocarbons and other used oil contaminants into the soil.
- Petroleum hydrocarbons, volatile organic compounds, and used oil contaminants into the groundwater.

Enclosure A includes a detailed description and diagram of the Site, as currently known to Ecology.

Please note a parcel of real property can be affected by multiple sites. At this time, we have no information that the parcel(s) associated with this Site are affected by other sites.

Basis for the Opinion

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

1. SAIC Energy, Environment & Infrastructure, LLC, 2013. "Supplemental Site Assessment Work Plan, Alder's Chevron/Former Chevron Station No. 93883 (VCP # CE0391), 1702 East Yakima Avenue, Yakima, Washington". August 9, 2013

2. Leidos Engineering, LLC, 2015. "Summary Report, Alders Chevron/Former Chevron Service Station No. 93883 (VCP #CE0391), 1702 East Yakima Avenue, Yakima, Washington". March 31, 2015

3. Contents of site file, Central Regional Office.

Those documents are kept in the Central Files of the Central Regional Office (CRO) of Ecology for review by appointment only. You can make an appointment by calling the CRO resource contact, Jackie Cameron, at (509) 575-2027.

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.

Ecology has determined your characterization of the Site is sufficient to establish cleanup standards and select a cleanup action. The Site is described above and in **Enclosure A.**

Three groundwater monitoring wells were installed to replace wells that were previously placed as points of compliance but were subsequently destroyed during site renovation in 1993. The groundwater sampling allowed the site characterization to be updated to account for natural attenuation processes including dilution, dispersion and degradation at these points of compliance. Soil sampling was also performed during well installation.

2. Establishment of cleanup standards.
Ecology has determined the cleanup levels and points of compliance you established for the Site meet the substantive requirements of MTCA.

a. Cleanup levels.

Method A cleanup levels were initially used to evaluate the site in the 1990s. In 2004, Ecology issued a No Further Action (NFA) opinion for soil at the Site with the requirement of groundwater assessment. In 2006, Ecology rescinded this soil-only NFA determination and required further action for site closure contingent on demonstration of four quarters of groundwater analytical results within MTCA Method A compliance limits.

On this more recent investigation, soil was evaluated by Method B cleanup levels after a groundwater empirical demonstration showed the lack of groundwater impact by the contaminants of concern.

At the points of compliance, the measured soil concentrations of petroleum hydrocarbons are compliant with the calculated Method B cleanup levels for direct contact; however, the concentrations of lead in soil are above the Method A soil cleanup level. Section 700(8)(b)(ii) of the Model Toxics Control Act allows for the use of two different Methods for evaluating cleanup levels within a given medium: "A site owner may decide to use Method A for some substances or media and Method B or C for others, depending upon site conditions and qualifications."

This Site is excluded from the requirement to complete a terrestrial ecological evaluation since there is less than 1.5 acres of contiguous undeveloped land on the Site or within 500 feet of any area of the Site.

b. Points of compliance.

Standard points of compliance were selected for the soil and groundwater media.

The monitoring wells that were originally installed were either destroyed or paved over during the redevelopment of the property in 1993. Three replacement monitoring wells were installed in 2013 with two of the wells situated in the former source areas and in the vicinity of the original wells. The third new well was situated to assess the down-gradient groundwater.

The depth of the wells extended throughout the soil column from ground surface and extended deeper than 15 feet below ground surface.

c. Cleanup standards

Verification of absence of cross-media impact allowed reevaluation of the cleanup standards for the contaminants of concern. Empirical demonstration consisting of four quarters of groundwater monitoring at three standard points of compliance showed the lack of cross-media impact from soil to groundwater. Method B soil cleanup levels were then calculated using Ecology's MTCATPH 11.1 workbook tool to assess the direct contact hazard exposure pathway for petroleum hydrocarbons and associated petroleum constituents. Equivalent carbon fractionated analyses were performed on soil samples collected from installation of the monitoring wells in the former source areas. The soil samples that were selected for analysis were the ones that showed the highest impacts through field screening. Adjustment downwards to residual saturation of the calculated Method B soil cleanup values was not required due to the findings of the empirical demonstration.

For petroleum hydrocarbons, the measured soil concentrations are within the compliance levels as determined by the Method B calculations; however, the lead concentration of the soil sample obtained from MW-5, located near the former waste oil UST, exceeds the Method A soil cleanup level. Per WAC 173-340-700(8)(b), it is necessary to analyze for and evaluate certain carcinogenic and noncarcinogenic hazardous substances that may be associated with a release of total petroleum hydrocarbons (TPH) as identified in Table 830-1. "In cases where the cleanup level for one or more of these associated hazardous substances is exceeded but the TPH cleanup level is not, the cleanup level shall be based on the associated hazardous substance."

The soil sample was also obtained from 13 feet below ground surface which is deeper than the vertical limit of the previous excavation in this area in 1992. This indicates that the sample was collected from the native soil as opposed to fill material.

3. Selection of cleanup action.

Ecology has determined the cleanup action you selected for the Site does not meet the substantive requirements of MTCA.

The previous cleanup actions consisted of excavation and proper disposal of petroleum-contaminated soils in 1992 and 1993. No other cleanup action was selected or performed in the interim time before the most recent characterization.

Ecology's preferred alternative for a final remedy typically involves active measures to include contaminated soil removal and/or treatment; however, an institutional control enforced by an environmental covenant may be imposed. This mechanism will serve to mitigate direct contact exposure hazard to contaminated soil.

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 (509) 454-7836 or e-mail at john.mefford@ecy.wa.gov.

Sincerely,

John Mefford

John Mefford
Site Manager
CRO Toxics Cleanup Program

jm: JE

Enclosures (1): A – Description and Diagrams of the Site

cc: Mr. Robert Hall
Dolores Mitchell, VCP Financial Manager (without enclosures)

Enclosure A

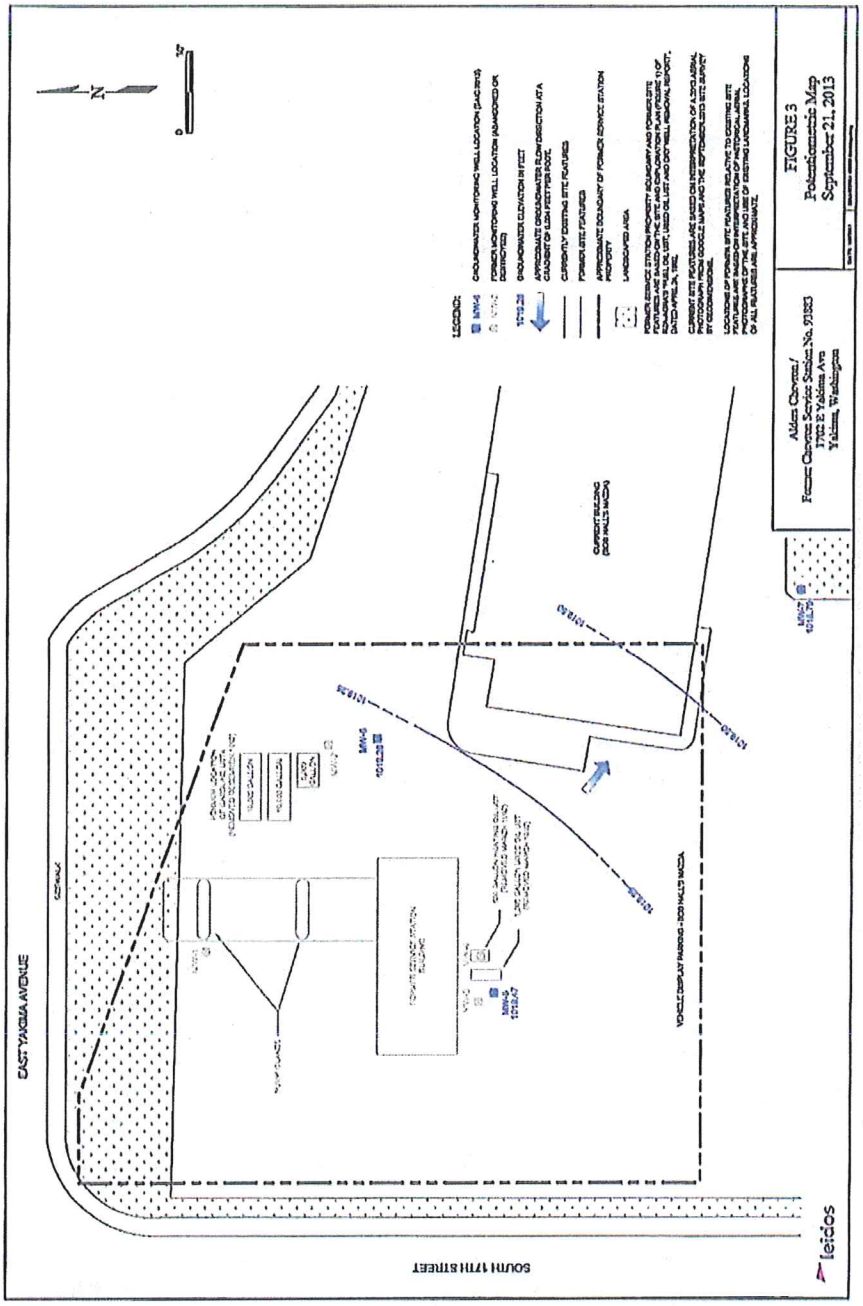
Description and Diagrams of the Site

Site Description

- The source of the releases was the underground storage tank system and which included the gasoline and diesel portions of the UST system.
- The hazardous substances known to be released at the Site are diesel, gasoline and gasoline constituents to include benzene, toluene, ethylbenzene, xylenes and lead.
- During the cleanup actions, approximately 754 cubic yards of petroleum-contaminated soils were removed from the Site in the affected areas. Residual contamination continues to exist in the vicinity of the former gasoline UST area (northeast portion of Site) and near the waste oil and heating oil UST area (south portion of Site).
- The media affected by the releases initially included both the soil and the groundwater. However, more recent data shows that only the soil medium remains affected.
- The Site is situated in the alluvial valley of the Yakima River. Soils consist of loose, to medium dense, sandy gravel and cobbles with up to 15% fine to coarse sand and up to 20% silt. Groundwater is generally encountered at depths of approximately 10 to 12 feet below ground surface (bgs). Groundwater flow across the Site is consistently toward the southeast at a gradient of approximately 0.003 to 0.004 feet per foot. The seasonal variation in groundwater elevation has a maximum of 1.35 feet fluctuation.

The source of the Site description is largely derived from the Leidos report dated March 31, 2015. Additional reference was also made to an earlier report provided by Groundwater Technology, Inc. dated October 7, 1993.

Site Diagrams



Site Diagrams