STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
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January 27, 2017

Tom Lovejoy
Puget Sound Truck Lines
PO Box 24526
Seattle, WA. 98124-0526

Re: Further Action at the following Site:

- **Site Name:** Puget Sound Truck Lines Longview
- **Site Address:** 146 Industrial Way, Longview WA. 98632
- **Facility/Site No.:** 74481279
- **VCP Project No.:** SW1429

Dear Mr. Lovejoy:

The Washington State Department of Ecology (Ecology) received your request for an opinion on your independent cleanup of the Puget Sound Truck Lines Longview 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:

- Petroleum and petroleum constituents into the soil and groundwater.

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. *3 Kings Environmental, Independent Cleanup Action*, Puget Sound Trucking Facility, March 15, 2012.
2. *3 Kings Environmental, Independent Cleanup Action Addendum Report*, Puget Sound Trucking Facility, June 27, 2012.
3. *3 Kings Environmental, Remedial Investigation & Cleanup Report*, Puget Sound Freight Lines Facility, December 24, 2012.
4. *Washington State Department of Ecology, Initial Investigation Field Report*, Puget Sound Freight Lines, January 17, 2013.
5. *Floyd Snider, Puget Sound Truck Lines Longview VCP Application,* containing the January 13, 2014 *Groundwater Compliance Sampling and Analysis Plan, and Puget Sound Truck Lines Longview Site – Groundwater Compliance Well Installation and Monitoring Results,* September 19, 2014.
6. *Floyd Snider, Puget Sound Truck Lines Longview Site – VCP SW1429 2014-2015 Groundwater Monitoring Results*, October 14, 2015.
7. *Floyd Snider, Puget Sound Truck Lines Longview Site – SW1429, 2016 Groundwater Monitoring Results and Summary of Soil Compliance*. November 30, 2016.

These documents are kept in the Central Files of the Southwest Regional Office of Ecology (SWRO) for review by appointment only. You can make an appointment by calling the SWRO resource contact at 360.407.6365.

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 not sufficient to establish cleanup standards and select a cleanup action. Additional description of the Site is provided in *Enclosure A, Description of the Site*.

Following excavation of source areas soils, diesel range total petroleum hydrocarbon contamination remains in groundwater above MTCA Method A cleanup levels at all Site monitoring wells. All monitoring wells have exceeded cleanup levels at least once in the last four monitoring events. No statistically significant decreasing trend is apparent from the current groundwater monitoring data.

While it is more likely than not that insufficient time has passed since excavation of source areas soils to allow for natural attenuation of remaining contamination at the Site, it is possible that additional petroleum contaminated soil may remain undetected at the Site that is impacting groundwater. If contaminant concentrations do not decrease in groundwater, additional characterization of the Site may be appropriate to determine why contaminant concentrations are not attenuating.

2. Establishment of cleanup standards.

Ecology has determined the cleanup levels and points of compliance you established for the Site do not meet the substantive requirements of MTCA.

MTCA Method A soil and groundwater cleanup levels have been used to evaluate the Site, including using MTCA Method A soil cleanup levels for terrestrial ecological evaluation[1]. MTCA Method A soil cleanup levels are not appropriate for terrestrial ecological evaluation.. Without additional terrestrial ecological evaluation, the ecological indicator soil concentrations for protection of terrestrial plants and animals in WAC 173-340-900, Table 749-3 are appropriate for use in eliminating hazardous substances from further consideration. Contaminant concentrations in soil exceeding those listed in Table 749-3 are reported remaining in soil at the Site.

MTCA Method A soil cleanup levels may not be sufficiently protective at this Site, if remaining contamination in soil continues to impact groundwater resulting in concentrations greater than the MTCA Method A cleanup levels.

a. Points of Compliance

The following points of compliance are appropriate for use:

- **Soil-Direct Contact (WAC 173-340-740(6)(d)):** Based on human exposure via direct contact, the point of compliance is throughout the Site from ground surface to fifteen feet below the ground surface.

- **Soil- Protection of Groundwater (WAC 173-340-747):** Based on the protection of groundwater, the point of compliance is throughout the Site

- **Soil-Protection of Plants, Animals and Soil Biota (WAC 173-340-7490(4)(b)):** Based on ecological protection, the point of compliance is throughout the Site from ground surface to fifteen feet below the ground surface.

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[1] Floyd Snider, Puget Sound Truck Lines Longview Site – VCP SW1429 2014-2015 Groundwater Monitoring Results, October 14, 2015, Page 7.

- **Groundwater (WAC 173-340-720(8)(b)):** Based on the protection of groundwater quality, points of compliance are established as throughout the site from the uppermost level of the saturated zone extending vertically to the lowest most depth which could potentially be affected by the site.

- **Groundwater-Surface Water Protection (WAC 173-340-730(6)):** Based on the protection of surface water, the point of compliance is all locations where hazardous substances are released to surface water.

- **Air Quality (WAC 173-340-750(6)):** Based on the protection of air quality, the point of compliance is ambient and indoor air throughout the Site.

- **Sediment (WAC 173-340-760):** Based on the protection of sediment quality, compliance with the requirements of 173-204 WAC.

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 selected cleanup action included the excavation of petroleum contaminated soil in the area of the former AST. Performance monitoring of groundwater contamination has not demonstrated that the cleanup action selected for the Site meets or will meet the requirements of WAC 173-340-360(2).

4. Cleanup.

Ecology has determined the cleanup you performed **does not meet** cleanup standards at the Site. A total of 2,580 tons of petroleum contaminated soil was excavated from the area of the former AST, for offsite disposal. Groundwater contamination above MTCA Method A cleanup levels continues to be detected at all Site monitoring wells, and Ecology's statistical evaluation of reported Site data shows no apparent statistically significant trend in groundwater reduction.

Diesel range total petroleum hydrocarbon contamination was left in place in soil below MTCA Method A cleanup levels. MTCA Method A soil cleanup levels for the protection of groundwater may not be sufficient at this Site. More stringent soil cleanup standards than Method A may be appropriate, and additional soil remediation may be required for the Site to meet MTCA Method A groundwater cleanup standards (WAC 173-340-740(1)(c)(iv)). However, it is likely that natural attenuation processes are currently occurring in soil and groundwater. Excavation at the Site occurred in 2012 and the time frame for restoration is still reasonable.

Continued regular monitoring of groundwater may produce a statistically significant trend to demonstrate that existing cleanup standards have been or will be met in a reasonable time frame. With such evidence, it may be appropriate to determine that additional soil remediation is not necessary at the Site. That determination is not supported by the current Site data.

If restoration of groundwater at the Site is not anticipated within a reasonable restoration time frame, instead of possible additional characterization or additional remedial excavation and continued regular performance monitoring of Site monitoring wells, an alternative may be to pursue a no further action determination with an environmental covenant and long term groundwater monitoring for the Site. To support no further action with an environmental covenant and long term groundwater monitoring for this Site, it may be appropriate to place additional groundwater monitoring points of compliance at the Southern Property boundary to demonstrate compliance with cleanup standards in the downgradient direction of shallow groundwater within Property boundaries. If compliance with MTCA Method A groundwater cleanup levels could be demonstrated in the downgradient direction of shallow groundwater, an environmental covenant could possibly be placed on the Site and a determination of no further action made. Long term confirmational groundwater monitoring would be required at approved points of compliance. If in the future, natural attenuation was shown to reduce contamination throughout the Site, the environmental covenant could be removed.

Alternately, continued regular monitoring of the four existing Site monitoring wells may be sufficient to demonstrate attenuation in groundwater at the Site, and that cleanup levels in groundwater can be anticipated within a reasonable time frame.

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
SWRO Toxics Cleanup Program

By Certified Mail: [91 7199 9991 7037 0278 3683]

AH: kb

Enclosures (1): A – Description of the Site

cc: Brett Beaulieu, Floyd Snider
Matthew Alexander, Ecology
Nicholas Acklam, Ecology

Enclosure A

Description of the Site

The Site as known is located on Cowlitz County tax parcels 10132, 10134, 10136 and 10137, immediately north of Industrial Way in the jurisdiction of the city of Longview, Washington. Parcels at the Site are zoned commercial. The mostly flat Site is located at approximately 14 feet elevation above mean sea level, in a large oxbow approximately 1,600 feet southwest of the Cowlitz River, approximately 1,000 feet north of a log pond, and approximately 7,000 feet north of where the Cowlitz River empties into the Columbia River. Soils encountered at the Site during test pit and monitoring well advancement include sands, silty sands and gravels. No geologic cross sections were submitted for this review.

An Adapt Engineering Inc. (AEI) 2011 Phase II Site investigation submitted with the remedial investigation report detected contamination in soil and groundwater above MTCA Method A cleanup levels at the location of a former aboveground storage tank (AST), and in soil and groundwater at the location of a former reported waste oil tank to the north of the building. Three soil borings were advanced for the Phase II in areas of possible contamination. Soil samples were reported "logged and inspected", but no boring logs were included in the report provided to Ecology. Soil sample depths are reported on the chain of custody for the project. Details of how groundwater was obtained, or from what depths, was not included in the AEI report. Soil Boring SB-1 was located at a reported former AST. AEI reports that "The soil samples collected from boring SB-1 exhibited significant visual and olfactory indications of hydrocarbon impacts from approximately 2 feet bgs to the maximum explored depth of approximately 12 feet bgs." The chain of custody for the project reports that a soil sample from SB-1 was obtained from the 5-7 foot depth. That soil sample contained 4,200 mg/kg diesel range total petroleum hydrocarbons. A groundwater sample obtained from soil boring SB-1 contained 530,000 µg/L diesel range total petroleum hydrocarbons.

Soil Boring SB-2 was located at the location of a reported former waste oil UST approximately 300 feet northeast of SB-1. A soil sample from 7-8 foot bgs was submitted for analysis of appropriate contaminants of concern for unknown oils, and did not detect contamination above laboratory reporting limits. A groundwater sample obtained from SB-2 contained 2,400 µg/L diesel range total petroleum hydrocarbons. A sample later obtained from test pit 11 at an adjacent location did not reproduce the diesel range total petroleum hydrocarbon concentration in groundwater.

Soil Boring SB-3 was located at a floor drain outfall approximately 400 feet northeast of SB-1. No gasoline, diesel or heavy-oil range total petroleum hydrocarbons were detected in soil at this location. No groundwater samples were analyzed.

During January and February 2012, 3 Kings Environmental collected soil and groundwater samples from test pits at the Site (TP1 through TP13).

Soil and groundwater samples are reported to have been collected at the soil/water interface in each test pit, at approximately 7-9 feet bgs. Diesel range total petroleum hydrocarbons were detected in test pits TP1 through TP13 at concentrations up to 3,660 mg/kg, except at TP5, TP7, and TP11 where diesel range organics were not detected.

Heavy oil-range total petroleum hydrocarbons were detected in a soil sample obtained from TP3 at 1,660 mg/kg. The combined heavy oil and diesel range total petroleum hydrocarbons at TP3 is 2,076 mg/kg, above the MTCA Method A cleanup level.

Diesel range total petroleum hydrocarbons were detected in excavation water from test pits at concentrations up to 15,400 µg/L (TP9). Heavy oil-range total petroleum hydrocarbons were detected in excavation water from test pits at up to 693 µg/L (TP1).

During January and February of 2012, contaminated soil was excavated at the location of the former AST. The excavation pit was reported at 65' x 65' x 10' deep. Soil and groundwater samples obtained from the sidewalls and bottom of the excavation did not detect contamination above cleanup levels. A total of 2,580 tons of petroleum contaminated soil was reported removed from the excavation for offsite disposal. Diesel range total petroleum hydrocarbon contamination was left in place in soil at the Site, including sidewall sample TP1NC3-020112, where 1,810 mg/kg diesel range total petroleum hydrocarbons were detected in soil. Diesel range total petroleum hydrocarbon contamination was also left in soil at location TP-9, where 663 mg/kg diesel range total petroleum hydrocarbons were detected in soil.

In June 2012, 3 Kings completed soil borings B1 and B2 in the former excavation at the Site and collected groundwater samples from approximately 10 feet bgs from each boring. Diesel-range total petroleum hydrocarbons were detected at concentrations up to 88 µg/L. No boring logs were provided for these soil borings.

In July 2012, 3 Kings returned to approximately the same two locations within the former excavation and advanced two additional soil borings, B4 and B5 and collected groundwater from approximately 10 feet bgs from each boring. Diesel-range total petroleum hydrocarbons were detected at concentrations up to 1,180 µg/L total petroleum hydrocarbons. No boring logs were provided for these soil borings.

In December 2012, 3 Kings returned to the Site and advanced four additional soil borings within and adjacent to the former excavation. Borings DP-2 and DP-3 were located within the former excavation.

Borings DP-1 and DP-4 were located what was later demonstrated to be cross gradient to the location of the former AST, offset approximately 150 feet to the west and 185 feet to the east, based on positional information from Ecology's Environmental Information Management (EIM) database. 3 Kings collected groundwater from approximately 10 feet bgs from each boring. A groundwater grab sample from DP-2 detected 174,000 µg/L diesel range total petroleum hydrocarbons. A groundwater sample from DP-4, approximately 185 feet to the northeast of the DP-2 contained 166 µg/L diesel range total petroleum hydrocarbons.

In 2014, Floyd Snider installed four groundwater monitoring wells at the Site surrounding the location of the former AST. Monitoring wells were completed to between 13.35 and 14.42 feet bgs. According to the well installation report (September 3, 2014) monitoring wells MW-1, MW-2, and MW-3 were screened between 4 -14 feet bgs. MW-4 was screened between 5-15 feet bgs. Soil samples were obtained during well advancement. Diesel range total petroleum hydrocarbons were detected at up to 1,300 mg/kg in the shallowest soil samples analyzed (6-6.5 feet bgs) and at up to 79 mg/kg in the deepest soil samples obtained, from 14-14.5 feet bgs.

Groundwater from MW-1 through MW-4 has been monitored nine times since March, 2014. Over the nine monitoring events conducted from 2014-2016, depth to groundwater has varied from 1.64 feet bgs to 5.99 feet bgs, indicating some groundwater samples have been obtained from submerged screened intervals. Groundwater samples have detected diesel range total petroleum hydrocarbons at concentrations ranging from 300 µg/L to 760 µg/L.

Ecology calculated 0.95 mean upper confidence levels for diesel range total petroleum hydrocarbons concentrations at each groundwater monitoring well using a bootstrap method of 2000 iterations. 95% UCLs varied from 487 µg/L in MW-3, to 552 µg/L in MW-1, 587.1 µg/L in MW-4, and 608.5 µg/L in MW-2. Ecology has determined that 14 of 35 (40%) groundwater samples obtained during the nine sampling events have exceeded cleanup levels. The highest concentration detected was 760 µg/L in monitoring well MW-1 in June, 2016. No single diesel range organics sample obtained in the last nine sampling events was more than twice the cleanup level of 500 µg/L. No statistically significant trend in groundwater contaminant concentrations is currently detectable.