STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
Northwest Regional Office • 3190 160th Avenue SE • Bellevue, Washington 98008-5452 • (425) 649-7000

March 31, 2010

Mr. Jeffery Goold
Shell Oil Products US
Environmental Services
20945 S Wilmington Avenue
Carson CA 90810

Re: Further Action at the following Site:

- **Site Name:** Shell Oil Products SAP 120877
- **Site Address:** 210 NE 45th St, Seattle, WA
- **Facility/Site No.:** 14577491
- **VCP Project No.:** NW2033

Dear Mr. Goold:

The Washington State Department of Ecology (Ecology) received your request for an opinion on your independent cleanup of the Shell Oil Products SAP 169780 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 releases:

- Gasoline-, diesel-, and oil-range total petroleum hydrocarbons (TPHg, TPHd, TPHo) into the Soil and Ground Water.

- Benzene, toluene, ethylbenzene, xylene (BTEX) into the Soil and Ground Water.

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. November 5, 2009, *Remedial Investigation Report*, Delta Environmental Consultants.
2. April 3, 2007, *Soil Excavation and Stockpile Sampling Report, Shell Service Station, 210 Ne 45th St Seattle, WA.*, Delta Environmental Consultants.
3. April 24, 1992, *Soil and Groundwater Investigation Report, Texaco Service Station, 210 Ne 45th St Seattle, WA.*, SEACOR.
4. April 1991, *Report of Underground Storage Tank Closure and Environmental Site Assessment, 210 Ne 45th St Seattle, WA.*, Groundwater Technology Inc.

These documents are kept in the Central Files of the Northwest Regional Office of Ecology (NWRO) for review by appointment only. You can make an appointment by calling the NWRO resource contact, Sally Perkins, at 425-649-9190.

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 select a cleanup action for the Site. Additional sampling is required to determine the lateral and vertical extent of ground water contamination. The Site is described above and in **Enclosure A.**

Site maps appear to indicate that there two unconnected areas of both soil and ground water contamination. There is no definitive determination in the reports if the areas are from the same release or different releases. This is a major discrepancy in the site

characterization work completed to date. It is noted that local utility lines surround the Property and may have provided a pathway that resulted in the contamination to the west of the Property.

Soil

A terrestrial ecologic evaluation (TEE) was submitted with an exclusion based upon the condition that there is less than 1½ acres of undeveloped land within 500 feet of the Site. Therefore soil cleanup standards protective of terrestrial species are not needed.

TPHg, TPHd, TPHo and BTEX were detected at concentrations at or above MTCA Method A soil cleanup levels. Subsurface soil investigations have determined the lateral and vertical extent of the contaminated soil.

Ground Water

TPHg, TPHd, TPHo, BTEX were detected at concentrations at or above MTCA Method A ground water cleanup levels. Ground water investigations have not bounded the lateral extent of the releases to the south of the property in the vicinity of MW-6.

2. Establishment of cleanup standards.

The documents listed in this letter used MTCA Method A cleanup levels and the standard points of compliance for evaluation purposes. Alternative cleanup standards can be established in the feasibility study (FS). The FS will need to address the following exposure pathways to determine the appropriate cleanup standards.

Soil

Cleanup Levels Protective of Ground Water and Direct Contact Pathways:

Ground water at this Site has been impacted by the identified releases, therefore soil cleanup levels based on leaching (protection of ground water) are appropriate. To establish soil concentrations protective of ground water, either MTCA Method A cleanup levels (Table 740-1) or one or more of the methods described in WAC 173-340-747 may be used.

The Site does not meet the MTCA definition of an industrial property, therefore soil cleanup levels suitable for unrestricted land use will also need to be considered. For unrestricted land use, the soil cleanup level is based on the direct contact pathway. Either MTCA Method A or Method B cleanup levels can be used.

Points of Compliance:

The point of compliance based on the protection of ground water is Site wide throughout the soil profile and may extend below the water table. For soil cleanup

levels based on direct contact, the point of compliance is defined as throughout the site from the ground surface to fifteen feet below the ground surface.

Ground water
Cleanup Levels:

The ground water at this site is classified as potable to protect drinking water beneficial uses. For potable ground water either Method A or Method B cleanup levels could be used. However, site specific analyses supportive of Method B cleanup levels have not been conducted. Method A cleanup levels would therefore be the appropriate choice based upon the current available data.

Point of Compliance:

The standard point of compliance for groundwater is throughout the site from the uppermost level of the saturated zone extending vertically to the lowest depth which could potentially be affected.

3. Selection of cleanup action.

No cleanup action was identified or selected in the document submitted for review. Before a cleanup alternative can be selected the vertical and lateral extent of contamination at the Site must be defined and cleanup standards must be established. It is noted that the document submitted for this opinion did identify that cleanup standards, a cleanup action and additional compliance sampling will be identified and submitted as part of a Feasibility Study.

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 425-649-7064 or e-mail at bgil461@ecy.wa.gov.

Sincerely,

Bradly Gilmore L.G.
NWRO Toxics Cleanup Program

BGG: kp

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

cc: Matthew Miller, Delta Consultants
Carol Campanga, Shell Oil Products US

Enclosure A

Description and Diagrams of the Site

Site Name: Shell Oil Products SAP 120877
Site Address: 210 NE 45th St, Seattle, WA
Facility/Site No.: 14577491
VCP Project No.: NW2033

The Site consists of petroleum contamination associated with a retail service station (the Property). The Property is located at 210 NE 45th St, Seattle, Washington. Gasoline- diesel- and oil-range total petroleum hydrocarbons (TPHg, TPHd, TPHo), benzene, toluene, ethylbenzene, xylene (BTEX) were released to soil and ground water at the Property and adjacent properties to the south and west, and comprise the Site.

The Property is located in an area of commercial and residential uses in the Wallingford area of North Seattle. Commercial properties are located along 45th St to the west and east. Residential properties are north of the Property and approximately 200 feet to the south.

The Property is currently occupied by a retail gasoline station that has been in business at this location since 1964. Prior uses included residential properties originally built in the early 1920's.

The Property is relatively flat with a gentle slope to the south towards 45th St. The majority of the Property is paved or covered with the building footprint and walkways. Storm water is captured in catch basins on the Property and discharged to combined sewer and storm drain lines in 2nd Ave NE on the west and Thackery Place on the east. Lake Union is located about one-half mile south of the property.

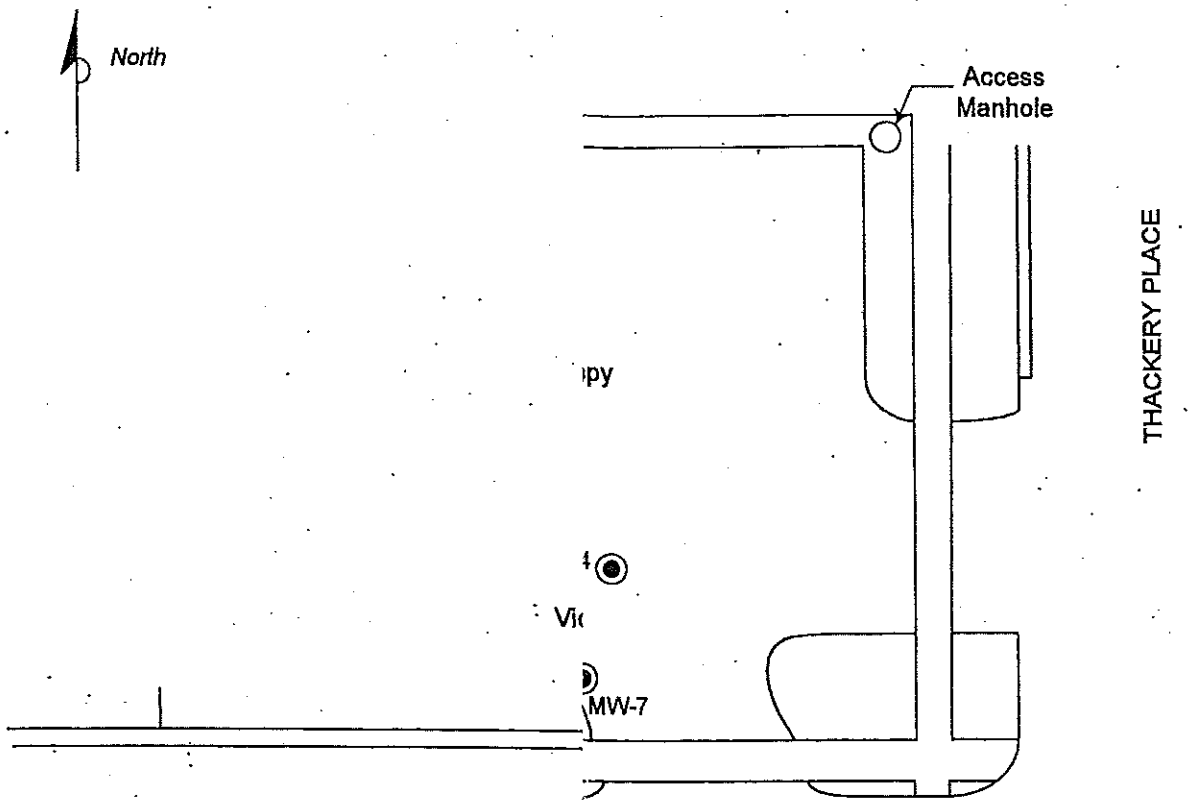
The property is connected to the City of Seattle municipal water system and municipal sewer system. No nearby residential water wells have been identified.

The Site is located on the north Seattle upland drift which is part of the Puget Sound lowland physiographic province. Geologic conditions beneath the Site consist of a coarse grained sand with varying amounts of gravel interbedded with a silty sand to a depth of 10 to 12 feet. Below these deposits is a silty sand grading into a predominately silt deposit. This sequence is most likely a Vashon recessional deposit (Qvr) overlying Vashon till (Qvt) deposits. The till extends from depth of 10 to 12 feet to the maximum depth of exploration of 25 feet.

Shallow ground water at the Site occurs under unconfined conditions. The water table fluctuates seasonally from approximately 5 ½ feet below ground surface (bgs) to 12 feet bgs. The ground water flows to the south-southeast towards Lake Union.

The TPHg, TPHd, TPHo and BTEX released to soil and ground water most likely came from leaking product supply lines, the dispenser islands and from leaking underground storage tanks. Site maps appear to indicate that there two unconnected areas of both soil and ground water contamination. There is no definitive determination if the areas are from the same release or different releases. This is a major discrepancy in the site characterization work completed to date.

Various cleanup actions conducted at the Site consisted of the removal of the UST's and excavation and removal of approximately 300 cubic yards of contaminated soil, installation of a soil vapor extraction (SVE) system, ground water extraction and treatment, injection of oxygen releasing compounds (ORC), and enhanced bioremediation injections. However, petroleum contamination of soil and groundwater still remains on the property and extends south across 45th St. The full lateral and vertical extent of the contamination has not been defined.



LEGEND

MW-1	Groundwater Monitoring Well
MW-2	Groundwater Extraction Well
MW-24	Former Shell Service Station 14310 Groundwater Monitoring Well
UO-N2	Location of Used Oil UST Excavation with MTCA Method A Exceedance
	Approximate Extent of Pre-Remediat
	Approximate Extent of Pre-Remediat
	Approximate Extent of Pre-Remediat
	Groundwater Impacts from Potential

NOTE:
Base map derived from base map provided in RETEC repor

FIGURE 1

ROXIMATE EXTENT OF IMPACTED MEDIA

Shell Oil Products US - SAP 120877

210 NE 45th STREET
SEATTLE, WASHINGTON

T NO. -045-1A	DRAWN BY JM 08/27/09
120877	PREPARED BY JM
N NO.	REVIEWED BY MM

DELTA