STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
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May 31, 2011

Perry Pineda
Shell Oil Products US
Environmental Services
20945 S Wilmington Avenue
Carson CA 90810

Re: Further Action at the following Site:

- **Site Name:** Shell Station 120531
- **Site Address:** 11700 NE 160th Bothell , WA
- **Facility/Site No.:** 63265631
- **VCP Project No.:** NW2053

Dear Mr. Pineda:

The Washington State Department of Ecology (Ecology) received your request for an opinion on your independent cleanup of the Shell Station 120531 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- and diesel-range total petroleum hydrocarbons (TPHg, TPHd) into the Soil and Ground Water.
- Benzene, toluene, ethylbenzene, xylene (BTEX) and naphthalene 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. The Site that this opinion letter applies to does not include the northwest portion of the parcel that was used for soil treatment. 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. March 3, 2011, *Remedial Investigation, Shell Branded Wholesale Facility, 11700 NE 160th Bothell, WA,* CRA.
2. August 2008, *Phase II Environmental Site Assessment, Current Shell Retail Facility, 11700 NE 160th Bothell, WA,* CRA.
3. April 17, 1996, *Limited Subsurface Investigation, Texaco Facility 63-232-1469, 11700 NE 160th Bothell, WA,* SECOR.
4. May 29, 1992, Preliminary *Site Assessment, Texaco Facility 63-232-1469, 11700 NE 160th Bothell, WA,* SECOR.

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 sufficient to establish cleanup standards and select a cleanup action. The Site is described above and in **Enclosure A.**

Soil
TPHg, TPHd, BTEX were detected at concentrations at or above MTCA Method A soil cleanup levels. There appears to be a limited area of TPHg and TPHo contamination remaining in the area near the drainage swale. The vertical and lateral extent of soil contamination in this area has not been determined, however further characterization may not be needed depending upon the selected cleanup action.

Ground Water
TPHg, TPHd, BTEX and naphthalene were detected at concentrations at or above MTCA Method A ground water cleanup levels at monitoring wells MW-1, and MW-9. The vertical and lateral extent of ground water contamination in the area around MW-1 and MW-9 has not been determined.

Sufficient data and information to support the determination of non-potable ground water was not provided in the listed documents. Missing information includes: the extent of affected groundwater; the likelihood of interconnection between the contaminated groundwater and groundwater that is a current or potential future source of drinking water; the hydrogeologic characteristics of the site; and a clear determination of discontinuities in the affected geologic stratum.

2. Establishment of cleanup standards.

The documents listed in this letter used MTCA Method B cleanup levels for soil and did not develop concomitant Method B cleanup levels for ground water. Standard points of compliance were also used for the evaluation purposes. Future reports will need to determine appropriate cleanup levels for each media.

Soil
Cleanup Levels Protective of Ground Water, Direct Contact and Terrestrial Ecological Pathways:
A terrestrial ecologic evaluation (TEE) has been completed. The Site qualifies for an exclusion. Specifically, there is less than 1.5 acres of contiguous undeveloped land on the site, or within 500 feet of any area of the site affected by the hazardous substances. Therefore soil cleanup standards protective of terrestrial species are not required.

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 (both human and ecologic species), 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 currently classified as potable to protect drinking water beneficial uses. Insufficient information was provided to make a determination that ground water at this Site can be considered non-potable.

Either MTCA Method A or Method B cleanup levels can be used. If Method B soil cleanup levels for direct contact are selected, Method B cleanup levels for potable ground water must also be determined for this Site.

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. It is noted that the document submitted for this opinion was a remedial investigation that identified additional characterization work was needed for the Site.

4. Cleanup.

Ecology has determined the cleanup you performed does not meet the cleanup standards established for the Site.

Approximately 1,740 cubic yards of contaminated soil was excavated and removed during upgrade and decommissioning work of Site facilities in 1991. Confirmation sampling was performed at the time of the work. Additional sample results document hydrocarbon concentrations above Method A direct contact soil cleanup levels at the east portion of the drainage swale I soil boring SB-8-6.

Ground water sample results document hydrocarbon concentrations above Method A cleanup levels at monitoring wells MW-1, and MW-9.

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: Brian Peters, CRA

Enclosure A

Description and Diagrams of the Site

Site Name: Shell Station 120531
Site Address: 11700 NE 160th St Bothell , WA
Facility/Site No.: 63265631
VCP Project No.: NW2053
Site Description

Site and Property Definition: The Site consists of petroleum contamination associated with a retail service station (the Property). The Property is located at 11700 NE 160th Bothell, Washington. Gasoline- and diesel-range total petroleum hydrocarbons (TPHg, TPHd), benzene, toluene, ethylbenzene, xylene (BTEX) were released to soil and ground water at the Property and comprise the Site.

Area Description: The Property is located in a residential and commercial mixed use area of the Kingsgate neighborhood at the intersection of Juanita Woodinville Way and 160th Street NE. The property is bounded by Juanita Woodinville Way, also known as Brickyard Road, to the west with the Interchange Plaza beyond, the Evergreen Academy school campus to the north and east, and a Chevron service station and commercial business to the south across 160th St. There are residential properties approximately 200 feet to the southeast and approximately 350 feet to the northwest. Interstate 405 is 500 feet to the west.

Property History and Current Use: The Property is currently a Shell-Branded service station. The Property was originally developed as a service station in 1972 and records indicate that the Property was undeveloped prior to 1972.

Contaminant Sources and History of Releases: The source of contamination is attributed to leaks and spills from the underground storage tanks (UST), dispenser islands and associated piping. No specific equipment failure has been identified at this site. The release was reported to Ecology in December 1991. The approximate boundary of the Site is presented in the attached figure.

Physiographic Setting: The site sits on a drift upland at an elevation of approximately 100 feet mean sea level (MSL) above the Sammamish River valley that runs to the east and north of the Site. The Sammamish River is approximately ¾ mile to the east of the Site.

Surface/Storm Water System: The Property is relatively flat with a slight slope to the southwest towards the drainage swale in the corner of the property. The majority of the Property is paved or covered with the building footprint and walkways. Storm water captured in the drainage swale discharges to storm drain system that flows under Brickyard Road and then along the right-of-way for Interstate 405 to a large bioswale.

Ecological Setting: Little undeveloped land exists immediately around the Site. There are landscape borders of grass and trees around the property. There is less than 1.5 acres of contiguous undeveloped land on the site, or within 500 feet of any area of the site affected by the hazardous substances.

Geology: The Site is located in the interlake upland drift, between the York channel and the Sammamish trough which is part of the Puget Sound lowland physiographic province. The surficial geologic unit in this area consists of Vashon till (Qvt) deposits.

Shallow subsurface soils at the Site consist of a layer of fill composed of sand and gravely sand. Underlying the fill is a dense fine to coarse grained sand with varying amounts of silt and gravel extending to the maximum depth of exploration of 60 feet. This deposit is interpreted to be Vashon till (Qvt).

Ground Water: Shallow ground water at the Site occurs within the Qvt deposit under unconfined conditions. The water bearing zone was measured at depths varying between 10 and 40 feet bgs. The large variation in water elevations is most likely the result of localized saturated zones throughout the site. Site ground water flow has not been determined. During testing of a dual phase extraction system at the Site hydraulic conductivity was determined to be 4.7 x 10-5 cm/s with an average discharge rate from monitoring well MW-1 of 0.16 gpm. No information was provided to delineate the extent of affected groundwater; the likelihood of interconnection between the contaminated groundwater and groundwater that is a current or potential future source of drinking water; the hydrogeologic characteristics of the site; and a clear presentation of discontinuities in the affected geologic stratum.

Water Use: The Property is connected to the Bothell Water and Wasterwater system. One nearby residential water well has been identified, approximately 2,300 feet to the southwest of the Property.

Release and Extent of Contamination - Soil: Soil contamination was detected in soil adjacent to and below the original USTs, the former dispenser islands and along product supply lines when they were removed and replaced in 1991. Current sample results document hydrocarbon concentrations above Method A direct contact soil cleanup levels in the east portion of the drainage swale at soil boring SB-8-6.

Extent of Contamination – Ground Water: Ground water sampling confirmed gasoline-, and diesel-range TPH and BTEX that exceeded MTCA Method A groundwater cleanup levels. The lateral and possible vertical extent of contamination has not been completely determined. Ground water sample results document hydrocarbon concentrations above Method A cleanup levels at monitoring wells MW-1, and MW-9.

Interim Actions:
Approximately 1,740 cubic yards of contaminated soil was excavated and removed during upgrade and decommissioning work of Site facilities in 1991. Confirmation sampling was performed at the time of the work. Additional sample results document hydrocarbon concentrations above Method A direct contact soil cleanup levels in the east portion of the drainage swale at soil boring SB-8-6.

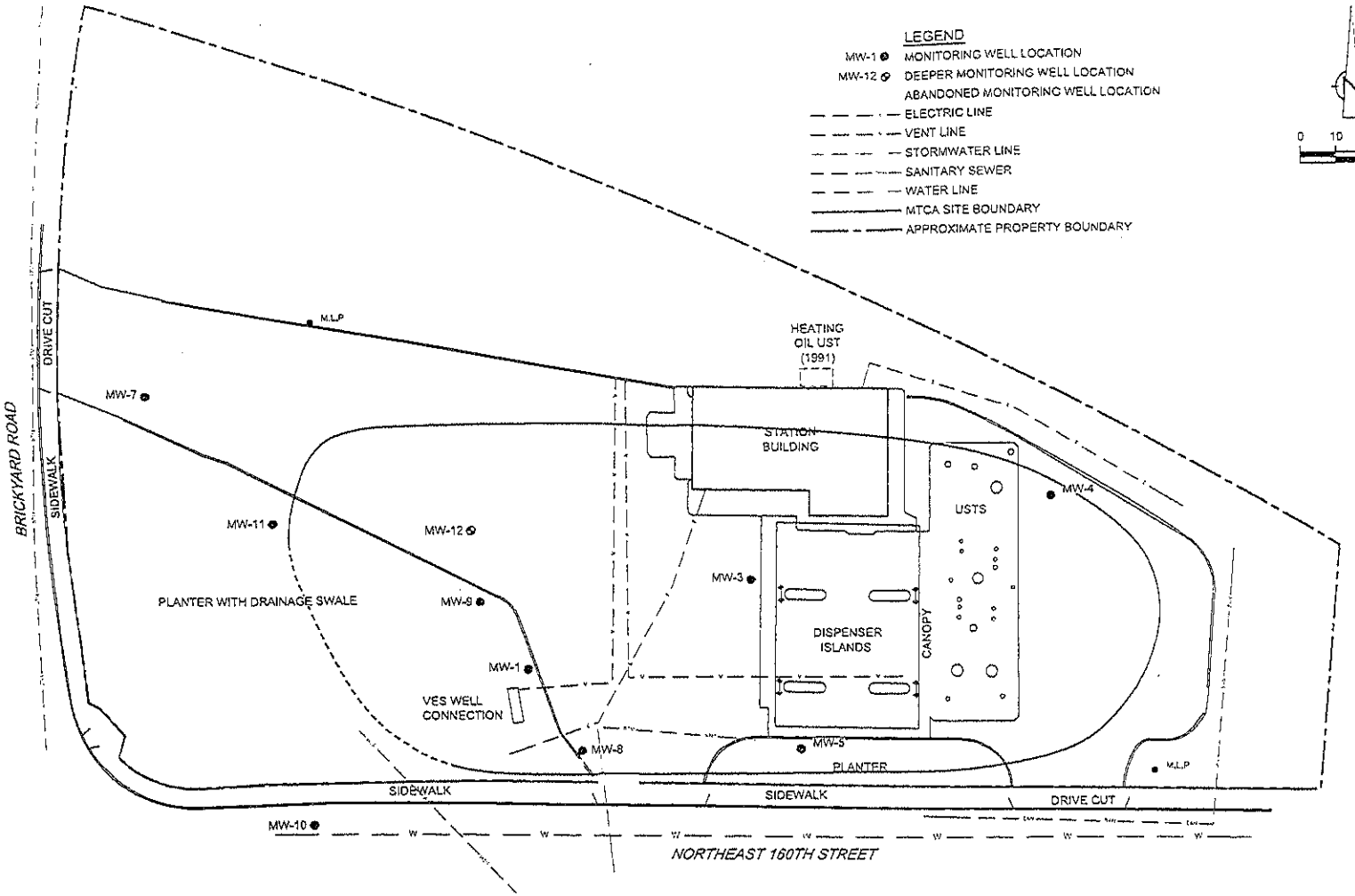

figure 2

SITE PLAN
SHELL-BRANDED WHOLESALE FACILITY
11700 NORTHEAST 160TH STREET
Bothell, Washington

BASEMAP MODIFIED FROM DRAWING PROVIDED BY STATEWIDE LAND SURVEYING INC.

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