



STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

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**Electronic Copy**

November 29, 2017

Ms. Jennifer C. Sedlachek  
ExxonMobil Environmental Services Co.  
4096 Piedmont Ave #194  
Oakland CA 94611-5221

**Re: No Further Action at the following Site:**

- **Site Name:** Lacey Food Mart
- **Site Address:** 4603 Lacey Blvd SE, Lacey, Washington
- **Facility/Site No.:** 54596735
- **Site Cleanup No.:** 6259
- **VCP Project No.:** SW1336

Dear Ms. Sedlachek:

The Washington State Department of Ecology (Ecology) received your request for an opinion on your independent cleanup of the Lacey Food Mart 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**

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**Ecology has determined that no 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**

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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 into the soil and 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**

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

1. *Confirmation Boring and Closure Request Report*, Cardno, August 11, 2015.
2. *Supplemental Closure Request*, Cardno, July 7, 2017.

These documents are kept in the Central Files of the Southwest Regional Office of Ecology (SWRO) for review by appointment only. You may 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**

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Ecology has concluded that **no 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**.

In May 2015 confirmation sampling took place at the Site to assure that all contamination had been removed to concentrations below applicable cleanup levels. Six borings were advanced in two areas where soil contamination had been left during previous cleanup activities (Figure 2). Collected samples were analyzed for Total Petroleum Hydrocarbons-Gasoline (TPH-G), Total Petroleum Hydrocarbons-Diesel (TPH-D), Total Petroleum Hydrocarbons-Oil (TPH-O), benzene, toluene, ethylbenzene, xylenes (BTEX), and lead (Pb). These results, along with the cumulative soil results, are shown in Table 1. Analyses were also conducted on these samples for volatile petroleum hydrocarbons (VPH; Table 2), extractable petroleum hydrocarbons (EPH; Table 3), additional volatile organic compounds (Table 4), and polycyclic aromatic hydrocarbons (Table 5).

This work confirmed that all soil analytical results were determined to be below applicable cleanup levels in the areas where remaining contamination had been located.

Confirmation grab groundwater samples were collected from borings B29 and B30 in areas where previous groundwater contamination had been identified, but no monitoring well installed. Samples were analyzed for TPH-G, TPH-D, TPH-O, BTEX, total Pb (PB-T) and dissolved Pb (Pb-D). The only analyte detected above the detection limit was Pb-T in boring B30 (Figure 2). All results from this sampling is shown in Table 6.

Groundwater has been monitored at the Site since 1998. The most recent sampling round was collected in December 2013 and analyzed for TPH-G, TPH-D, TPH-O, BTEX, total Pb (Pb-T) and dissolved Pb (Pb-D). At that time, with the exception of Pb-T, all remaining wells at the Site had a minimum of four consecutive quarters of results below applicable cleanup levels. Cumulative groundwater results are presented in Table 7.

## **2. Establishment of cleanup standards.**

Ecology has determined the cleanup levels and points of compliance you established for the Site meets the substantive requirements of MTCA.

The *Model Remedies for Sites with Petroleum Impacts to Groundwater*, Ecology, Publications No. 16-09-057, August 2016, Model Remedy 5, was used to determine cleanup levels for soil and groundwater. This remedy states:

“This model remedy is for situations where, following remediation, sufficient monitoring data are collected to confirm that the Method A groundwater cleanup levels are met throughout the site. Once groundwater quality has been adequately addressed, an empirical demonstration can be pursued using the provisions in WAC 173-340-747 to establish Method B soil cleanup levels that are protective of groundwater. This requires that the characteristics of the site are representative of future site conditions.”

After implementation of the remedy, confirmation testing must be performed to document that the Method B direct contact cleanup levels have been met at the point of compliance and the vapor intrusion pathway has been adequately addressed. At that point an NFA letter could be issued and no environmental covenant would be necessary.

In compliance with Model Remedy 5, cleanup levels and points of compliance were calculated using empirical demonstration [Chapter 173-340-7490(f)] for groundwater and a Site-specific Method B cleanup level for TPH-G in soil. Using this chapter, the exposure routes have been studied and found to be incomplete.

Site-specific Method B cleanup levels were calculated for TPH-G and benzene. This was accomplished by analyzing two samples, representative of Site conditions, for EVPH/EPH, and semi-volatile organic compounds. Two representative soil samples for VPH fractions and then entering this data into the Method B spreadsheets. A TPH-G value of 3,384 mg/kg for direct contact was derived for the Site (Tables 8 and 9). All the remaining TPH-G in soil is below this value.

MTCA Method A Cleanup Levels for groundwater are being used to characterize the Site.

**The Method A cleanup levels used are:**

**Groundwater:**

TPH-Gasoline	800 ug/l
Benzene	5 ug/l
Toluene	1000 ug/l
Ethylbenzene	700 ug/l
Total Xylenes	1000 ug/l
TPH-Diesel	500 ug/l
Pb-T	15 µg/l

Groundwater sampling results have been below the Method A cleanup levels for the four most recent consecutive quarters of sampling. This data indicates that partitioning of petroleum into groundwater is not occurring. Using empirical demonstration detailed in WAC 173-340-74-(3)(f), groundwater has been shown to be in compliance with the exception of Pb-T.

The Pb-T detections in Site groundwater monitoring results has varied significantly during the many years of sampling. The highest detection, 291 micrograms per liter (µg/l), was found in MW4 in December 2010. This is above the Method A cleanup level of 15 µg/l. The sample was also analyzed for Pb-D, which was not found at the detection level of 5.00 µg/l. Before 2002, Pb-D was occasionally analyzed in samples on an inconsistent schedule. Beginning around 2004, all Pb samples were analyzed for both total and dissolved Pb. During this time, only one result for Pb-D was above the detection limit. This result was 5.20 µg/l in a sample collected on March 25, 20013 from MW5.

Several lines of evidence indicate that the Pb-T is not related to contaminants emanating from the Site. These are:

- In the Ecology's *Natural Background Soil Metals Concentrations in Washington State*, dated October 1994, Publication No. 94-115, the established median and 90<sup>th</sup> percentile background Pb concentration in soil for the Puget Sound region was 9.8 milligrams per kilogram (mg/kg) and 16.83 mg/kg, respectively.

The Pb levels in the soil at the Site have been consistently below the Method A cleanup level of 250 mg/kg and the 90<sup>th</sup> percentile background concentrations for the Puget Sound area. Additionally, the median total Pb concentration in soil samples at the Site is 5.05 mg/kg.

- In groundwater, Pb has been detected at 290 µg/l in MW4 in December 2010. The result for Pb-D during the same sampling round was non-detect.
- The only detection in groundwater of Pb-D above the detection level was in MW5 in March 2013. The result was 5.20 µg/l. The result for Pb-T from the same round was 7.70 µg/l. Most of the sampling rounds had both Pb-T and Pb-D analyses. No correlation between the Pb-T and Pb-D is apparent.
- Groundwater samples from wells MW4, MW8, MW10, and MW11 historically have had the highest levels of TPH-G and benzene. These results did not have detectable concentrations of Pb-D. If concentrations of Pb-T and Pb-D were associated with the historical hydrocarbon release, a correlation between the Pb-T and TPH-G, TPH-D, TPH-O, and BTEX would be expected. Graphs were constructed of the analytical results and groundwater elevations to determine if there is any correlation. Graph 1 is a plot of hydrocarbons versus Pb-T concentrations in groundwater. Graph 2 plots BTEX versus Pb-T concentrations in groundwater. Graph 3 is a plot of groundwater elevations versus Pb-T. Included with Graphs 2 and 3 are tables showing the coefficient of determination values for each well.
- Concentrations of Pb-T have been detected in groundwater up gradient from the former USTs and product piping.

The vapor intrusion pathway was assessed. No soil remains in the vadose zone above the MTCA Method A cleanup levels thus this pathway is not complete.

### **3. Selection of cleanup action.**

Ecology has determined the cleanup action you selected for the Site meets the substantive requirements of MTCA.

Cleanup actions selected for Site remediation consisted of:

- Excavation of affected soil with off-Site treatment and disposal.
- Removal of groundwater during excavation with on-Site and off-Site treatment.

- Pilot air sparge/soil vapor extraction (AS/SVE) feasibility test.
- Oxygen injections into soil.

#### **4. Cleanup.**

Ecology has determined the cleanup you performed meets the cleanup standards established for the Site.

Cleanup of the Site consisted of removal of the USTs and product piping along with excavation of affected soil. A total of 2,255 tons of contaminated soil was taken off Site for disposal at TPS Technologies in Tacoma, Washington. The excavation was backfilled with clean soil. A total of 1,700 gallons of contaminated groundwater were removed and taken off Site to Arcom Oil Company in Tacoma, Washington, for treatment. A total of 4,810 gallons of contaminated water was treated on Site by Oil Trap, Inc., of Tumwater, Washington.

A pilot air sparge/soil vapor extraction (AS/SVE) feasibility test. The results were inconclusive so this remedy was not used.

Oxygen injections into soil were done at the Site from January 2011 through September 2012 in various on-Site injection wells.

Groundwater monitoring of contaminants.

#### **Listing of the Site**

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Based on this opinion, Ecology will initiate the process of removing the Site from our lists of hazardous waste sites, including:

- Hazardous Sites List.
- Confirmed and Suspected Contaminated Sites List.

This process includes public notice and opportunity to comment. Based on the comments received, Ecology will either remove the Site from the applicable lists or withdraw this opinion.

#### **Limitations of the Opinion**

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- 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).

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November 29, 2017  
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### **Termination of Agreement**

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Thank you for cleaning up the Site under the Voluntary Cleanup Program (VCP). This opinion terminates the VCP Agreement governing this project (#SW1336).

For more information about the VCP and the cleanup process, please visit our web site: [www.ecy.wa.gov/programs/tcp/vcp/vcpmain.htm](http://www.ecy.wa.gov/programs/tcp/vcp/vcpmain.htm). If you have any questions about this opinion or the termination of the Agreement, please contact me by phone at (360) 407-6263 or at [Carol.Johnston@ecy.wa.gov](mailto:Carol.Johnston@ecy.wa.gov).

Sincerely,



Carol A. Johnston  
SWRO Toxics Cleanup Program

CAJ: kb

By Certified Mail: [91 7199 9991 7037 7462 2231]

Enclosures: A – Description and Diagrams of the Site

cc: Mr. Jose Rodriguez Lopez, ExxonMobil Environmental Services Co.  
Ashok Sharma, Hariom Enterprises, Inc.  
Mr. Michael Miller, Cardno ERI  
Mr. Patrick Soderberg, Thurston County Environmental Health  
Mr. Nicholas Acklam, Ecology  
Ms. Stephanie Bussell, Ecology  
Mr. Mark Gordon, Ecology  
Ms. Megan MacClellan, Ecology



## **Enclosure A**

### **Description and Diagrams of the Site**

## Site Description

The Site, 0.31 acres, is located on the southeast corner of the intersection of Lacey Boulevard Southeast and College Street in Lacey, Washington (Figure 1). The Site is currently occupied by a Chevron gasoline station. The topography is generally flat. Land use in the surrounding area is commercial and residential.

Topography at the Site slopes to the east-southeast. Geology in the area consists of Vashon recessional outwash with moderately permeable sand and gravel deposits. Exploration at the Site has found predominantly silty sand from the surface to 15 feet bgs. Below the silty sand are silty clays and clays to 30 feet bgs. Till was encountered at 21 feet bgs during excavation activities.

The depth to groundwater at the Site has ranged from 12 to 22 feet bgs. The flow direction is predominantly to the northwest with a magnitude ranging from 0.0 to 0.6.

## Site History

In December 1973, a release of 1,178 gallons of petroleum was released into the subsurface due to a malfunctioning check valve. Environmental investigations have been conducted at the Site starting in 1986. Ecology does not have copies of reports of work done prior to 1996.

From available information, it appears that five underground storage tanks (USTs) were removed in the late 1980s: Two 8,000-gallon gasoline tanks, one 6,000-gallon gasoline tank, one 300-gallon used oil tank, and one approximately 300- to 500-gallon heating oil tank. During excavation activities, the hoists in the former service bay were also removed. The fuel and vent lines were left in place.

From January 1996 through June 1997, the Site was demolished and more contaminated soil excavated. No USTs were found during this phase of work.

The first phase of excavation started in December 1995 to February 1996. The excavation in the UST area was extended to approximately 21 feet below ground surface (bgs). The northern portion had contamination left in it due to stability issues concerning the roadway. While the excavation was open, groundwater flowed into it. Water in the excavation was pumped out and stored on Site in a Baker tank.

The area of the former heating oil tank was excavated to native soil at approximately 4.5 feet bgs. Samples collected and analyzed for TPH-D were non detect.

The former waste oil tank area was excavated and at approximately 17 feet bgs contamination was still present. The excavation was then extended and started encountering contamination from two dry wells. During this work, water seeping into the excavation had a petroleum odor and was pumped into a Baker tank. As the excavation proceeded toward the dry wells, a solvent odor was noticed along with the petroleum odor. The two dry wells were found to consist of vaults with holes for draining. Piping leading into the dry wells was found to start at the service bays of the building. Selected confirmation samples in the waste oil/dry wells excavation were also analyzed for intermediary petroleum distillates, specific halogenated hydrocarbons, and metals.

Remediation activities were resumed December 1996 through June 1997. The area of the waste oil/dry wells excavation was extended to a maximum depth of 21 feet bgs where till was encountered. After removing all noticeably contaminated soil, confirmation samples indicated all results were below cleanup levels for petroleum and halogenated hydrocarbons. The north pump island was excavated to a depth of approximately 7.5 feet bgs. Excavation at the western pump island found no contamination. Excavation extent is shown in Figure 2.

A total of 2,255 tons of contaminated soil was taken off Site for disposal at TPS Technologies in Tacoma, Washington. The excavation was backfilled with clean soil. A total of 1,700 gallons of contaminated groundwater were removed and taken off Site to Arcom Oil Company in Tacoma,

Washington, for treatment. A total of 4,810 gallons of contaminated water was treated on Site by Oil Trap, Inc., of Tumwater, Washington.

In March 1997, a Strata Probe was used to drill around the perimeter of the western and northwestern sides of the UST excavation to determine the extent of any remaining residual contamination. Two locations TPH-G and BTEX contamination.

Groundwater monitoring wells MW1 through MW4 were installed in January 1998. No soil sampling results are available for review. Groundwater samples from MW2 and MW4 were contaminated. Locations of all groundwater monitoring wells are shown on Figure 2.

In December 2000, five soil borings were advanced on and around the Site. A grab groundwater sample found that contamination extended into Lacey Boulevard. No contaminants above cleanup levels were found in soil. A report detailing the work was not available for review.

Monitoring wells MW5, MW6, and MW7 were installed in May 2002 (Figure 2). Soil samples collected to 30 feet bgs during installation found no contamination. In September 2007, monitoring wells MW8 through MW11 were installed. Soil contamination was found in boring B11 (MW8) at 16 feet and B13 (MW11) at 28 feet bgs. Monitoring wells MW12 and MW13 were installed in April 2008. No contamination was found in the soil samples collected.

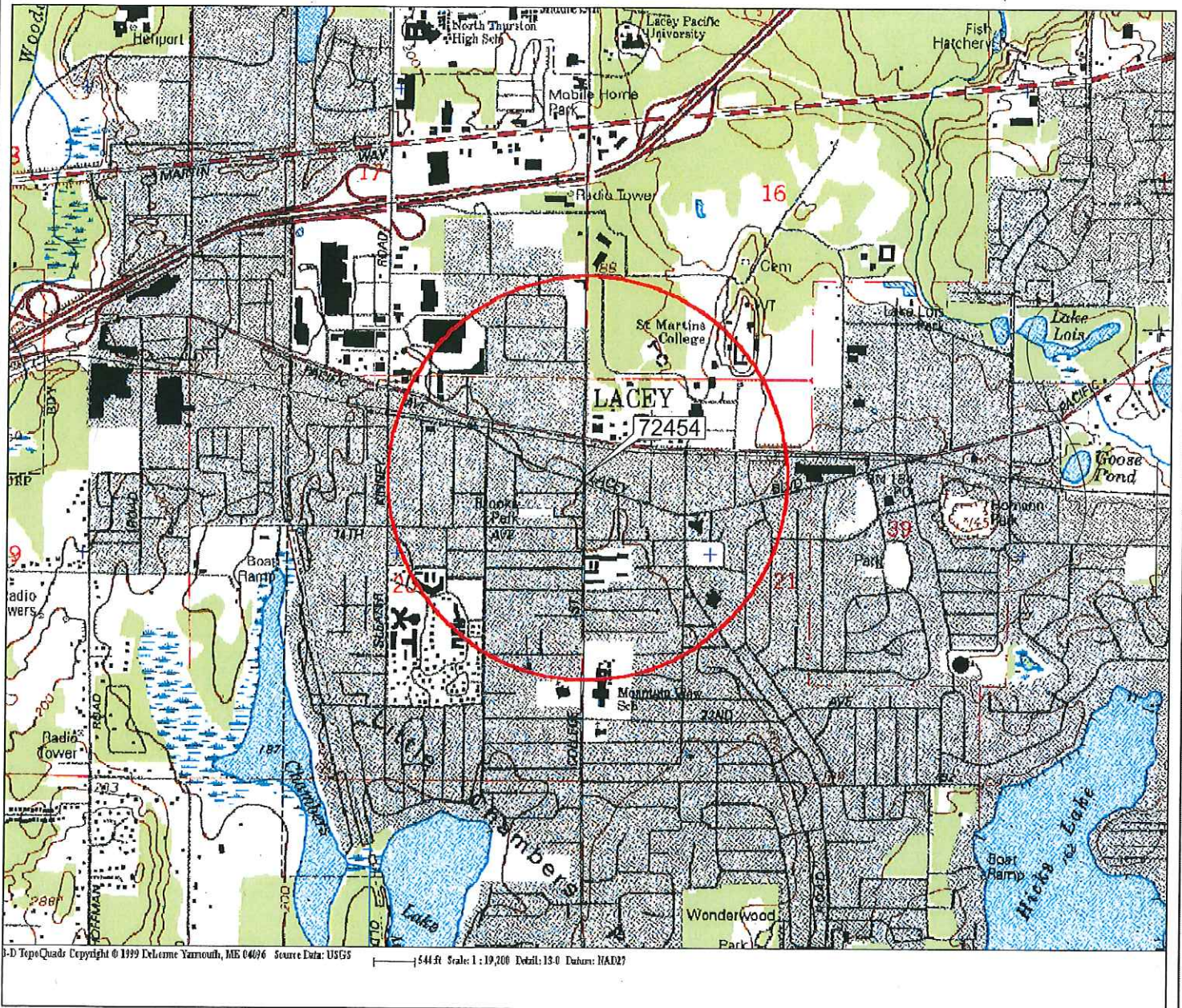
In July 2008, two more borings were installed and completed as air sparge (AS) wells AS1 and AS2. Both borings had contamination (Figure 2). A pilot air sparge/soil vapor extraction (AS/SVE) feasibility test was conducted in August 2009. The results were inconclusive as to the effectiveness of an AS/SVE system.

In November 2010, soil borings B19 through B23 were advanced to a total depth of 35 feet bgs. These borings were completed as AS wells AS3 through AS6. Borings B19 and B22 had soil contamination at 20 feet bgs and 25 feet bgs, respectively. Sample results from these borings were evaluated using the Method B spreadsheet calculations. The results found that the Method B calculated cleanup values for direct contact were protective of human health and the environment but not protective of the groundwater pathway.

Oxygen injections were done at the Site from January 2011 through September 2012 in various on-Site injection wells.


Groundwater has been monitored since late 1998. Table 1 lists groundwater monitoring results through December 2012.

## Site Diagrams



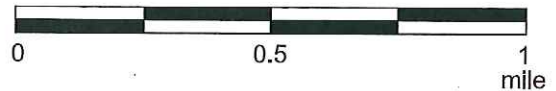
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**EXPLANATION**

 1/2-mile radius circle



**APPROXIMATE SCALE**



SOURCE:  
 Modified from a map  
 provided by  
 DeLorme 3-D TopoQuads



**SITE LOCATION MAP**  
 FORMER EXXON STATION 72454  
 4603 Lacey Boulevard Southeast  
 Lacey, Washington

**PROJECT NO.**  
 031104  
**PLATE**  
 1  
 NAG: 11/02/11



**TABLE 1**  
**CUMULATIVE SOIL ANALYTICAL RESULTS**  
Former Exxon Station 72454  
4603 Lacey Boulevard  
Lacey, Washington  
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Sample Name	Sample Date	Depth (ft bgs)	Location	TPHg (mg/kg)	TPHd (mg/kg)	TPHmo (mg/kg)	B (mg/kg)	T (mg/kg)	E (mg/kg)	X (mg/kg)	Total Pb (mg/kg)
<u>Stemen Environmental, Inc. (Stemen) - Excavation and Independent Remedial Action Report - July 28, 1997:</u>											
S-5	01/25/96	10.5	NA	1,190	--	--	--	--	--	--	--
S-6	01/25/96	11	NA	574	--	--	--	--	--	--	--
S-7	01/25/96	5.3	NA	35	ND	ND	ND	ND	ND	0.11	--
S-8	01/25/96	4.7	NA	--	ND	ND	--	--	--	--	--
S-9	01/25/96	7.2	NA	--	ND	ND	--	--	--	--	--
WO-1	02/01/96	--	NA	--	--	--	--	--	--	--	--
WO-2	02/01/96	--	NA	--	--	--	--	--	--	--	--
WO-3	02/01/96	--	NA	--	--	--	--	--	--	--	--
WO-4	02/01/96	--	NA	--	--	--	--	--	--	--	--
WO-5	02/01/96	--	NA	--	--	193	--	--	--	--	--
S-13	02/05/96	17	NA	ND	--	--	ND	ND	ND	ND	--
S-1	12/09/96	15	NA	ND	ND	ND	ND	ND	ND	ND	--
S-2	12/09/96	20	NA	ND	ND	ND	ND	ND	ND	ND	--
S-3	12/09/96	16	NA	ND	ND	ND	ND	ND	ND	ND	--
S-4	12/09/96	16.3	NA	ND	ND	ND	ND	ND	ND	ND	--
S-5	12/09/96	17	NA	ND	ND	ND	ND	ND	ND	ND	--
S-6	12/09/96	NA	NA	ND	ND	ND	ND	ND	ND	ND	--
S-8	12/13/96	8	NA	ND	ND	ND	ND	ND	ND	ND	--
S-9	12/13/96	19.5	NA	ND	ND	ND	ND	ND	ND	ND	--
S-11	12/13/96	20	NA	ND	ND	ND	ND	ND	ND	ND	--
S-12	12/13/96	17	NA	ND	ND	ND	ND	ND	ND	ND	--
S-13	12/13/96	20	NA	ND	ND	ND	ND	ND	ND	ND	--
S-14	12/13/96	6	NA	ND	ND	ND	ND	ND	ND	ND	--
S-15	12/13/96	13	NA	ND	ND	ND	ND	ND	ND	ND	--
S-16	12/13/96	14	NA	ND	ND	ND	ND	ND	ND	ND	--
S-17	12/13/96	20.8	NA	ND	ND	ND	ND	ND	ND	ND	--
S-18	12/17/96	15.3	NA	ND	ND	ND	ND	ND	ND	ND	--
S-19	12/17/96	20.3	NA	ND	ND	ND	ND	ND	ND	ND	--
S-21	12/17/96	20	NA	ND	ND	ND	ND	ND	ND	ND	--
S-23	12/17/96	19.7	NA	ND	ND	ND	ND	ND	ND	ND	--
S-24	12/17/96	17	NA	ND	ND	ND	ND	ND	ND	ND	--
S-25	12/17/96	20.1	NA	ND	ND	ND	ND	ND	ND	ND	--
S-26	12/17/96	11.3	NA	ND	ND	ND	ND	ND	ND	ND	--
S-27	12/17/96	19.8	NA	ND	ND	ND	ND	ND	ND	ND	--
S-28	12/17/96	20.8	NA	ND	ND	ND	ND	ND	ND	ND	--
S-29	12/17/96	20.6	NA	ND	ND	ND	ND	ND	ND	ND	--
S-31	12/19/96	5.8	NA	ND	ND	ND	ND	ND	ND	ND	--
S-32	12/19/96	20.8	NA	ND	ND	ND	ND	ND	ND	ND	--
SPS-1-12	03/07/97	12	SP1	ND	--	--	ND	0.32	ND	ND	--
SPS-1-15	03/07/97	15	SP1	ND	--	--	ND	ND	ND	ND	--
SPS-1-18	03/07/97	18	SP1	180	--	--	0.16	0.15	ND	1.12	--
SPS-1-21	03/07/97	21	SP1	802	--	--	4.09	27.6	9.03	68.9	--
SPS-1-27	03/07/97	27	SP1	60	--	--	ND	0.12	0.29	1.12	--
SPS-2-13	03/07/97	19	SP2	ND	--	--	ND	ND	ND	ND	--
SPS-2-21	03/07/97	21	SP2	ND	--	--	ND	ND	ND	ND	--
SPS-2-27	03/07/97	27	SP2	ND	--	--	ND	ND	ND	ND	--
SPS-3-18	03/07/97	18	SP3	16	--	--	ND	ND	0.31	0.5	--
SPS-3-26	03/07/97	26	SP3	ND	--	--	ND	ND	ND	ND	--
SPS-4-16	03/07/97	16	SP4	ND	--	--	ND	ND	ND	ND	--
MTCA Method A Cleanup Level				30/100 <sup>a</sup>	2,000	2,000	0.03	7	6	9	250
MTCA Method B Cleanup Level					3,384 <sup>b</sup>		18.2	6,400	8,000	16,000	NA

Continued on page 2



**TABLE 1**  
**CUMULATIVE SOIL ANALYTICAL RESULTS**  
Former Exxon Station 72454  
4603 Lacey Boulevard  
Lacey, Washington  
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Sample Name	Sample Date	Depth (ft bgs)	Location	TPHg (mg/kg)	TPHd (mg/kg)	TPHmo (mg/kg)	B (mg/kg)	T (mg/kg)	E (mg/kg)	X (mg/kg)	Total Pb (mg/kg)
<u>Stemen Environmental, Inc. (Stemen) - Excavation and Independent Remedial Action Report - July 28, 1997 (continued):</u>											
SPS-4-22	03/07/97	22	SP4	ND	--	--	ND	ND	ND	ND	--
SPS-4-26	03/07/97	26	SP4	ND	--	--	ND	ND	ND	ND	--
SPS-5-15	03/07/97	15	SP5	ND	--	--	ND	ND	ND	ND	--
SPS-5-20	03/07/97	20	SP5	ND	--	--	ND	ND	ND	ND	--
SPS-5-23	03/07/97	23	SP5	2,200	--	--	2.02	24.8	27.6	129	--
SPS-5-26	03/07/97	26	SP5	ND	--	--	0.21	ND	ND	ND	--
SWSW	04/15/97	5	NA	ND	--	--	ND	ND	ND	ND	--
NESW	04/15/97	8	NA	ND	--	--	ND	ND	ND	ND	--
SWCW	05/21/97	6	NA	ND	--	--	ND	ND	ND	ND	--
SWCF	05/21/97	15	NA	ND	--	--	ND	ND	ND	ND	--
SW6	05/21/97	14.2	NA	ND	--	--	ND	ND	ND	ND	--
SECW6	05/21/97	7	NA	ND	--	--	ND	ND	ND	ND	--
SECF6	05/21/97	15	NA	ND	--	--	ND	ND	ND	ND	--
NPI-1	05/21/97	7.5	NA	ND	--	--	ND	ND	ND	ND	--
NPI-2	05/21/97	7	NA	ND	--	--	ND	ND	ND	ND	--
NPI-3	05/21/97	5.4	NA	ND	--	--	ND	ND	ND	ND	--
<u>Environmental Resolutions, Inc. (ERI) - Soil Probe Assessment - August 7, 2001:</u>											
P1-15	12/28/00	15	NA	<5.00	<10.0	31.5	<0.0500	<0.0500	<0.0500	<0.100	--
P2-10	12/28/00	10	NA	<5.00	144	1,600	<0.0500	<0.0500	<0.0500	<0.100	--
P3-10	12/28/00	10	NA	<5.00	<10.0	26.8	<0.0500	<0.0500	<0.0500	<0.100	--
P5-10	12/28/00	10	NA	<5.00	<10.0	<25.0	<0.0500	<0.0500	<0.0500	<0.100	--
<u>Environmental Resolutions, Inc. (ERI) - Monitoring Well Installation and Soil Sampling Report - December 31, 2002:</u>											
S-19-B1	05/31/02	19	MW5	<6.70	<13.4	<13.4	<0.013	<0.013	<0.013	<0.013	2.33
S-19-B2	05/31/02	19	MW6	<5.82	<11.6	<11.6	<0.012	<0.012	<0.012	<0.012	1.61
S-15-B3	05/31/02	15	MW7	<6.71	<13.4	<13.4	<0.013	<0.013	<0.013	<0.013	4.35
S-19-B3	05/31/02	19	MW7	<6.24	<12.5	<12.5	<0.012	<0.012	<0.012	<0.012	1.45
<u>Environmental Resolutions, Inc. (ERI) - Drilling and Well Installation Report - November 21, 2007:</u>											
S-16-B11	09/17/07	16	MW8	3,000	28.5	<5.05	<0.0335	8.43	28.5	173	5.29
S-22-B11	09/17/07	22	MW8	11.3	<5.08	<5.08	<0.0344	0.0900	0.625	0.738	2.88
S-16-B10	09/18/07	16	MW9	6.50	<4.48	<4.48	<0.0309	<0.0618	<0.0618	0.185	1.31
S-21-B10	09/18/07	21	MW9	<6.35	<5.12	<5.12	<0.0317	<0.0635	<0.0635	<0.190	2.79
S-10-B12	09/17/07	10	MW10	5.90	<4.12	<4.12	<0.0282	<0.0564	<0.0564	<0.169	1.41
S-24-B12	09/17/07	24	MW10	7.56	<5.20	<5.20	<0.0292	<0.0583	<0.0583	<0.175	2.61
S-16-B13	09/18/07	16	MW11	<6.17	<5.00	<5.00	<0.0309	<0.0617	<0.0617	<0.185	2.79
S-28-B13	09/18/07	28	MW11	10.2	<4.92	<4.92	0.0975	<0.0597	<0.0597	<0.179	2.94
<u>Environmental Resolutions, Inc. (ERI) - Soil Sampling and Well Installation Activities - May 28, 2008:</u>											
S-10-B15	04/06/08	10	MW12	<3.79	<4.43	18.9	<0.0190	<0.0379	<0.0379	<0.114	--
S-15-B15	04/06/08	15	MW12	<4.04	7.83	58.1	<0.0202	<0.0404	<0.0404	<0.121	--
S-20-B15	04/06/08	20	MW12	<4.88	<4.58	4.65	<0.0244	<0.0488	<0.0488	<0.147	3.06
S-25-B15	04/06/08	25	MW12	<6.44	<5.37	<5.37	<0.0322	<0.0644	<0.0644	<0.193	--
S-10.5-B16	04/10/08	10.5	MW13	<11.2	<4.42	<4.42	<0.0560	<0.112	<0.112	<0.336	--
S-15.5-B15	04/10/08	15.5	MW13	<11.9	<4.78	<4.78	<0.0597	<0.119	<0.119	<0.358	3.00
S-21-B16	04/10/08	21	MW13	<11.3	<4.85	<4.85	<0.0567	<0.113	<0.113	<0.340	--
S-25.5-B16	04/10/08	25.5	MW13	<10.6	<4.82	<4.82	<0.0531	<0.106	<0.106	<0.319	--
MTCA Method A Cleanup Level				30/100 <sup>a</sup>	2,000	2,000	0.03	7	6	9	250
MTCA Method B Cleanup Level					3,384 <sup>b</sup>		18.2	6,400	8,000	16,000	NA

Continued on page 3

**TABLE 1**  
**CUMULATIVE SOIL ANALYTICAL RESULTS**  
Former Exxon Station 72454  
4603 Lacey Boulevard  
Lacey, Washington  
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Sample Name	Sample Date	Depth (ft bgs)	Location	TPHg (mg/kg)	TPHd (mg/kg)	TPHmo (mg/kg)	B (mg/kg)	T (mg/kg)	E (mg/kg)	X (mg/kg)	Total Pb (mg/kg)
<u>Environmental Resolutions, Inc. (ERI) - Air Sparge Well Installation Report - September 5, 2008:</u>											
S-16-B17	07/30/08	16	AS1	<5.26	<4.75	<4.75	<0.00180	0.0159b	0.00502b	0.0533b	6.24
S-21-B17	07/30/08	21	AS1	23.5	<5.25	<5.25	0.37	5.37	1.47	5.89	--
S-30-B17	07/30/08	30	AS1	<5.66	<4.87	<4.87	0.00412 <sup>c</sup>	0.0332 <sup>c</sup>	0.0214 <sup>c</sup>	0.0678 <sup>c</sup>	--
S-16-B18	07/31/08	16	AS2	<5.30	<4.66	<4.66	<0.00185	0.00856 <sup>c</sup>	0.00285 <sup>c</sup>	0.0247 <sup>c</sup>	9.33
S-21.5-B18	07/31/08	21.5	AS2	35.3	<5.09	<5.09	0.94	8.09	1.77	8.81	--
S-26-B18	07/31/08	26	AS2	<5.33	<5.05	<5.05	0.00259 <sup>c</sup>	0.0265 <sup>c</sup>	0.0144 <sup>c</sup>	0.0616 <sup>c</sup>	--
S-27-B18	07/31/08	27	AS2	73.4	<4.54	<4.54	0.02	0.67	0.666	3.59	2.75
<u>Cardno ERI (Cardno) - Air Sparge Well Installation Report - February 16, 2011:</u>											
S-5-B19	11/09/10	5	AS3	<6.53	5.62	4.96	<0.00264	0.00280	<0.00264	<0.00659	4.79
S-10-B19	11/11/10	10	AS3	<6.30	<4.31	9.29	<0.00276	<0.00276	<0.00276	<0.00691	6.23
S-15-B19	11/11/10	15	AS3	<7.09	<4.36	<4.36	<0.00265	<0.00265	<0.00265	<0.00663	3.87
S-20-B19	11/11/10	20	AS3	31.4	637	5.83	<0.122	0.326	1.04	3.25	6.17
S-25-B19	11/11/10	25	AS3	<6.57	<4.54	<4.54	0.00488	0.00407	0.00660	<0.00792	3.55
S-5-B20	11/09/10	5	AS4	<7.04	<5.19	115	0.00280	0.0104	0.00380	0.0507	4.37
S-15-B20	11/11/10	15	AS4	<11.7	<4.64	<4.64	<0.00298	0.00298	<0.00298	<0.00744	5.37
S-25-B20	11/11/10	25	AS4	<6.30	<5.19	<5.19	<0.00251	<0.00251	<0.00251	<0.00628	6.41
S-27.5-B20	11/11/10	27.5	AS4	<5.29	<4.15	<4.15	<0.00180	<0.00180	<0.00180	<0.00449	1.99
S-5-B21	11/10/10	5	NA	<4.82	<4.42	47.6	<0.00226	<0.00226	<0.00226	<0.00564	7.45
S-5-B22	11/10/10	5	AS5	<6.93	<5.12	<5.12	<0.00330	<0.00330	<0.00330	<0.00824	4.50
S-15-B22	11/11/10	15	AS5	<6.04	<4.19	<4.19	<0.00236	<0.00236	<0.00236	<0.00590	5.05
S-25-B22	11/11/10	25	AS5	33.7	4.97J	2.11J	0.142	0.0322	3.23	5.72	7.39
S-5-B23	11/09/10	5	AS6	<6.97	<4.15	16.7	<0.00242	<0.00242	0.00344	0.0238	4.89
S-10-B23	11/10/10	10	AS6	<5.94	<4.15	<4.15	<0.00228	<0.00228	<0.00228	<0.00569	5.19
S-15-B23	11/10/10	15	AS6	<6.71	<5.18	<5.18	<0.00245	<0.00245	<0.00245	<0.00612	7.07
S-20-B23	11/10/10	20	AS6	<9.08	7.29	180	<0.00253	<0.00253	<0.00253	<0.00633	5.05
S-25-B23	11/10/10	25	AS6	8.28	<5.01	<5.01	0.00905	0.0376	0.762	1.77	5.19
S-32.5-B23	11/11/10	32.5	AS6	<5.93	<4.90	<4.90	<0.00261	<0.00261	<0.00261	<0.00654	4.92
<u>Cardno - Confirmation Boring and Closure Request Report - August 11, 2015:</u>											
S-21-B24	05/05/15	21	NA	292	2.12J	<5.51	0.122	22.8	10.6	62.4	9.45
S-27-B24	05/05/15	27	NA	<6.45	<4.98	<4.98	0.00535	0.00596	0.0353	0.0128	10.3
S-18-B25	05/05/15	18	NA	<5.83	<4.62	2.62J	<0.00176	0.00154J	<0.00176	0.00102J	7.42
S-21-B25	05/05/15	21	NA	304	11.0	3.19J	0.00724	1.64	5.29	15.3	8.17
S-27-B25	05/05/15	27	NA	7.63	<4.95	<4.95	0.0358	0.00558	0.777	0.0527	8.12
S-23-B26	05/05/15	23	NA	32.5	<5.50	<5.50	0.0119	0.0106	0.214	1.34	7.36
S-26-B26	05/05/15	26	NA	4.13J	<4.99	2.53J	0.00130J	<0.00197	0.00266	<0.00295	6.52
S-10.5-B27	05/04/15	10.5	NA	<5.28	<4.21	<4.21	<0.00158	<0.00158	0.000568J	0.00147J	3.72
S-11-B28	05/04/15	11	NA	57	<4.51	2.63J	<0.00202	0.000799J	<0.00202	0.00161J	6.16
S-5.5-B31	05/05/15	5.5	NA	<5.29	1.86J	21.9	0.00149J	0.00415	0.00108J	0.00662	13.0
MTCA Method A Cleanup Level				30/100 <sup>a</sup>	2,000	2,000	0.03	7	6	9	250
MTCA Method B Cleanup Level					3,384 <sup>b</sup>		18.2	6,400	8,000	16,000	NA

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**TABLE 1**  
**CUMULATIVE SOIL ANALYTICAL RESULTS**  
 Former Exxon Station 72454  
 4603 Lacey Boulevard  
 Lacey, Washington  
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Sample Name	Sample Date	Depth (ft bgs)	Location	TPHg (mg/kg)	TPHd (mg/kg)	TPHmo (mg/kg)	B (mg/kg)	T (mg/kg)	E (mg/kg)	X (mg/kg)	Total Pb (mg/kg)
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**EXPLANATION:**

mg/kg= Milligrams per kilogram

ft bgs= Feet below ground surface

TPHg = Total Petroleum Hydrocarbons as gasoline in accordance with Ecology Method WTPH-G or Ecology Method NWTPH-Gx

TPHd = Total Petroleum Hydrocarbons as diesel; TPHmo = Total Petroleum Hydrocarbons as oil

TPHd and TPHmo analyses in accordance with Ecology Method WTPH-D (extended) or Ecology Method NWTPH-Dx, refer to laboratory reports

B = Benzene; T = Toluene; E = Ethylbenzene; X = Total xylenes

BTEX = Aromatic compounds in accordance with EPA Method 8021B or 8260B, refer to laboratory reports

Shaded values equal or exceed the applicable MTCA cleanup levels

ND = Not detected

-- = Not analyzed

NA = Not applicable

< = Less than the stated laboratory reporting limit

a = TPHg soil cleanup level is 30 mg/kg unless benzene is not detected in the sample, or if toluene, ethylbenzene, and total xylenes constitute less than 1% of the TPHg in the samples. If these conditions are met, the cleanup level for TPHg may be elevated to 100 mg/kg.

b = Total TPH cleanup level calculated using Ecology's worksheet A2.1B Worksheet for Calculating Soil Cleanup Levels for Protection of Human Health

c = Results may be elevated due to carryover from previously analyzed sample

**TABLE 2**  
**CUMULATIVE SOIL ANALYTICAL RESULTS**  
**VOLATILE PETROLEUM HYDROCARBONS**

Former Exxon Station 72454  
 4603 Lacey Boulevard  
 Lacey, Washington  
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Soil Sample Name	Well ID	Date	Aliphatics				Aromatics		
			C5-C6 (mg/kg)	C6-C8 (mg/kg)	C8-C10 (mg/kg)	C10-C12 (mg/kg)	C8-C10 (mg/kg)	C10-C12 (mg/kg)	C12-C13 (mg/kg)
<u>Cardho ERI (Cardho) - Air Sparge Well Installation Report - February 16, 2011:</u>									
S-20-B19	AS3	11/11/10	<6.09	2.32J	6.12	8.60	9.68	2.89J	0.636J
S-25-B22	AS5	11/11/10	<7.46	3.14J	8.68	9.95	13.9	5.11J	<7.46
<u>Cardho - Confirmation Boring and Closure Request Report - August 11, 2015:</u>									
S-21-B24	NA	05/05/15	<6.95	12.2	<6.95	2.86J	68.0a	16.3a	5.77J,a
S-27-B25	NA	05/05/15	<6.28	<6.28	<6.28	<6.28	<6.04	<6.04	<6.04
S-23-B26	NA	05/05/15	<6.94	<6.94	<6.94	<6.94	14.9a	8.04a	7.56

**EXPLANATION:**

mg/kg = milligram per kilogram

Analyses performed in accordance with Washington Department of Ecology Method NWTPH-VPH

< = Less than the stated laboratory reporting limit

a = Sample was prepped or analyzed beyond the specified time

J = Denotes a result that is an estimated value, between the laboratory method detection limit and the method reporting limit

**TABLE 3**  
**CUMULATIVE SOIL ANALYTICAL RESULTS**  
**EXTRACTABLE PETROLEUM HYDROCARBONS**

Former Exxon Station 72454  
 4603 Lacey Boulevard  
 Lacey, Washington  
 Page 1 of 1

Soil Sample Name	Well ID	Date	Aliphatics				Aromatics					
			C8-C10 (mg/kg)	C10-C12 (mg/kg)	C12-C16 (mg/kg)	C16-C21 (mg/kg)	C21-C34 (mg/kg)	C8-C10 (mg/kg)	C10-C12 (mg/kg)	C12-C16 (mg/kg)	C16-C21 (mg/kg)	C21-C34 (mg/kg)
<b>Cardno ERI (Cardno) - Air Sparge Well Installation Report - February 16, 2011:</b>												
S-20-B19	AS3	11/11/10	433	158	38.4	2.69J	<6.12	306	188	75.9	6.03J	<6.12
S-25-B22	AS5	11/11/10	<5.93	<5.93	<5.93	<5.93	<5.93	<5.93	2.79J	<5.93	<5.93	<5.93
<b>Cardno - Confirmation Boring and Closure Request Report - August 11, 2015:</b>												
S-21-B24	NA	05/05/15	18.6	13.6	5.61	<6.36	<6.36	5.55J	4.39J	4.99J	<6.36	<6.36
S-27-B25	NA	05/05/15	<6.01	<6.01	<6.01	<6.01	4.07J,a	<6.01	<6.01	<6.01	<6.01	4.37J,a
S-23-B26	NA	05/05/15	<6.94	<6.94	<6.94	<6.94	<6.94	<6.94	<6.94	<6.94	<6.94	<6.94

**EXPLANATION:**

mg/kg = milligram per kilogram

Analyses performed in accordance with Washington Department of Ecology Method NWTPH-EPH

< = Less than the stated laboratory reporting limit

a = Instrument related quality control outside acceptable control limits

J = Denotes a result that is an estimated value, between the laboratory method detection limit and the method reporting limit

**TABLE 4**  
**CUMULATIVE SOIL ANALYTICAL RESULTS**  
**ADDITIONAL VOCs**  
 Former Exxon Station 72454  
 4603 Lacey Boulevard  
 Lacey, Washington  
 Page 1 of 1

Soil Sample Name	S-20-B19	S-25-B22	S-21-B24	S-27-B25	S-23-B26	MTCA Method B Cleanup Level
Date	11/11/10	11/11/10	05/05/15	05/05/15	05/05/15	
Sample Depth (ft bgs)	20	25	21	27	23	
(mg/kg)						
Naphthalene	0.446	1.92	3.72	0.139	2.15	1,600
n-Hexane	< 0.609	0.222	2.63	0.0736	0.0234	4,800
MTBE	< 0.122	< 0.00269	< 0.00220	< 0.00254	< 0.00282	556
EDB	< 0.00256	< 0.00269	< 0.00220	< 0.00254	< 0.00282	0.5
EDC	< 0.122	< 0.00269	< 0.00220	< 0.00254	< 0.00282	--
2-Methyl	17.8	0.0543	--	--	--	--

**EXPLANATION:**

mg/kg = milligram per kilogram

MTBE = Methyl tert-butyl ether

EDB = 1,2-Dibromoethane; EDC = 1,2-Dichloroethane

2-Methyl = 2-Methylnaphthalene

Naphthalene, n-Hexane, MTBE, EDB and EDC in accordance with WDOE Interim TPH Policy Method in accordance with 8260B, see laboratory report

PAHs in accordance with EPA Method 8270C

< = Less than the stated laboratory reporting limit

**TABLE 5**  
**CUMULATIVE SOIL ANALYTICAL RESULTS**  
**POLYCYCLIC AROMATIC HYDROCARBONS**  
 Former Exxon Station 72454  
 4603 Lacey Boulevard  
 Lacey, Washington  
 Page 1 of 1

Sample Name	S-20-B19 Sample Date 11/11/10 20	S-25-B22 Sample Date 11/11/10 25	S-21-B24 Sample Date 05/05/15 21	S-27-B25 Sample Date 05/05/15 27	S-23-B26 Sample Date 05/05/15 23	MTCA Method B Cleanup Level	MTCA Method B Cleanup Level
B(a)A	< 0.00209	< 0.00414	< 0.00330	< 0.00332	< 0.00311	1.37	1.37
B(a)P	< 0.00417	< 0.00414	< 0.00330	< 0.00332	< 0.00311	0.137	0.137
B(b)F	< 0.00417	< 0.00414	< 0.00330	< 0.00332	< 0.00311	1.37	1.37
B(k)F	< 0.00417	< 0.00414	< 0.00330	< 0.00332	< 0.00311	13.7	13.7
Chrysene	< 0.00167	< 0.00414	< 0.00330	< 0.00332	< 0.00311	137	137
DBA	< 0.00417	< 0.00414	< 0.00330	< 0.00332	< 0.00311	0.137	0.137
IP	< 0.00417	< 0.00414	< 0.00330	< 0.00332	< 0.00311	1.37	1.37
Sum TEF Values	0.003	0.003	0.002	0.003	0.003	0.002	0.002
MTCA Method A Cleanup Level	0.1	0.1	0.1	0.1	0.1	0.1	0.1

**EXPLANATION:**

All units are milligram per kilogram  
 ft bgs = feet below ground surface  
 TEF = Toxicity Equivalence Factor  
 B(a)A = Benzo(a)anthracene  
 B(b)F = Benzo(b)fluoranthene  
 B(k)F = Benzo(k)fluoranthene  
 B(a)P = Benzo(a)pyrene  
 DBA = Dibenzo(a,h)anthracene  
 IP = Indeno(1,2,3-cd)pyrene  
 PAHs = Polycyclic Aromatic Hydrocarbons in accordance with EPA Method 8270D SIM  
 < = Less than the stated laboratory reporting limit  
 Shaded values equal or exceed MTCA Method B Cleanup Levels  
 For samples that were not detected above the laboratory report limit, half the laboratory method detection limit was used to calculate the TEF value

**TABLE 6**  
**GRAB GROUNDWATER ANALYTICAL RESULTS - 05/04/15**

Former Exxon Station 72454  
 4603 Lacey Boulevard  
 Lacey, Washington  
 Page 1 of 1

Sample ID	Sampling Date	TPHg (µg/L)	TPHd (µg/L)	TPHmo (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	Total Lead (µg/L)	Dissolved Lead (µg/L)
W-15-B29	05/04/15	<100	<93.5	<93.5	<1.00	<1.00	<1.00	<2.00	<5.00	<5.00
W-15-B30	05/04/15	<100	<95.7	<95.7	<1.00	<1.00	<1.00	<2.00	6.00	<5.00
MTCA Method A Cleanup Level 800/1,000 <sup>a</sup> 500 500 5 1,000 700 1,000 15 15										

**EXPLANATION:**

µg/L = Micrograms per Liter

TPHg = Total Petroleum Hydrocarbons as Gasoline in accordance with Ecology Method NWTPH-Gx  
 TPHd and TPHmo = Total Petroleum Hydrocarbons as Diesel and Oil, respectively, in accordance with Ecology Method NWTPH-Dx

B = Benzene; T = Toluene; E = Ethylbenzene; X = Total Xylenes

BTEX = volatile organic compounds in accordance with EPA Method 8260B

Total and Diss Pb = Total and Dissolved Lead in accordance with EPA Method 6010C

< = Less than the stated laboratory reporting limit

a = TPHg cleanup level for groundwater is 800 µg/L if benzene is present, or 1,000 µg/L if benzene is not present





**TABLE 7**  
**CUMULATIVE GROUNDWATER ANALYTICAL RESULTS**  
 Former Exxon Station 72454  
 4603 Lacey Boulevard Southeast  
 Lacey, Washington  
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Well ID	Sampling Date	Wellhead Elev (feet)	DTW (feet)	GW Elev (feet)	TPHg (µg/L)	TPHd (µg/L)	TPHmo (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	Total Pb (µg/L)	Diss Pb (µg/L)	Ethanol (µg/L)
MW1	04/02/13	202.50	14.73	187.77	<100	-c	-c	<1.00	<1.00	<1.00	<3.00	-c	-c	-
MW1	04/29/13	202.50	NM	-	-	-	-	-	-	-	-	-	-	-
MW1	06/26/13	202.50	15.32	187.18	<100	<96.2	<96.2	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	-
MW1	12/30/13	202.50	18.30	184.20	<100	<96.2	<96.2	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	-
Screened Interval 10-30 ft bgs \ Total Depth 30 ft bgs														
MW2	10/30/98	99.45	22.10	77.35	55,000	-	-	610	12,000	1,100	10,000	-	-	-
MW2	12/17/99	99.45	16.30	83.15	2,500	-	-	22	430	79	570	-	-	-
MW2	04/07/00	99.45	13.45	86.00	2,400	-	-	13	250	40	300	-	-	-
MW2	12/28/00	99.45	19.80	79.65	55,200	514	<750	1,020	9,620	1,230	6,210	-	-	-
MW2	03/26/01	99.45	20.95	78.50	26,000	-	-	634	4,660	601	3,020	-	-	-
MW2	06/12/01	99.45	21.32	78.13	9,380	-	-	385	1,850	264	1,140	-	-	-
MW2	09/24/01	99.45	23.06	76.39	6,650	-	-	356	1,660	211	999	-	-	-
MW2	03/20/02	99.45	14.16	85.29	9,430	-	-	32.5	54.6	548	298	5.00	-	-
MW2	12/18/02 b	99.45	20.03	79.42	51,600	-	-	380	17,000	1,980	11,100	<3.00	-	-
Destroyed														
Screened Interval 10-30 ft bgs \ Total Depth 30 ft bgs														
MW3	10/30/98	99.16	21.75	77.41	<100	-	-	<1.00	<1.00	<1.00	<1.00	-	-	-
MW3	12/17/99	99.16	16.20	82.96	<100	-	-	<1.00	<1.00	<1.00	<1.00	-	-	-
MW3	04/07/00	99.16	13.25	85.91	<100	-	-	<1.00	<1.00	<1.00	<1.00	-	-	-
MW3	12/28/00	99.16	19.40	79.76	1,080	467	<750	9.19	196	35.9	137	-	-	-
MW3	03/26/01	99.16	20.46	78.70	621	-	-	6.92	110	16.4	71.6	-	-	-
MW3	06/12/01	99.16	20.90	78.26	Casing obstructed	-	-	-	-	-	-	-	-	-
MW3	09/24/01	99.16	22.48	76.68	532	-	-	68.8	238	13.4	61.1	-	-	-
MW3	03/20/02	99.16	13.90	85.26	<100	-	-	<1.00	3.20	3.70	9.20	<3.00	-	-
MW3	12/18/02 b	99.16	19.66	79.50	<100	-	-	<1.00	<1.00	<1.00	<1.00	-	-	-
Destroyed														
Screened Interval 10-30 ft bgs \ Total Depth 30 ft bgs														
MW4	10/30/98	98.77	21.35	77.42	94,000	-	-	460	5,300	1,000	3,100	-	-	-
MW4	12/17/99	98.77	15.75	83.02	8,100	-	-	67	660	710	2,000	-	-	-
MW4	04/07/00	98.77	12.90	85.87	3,300	-	-	12	68	230	810	-	-	-
MW4	12/28/00	98.77	19.05	79.72	20,300	548	<750	29.4	590	1,160	3,860	-	-	-
MW4	03/26/01	98.77	20.18	78.59	17,200	-	-	<25.0	117	1,280	3,100	-	-	-
MW4	06/12/01	98.77	20.88	77.89	6,500	-	-	40.1	325	281	778	-	-	-
MW4	09/24/01	98.77	NM	-	4,450	-	-	41.5	114	602	5,190	-	-	-
MW4	03/20/02	98.77	13.61	85.16	4,330	-	-	25.3	9.50	640	256	9.00	-	-
MW4	12/18/02	98.77	19.39	79.38	4,330	-	-	56.5	28.3	631	324	-	-	-
MW4	10/28/04	98.77	20.09	78.68	5,120	<100	<100	86	40.3	872	741	20	<5.0	<100
MTCA Method A Cleanup Levels														
					800/1,000a	500	500	5	1,000	700	1,000	15	15	N/A

**TABLE 7**  
**CUMULATIVE GROUNDWATER ANALYTICAL RESULTS**

Former Exxon Station 72454  
 4603 Lacey Boulevard Southeast  
 Lacey, Washington  
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Well ID	Sampling Date	Wellhead Elev (feet)	DTW (feet)	GW Elev (feet)	TPHg (µg/L)	TPHd (µg/L)	TPHmo (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	Total Pb (µg/L)	Diss Pb (µg/L)	Ethanol (µg/L)
MW4	12/13/05	98.77	21.69	77.08	8,100	2,620	<114	142	21.9	985	840	41.7	<5.00	<100
MW4	12/19/06	98.77	15.45	83.32	5,950	1,790	<125	174	26.2	736	1,160	--	--	--
MW4	03/27/07	98.77	12.17	86.60	853	362	<133	39.8	3.53	109	199	<5.00	<5.00	--
MW4	06/18/07	98.77	13.64	85.13	1,380	496	<93.9	29.4	8.27	178	362	<5.00	<5.00	--
MW4	09/26/07	98.77	16.58	82.19	1,830	--	--	51.3	5.55	156	267	<5.00	<5.00	--
MW4	11/27/07	98.77	17.72	81.05	1,540	599	<105	75.5	6.34	194	303	<5.00	<5.00	--
MW4	02/27/08	98.77	13.55	85.22	1,240	655	<94.3	46.0	8.10	177	313	<5.00	<5.00	--
MW4	06/04/08	98.77	14.56	84.21	346	131	<102	7.71	1.47	47.5	90.8	<5.00	<5.00	--
MW4	09/15/08	98.77	17.52	81.25	1,800	570	<102	29.7	4.50	167	310	<5.00	<5.00	--
MW4	11/12/08	98.77	17.56	81.21	7,000	1,160	<95.2	15.6	46.0	431	1,880	84.6	<5.00	--
MW4	03/31/09	98.77	17.37	81.40	1,570	1,080	<111	45.8	4.64	166	39.4	<5.00	<5.00	--
MW4	06/30/09	98.77	16.18	82.59	2,880	913	<94.3	37.2	7.23	200	274	<5.00	<5.00	--
MW4	09/30/09	98.77	18.61	80.16	3,950	1,260	<105	25.4	10.5	338	707	<5.00	<5.00	--
MW4	12/18/09	98.77	18.01	80.76	19,400	2,340	131	89.6	67.6	668	2,970	56.4	<5.00	--
MW4	03/31/10	98.77	17.07	81.70	544	799	<97.1	46.5	1.04	6.74	19.6	10.6	<5.00	--
MW4	06/02/10	98.77	16.55	82.22	2,540	690	<105	14.8	3.83	164	337	5.40	<5.00	--
MW4	09/07/10	98.77	16.81	81.96	1,130	279	<105	10.3	2.09	112	105	--	--	--
MW4	12/20/10	98.77	15.63	83.14	1,680	1,220	<105	6.07	5.75	98.4	204	291	<5.00	<100
MW4	03/10/11	98.77	13.24	85.53	<100	<96.2	<96.2	<1.00	<1.00	<1.00	<3.00	5.00	<5.00	<100
MW4	06/16/11 d	201.75	12.73	189.02	--	--	--	--	--	--	--	--	--	--
MW4	06/17/11	201.75	12.73	189.02	<100	<99.0	<248	<1.00	<1.00	<1.00	<3.00	10.1	<5.00	--
MW4	09/25/11	201.75	15.47	186.28	<100	<102	<255	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	--
MW4	12/30/11	201.75	16.32	185.43	--	--	--	--	--	--	--	--	--	--
MW4	06/25/12	201.75	14.36	187.39	<100	<96.2	<96.2	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	--
MW4	12/03/12	201.75	18.23	183.52	--	--	--	--	--	--	--	--	--	--
MW4	12/04/12	201.75	NM	--	--	--	--	--	--	--	--	--	--	--
MW4	03/26/13	201.75	NM	--	--	--	--	--	--	--	--	--	--	--
MW4	04/02/13	201.75	13.93	187.82	<100	--	--	<1.00	<1.00	<1.00	<3.00	--	--	--
MW4	04/29/13	201.75	NM	--	--	--	--	--	--	--	--	--	--	--
MW4	06/26/13	201.75	14.61	187.14	<100	<95.2	96.7	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	--
MW4	12/30/13	201.75	17.39	184.36	<100	<98.0	<98.0	<1.00	<1.00	<1.00	<3.00	15.4	<5.00	--
Screened interval 10-30 ft bgs \ Total Depth 30 ft bgs														
MW5	12/18/02	98.56	19.17	79.39	<100	<100	<100	<1.0	1.5	<1.0	1.6	78.0	--	--
MW5	10/28/04	98.56	NM	--	--	--	--	--	--	--	--	--	--	--
MW5	12/13/05	98.56	20.48	78.08	<100	122	<103	1.62	<1.00	<1.00	<3.00	82.9	<5.00	<100
MW5	12/19/06	98.56	Inaccessible	--	--	--	--	--	--	--	--	--	--	--
MW5	03/27/07	98.56	Inaccessible	--	--	--	--	--	--	--	--	--	--	--
MTCA Method A Cleanup Levels														
800/1,000a 500 500 5 1,000 700 1,000 15 15 N/A														

**TABLE 7**  
**CUMULATIVE GROUNDWATER ANALYTICAL RESULTS**

Former Exxon Station 72454  
 4603 Lacey Boulevard Southeast  
 Lacey, Washington  
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Well ID	Sampling Date	Wellhead Elev (feet)	DTW (feet)	GW Elev (feet)	TPHg (µg/L)	TPHd (µg/L)	TPHmo (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	Total Pb (µg/L)	Diss Pb (µg/L)	Ethanol (µg/L)
MW5	06/18/07	98.56	Inaccessible											
MW5	09/26/07	98.56	Inaccessible											
MW5	11/27/07	98.56	Inaccessible											
MW5	02/27/08	98.56	Inaccessible											
MW5	06/04/08	98.56	14.34	84.22	<100	<95.2	<1.00	<1.00	<1.00	<1.00	<3.00	7.60	<5.00	
MW5	09/15/08	98.56	17.31	81.25	<100	<103	<1.00	<1.00	<1.00	<1.00	<3.00	11.0	<5.00	
MW5	11/12/08	98.56	18.42	80.14	<100	<97.1	<1.00	<1.00	<1.00	<1.00	<3.00	49.9	<5.00	
MW5	03/31/09	98.56	NM											
MW5	06/30/09	98.56	NM											
MW5	09/30/09	98.56	18.30	80.26	<100	<99.0	<1.00	<1.00	<1.00	<1.00	<3.00	10.6	<5.00	
MW5	12/18/09	98.56	17.72	80.84	<100	<96.2	<1.00	<1.00	<1.00	<1.00	<3.00	11.2	<5.00	
MW5	03/31/10	98.56	14.93	83.63	<100	<95.2	<1.00	<1.00	<1.00	<1.00	<3.00	13.6	<5.00	
MW5	06/02/10	98.56	14.34	84.22	<100	<96.2	<1.00	<1.00	<1.00	<1.00	<3.00	46.5	<5.00	
MW5	09/07/10	98.56	NM											
MW5	12/20/10	98.56	15.22	83.34	<100	<95.2	<1.00	<1.00	<1.00	<1.00	<3.00	44.6	<5.00	
MW5	03/10/11	98.56	12.50	86.06	<100	<102	<1.00	<1.00	<1.00	<1.00	<3.00	40.1	<5.00	
MW5	06/16/11 d	201.38	12.28	189.10	<100	<97.1	<243	<1.00	<1.00	<1.00	<3.00	46.8	<5.00	
MW5	06/17/11	201.38	NM											
MW5	09/25/11	201.38	NM											
MW5	12/30/11	201.38	NM											
MW5	06/25/12	201.38	NM											
MW5	12/03/12	201.38	17.76	183.62	<100	<94.3	132	<1.00	<1.00	<1.00	<3.00	9.70	<5.00	
MW5	03/26/13	210.38	13.48	196.90	<100	<94.3	<94.3	<1.00	<1.00	<1.00	<3.00	7.70	5.20	
MW5	04/02/13	210.38	NM											
MW5	04/29/13	210.38	NM											
MW5	06/26/13	210.38	NM											
MW5	12/30/13	210.38	NM											

Screened Interval 10-30 ft bgs \ Total Depth 30 ft bgs

MW6	12/18/02	99.94	20.55	79.39	<100	<100	<1.00	<1.00	1	<1.00	1.5	75.0		
MW6	10/28/04	99.94	NM											
MW6	12/13/05	99.94	NM											
MW6	12/19/06	99.94	Inaccessible											
MW6	03/27/07	99.94	Inaccessible											
MW6	06/18/07	99.94	Inaccessible											
MW6	09/26/07	99.94	Inaccessible											
MW6	11/27/07	99.94	Inaccessible											
MW6	02/27/08	99.94	Inaccessible											

MTCA Method A Cleanup Levels

800/1,000a 500 500 5 1,000 700 1,000 15 15 N/A

**TABLE 7**  
**CUMULATIVE GROUNDWATER ANALYTICAL RESULTS**  
 Former Exxon Station 72454  
 4603 Lacey Boulevard Southeast  
 Lacey, Washington  
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Well ID	Sampling Date	Wellhead Elev (feet)	DTW (feet)	GW Elev (feet)	TPHg (µg/L)	TPHd (µg/L)	TPHmo (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	Total Pb (µg/L)	Diss Pb (µg/L)	Ethanol (µg/L)
MW6	06/04/08	99.94	16.82	83.12	<100	<96.2	<96.2	<1.00	<1.00	<1.00	<3.00	14.6	<5.00	<100
MW6	09/15/08	99.94	19.95	79.99	<100	<104	<104	<1.00	<1.00	<1.00	<3.00	15.8	<5.00	--
MW6	11/12/08	99.94	21.01	78.93	<100	<111	<111	<1.00	<1.00	<1.00	<3.00	80.5	<5.00	--
MW6	03/31/09	99.94	20.89	79.05	<100	<105	<105	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	--
MW6	06/30/09	99.94	18.89	81.05	<100	<95.2	<95.2	<1.00	<1.00	<1.00	<3.00	94.7	<5.00	--
MW6	09/30/09	99.94	NM	--	--	--	--	--	--	--	--	--	--	--
MW6	12/18/09	99.94	18.38	81.56	<100	<105	<105	<1.00	<1.00	<1.00	<3.00	67.0	<5.00	--
MW6	03/31/10	99.94	17.54	82.40	<100	<95.2	<95.2	<1.00	<1.00	<1.00	<3.00	54.9	<5.00	--
MW6	06/02/10	99.94	17.12	82.82	<100	<100	<100	<1.00	<1.00	<1.00	<3.00	99.5	<5.00	--
MW6	09/07/10	99.94	17.13	82.81	--	--	--	--	--	--	--	--	--	--
MW6	12/20/10	99.94	18.03	81.91	<100	<95.2	<95.2	<1.00	<1.00	<1.00	<3.00	8.80	<5.00	--
MW6	03/10/11	99.94	15.09	84.85	<100	<100	<100	<1.00	<1.00	<1.00	<3.00	9.50	<5.00	--
MW6	06/16/11 d	204.01	14.71	189.30	<100	<99.0	<248	<1.00	<1.00	<1.00	<3.00	34.7	<5.00	--
MW6	06/17/11	204.01	NM	--	--	--	--	--	--	--	--	--	--	--
MW6	09/25/11	204.01	NM	--	--	--	--	--	--	--	--	--	--	--
MW6	12/30/11	204.01	NM	--	--	--	--	--	--	--	--	--	--	--
MW6	06/25/12	204.01	NM	--	--	--	--	--	--	--	--	--	--	--
MW6	12/03/12	204.01	18.21	185.80	--	--	--	--	--	--	--	--	--	--
MW6	12/04/12	204.01	18.21	185.80	<100	<96.2	<96.2	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	--
MW6	03/26/13	204.01	NM	--	--	--	--	--	--	--	--	--	--	--
MW6	04/02/13	204.01	16.15	187.86	<100	<95.2	<95.2	<1.00	<1.00	<1.00	<3.00	5.50	<5.00	--
MW6	04/29/13	204.01	NM	--	--	--	--	--	--	--	--	--	--	--
MW6	06/26/13	204.01	NM	--	--	--	--	--	--	--	--	--	--	--
MW6	12/30/13	204.01	NM	--	--	--	--	--	--	--	--	--	--	--

Screened Interval 10-30 ft bgs \ Total Depth 30 ft bgs														
					500	500	5	1,000	700	1,000	15	15	15	N/A
MW7	12/18/02	99.84	20.56	<100	<100	<100	<1.00	<1.00	1.6	<1.00	2.0	42.0	--	--
MW7	10/28/04	99.84	NM	--	--	--	--	--	--	--	--	--	--	--
MW7	12/13/05	99.84	21.85	77.99	<100	<105	<105	<1.00	<1.00	<1.00	<3.00	21.8	<5.00	<100
MW7	12/19/06	99.84	16.35	83.49	<100	<111	<111	<1.00	<1.00	<1.00	<3.00	--	--	--
MW7	03/27/07	99.84	13.11	86.73	<100	<125	<125	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	--
MW7	06/18/07	99.84	14.71	85.13	<100	<98.0	<98.0	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	--
MW7	09/26/07	99.84	17.81	82.03	<250	--	--	<1.00	<1.00	<1.00	<3.00	5.64	<5.00	--
MW7	11/27/07	99.84	18.93	80.91	<250	<105	<105	<1.00	<1.00	<1.00	<3.00	13.0	<5.00	--
MW7	02/27/08	99.84	14.53	85.31	<100	<100	<100	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	--
MW7	06/04/08	99.84	16.63	83.21	<100	<95.2	<95.2	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	--
MW7	09/15/08	99.84	18.74	81.10	<100	<100	<100	<1.00	<1.00	<1.00	<3.00	19.3	<5.00	--
MW7	11/12/08	99.84	19.67	80.17	<100	<97.1	<97.1	<1.00	<1.00	<1.00	<3.00	35.3	<5.00	--

MTCA Method A Cleanup Levels 800/1,000a 500 500 5 1,000 700 1,000 15 15 15 N/A

**TABLE 7**  
**CUMULATIVE GROUNDWATER ANALYTICAL RESULTS**  
 Former Exxon Station 72454  
 4603 Lacey Boulevard Southeast  
 Lacey, Washington  
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Well ID	Sampling Date	Wellhead Elev (feet)	DTW (feet)	GW Elev (feet)	TPHg (µg/L)	TPHd (µg/L)	TPHmo (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	Total Pb (µg/L)	Diss Pb (µg/L)	Ethanol (µg/L)
MW7	03/31/09	99.84	19.74	80.10	<100	<118	<118	<1.00	<1.00	<1.00	<3.00	30.9	<5.00	--
MW7	06/30/09	99.84	17.24	82.60	<100	<94.3	<94.3	<1.00	<1.00	<1.00	<3.00	135	<5.00	--
MW7	09/30/09	99.84	NM	--	--	--	--	--	--	--	--	--	--	--
MW7	12/18/09	99.84	18.94	80.90	<100	<94.3	<94.3	<1.00	<1.00	<1.00	<3.00	94.0	<5.00	--
MW7	03/31/10	99.84	16.02	83.82	<100	<95.2	<95.2	<1.00	<1.00	<1.00	<3.00	56.1	<5.00	--
MW7	06/02/10	99.84	15.49	84.35	<100	<100	<100	<1.00	<1.00	<1.00	<3.00	33.9	<5.00	--
MW7	09/07/10	99.84	16.32	83.52	--	--	--	--	--	--	--	--	--	--
MW7	12/20/10	99.84	16.38	83.46	<100	<95.2	<95.2	<1.00	<1.00	<1.00	<3.00	26.9	<5.00	--
MW7	03/10/11	99.84	13.66	86.18	<100	<99.0	<99.0	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	--
MW7	06/16/11 d	202.63	13.32	189.31	<100	<99.0	<248	<1.00	<1.00	<1.00	<3.00	39.1	<5.00	--
MW7	06/17/11	202.63	NM	--	--	--	--	--	--	--	--	--	--	--
MW7	09/25/11	202.63	NM	--	--	--	--	--	--	--	--	--	--	--
MW7	12/30/11	202.63	NM	--	--	--	--	--	--	--	--	--	--	--
MW7	06/25/12	202.63	NM	--	--	--	--	--	--	--	--	--	--	--
MW7	12/03/12	202.63	17.96	184.67	--	--	--	--	--	--	--	--	--	--
MW7	12/04/12	202.63	17.96	184.67	<100	<100	<100	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	--
MW7	03/26/13	202.63	NM	--	--	--	--	--	--	--	--	--	--	--
MW7	04/02/13	202.63	NM	--	--	--	--	--	--	--	--	--	--	--
MW7	04/29/13	202.63	NM	--	--	--	--	--	--	--	--	--	--	--
MW7	06/26/13	202.63	NM	--	--	--	--	--	--	--	--	--	--	--
MW7	12/30/13	202.63	NM	--	--	--	--	--	--	--	--	--	--	--

Screened Interval 7-22 ft bgs \ Total Depth 22 ft bgs

Well ID	Sampling Date	Wellhead Elev (feet)	DTW (feet)	GW Elev (feet)	TPHg (µg/L)	TPHd (µg/L)	TPHmo (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	Total Pb (µg/L)	Diss Pb (µg/L)	Ethanol (µg/L)
MW8	09/26/07	99.36	17.09	82.27	--	--	--	--	--	--	--	--	--	--
MW8	11/27/07	99.36	18.18	81.18	<250	<111	<111	<1.00	<1.00	<1.00	<3.00	--	--	<100
MW8	02/27/08	99.36	14.55	84.81	840	229	<100	<1.00	4.72	29.0	172	<5.00	<5.00	--
MW8	06/04/08	99.36	15.52	83.84	1,170	391	<95.2	<1.00	1.03	54.2	222	8.50	<5.00	<100
MW8	09/15/08	99.36	18.52	80.84	1,910	453	<98.0	<1.00	16.9	97.6	401	<5.00	<5.00	--
MW8	11/12/08	99.36	19.14	80.22	29,900	4,480	<541	6.31	873	1,340	9,570	32.8	<5.00	--
MW8	03/31/09	99.36	19.03	80.33	288	<95.2	<95.2	<1.00	1.76	7.97	38.5	10.4	<5.00	--
MW8	06/30/09	99.36	17.22	82.14	235	<95.2	<95.2	<1.00	1.81	9.39	41.6	9.00	<5.00	--
MW8	09/30/09	99.36	19.55	79.81	8,080	1,190	<100	1.43	170	479	2,210	<5.00	<5.00	--
MW8	12/18/09	99.36	18.43	80.93	38,900	5,170	<100	5.76	951	2,410	9,320	80.7	<5.00	--
MW8	03/31/10	99.36	18.02	81.34	<100	<111	<111	<1.00	<1.00	<1.00	<3.00	9.40	<5.00	--
MW8	06/02/10	99.36	15.60	83.76	<100	<97.1	<97.1	<1.00	<1.00	<1.00	<3.00	5.60	<5.00	--
MW8	09/07/10	99.36	17.67	81.69	<100	<103	<103	<1.00	1.56	11.5	26.9	14.5	<5.00	--
MW8	12/20/10	99.36	16.53	82.83	3,980	573	<96.2	1.86	129	753	1,650	<5.00	<5.00	--
MW8	03/10/11	99.36	13.47	85.89	<100	<98.0	<98.0	<1.00	<1.00	2.73	8.13	7.00	<5.00	--

MTCA Method A Cleanup Levels

800/1,000a 500 500 5 1,000 700 1,000 15 15 N/A

**TABLE 7**  
**CUMULATIVE GROUNDWATER ANALYTICAL RESULTS**  
 Former Exxon Station 72454  
 4603 Lacey Boulevard Southeast  
 Lacey, Washington  
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Well ID	Sampling Date	Wellhead Elev (feet)	DTW (feet)	GW Elev (feet)	TPHg (µg/L)	TPHd (µg/L)	TPHmo (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	Total Pb (µg/L)	Diss Pb (µg/L)	Ethanol (µg/L)
MW8	06/16/11 d	202.72	13.12	189.60	-	-	-	-	-	-	-	-	-	-
MW8	06/17/11	202.72	13.12	189.60	<100	<98.0	<245	<1.00	<1.00	<1.00	<3.00	27.3	<5.00	-
MW8	09/25/11	202.72	16.33	186.39	<100	<94.3	<236	<1.00	<1.00	2.46	<3.00	<5.00	<5.00	-
MW8	12/30/11	202.72	16.90	185.82	193	<94.8	<237	<1.00	12.0	79.9	127	<5.00	<5.00	-
MW8	06/25/12	202.72	14.79	187.93	<100	<95.2	<95.2	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	-
MW8	12/03/12	202.72	16.98	185.74	899	153	<100	<1.00	7.28	71.7	168	28.5	<5.00	-
MW8	12/04/12	202.72	NM	-	-	-	-	-	-	-	-	-	-	-
MW8	03/26/13	202.72	NM	-	-	-	-	-	-	-	-	-	-	-
MW8	04/02/13	202.72	14.85	187.87	<100	<95.2	<95.2	<1.00	<1.00	<1.00	<3.00	11.7	<5.00	-
MW8	04/29/13	202.72	NM	-	-	-	-	-	-	-	-	-	-	-
MW8	06/26/13	202.72	15.46	187.26	<100	<95.2	<95.2	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	-
MW8	12/30/13	202.72	18.35	184.37	<100	<94.3	<94.3	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	-

Screened Interval 9-19 ft bgs \ Total Depth 19 ft bgs														
MW9	09/26/07	99.85	10.62	89.23	4,860	-	-	1.15	102	189	1,250	-	-	-
MW9	11/27/07	99.85	18.72	81.13	3,280	885	<95.2	<1.00	71.9	139	886	12.1	<5.00	<100
MW9	02/27/08	99.85	14.06	85.79	<100	<100	<100	<1.00	<1.00	<1.00	<3.00	5.70	<5.00	-
MW9	06/04/08	99.85	14.94	84.91	<100	<95.2	<95.2	<1.00	<1.00	<1.00	<3.00	17.7	<5.00	-
MW9	09/15/08	99.85	18.07	81.78	<100	<100	<100	<1.00	<1.00	<1.00	<3.00	66.8	<5.00	-
MW9	11/12/08	99.86	16.01	83.85	<100	<94.3	<94.3	<1.00	<1.00	<1.00	<3.00	16.2	<5.00	-
MW9	03/31/09	99.86	15.94	83.92	<100	<118	<118	<1.00	<1.00	<1.00	<3.00	35.1	<5.00	-
MW9	06/30/09	99.86	15.23	84.63	<100	<94.3	<94.3	<1.00	<1.00	<1.00	<3.00	112	<5.00	-
MW9	09/30/09	99.86	DRY	-	-	-	-	-	-	-	-	-	-	-
MW9	12/18/09	99.86	15.63	84.23	<100	<111	<111	<1.00	<1.00	<1.00	<3.00	102	<5.00	-
MW9	03/31/10	99.86	17.79	82.07	<100	<99.0	<99.0	<1.00	<1.00	<1.00	<3.00	65.0	<5.00	-
MW9	06/02/10	99.86	17.23	82.63	<100	<103	<103	<1.00	<1.00	<1.00	<3.00	88.6	<5.00	-
MW9	09/07/10	99.86	17.14	82.72	<100	<109	<109	<1.00	<1.00	<1.00	<3.00	51.2	<5.00	-
MW9	12/20/10	99.86	15.76	84.10	<100	<105	<105	<1.00	<1.00	<1.00	<3.00	6.40	<5.00	-
MW9	03/10/11	99.86	12.29	87.57	<100	<99.0	<99.0	<1.00	<1.00	<1.00	<3.00	5.20	<5.00	-
MW9	06/16/11 d	202.20	12.08	190.12	<100	<97.1	<243	<1.00	<1.00	<1.00	<3.00	24.7	<5.00	-
MW9	06/17/11	202.20	NM	-	-	-	-	-	-	-	-	-	-	-
MW9	09/25/11	202.20	15.86	186.34	<100	<94.3	<236	<1.00	<1.00	<1.00	<3.00	51.5	<5.00	-
MW9	12/30/11	202.20	15.61	186.59	-	-	-	-	-	-	-	-	-	-
MW9	06/25/12	202.20	13.85	188.35	<100	<95.2	<95.2	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	-
MW9	12/03/12	202.20	15.74	186.46	<100	<94.3	<94.3	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	-
MW9	12/04/12	202.20	NM	-	-	-	-	-	-	-	-	-	-	-
MW9	03/26/13	202.20	NM	-	-	-	-	-	-	-	-	-	-	-
MW9	04/02/13	202.20	14.35	187.85	<100	<95.2	<95.2	<1.00	<1.00	<1.00	<3.00	14.3	<5.00	-

**TABLE 7**  
**CUMULATIVE GROUNDWATER ANALYTICAL RESULTS**  
 Former Exxon Station 72454  
 4603 Lacey Boulevard Southeast  
 Lacey, Washington  
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Well ID	Sampling Date	Wellhead Elev (feet)	DTW (feet)	GW Elev (feet)	TPHg (µg/L)	TPHd (µg/L)	TPHmo (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	Total Pb (µg/L)	Diss Pb (µg/L)	Ethanol (µg/L)	
MW9	04/29/13	202.20	NM	--	--	--	--	--	--	--	--	--	--	--	
MW9	06/26/13	202.20	DRY	--	--	--	--	--	--	--	--	--	--	--	
MW9	12/30/13	202.20	183.39	--	--	--	--	--	--	--	--	--	--	--	
Screened Interval 10-23 ft bgs \ Total Depth 23 ft bgs															
MW10	09/26/07	98.47	16.26	82.21	--	--	--	--	--	--	--	--	--	--	
MW10	11/27/07	98.47	17.40	81.07	3,650	1,780	125	12.3	10.2	131	653	<5.00	<5.00	<100	
MW10	02/27/08	98.47	13.21	85.26	2,310	1,140	154	50.4	19.8	155	397	5.50	<5.00	--	
MW10	06/04/08	98.47	14.20	84.27	596	460	<100	4.65	1.19	45.6	59.2	5.40	<5.00	--	
MW10	09/15/08	98.47	17.17	81.30	5,220	2,090	193	18.7	12.7	191	752	7.21	<5.00	--	
MW10	11/12/08	98.47	17.58	80.89	9,000	1,230	121	18.4	50.0	510	2,360	100	<5.00	<100	
MW10	03/31/09	98.47	17.87	80.60	1,070	4,180	<189	26.1	<1.00	91.5	<3.00	5.12	<5.00	<100	
MW10	06/30/09	98.47	15.87	82.60	223	1,160	<95.2	15.6	<1.00	8.15	<3.00	<5.00	<5.00	<100	
MW10	09/30/09	98.47	18.12	80.35	8,270	2,120	<211	48.4	46.2	521	2,130	<5.00	<5.00	--	
MW10	12/18/09	98.47	17.64	80.83	19,200	4,250	<105	95.9	73.3	652	2,880	49.1	<5.00	<100	
MW10	03/31/10	98.47	15.08	83.39	1,930	1,520	<96.2	165	3.51	20.7	90.2	6.80	<5.00	<100	
MW10	06/02/10	98.47	14.27	84.20	<100	<100	<100	<1.00	<1.00	<1.00	<3.00	11.8	<5.00	<100	
MW10	09/07/10	98.47	16.31	82.16	1,010	738	<101	7.01	2.93	36.0	117	17.2	<5.00	<100	
MW10	12/20/10	98.47	15.31	83.16	924	633	<100	17.2	6.05	51.7	156	<5.00	<5.00	<100	
MW10	03/10/11	98.47	12.43	86.04	<100	<97.1	<97.1	<1.00	<1.00	<1.00	<3.00	6.70	<5.00	<100	
MW10	06/16/11 d	201.33	12.22	189.11	--	--	--	--	--	--	--	--	--	--	
MW10	06/17/11	201.33	12.22	189.11	<100	<100	<250	<1.00	<1.00	<1.00	<3.00	25.4	<5.00	<100	
MW10	09/25/11	201.33	15.02	186.31	728	515	<272	5.59	2.72	40.2	72.4	<5.00	<5.00	<100	
MW10	12/30/11	201.33	15.87	185.46	356	188	<240	1.65	<1.00	16.7	34.3	<5.00	<5.00	--	
MW10	06/25/12	201.33	13.11	188.22	<100	<99.0	<99.0	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	--	
MW10	12/03/12	201.33	15.87	185.46	239	215	<94.3	<1.00	<1.00	8.16	17.2	<5.00	<5.00	--	
MW10	12/04/12	201.33	NM	--	--	--	--	--	--	--	--	--	--	--	
MW10	03/26/13	201.33	NM	--	--	--	--	--	--	--	--	--	--	--	
MW10	04/02/13 e	201.33	13.51	187.82	<100	698	<95.2	<1.00	<1.00	4.05	6.01	15.2	<5.00	--	
MW10	04/29/13	201.33	13.24	188.09	<100	<97.1	<97.1	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	--	
MW10	06/26/13	201.33	14.16	187.17	<100	<95.2	<95.2	<1.00	<1.00	<1.00	<300	<5.00	<5.00	--	
MW10	12/30/13	201.33	16.98	184.35	<100	141	<97.1	<1.00	<1.00	3.38	5.02	<5.00	<5.00	--	
Screened Interval 12-27 ft bgs \ Total Depth 27 ft bgs															
MW11	09/26/07	98.54	16.37	82.17	--	--	--	--	--	--	--	--	--	--	
MW11	11/27/07	98.54	17.50	81.04	1,090	402	<105	2.65	32.3	4.26	139	50.2	<5.00	<100	
MW11	02/27/08	98.54	13.32	85.22	152	279	136	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	<100	
MW11	06/04/08	98.54	14.34	84.20	153	<97.1	<97.1	<1.00	<1.00	3.66	23.2	21.9	<5.00	--	
MTCA Method A Cleanup Levels															
					800/1,000a	500	500	5	1,000	700	1,000	15	15	N/A	



**TABLE 7**  
**CUMULATIVE GROUNDWATER ANALYTICAL RESULTS**  
 Former Exxon Station 72454  
 4603 Lacey Boulevard Southeast  
 Lacey, Washington  
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Well ID	Sampling Date	Wellhead Elev (feet)	DTW (feet)	GW Elev (feet)	TPHg (µg/L)	TPHd (µg/L)	TPHmo (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	Total Pb (µg/L)	Diss Pb (µg/L)	Ethanol (µg/L)
MW11	09/15/08	98.54	17.31	81.23	2,470	614	130	8.92	25.2	202	949	21.7	<5.00	--
MW11	11/12/08	98.54	18.40	80.14	6,770	1,380	<103	22.8	64.5	406	1,840	73.4	<5.00	<100
MW11	03/31/09	98.54	18.25	80.29	<100	<105	<105	<1.00	<1.00	<1.00	<3.00	17.8	<5.00	<100
MW11	06/30/09	98.54	15.96	82.58	<100	<94.3	<94.3	<1.00	<1.00	5.04	22.0	20.3	<5.00	<100
MW11	09/30/09	98.54	18.31	80.23	1,680	<100	<100	1.83	9.16	73.8	253	<5.00	<5.00	--
MW11	12/18/09	98.54	17.69	80.85	5,490	823	<118	4.60	24.7	284	1,070	76.2	<5.00	<100
MW11	03/31/10	98.54	14.87	83.67	<100	<95.2	<95.2	<1.00	<1.00	<1.00	<3.00	11.8	<5.00	<100
MW11	06/02/10	98.54	14.34	84.20	<100	<95.2	<95.2	<1.00	<1.00	<1.00	<3.00	8.90	<5.00	<100
MW11	09/07/10	98.54	16.42	82.12	2,120	127	<94.3	<1.00	10.3	120	471	27.8	<5.00	<100
MW11	12/20/10	98.54	15.21	83.33	2,660	124	<94.3	2.09	9.77	291	823	7.00	<5.00	<100
MW11	03/10/11	98.54	12.58	85.96	4,210	419	<99.0	<1.00	12.3	181	868	<5.00	<5.00	<100
MW11	06/16/11 d	201.39	12.25	189.14	--	--	--	--	--	--	--	--	--	--
MW11	06/17/11	201.39	12.25	189.14	<100	<102	<255	<1.00	<1.00	<1.00	<3.00	9.70	<5.00	<100
MW11	09/25/11	201.39	15.11	186.28	<100	<102	<255	<1.00	6.84	83.8	234	<5.00	<5.00	<100
MW11	12/30/11	201.39	15.89	185.50	312	<118	<294	<1.00	2.47	9.39	99.9	<5.00	<5.00	--
MW11	06/25/12	201.39	13.35	188.04	<100	<100	<100	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	<100
MW11	12/03/12	201.39	15.75	185.64	--	--	--	--	--	--	--	--	--	--
MW11	12/04/12	201.39	NM	--	<100	<100	<100	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	<100
MW11	03/26/13	201.39	NM	--	--	--	--	--	--	--	--	--	--	--
MW11	04/02/13	201.39	13.63	187.76	<100	<95.2	<95.2	<1.00	<1.00	11.0	27.5	14.3	<5.00	<100
MW11	04/29/13	201.39	NM	--	--	--	--	--	--	--	--	--	--	--
MW11	06/26/13	201.39	14.25	187.14	<100	<96.2	<96.2	<1.00	<1.00	<1.00	15.4	<5.00	<5.00	<100
MW11	12/30/13	201.39	17.05	184.34	<100	<97.1	<97.1	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	--
Screened Interval 10-25 ft bgs \ Total Depth 25 ft bgs														
MW12	06/04/08	98.82	NM	--	--	--	--	--	--	--	--	--	--	--
MW12	09/05/08	98.82	NM	--	--	--	--	--	--	--	--	--	--	--
MW12	11/12/08	98.82	NM	--	--	--	--	--	--	--	--	--	--	--
MW12	03/31/09	98.82	16.33	82.49	<100	<94.3	<94.3	<1.00	<1.00	<1.00	<3.00	35.0	<5.00	--
MW12	06/30/09	98.82	15.97	82.85	<100	<98.0	<98.0	<1.00	<1.00	<1.00	<3.00	126	<5.00	--
MW12	09/30/09	98.82	18.65	80.17	<100	<97.1	<97.1	<1.00	<1.00	<1.00	<3.00	56.1	<5.00	--
MW12	12/18/09	98.82	18.03	80.79	<100	<94.3	<94.3	<1.00	<1.00	<1.00	<3.00	83.1	<5.00	--
MW12	03/31/10	98.82	17.04	81.78	<100	<102	<102	<1.00	<1.00	<1.00	<3.00	65.7	<5.00	--
MW12	06/02/10	98.82	16.64	82.18	<100	<102	<102	<1.00	<1.00	<1.00	<3.00	85.5	<5.00	--
MW12	09/07/10	98.82	16.76	82.06	<100	<95.2	<95.2	<1.00	<1.00	<1.00	<3.00	49.1	<5.00	--
MW12	12/20/10	98.82	15.35	83.47	<100	<97.1	<97.1	<1.00	<1.00	<1.00	<3.00	6.30	<5.00	--
MW12	03/10/11	98.82	12.72	86.10	<100	<99.0	<99.0	<1.00	<1.00	<1.00	<3.00	7.60	<5.00	--
MW12	06/16/11 d	201.66	12.31	189.35	<100	<94.3	<236	<1.00	<1.00	<1.00	<3.00	36.8	<5.00	--
MTCA Method A Cleanup Levels														
800/1,000a 500 500 5 1,000 700 1,000 1,000 15 15 N/A														

**TABLE 7**  
**CUMULATIVE GROUNDWATER ANALYTICAL RESULTS**  
 Former Exxon Station 72454  
 4603 Lacey Boulevard Southeast  
 Lacey, Washington  
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Well ID	Sampling Date	Wellhead Elev (feet)	DTW (feet)	GW Elev (feet)	TPHg (µg/L)	TPHd (µg/L)	TPHmo (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	Total Pb (µg/L)	Diss Pb (µg/L)	Ethanol (µg/L)
MW12	06/17/11	201.66	NM	-	-	-	-	-	-	-	-	-	-	-
MW12	09/25/11	201.66	15.48	186.18	<100	<110	<275	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	-
MW12	12/30/11	201.66	NM	-	-	-	-	-	-	-	-	-	-	-
MW12	06/25/12	201.66	NM	-	-	-	-	-	-	-	-	-	-	-
MW12	12/03/12	201.66	15.84	185.82	-	-	-	-	-	-	-	-	-	-
MW12	12/04/12	201.66	15.84	185.82	<100	<95.2	<95.2	<1.00	<1.00	<1.00	<3.00	8.50	<5.00	-
MW12	03/26/13	201.66	NM	-	-	-	-	-	-	-	-	-	-	-
MW12	04/02/13	201.66	13.90	187.76	<100	<95.2	<95.2	<1.00	<1.00	<1.00	<3.00	7.40	<5.00	-
MW12	04/29/13	201.66	NM	-	-	-	-	-	-	-	-	-	-	-
MW12	06/26/13	201.66	14.54	187.12	<100	<99.0	<99.0	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	-
MW12	12/30/13	201.66	17.33	184.33	<100	<94.3	<94.3	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	-

Screened Interval 10-25 ft bgs \ Total Depth 25 ft bgs

MW13	06/04/08	100.00	NM	-	-	-	-	-	-	-	-	-	-	-
MW13	09/05/08	100.00	NM	-	-	-	-	-	-	-	-	-	-	-
MW13	11/12/08	100.00	19.61	80.39	<100	<100	<100	<1.00	<1.00	<1.00	<3.00	134	<5.00	-
MW13	03/31/09	100.00	19.47	80.53	<100	<94.3	125	<1.00	<1.00	<1.00	<3.00	94.5	<5.00	-
MW13	06/30/09	100.00	17.62	82.38	<100	<97.1	<97.1	<1.00	<1.00	<1.00	<3.00	110	<5.00	-
MW13	09/30/09	100.00	19.79	80.21	<100	<96.2	<96.2	<1.00	<1.00	<1.00	<3.00	43.2	<5.00	-
MW13	12/18/09	100.00	18.94	81.06	<100	<95.2	<95.2	<1.00	<1.00	<1.00	<3.00	85.2	<5.00	-
MW13	03/31/10	100.00	16.11	83.89	<100	<97.1	<97.1	<1.00	<1.00	<1.00	<3.00	62.1	<5.00	-
MW13	06/02/10	100.00	15.68	84.32	<100	<96.2	<96.2	<1.00	<1.00	<1.00	<3.00	65.3	<5.00	-
MW13	09/07/10	100.00	17.85	82.15	<100	<114	<114	<1.00	<1.00	<1.00	<3.00	64.8	<5.00	-
MW13	12/20/10	100.00	16.27	83.73	<100	<100	<100	<1.00	<1.00	<1.00	<3.00	8.00	<5.00	-
MW13	03/10/11	100.00	13.89	86.11	<100	<95.2	<95.2	<1.00	<1.00	<1.00	<3.00	5.50	<5.00	-
MW13	06/16/11 d	202.84	13.56	189.28	-	-	-	-	-	-	-	-	-	-
MW13	06/17/11	202.84	13.56	189.28	<100	<99.0	<248	<1.00	<1.00	<1.00	<3.00	42.5	<5.00	-
MW13	09/25/11	202.84	16.57	186.27	<100	<95.2	<238	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	-
MW13	12/30/11	202.84	17.18	185.66	-	-	-	-	-	-	-	-	-	-
MW13	06/25/12	202.84	NM	-	-	-	-	-	-	-	-	-	-	-
MW13	12/03/12	202.84	NM	-	-	-	-	-	-	-	-	-	-	-
MW13	12/04/12	202.84	NM	-	-	-	-	-	-	-	-	-	-	-
MW13	03/25/13	202.84	NM	-	-	-	-	-	-	-	-	-	-	-
MW13	04/02/13	202.84	14.98	187.86	<100	<95.2	<95.2	<1.00	<1.00	<1.00	<3.00	12.2	<5.00	-
MW13	04/29/13	202.84	NM	-	-	-	-	-	-	-	-	-	-	-
MW13	06/26/13	202.84	15.65	187.19	<100	<95.2	<95.2	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	-
MW13	12/30/13	202.84	18.48	184.36	<100	<96.2	<96.2	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	-

MTCA Method A Cleanup Levels

800/1,000a 500 500 5 1,000 700 1,000 15 15 N/A

**TABLE 7**  
**CUMULATIVE GROUNDWATER ANALYTICAL RESULTS**  
 Former Exxon Station 72454  
 4603 Lacey Boulevard Southeast  
 Lacey, Washington  
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**EXPLANATION:**

- Wellhead Elev = Wellhead elevation
- µg/L = Micrograms per Liter
- ft bgs = Feet below ground surface
- DTW = Depth to water in feet below top of casing
- GW Elev = Groundwater elevation relative to top of casing elevations
- TPHg = Total Petroleum Hydrocarbons as Gasoline in accordance with Ecology Method NWTPH-Gx
- TPHd and TPHmo = Total Petroleum Hydrocarbons as Diesel and Oil, respectively, in accordance with Ecology Method NWTPH-Dx
- B = Benzene; T = Toluene; E = Ethylbenzene; X = Total Xylenes
- BTEX = Aromatic compounds in accordance with EPA Method 8021B or 8260B, refer to laboratory reports
- Total and Diss Pb = Total and Dissolved Lead in accordance with EPA Method 6010B
- Ethanol in accordance with EPA Method 8260B
- = Not Analyzed or Sampled
- < = Less than the stated laboratory reporting limit
- Shaded values equal or exceed the MTCA Method A Cleanup Levels
- a = TPHg cleanup level for groundwater is 800 µg/L if benzene is present, or 1,000 µg/L if benzene is not present
- b = MW2 and MW3 covered or paved over by the City of Lacey during road improvements and are presumed destroyed
- c = Analyses could not be performed due to low sample volume recovery
- d = Wellhead elevations resurveyed by Cardno on 03/17/11 using NAVD 88
- e = Sample exceeded the MTCA Method A Cleanup Levels. Re-sampled on 04/29/13; 04/02/13 exceedence considered anomalous.

**A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750**

**1. Enter Site Information**

Date: 11/11/10  
 Site Name: Former Exxon Station 72454, Lacey, Washington  
 Sample Name: S-20-B19

**2. Enter Soil Concentration Measured**

Chemical of Concern or Equivalent Carbon Group	Measured Soil Conc dry basis mg/kg	Composition Ratio %
<b>Petroleum EC Fraction</b>		
AL_EC >5-6	0.61	0.05%
AL_EC >6-8	1.83	0.15%
AL_EC >8-10	433	35.05%
AL_EC >10-12	158	12.79%
AL_EC >12-16	38.4	3.11%
AL_EC >16-21	2.45	0.20%
AL_EC >21-34	1.96	0.16%
AR_EC >8-10	306	24.77%
AR_EC >10-12	188	15.22%
AR_EC >12-16	75.9	6.14%
AR_EC >16-21	3.79	0.31%
AR_EC >21-34	2.695	0.22%
Benzene	0.0335	0.00%
Toluene	0.326	0.03%
Ethylbenzene	1.04	0.08%
Total Xylenes	3.25	0.26%
Naphthalene	0.446	0.04%
1-Methyl Naphthalene	0	0.00%
2-Methyl Naphthalene	17.8	1.44%
n-Hexane	0	0.00%
MTBE	0	0.00%
Ethylene Dibromide (EDB)	0	0.00%
1,2 Dichloroethane (EDC)	0	0.00%
Benzo(a)anthracene	0.000751	0.00%
Benzo(b)fluoranthene	0	0.00%
Benzo(k)fluoranthene	0	0.00%
Benzo(a)pyrene	0	0.00%
Chrysene	0.00125	0.00%
Dibenz(a,h)anthracene	0	0.00%
Indeno(1,2,3-cd)pyrene	0	0.00%
<b>Sum</b>	<b>1235.532501</b>	<b>100.00%</b>

Notes for Data Entry    Set Default Hydrogeology

Clear All Soil Concentration Data Entry Cells

Restore All Soil Concentration Data cleared previously

REMARK:

Default hydrogeologic information used in evaluation.

**3. Enter Site-Specific Hydrogeological Data**

Total soil porosity:	0.43	Unitless
Volumetric water content:	0.3	Unitless
Volumetric air content:	0.13	Unitless
Soil bulk density measured:	1.5	kg/L
Fraction Organic Carbon:	0.001	Unitless
Dilution Factor:	20	Unitless

**4. Target TPH Ground Water Concentration (if adjusted)**

If you adjusted the target TPH ground water concentration, enter adjusted value here:  ug/L

TABLE 3A

**A2 Soil Cleanup Levels: Calculation and Summary of Results.** Refer to WAC 173-340-720, 740, 745, 747, 750

**Site Information**

Date: 11/11/2010

Site Name: Former Exxon Station 72454, Lacey, Washington

Sample Name: S-20-B19

Measured Soil TPH Concentration, mg/kg 1,235.533

**1. Summary of Calculation Results**

Exposure Pathway	Method/Goal	Protective Soil TPH Conc, mg/kg	With Measured Soil Conc		Does Measured Soil Conc Pass or Fail?
			RISK @	HI @	
Protection of Soil Direct Contact: Human Health	Method B	2,258	2.69E-09	5.47E-01	Pass
	Method C	42,375	4.57E-10	2.92E-02	Pass
Protection of Method B Ground Water Quality (Leaching)	Potable GW: Human Health Protection	0	7.51E-06	4.47E+01	Fail
	NA	NA	NA	NA	NA

Warning! Check to determine if a simplified or site-specific Terrestrial Ecological Evaluation may be required (Refer to WAC 173-340-7490 through ~7494).

Warning! Check Residual Saturation (WAC340-747(10)).

**2. Results for Protection of Soil Direct Contact Pathway: Human Health**

	Method B: Unrestricted Land Use	Method C: Industrial Land Use
Protective Soil Concentration, TPH mg/kg	2,258.27	42,375.15
Most Stringent Criterion	HI =1	HI =1

Soil Criteria	Protective Soil Concentration @Method B				Protective Soil Concentration @Method C			
	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @
HI =1	YES	2.26E+03	4.92E-09	1.00E+00	YES	4.24E+04	1.57E-08	1.00E+00
Total Risk = 1E-5	NO	4.59E+06	1.00E-05	2.03E+03	NO	2.70E+07	1.00E-05	6.38E+02
Risk of Benzene = 1E-6	NO	6.70E+05	1.46E-06	2.97E+02	NA			
Risk of cPAHs mixture = 1E-6	NO	1.46E+06	3.18E-06	6.47E+02				
EDB	NA	NA	NA	NA				
EDC	NA	NA	NA	NA				

**3. Results for Protection of Ground Water Quality (Leaching Pathway)**

**3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection**

Most Stringent Criterion	#N/A
Protective Ground Water Concentration, ug/L	0.00
Protective Soil Concentration, mg/kg	0.00

Ground Water Criteria	Protective Potable Ground Water Concentration @Method B				Protective Soil Conc, mg/kg
	Most Stringent?	TPH Conc, ug/L	RISK @	HI @	
HI=1	NO	9.25E+04	5.94E-05	2.86E+02	1.00E+04
Total Risk = 1E-5	NO	1.18E+03	5.05E-06	3.09E+00	100% NAPL
Total Risk = 1E-6	NO	9.25E+04	5.94E-05	2.86E+02	1.00E+04
Risk of cPAHs mixture = 1E-5	NO	1.18E+03	5.05E-06	3.09E+00	100% NAPL
Benzene MCL = 5 ug/L	NO	1.18E+03	5.05E-06	3.09E+00	100% NAPL
MTBE = 20 ug/L	NA	NA	NA	NA	NA

#DIV/0!

**3.2 Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered**

Ground Water Criteria	Protective Ground Water Concentration			Protective Soil Conc, mg/kg
	TPH Conc, ug/L	Risk @	HI @	
NA	NA	NA	NA	NA

**A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750**

**1. Enter Site Information**

Date: 11/11/10

Site Name: Former Exxon Station 72454, Lacey, Washington

Sample Name: S-25-B22

**2. Enter Soil Concentration Measured**

Chemical of Concern or Equivalent Carbon Group	Measured Soil Conc	Composition
	dry basis mg/kg	Ratio %
<b>Petroleum EC Fraction</b>		
AL_EC>5-6	0.745	1.27%
AL_EC>6-8	2.24	3.83%
AL_EC>8-10	8.68	14.85%
AL_EC>10-12	9.95	17.02%
AL_EC>12-16	0.83	1.42%
AL_EC>16-21	1.185	2.03%
AL_EC>21-34	1.895	3.24%
AR_EC>8-10	13.9	23.78%
AR_EC>10-12	2.24	3.83%
AR_EC>12-16	1.01	1.73%
AR_EC>16-21	1.84	3.15%
AR_EC>21-34	2.61	4.47%
Benzene	0.142	0.24%
Toluene	0.0322	0.06%
Ethylbenzene	3.23	5.53%
Total Xylenes	5.72	9.79%
Naphthalene	1.92	3.28%
1-Methyl Naphthalene	0	0.00%
2-Methyl Naphthalene	0.0543	0.09%
n-Hexane	0.222	0.38%
MTBE	0	0.00%
Ethylene Dibromide (EDB)	0	0.00%
1,2 Dichloroethane (EDC)	0	0.00%
Benzo(a)anthracene	0.0003735	0.00%
Benzo(b)fluoranthene	0	0.00%
Benzo(k)fluoranthene	0	0.00%
Benzo(a)pyrene	0	0.00%
Chrysene	0.0062	0.01%
Dibenz(a,h)anthracene	0	0.00%
Indeno(1,2,3-cd)pyrene	0	0.00%
<b>Sum</b>	<b>58.4520735</b>	<b>100.00%</b>

Notes for Data Entry

Set Default Hydrogeology

Clear All Soil Concentration Data Entry Cells

Restore All Soil Concentration Data cleared previously

REMARK:

Default hydrogeologic information used in evaluation.

**3. Enter Site-Specific Hydrogeological Data**

Total soil porosity:	0.43	Unitless
Volumetric water content:	0.3	Unitless
Volumetric air content:	0.13	Unitless
Soil bulk density measured:	1.5	kg/L
Fraction Organic Carbon:	0.001	Unitless
Dilution Factor:	20	Unitless

**4. Target TPH Ground Water Concentration (if adjusted)**

If you adjusted the target TPH ground water

concentration, enter adjusted value here:  ug/L

**A2 Soil Cleanup Levels: Calculation and Summary of Results.** Refer to WAC 173-340-720, 740, 745, 747, 750

**Site Information**

Date: 11/11/2010

Site Name: Former Exxon Station 72454, Lacey, Washington

Sample Name: S-25-B22

Measured Soil TPH Concentration, mg/kg 58.452

**1. Summary of Calculation Results**

Exposure Pathway	Method/Goal	Protective Soil TPH Conc, mg/kg	With Measured Soil Conc		Does Measured Soil Conc Pass or Fail?
			RISK @	HI @	
Protection of Soil Direct Contact: Human Health	Method B	3,235	8.78E-09	1.81E-02	Pass
	Method C	55,585	1.28E-09	1.05E-03	Pass
Protection of Method B Ground Water Quality (Leaching)	Potable GW: Human Health Protection	0	3.18E-05	2.92E+00	Fail
	NA	NA	NA	NA	NA

**2. Results for Protection of Soil Direct Contact Pathway: Human Health**

	Method B: Unrestricted Land Use	Method C: Industrial Land Use
Protective Soil Concentration, TPH mg/kg	3,235.31	55,585.41
Most Stringent Criterion	HI =1	HI =1

Soil Criteria	Protective Soil Concentration @Method B				Protective Soil Concentration @Method C			
	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @
HI =1	YES	3.24E+03	4.86E-07	1.00E+00	YES	5.56E+04	1.22E-06	1.00E+00
Total Risk=1E-5	NO	6.66E+04	1.00E-05	2.06E+01	NO	4.55E+05	1.00E-05	8.18E+00
Risk of Benzene= 1E-6	NO	7.48E+03	1.12E-06	2.31E+00	NA			
Risk of cPAHs mixture= 1E-6	NO	6.10E+04	9.16E-06	1.89E+01				
EDB	NA	NA	NA	NA				
EDC	NA	NA	NA	NA				

**3. Results for Protection of Ground Water Quality (Leaching Pathway)**

3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

Most Stringent Criterion	#N/A
Protective Ground Water Concentration, ug/L	0.00
Protective Soil Concentration, mg/kg	0.00

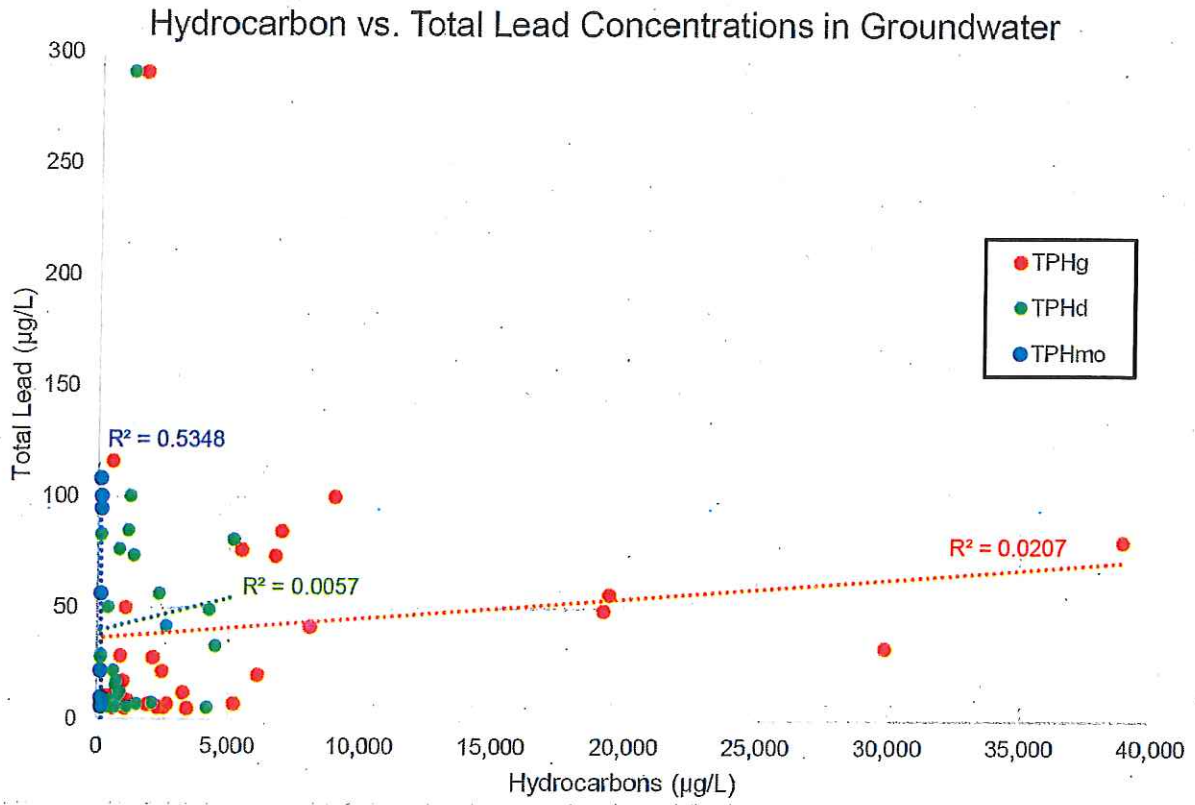
Ground Water Criteria	Protective Potable Ground Water Concentration @Method B				Protective Soil Conc, mg/kg
	Most Stringent?	TPH Conc, ug/L	RISK @	HI @	
HI=1	NO	2.24E+05	5.33E-03	4.23E+02	1.00E+04
Total Risk = 1E-5	NO	2.24E+05	5.33E-03	4.23E+02	~1.00E+04
Total Risk = 1E-6	NO	2.24E+05	5.33E-03	4.23E+02	1.00E+04
Risk of cPAHs mixture= 1E-5	NO	3.04E+03	4.52E-04	1.44E+01	100% NAPL
Benzene MCL = 5 ug/L	NO	2.24E+05	5.33E-03	4.23E+02	1.00E+04
MTBE = 20 ug/L	NA	NA	NA	NA	NA

#DIV/0!

3.2 Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

Ground Water Criteria	Protective Ground Water Concentration			Protective Soil Conc, mg/kg
	TPH Conc, ug/L	Risk @	HI @	
NA	NA	NA	NA	NA

Graph 1 – Hydrocarbons vs. Total Lead Concentrations in Groundwater





Graph 2 – BTEX vs. Total Lead Concentrations in Groundwater

BTEX vs. Total Lead Concentrations in Groundwater

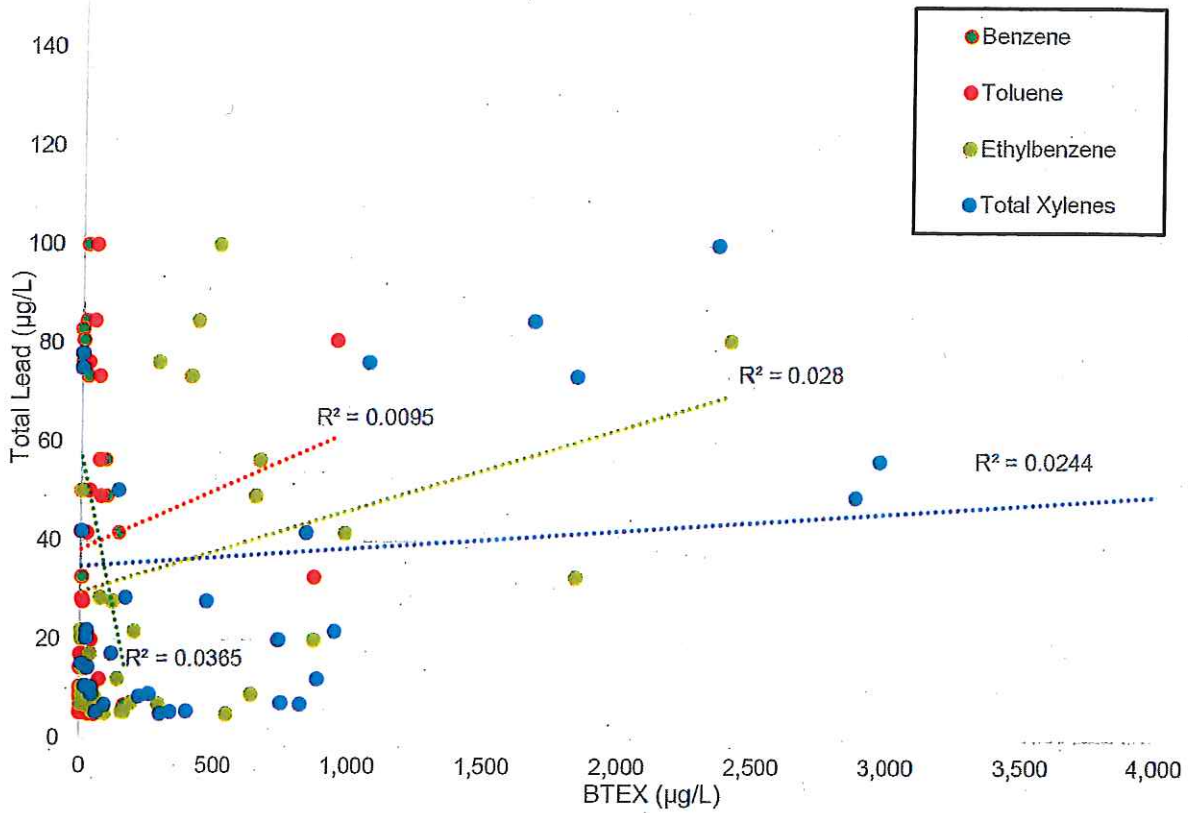


Figure 1 - Linear Regression Statistics for Correlation Between Total Lead and Constituents of Concern

Constituent	Coefficient of Determination (R <sup>2</sup> )
TPHg	0.021
TPHd	0.006
TPHmo	0.054
Benzene	0.037
Toluene	0.010
Ethylbenzene	0.028
Total Xylenes	0.024

5.2

Correlation Between Groundwater Elevation and Total Lead in Groundwater

Graph 3 - Groundwater Elevations vs. Total Lead Concentrations

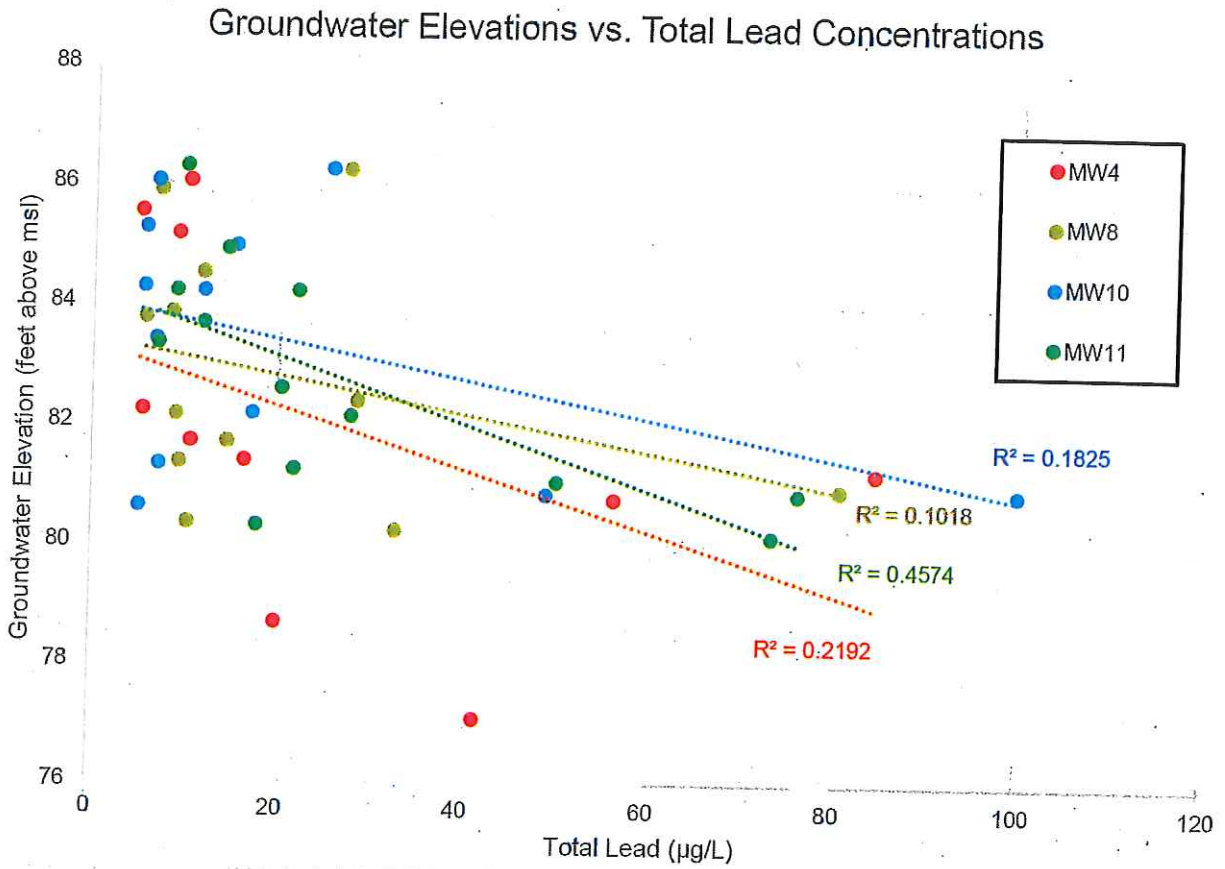


Figure 2 - Linear Regression Statistics for Correlation Between Groundwater Elevation and Total Lead Concentrations

Monitoring Well	Coefficient of Determination ( $R^2$ )
MW4	0.2192
MW8	0.1018
MW10	0.1825
MW11	0.4574