



WASHINGTON STATE  
DEPARTMENT OF  
E C O L O G Y

---

Southwest Regional Office  
Toxics Cleanup Program  
PO Box 47775  
Olympia, WA 98504-7775  
360-407-6240

### TRANSMITTAL MEMO

Date: August 21, 2013

TO: Mr. Lee Hanley  
ExxonMobil Environmental Services

RE: Former Exxon Station 7-3594  
SW0447

Subject: Explanation of Timeline

**NOTE:** The determination date is the date Ecology approved the No Further Action status for the site. Final payment, EIM Data submission, once received, the NFA letter was released.

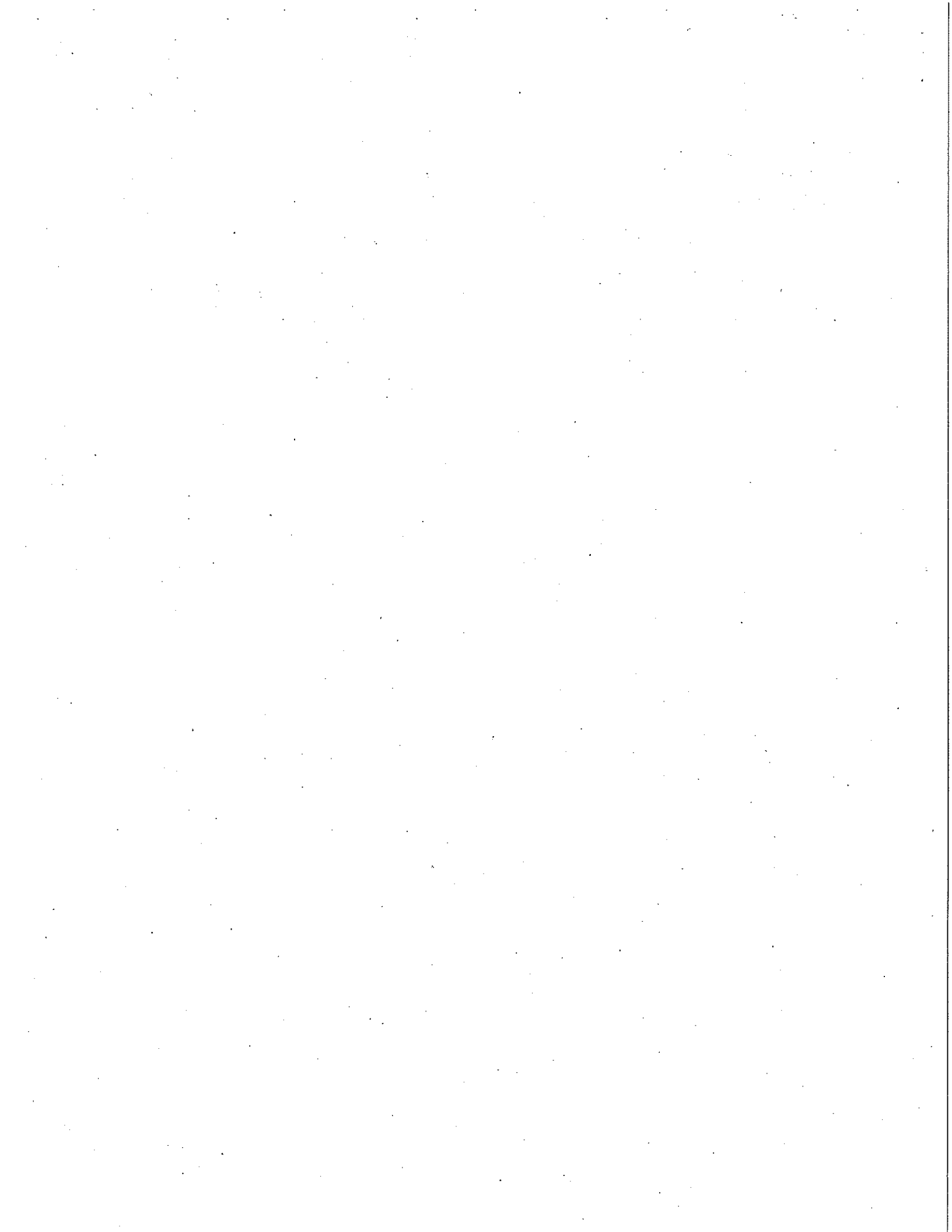
Ecology Determination date: August 20, 2013

Email Customer Notification: August 14, 2013

Payment received date: August 20, 2013

EIM Data successfully uploaded: March 26, 2013

Ecology Determination letter mailed/sent: August 21, 2013





STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

PO Box 47775 • Olympia, Washington 98504-7775 • (360) 407-6300

August 20, 2013

Mr. Lee Hanley  
ExxonMobil Environmental Services  
1464 Madera Road, Suite N, #265  
Simi Valley, CA 93065

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

- **Site Name:** Former Exxon Station 7-3594
- **Site Address:** 13204 Northeast Highway 99, Vancouver, WA
- **Facility/Site No.:** 53876575
- **Cleanup Site ID No.:** 6242
- **VCP Project No.:** SW0447

Dear Mr. Hanley:

The Washington State Department of Ecology (Ecology) received your request for an opinion on your independent cleanup of the Former Exxon Station 7-3594 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?

**No. Ecology has determined that no further remedial action is necessary to clean up contamination at the Site.**

**This opinion is dependent on the continued performance and effectiveness of the post-cleanup controls and monitoring specified below.**

This opinion is based on an analysis of whether the remedial action meets the substantive requirements of MTCA, Chapter 70.105D RCW, and its implementing regulations, Chapter 173-340 WAC (collectively "substantive requirements of MTCA"). The analysis is provided below.

**Description of the Site**

---

This opinion applies only to the Site described below. The Site is defined by the nature and extent of contamination associated with the following release:



- Petroleum Constituents in the Soil
- Petroleum Constituents and Lead in the Groundwater

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

### **Basis for the Opinion**

---

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

1. Corrective Action Plan – Environmental Covenant, Former Exxon Station 73594, 1320 Northeast Highway 99, Vancouver, WA, dated October 25, 2012 by Cardno ERI.
2. Feasibility Study/Disproportionate Cost Analysis, Former Exxon Station 73594, 1320 Northeast Highway 99, Vancouver, WA, dated October 25, 2012 by Cardno ERI.
3. Former Exxon 73594, Model Restrictive (Environmental) Covenant, filed at Clark County Auditor's Office 5/14/2013.

These documents are kept in the Central Files of the Southwest Regional Office of Ecology (SWRO) for review by appointment only. You can make an appointment by calling the SWRO resource contact at (360) 407-6365.

This opinion is void if any of the information contained in this document is materially false or misleading.

### **Analysis of the Cleanup**

---

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 below.

This Site is located at 13204 Northeast Highway 99, Vancouver, Clark County, Washington. The Site is a former Exxon gasoline station and is located in the vicinity of the intersection of Interstate 5 and Interstate 205. An operating Taco Bell restaurant currently occupies the Site with an adjacent parking lot. A Site location map and generalized Site layout map are included as Figures 1 and 2 in the Enclosures.

Prior to 1988, the underground storage tanks (USTs) and pump islands were removed from the Site. In April and June 1988, CH2M HILL installed three groundwater monitoring wells (MW-1 through MW-3). Soil samples collected did not exceed MTCA Method A cleanup levels; however, the three groundwater samples did. A soil vapor extraction (SVE) system was installed and operated from August 1990 to December 1991.

Between February 1992 and December 1993, Enviro-Logics, Inc. (ELI) installed three additional groundwater monitoring wells (MW-4 through MW-6), abandoned MW-1, and collected additional soil and groundwater samples. No exceedance of MTCA Method A cleanup levels were noted for either soil or groundwater. In April 1992, the SVE system was restarted and operated until September 1993, when it was shut down pending expansion. In April 1994, SECOR International, Inc. (SECOR) installed and connected air sparging well SP1 to the SVE system. In August 1995, EA Engineering, Science, and Technology (EA) completed installation and started the combined air sparging and soil vapor extraction (AS/SVE) system. In June 1997, the AS/SVE system was shut down and the system was again restarted in June 1999.

In May 1998, two soil borings (B1 and B2) were advanced in the area of the former pump islands, and three soil samples collected for analysis. Laboratory results indicated that soil samples collected from approximately 10 feet and 20 feet below ground surface (bgs) from boring B2 contained petroleum hydrocarbon concentrations exceeding MTCA Method A cleanup levels, with up to 7,290 milligrams per kilogram (mg/kg) gasoline-range total petroleum hydrocarbons (TPH-G). The soil sample collected from boring B1 did not contain any concentrations exceeding MTCA Method A cleanup levels. In July 1998, six additional soil borings (B2 through B7) were advanced in the area of the former pump islands and up-gradient of this area, and six soil samples were collected for laboratory analysis for petroleum products. Laboratory results indicated that soil samples collected from borings B2 and B4 in the northwest corner of the former UST basin contained petroleum hydrocarbon concentrations exceeding MTCA Method A cleanup levels, with up to 3,770 mg/kg TPH-G and 12.6 mg/kg benzene in boring B4. Borings B3, B5, and B7 were completed as pressure monitoring wells PM3, PM2, and PM1, respectively. Boring B2 was completed as monitoring well MW8, and boring B4 was completed as vapor extraction well VE1. Boring B6 was abandoned.

In April 1988, periodic groundwater monitoring and sampling activities were initiated by CH2M HILL. Results of subsequent monitoring and sampling events conducted by previous consultants between April 1988 and October 1999 indicated that groundwater samples from MW-2, MW-3, MW-4, MW-5, and MW-6 periodically contained petroleum hydrocarbon concentrations exceeding MTCA Method A cleanup levels. Results of these investigations are presented in quarterly groundwater monitoring and status reports prepared by previous consultants. In October 2000, Environmental Resolutions, Inc. (ERI) assumed environmental management of the Site to continue to monitor groundwater and operate and maintain the AS/SVE system. The system operated until January 2002, when it was shut

down in preparation for Site closure, having removed a total of approximately 1,268 pounds of hydrocarbons as vapors. Results of periodic groundwater monitoring and sampling activities conducted by ERI and previous consultants indicated that groundwater samples from on-Site monitoring wells have not contained any petroleum hydrocarbon concentrations exceeding MTCA Method A cleanup levels since October 1999.

On April 4, 2002, ERI personnel visited the Site to observe advancement of confirmation soil borings near the former pump islands and USTs, in areas of impacted soil identified during previous investigations, and to collect soil samples for laboratory analysis for petroleum products. A total of seven soil borings (B1 through B7) were advanced to depths ranging between approximately 20 and 24 feet bgs. Soil samples were collected at approximately 5-foot intervals and screened for the presence of volatile organic compounds (VOCs) using a photo-ionization detector (PID). Soil encountered consisted of moist to damp, light to dark brown, semi-consolidated sands, silts, and clays from the surface to approximately 24 feet bgs. Groundwater was encountered at approximately 19 to 22 feet bgs. Laboratory results indicated that none of the soil samples analyzed contained any analyte concentrations exceeding MTCA Method A cleanup levels.

An Ecology opinion letter dated January 16, 2007 identified items of concern for which additional information was requested. ERI submitted an Agency Response and Work Plan on March 18, 2008 to address the concerns outlined in the opinion. On July 11, 2008, ERI completed the work outlined in the proposed work plan. Soil and groundwater in the vicinity of the former used oil and waste oil USTs, and in the vicinity northeast of the former pump islands were investigated. No concentrations of petroleum hydrocarbons were detected above MTCA Method A cleanup levels in either the soil or groundwater in the vicinity of the former used oil and waste oil USTs or to the northeast of the former pump islands. Groundwater samples were also collected from each well for characterization of total and dissolved lead. Results from these samples indicated that both total and dissolved lead in groundwater exceeded the MTCA Method A cleanup level of 15 micrograms per liter ( $\mu\text{g/L}$ ) in MW-2 (88.7  $\mu\text{g/L}$  total lead and 85.3  $\mu\text{g/L}$  dissolved lead) and MW-8 (35.7  $\mu\text{g/L}$  total lead and 34.9  $\mu\text{g/L}$  dissolved lead). A second sampling round in these wells confirmed that the results were representative of the current groundwater conditions in this area. It was also surmised that the lead results were not a result of lead in suspended sediments in the samples. At this point, only total and dissolved lead, in groundwater in these two wells is in exceedance of the MTCA Method A cleanup level.

Cardno ERI (Cardno) decommissioned wells MW-2 and MW-8 and replaced them with new wells in September 2010. These wells (MW-2a and MW-8a) were sampled and yielded similar total and dissolved lead concentrations in groundwater (which continued to exceed the MTCA Method A cleanup levels). After discussions with Ecology, Cardno decommissioned the wells on the Site and advanced a series of temporary monitoring wells to collect additional total and dissolved lead data. The results are presented in the corrective action plan submitted to Ecology in October 2012 and shown on Figure 3 included in the

Enclosures. These data were used to prepare a feasibility study and disproportionate cost analysis (FS/DCA) that was submitted to Ecology in October 2012. Three alternatives were reviewed including:

- Restrictive Covenant with long-term groundwater monitoring plan,
- Excavation, Off-Site Transport/Disposal, and
- Groundwater pump and treat system installation and operation.

Based on the analysis of available options, the restrictive covenant with a long-term groundwater monitoring plan was selected as the most viable approach for the Site. As part of the FS/DCA, a Figure outlining the extent of the lead-impacted groundwater was prepared (Figure 3 in the Enclosures). The long-term groundwater plan included the initial temporary well sampling event and one additional event in five years to assess groundwater conditions for the 5-year Ecology review. A summary of all the groundwater results is included as Table 1 included in the Enclosures.

Soils at the Site are noted as a small layer of gravel, sand, and cobble fill underlain by a silty clay with sand to the total depth drilled of approximately 40 feet bgs. Groundwater is present at approximately 20 to 25 feet bgs and flows either northwest or southeast, depending on season, under a flat and low hydraulic gradient.

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

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

### **a. Cleanup levels.**

MTCA Method A cleanup levels for soil and groundwater were used to characterize the Site.

### **b. Points of compliance.**

Standard points of compliance were used for the Site. The point of compliance for protection of groundwater was established in the soils throughout the Site. For soil cleanup levels based on human exposure via direct contact or other exposure pathways where contact with the soil is required to complete the pathway, the point of compliance was established in the soils throughout the Site from the ground surface to 15 feet bgs. In addition, the point of compliance for the groundwater was established throughout the Site from the uppermost level of the saturated zone extending vertically to the lowest most depth that could potentially be affected by the Site.

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

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

Cleanup actions conducted at the Site to date have included the operation of a SVE system, and long-term groundwater monitoring.

**4. Cleanup.**

Ecology has determined the cleanup you performed meets the cleanup standards established for the Site. This determination is dependent on the continued performance and effectiveness of the post-cleanup controls and monitoring specified below.

Approximately 1,268 pounds of hydrocarbons were calculated to have been removed from the Site during the operation of the SVE system. Currently, only total and dissolved lead in groundwater remain in one area of the Site (near former wells MW-2 and MW-8) at concentrations greater than MTCA Method A cleanup levels.

An Environmental Covenant has been prepared and filed on Title. This covenant documents the location of impacted groundwater greater than the MTCA Method A cleanup levels that were not able to be removed during the cleanup of the Site. In addition, a long-term groundwater monitoring plan has also been appended to the covenant and outlines a sampling event to be conducted at the 5-year mark to assess the total and dissolved lead in groundwater concentrations. This sampling event is to be conducted by geoprobe/temporary sampling well points placed in the same location as the temporary wells advanced in October 2012 (TMW-14 through TMW-18). This sampling event is scheduled to coincide with Ecology's 5-year review of the Site and following this review, future sampling requirements will be determined.

**Post-Cleanup Controls and Monitoring**

---

Post-cleanup controls and monitoring are remedial actions performed after the cleanup to maintain compliance with cleanup standards. This opinion is dependent on the continued performance and effectiveness of the following:

**1. Compliance with institutional controls.**

Institutional controls prohibit or limit activities that may interfere with the integrity of engineered controls or result in exposure to hazardous substances. The following institutional control is necessary at the Site:

- Restriction on groundwater use.



To implement that control, an Environmental Covenant has been recorded on the following parcel of real property in Clark County:

- 186754000.

Ecology approved the recorded Covenant. A copy of the Covenant is included in **Enclosure A.**

**2. Performance of confirmational monitoring.**

Confirmational monitoring is necessary at the Site to confirm the long-term effectiveness of the cleanup. The monitoring data will be used by Ecology during periodic reviews of post-cleanup conditions. Ecology has approved the monitoring plan you submitted. A copy of the plan is included with the Environmental Covenant in **Enclosure A.**

**Periodic Review of Post-Cleanup Conditions**

---

Ecology will conduct periodic reviews of post-cleanup conditions at the Site to ensure that they remain protective of human health and the environment. If Ecology determines, based on a periodic review, that further remedial action is necessary at the Site, then Ecology will withdraw this opinion.

**Listing of the Site**

---

Based on this opinion, Ecology will remove the Site from our Confirmed and Suspected Contaminated Sites List.

**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.**

Mr. Lee Hanley  
August 20, 2013  
Page 8

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).

**Termination of Agreement**

---

Thank you for cleaning up the Site under the Voluntary Cleanup Program (VCP). This opinion terminates the VCP Agreement governing this project (#SW0447)

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 360-407-7263 or e-mail at [tmid461@ecy.wa.gov](mailto:tmid461@ecy.wa.gov).

Sincerely,



Thomas Middleton L.H.G.  
SWRO Toxics Cleanup Program

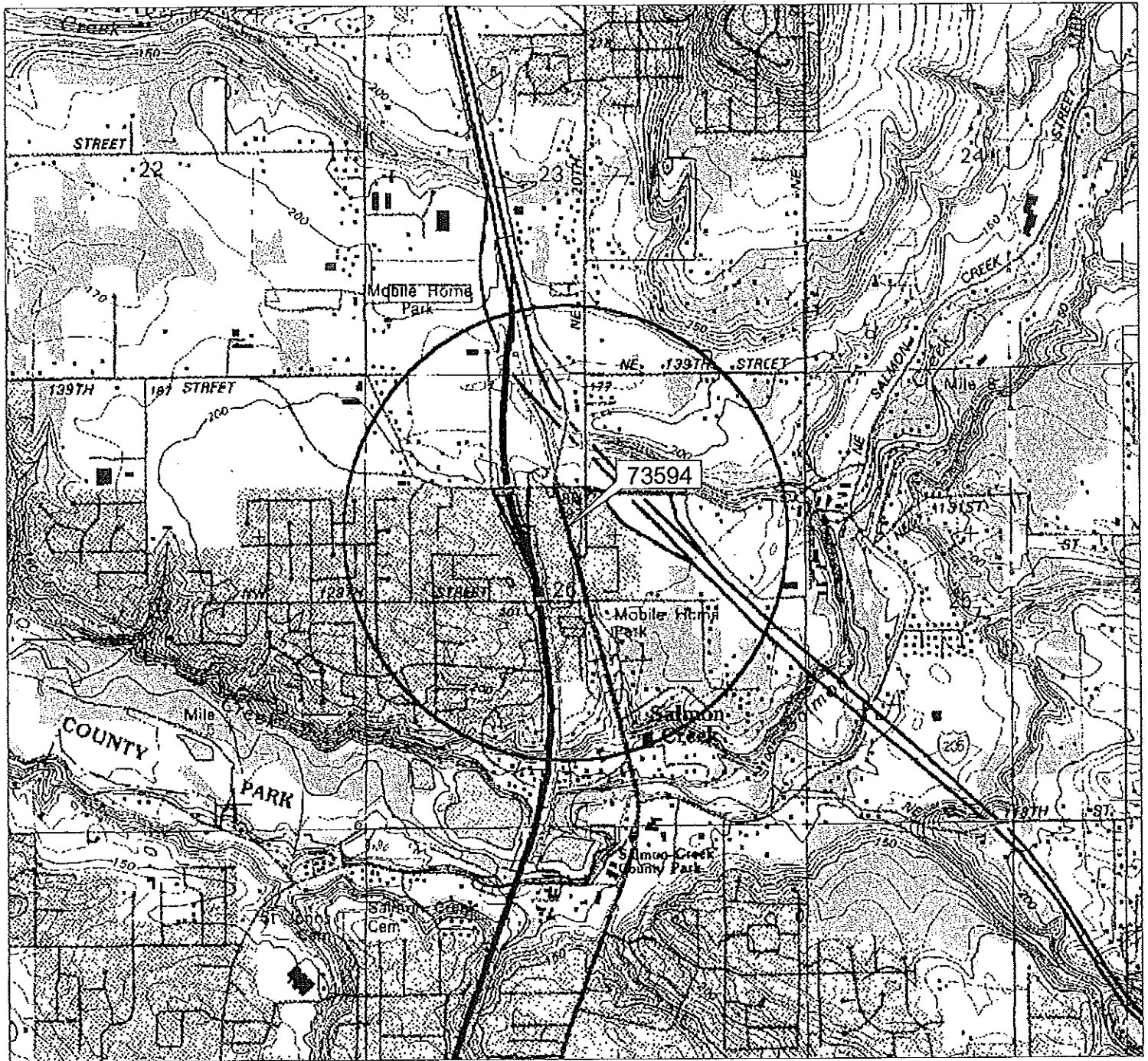
TMM/ksc: Former Exxon 73594 Env Cov NFA 08202012

**Enclosures:**

- Figure 1 – Site Location Map (Oct 2012)
- Figure 2 – Generalized Site Plan (Oct 2012)
- Figure 3 – Well Decommissioning and Grab Groundwater Sampling Plan (Oct 2012)
- Table 1 – Cumulative Groundwater Analytical Results
- Figure 3 – Horizontal Extent of Total and Dissolved Lead (FS/DCA Oct 2012)
- A – Restrictive Environmental Covenant and Long Term Groundwater Monitoring Plan

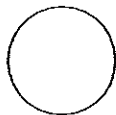
By certified mail: (7012 1010 0003 0195 4659)

cc: Bryan DeDoncker, Clark Co Health  
Scott Rose – Ecology  
Paul Turner – Ecology  
Dolores Mitchell – Ecology (w/o enclosures)



FN 311110001

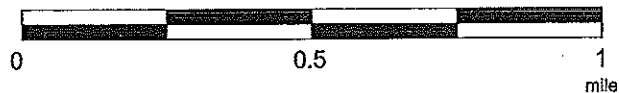
**EXPLANATION**



1/2-mile radius circle



**APPROXIMATE SCALE**



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



**Cardno  
ERI**

Shaping the Future

**SITE LOCATION MAP**

FORMER EXXON STATION 73594

13204 Northeast Highway 99

Vancouver, Washington

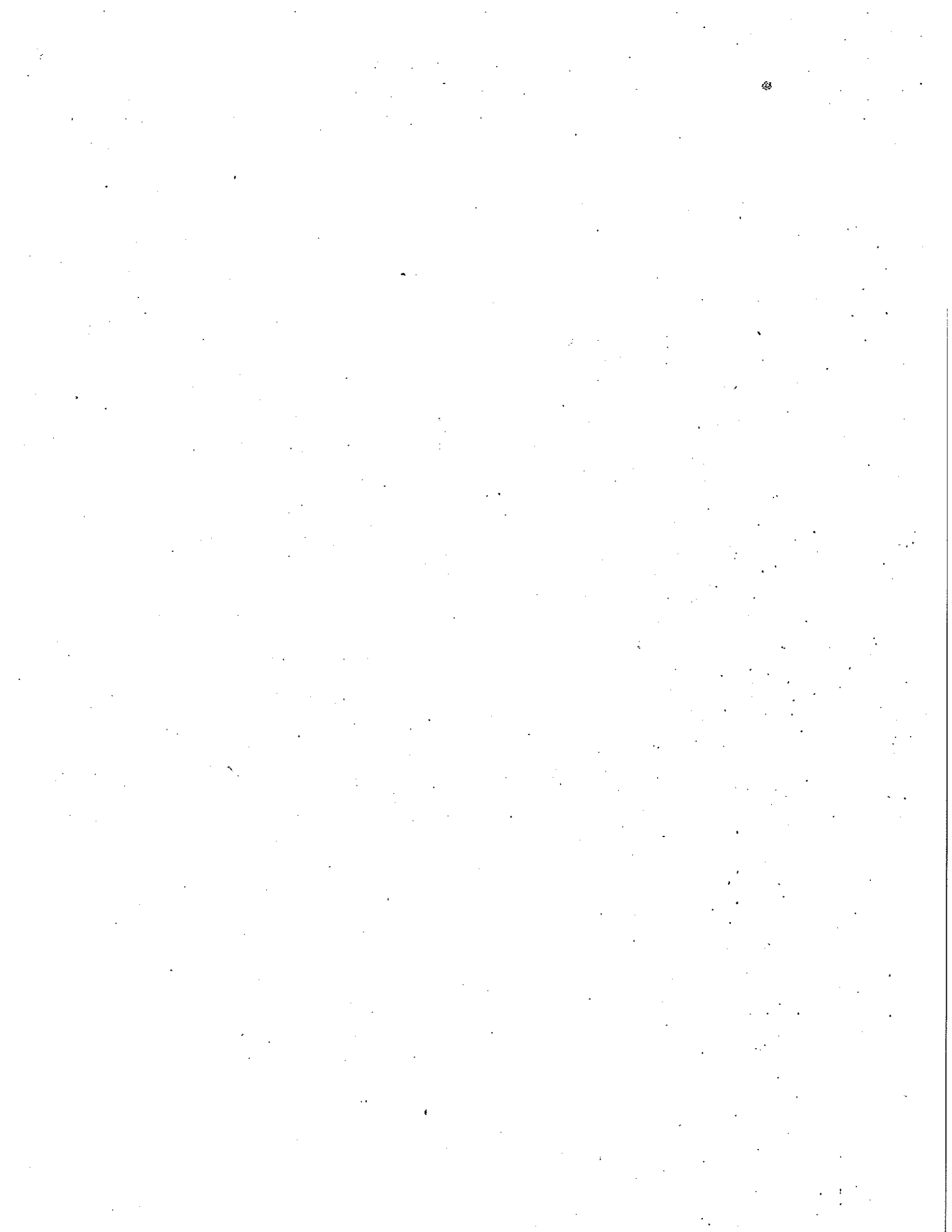
**PROJECT NO.**

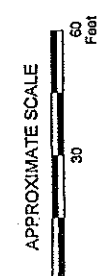
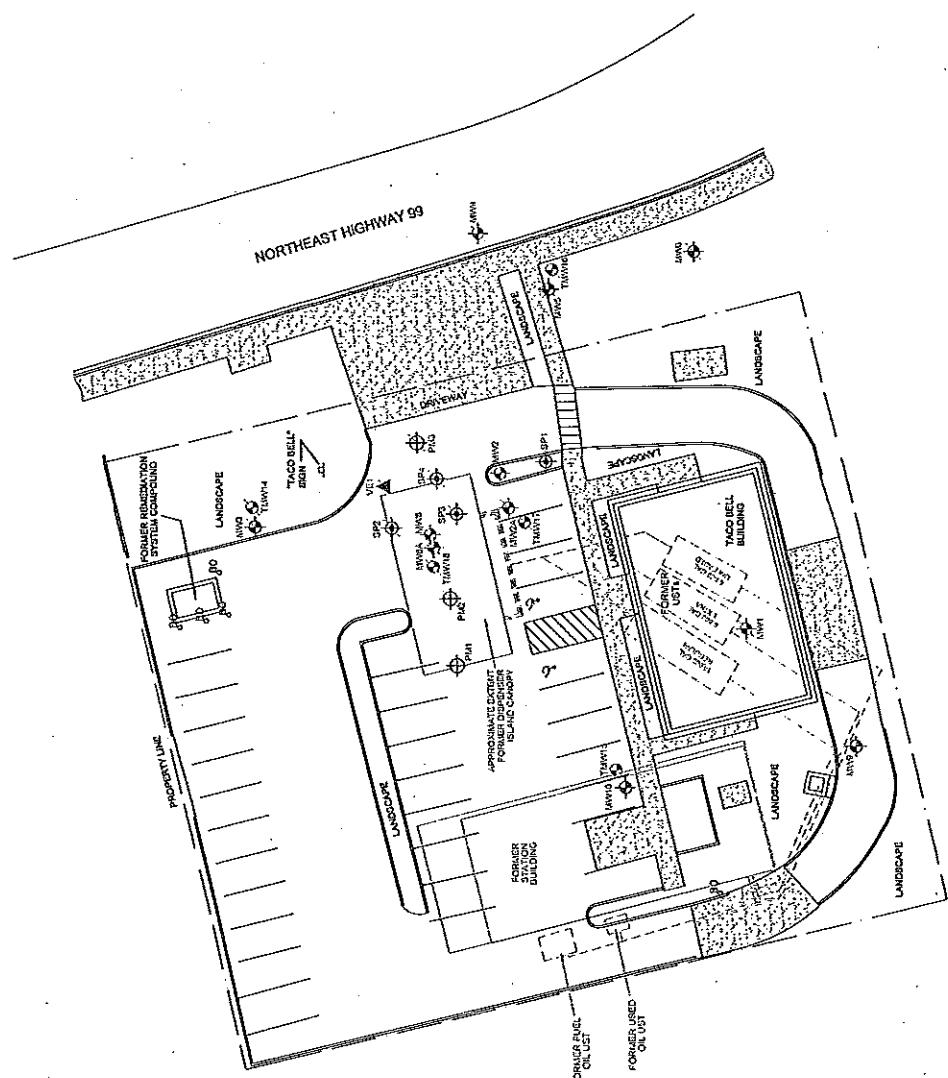
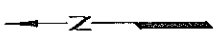
31111

**PLATE**

1

NAG: 09/11/12



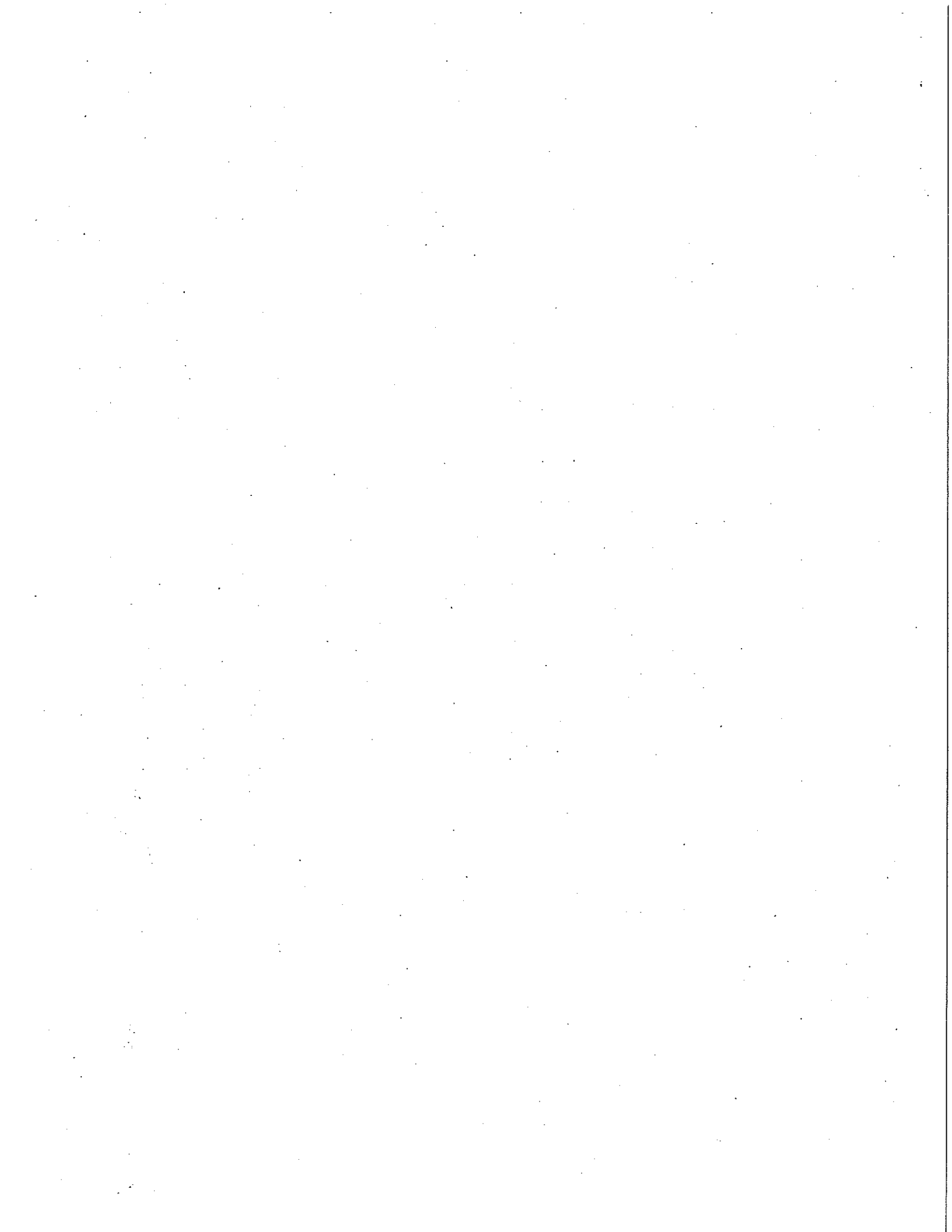


SOURCE: Modified from a map provided by ExxonMobil Oil Corporation

FN 311110002

**GENERALIZED SITE PLAN**  
 FORMER EXON STATION 73498  
 13204 Northeast Highway 99  
 Vancouver, Washington

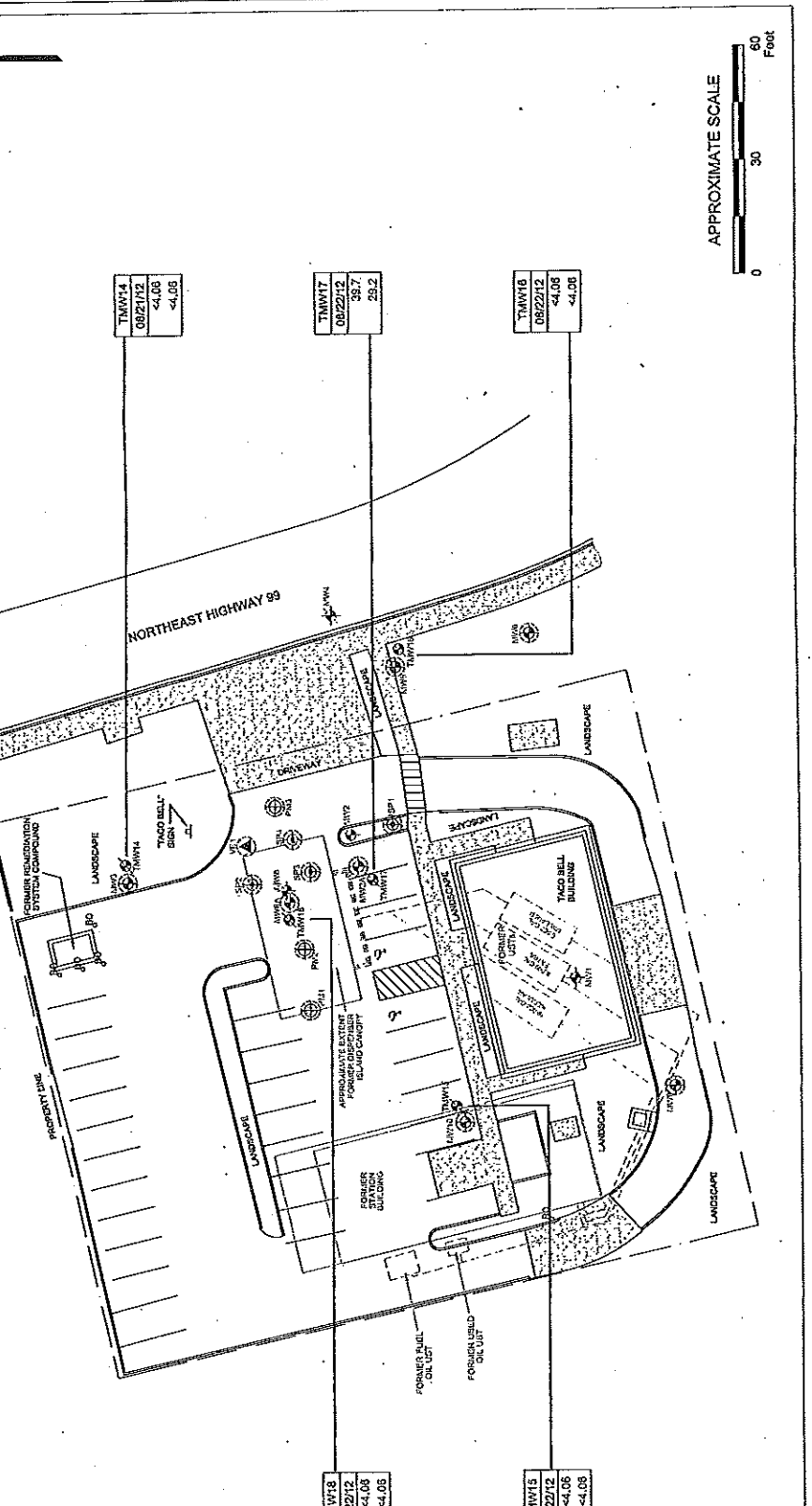
EXPLANATION		PROJECT NO.
MW10	Destroyed Groundwater Monitoring Well	31111
TMM18	Destroyed Temporary Groundwater Monitoring Well	PLATE 2
PM3	Destroyed Pressure Monitoring Well	NAG: 10/18/12
SP4	Destroyed Air Sparging Well	
VE1	Destroyed Soil Vapor Extraction Well	
[Symbol]	Existing Concrete Surface	



Laboratory Results in µg/L

Well ID	Sample Date	Total Lead	Detected Lead
TMW17	08/22/12	39.7	29.2

-- = Not Sampled  
 <4.05 = Less than the Stated Laboratory Reporting Limit  
 • Anions and Vals Symbols as Noted without Checkmark are Total Lead  
 • Numerical Not Checkmark in Blue indicates Detected and Total Lead  
 • Checkmark in Blue indicates Not Detected and Total Lead  
 • Checkmark in Blue indicates Not Detected and Total Lead

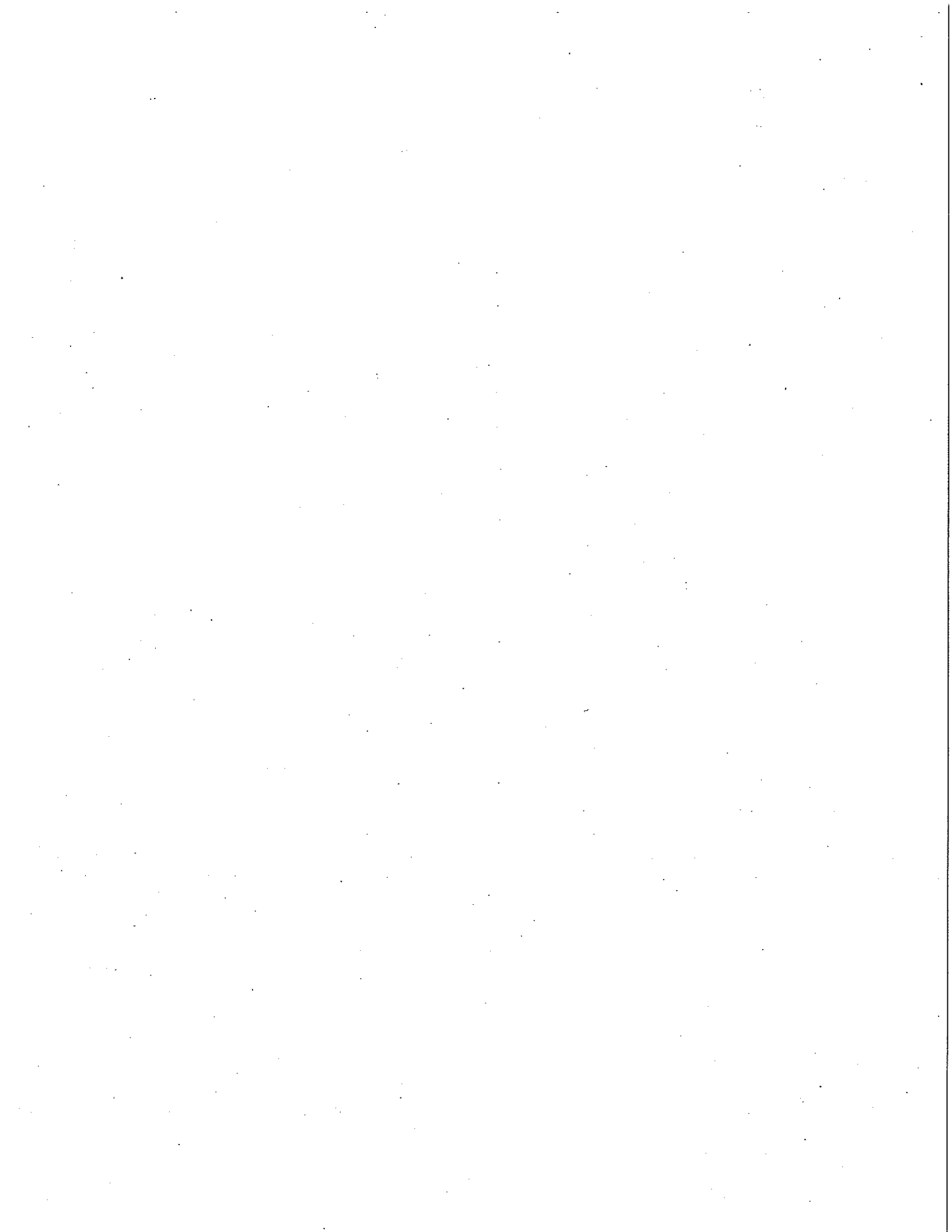


EXPLANATION	PROJECT NO.
MW10 Destroyed Groundwater Monitoring Well	31111
FM3 Pressure Monitoring Well	PLATE 3
SP4 Former Air Sparging Well	NAG: 10/18/12
VE1 Former Soil Vapor Extraction Well	
TMW18 Temporary Well Location	
○ Decommissioned Well Location	

**WELL DECOMMISSIONING AND GRAB GROUNDWATER SAMPLING ANALYSIS**  
**MAP - 08/21 & 08/22/12**  
 FORMER EXXON STATION 73498  
 13204 Northeast Highway 99  
 Vancouver, Washington

**Cardno ERI**  
 Shaping the Future

SOURCE: Modified from a map provided by ExxonMobil Oil Corporation  
 FN 311110002





**TABLE 1**  
**CUMULATIVE GROUNDWATER ANALYTICAL RESULTS**  
 Former Exxon Station 73594  
 13204 Northeast Highway 99  
 Vancouver, Washington  
 Page 1 of 11

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)	MTBE (µg/L)	Total Pb (µg/L)	Diss Pb (µg/L)	TSS (µg/L)
Screened Interval 15-35 ft bgs/ Total Well Depth 35 ft bgs															
MW1	04/05/88	100.03	22.49	77.54	-	-	-	<25.0	<1.0	<1.0	<1.0	-	-	-	-
MW1	07/20/88	100.03	22.90	77.13	-	-	-	-	-	-	-	-	-	-	-
MW1	03/27/89	100.03	21.70	78.33	-	-	-	<1.0	0.5	0.6	1.7	-	-	-	-
MW1	05/24/89	100.03	21.55	78.48	-	-	-	<1.0	<1.0	<1.0	<1.0	-	-	-	-
MW1	06/19/89	100.03	NM	-	-	-	-	<1.0	1.0	<1.0	<1.0	-	-	-	-
MW1	12/03/90	100.03	NM	-	-	-	-	<1.0	<1.0	<1.0	<1.0	-	-	-	-
MW1	12/10/90	100.03	22.78	77.25	-	-	-	-	-	-	-	-	-	-	-
MW1	03/05/91	100.03	22.04	77.99	-	-	-	<1.0	<1.0	<1.0	<1.0	-	-	-	-
MW1	05/20/91	100.03	21.25	78.78	-	-	-	<1.0	<1.0	<1.0	<1.0	-	-	-	-
MW1	08/28/91	100.03	22.64	77.39	-	-	-	<0.5	<0.5	<0.5	1.1	-	-	-	-
MW1	04/23/92	NE	21.67	-	52	-	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
MW1	07/16/92	NE	22.67	-	70	-	-	0.8	0.6	<0.5	<0.5	-	-	-	-
MW1	10/19/92	NE	23.68	-	90	-	-	<0.5	0.7	0.7	<0.5	-	-	-	-
MW1	02/25/93	NE	22.35	-	<50	-	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
MW1	06/04/93	NE	NM	-	-	-	-	<1.0	<1.0	-	<1.0	-	-	-	-
MW1	06/15/93	NE	21.23	-	<50	-	-	<0.5	<0.5	<0.5	<0.5	-	5.0	5.0	-
MW1	12/03/93	NE	NM	-	-	-	-	<1.0	<1.0	<1.0	<1.0	-	-	-	-
MW1	02/18/94	NE	NM	-	-	-	-	<1.0	<1.0	<1.0	<1.0	-	-	-	-
MW1	09/01/94	NE	NM	-	-	-	-	<1.0	<1.0	<1.0	<1.0	-	-	-	-
MW1	12/04/94	NE	NM	-	-	-	-	<1.0	<1.0	<1.0	<1.0	-	-	-	-
Destroyed															
Screened Interval 15-35 ft bgs/ Total Well Depth 35 ft bgs															
MW2	04/05/88	99.60	22.74	76.86	-	-	-	8.0	2.0	2.0	5.0	-	-	-	-
MW2	07/20/88	99.60	22.40	77.20	-	-	-	-	-	-	-	-	-	-	-
MW2	03/27/89	99.60	21.45	78.15	-	-	-	2.2	0.7	4.8	4.8	-	-	-	-
MW2	05/24/89	99.60	21.65	77.95	-	-	-	3.0	2.0	19.0	19.0	-	-	-	-
MW2	06/19/89	99.60	NM	-	-	-	-	5.0	<1.0	12.0	12.0	-	-	-	-
MW2	12/03/90	99.60	NM	-	-	-	-	19.0	2.7	12.0	12.0	-	-	-	-
MW2	12/10/90	99.60	22.76	76.84	-	-	-	-	-	-	-	-	-	-	-
MW2	03/05/91	99.60	22.13	77.47	-	-	-	52.0	3.1	23.0	23.0	-	-	-	-
MW2	05/20/91	99.60	21.30	78.30	-	-	-	<1.0	2.1	1.4	1.4	-	-	-	-
MW2	08/28/91	99.60	22.45	77.15	-	-	-	12.0	1.2	7.9	7.9	-	-	-	-
MW2	04/23/92	76.52	21.75	54.77	13.00	-	-	0.6	2.4	1.1	1.1	-	-	-	-

**TABLE 1**  
**CUMULATIVE GROUNDWATER ANALYTICAL RESULTS**  
 Former Exxon Station 73594  
 13204 Northeast Highway 99  
 Vancouver, Washington  
 Page 2 of 11

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)	MTBE (µg/L)	Total Pb (µg/L)	Diss Pb (µg/L)	TSS (µg/L)
MW2	07/16/92	76.52	22.42	54.10	2,100				66.0	6.9	40.0				
MW2	10/19/92	76.52	23.44	53.08	2,300			330	150.0	8.9	100.0				
MW2	02/25/93	76.52	22.14	54.38	2,800			370	220.0	12.0	150.0				
MW2	06/15/93	76.52	21.22	55.30	3,300			350	390.0	81.0	290.0		6.0	<3.0	
MW2	12/27/93	76.52	22.86	53.66											
MW2	06/13/94	98.56	22.63	75.93	2,500			240	2.6	75.0	17.0		4.0	<3.0	
MW2	09/12/94	98.56	23.32	75.24	2,800			2700	340.0	270.0	560.0		7.9	<3.0	
MW2	12/12/94	98.56	22.31	76.25	2,100			17	0.5	20.0	0.9		<3.0		
MW2	02/22/95	98.56	NM		140			3	0.7	4.1	2.6		<2.0		
MW2	05/22/95	98.56	NM		1,500			10	510	410	970		<2.0		
MW2	08/01/95	98.56	NM		2,100			900	700	700	500		<2.0		
MW2	01/24/96	98.56	NM		<50			0.6	<0.5	<0.5	<1.0		13.0		
MW2	04/18/96	98.56	NM		<50			<0.5	<0.5	<0.5	<1.0		10.0		
MW2	06/20/97	98.56	NM		<50			<0.5	<0.5	<0.5	<1.0				
MW2	05/27/98	98.56	20.76	77.80	115			15	<1.0	6.3	<2.0				
MW2	11/19/98	98.56	22.87	75.69	3,800			750	<25.0	<25.0	<50.0				
MW2	11/23/99	98.56	24.07	74.49	<250			<1	<1	<1	<1				
MW2	05/09/00	98.56	NM		<50			<0.5	<0.5	<0.5	<1	<5.00			
MW2	03/20/01	98.56	23.05	75.51	<50.0			<0.500	<0.500	<0.500	<1.00				
MW2	06/22/01	98.56	23.62	74.94	<50.0			<0.500	0.593	<0.500	<1.00				
MW2	09/14/01	98.56	23.86	74.70	<50.0			<0.500	<0.500	<0.500	<1.00				
MW2	03/26/02	98.56	21.08	77.48	<100			<1.00	<1.00	<1.00	<1.00				
MW2	07/11/02	98.56	22.35	76.21	<100			<1.0	<1.0	<1.0	<1.0				
MW2	02/11/03	98.56	20.50	78.06	<100			<1.0	<1.0	<1.0	<1.0		<3.0	<3.0	64,100
MW2	05/19/03	98.56	21.10	77.46											
MW2	03/11/04	98.56	21.05	77.51											
MW2	06/16/04	98.56	NM												
MW2	09/15/04	98.56	NM												
MW2	11/24/04	98.56	NM												
MW2	02/10/05	98.56	NM												
MW2	09/02/05	98.56	NM												
MW2	12/29/05	98.56	NM												
MW2	03/20/06	98.56	NM												
MW2	07/12/06	98.56	NM												

TABLE 1  
**CUMULATIVE GROUNDWATER ANALYTICAL RESULTS**

Former Exxon Station 73594  
 13204 Northeast Highway 99  
 Vancouver, Washington

Page 3 of 11

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)	MTBE (µg/L)	Total Pb (µg/L)	Total Diss Pb (µg/L)	TSS (µg/L)
MW2	07/02/08	98.56	24.02	74.54	<100	363	179	<1.00	<1.00	<1.00	<3.00	<1.00	7.10	<5.00	<2,000
MW2	07/24/08	98.56	24.16	74.40	-	-	-	-	-	-	-	-	13.5	<5.00	<2,130
MW2	07/25/08	98.56	NM	-	-	-	-	-	-	-	-	-	-	-	-
MW2	03/26/09	98.56	24.44	74.12	-	-	-	-	-	-	-	-	13.5	14.9	4,200
MW2	03/26/09 b	98.56	24.29	74.27	-	-	-	-	-	-	-	-	13.5	14.9	-
MW2	06/28/09	98.56	24.61	73.95	-	-	-	-	-	-	-	-	13.5	14.9	-
MW2	01/13/10	98.56	24.05	74.51	-	-	-	-	-	-	-	-	13.5	14.9	-
Destroyed															
Screened Interval 15-40 ft bgs/ Total Well Depth 40 ft bgs															
MW2A	06/15/10	NE	23.08	-	-	-	-	-	-	-	-	-	<5.00	<5.00	-
MW2A	09/16/10	NE	23.31	-	-	-	-	-	-	-	-	-	13.5	14.9	-
MW2A	12/10/10	NE	24.62	-	-	-	-	-	-	-	-	-	13.5	14.9	-
MW2A	03/17/11	NE	22.26	-	-	-	-	-	-	-	-	-	13.5	14.9	-
MW2A	06/07/11 c	202.24	22.48	179.76	-	-	-	-	-	-	-	-	13.5	14.9	-
Screened Interval 20-35 ft bgs/ Total Well Depth 35 ft bgs															
MW3	07/20/88	99.80	22.72	77.08	-	<50	-	<1.0	<1.0	<2.0	4.0	-	-	-	-
MW3	03/27/89	99.80	21.55	78.25	-	-	-	<4.1	<0.5	<0.6	<1.0	-	-	-	-
MW3	05/24/89	99.80	21.16	78.64	-	-	-	-	-	-	-	-	-	-	-
MW3	12/10/90	99.80	22.26	77.54	-	-	-	1.4	<1.0	<1.0	<1.0	-	-	-	-
MW3	03/05/91	99.80	21.51	78.29	-	-	-	<1.0	<1.0	<1.0	<1.0	-	-	-	-
MW3	05/20/91	99.80	20.60	79.20	-	-	-	<1.0	<1.0	<1.0	<1.0	-	-	-	-
MW3	08/28/91	99.80	22.20	77.60	-	-	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
MW3	04/23/92	76.66	21.21	55.45	<50	-	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
MW3	07/16/92	76.66	22.23	54.43	<50	-	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
MW3	10/19/92	76.66	23.30	53.36	70	-	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
MW3	02/25/93	76.66	21.97	54.69	<50	-	-	1.1	<0.5	<0.5	<0.5	-	-	-	-
MW3	06/15/93	76.66	20.82	55.84	<50	-	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
MW3	12/27/93	76.66	22.16	54.50	-	-	-	-	-	-	-	-	3.0	<3.0	-
MW3	06/13/94	98.00	21.94	76.06	<50	-	-	<0.5	<0.5	<0.5	<0.5	-	6.0	<3.0	-
MW3	09/12/94	98.00	22.71	75.29	<50	-	-	<0.5	0.6	<0.5	<0.5	-	6.3	<3.0	-
MW3	12/12/94	98.00	21.54	76.46	<50	-	-	<0.5	<0.5	<0.5	<0.5	-	<3.0	-	-
MW3	02/22/95	98.00	NM	-	<50	-	-	<0.5	<0.5	<0.5	<1.0	-	<2.0	-	-
MW3	08/01/95	98.00	NM	-	<50	-	-	0.9	1.4	<0.5	2.0	-	<2.0	-	-
MW3	01/24/96	98.00	NM	-	<50	-	-	<0.5	<0.5	<0.5	<1.0	-	4.3	-	-
MTCA Method A Cleanup Levels															
					800/1,000 a	500	500	5	1,000	700	1,000	20	15	15	N/A

**TABLE 1**  
**CUMULATIVE GROUNDWATER ANALYTICAL RESULTS**

Former Exxon Station 73594  
 13204 Northeast Highway 99  
 Vancouver, Washington

Page 4 of 11

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)	MTBE (µg/L)	Total Pb (µg/L)	Diss Pb (µg/L)	TSS (µg/L)
MW3	06/20/97	98.00	NM	--	<50	--	--	<0.5	<0.5	<0.5	<1.0	--	--	--	--
MW3	11/19/98	98.00	21.95	76.05	--	--	--	--	--	--	--	--	--	--	--
MW3	11/23/99	98.00	22.27	75.73	--	--	--	--	--	--	--	--	--	--	--
MW3	03/20/01	98.00	23.15	74.85	<50.0	--	--	<0.500	<0.500	<0.500	<1.00	--	--	--	--
MW3	06/22/01	98.00	23.70	74.30	<50.0	--	--	<0.500	<0.500	<0.500	<1.00	--	--	--	--
MW3	09/14/01	98.00	23.42	74.58	<50.0	--	--	<0.500	<0.500	<0.500	<1.00	--	--	--	--
MW3	03/26/02	98.00	20.06	77.94	<100	--	--	<1.00	<1.00	<1.00	<1.00	--	--	--	--
MW3	07/11/02	98.00	21.43	76.57	<100	--	--	<1.0	<1.0	<1.0	<1.0	--	--	--	--
MW3	02/11/03	98.00	20.75	77.25	<100	<100	<100	<1.0	<1.0	<1.0	<1.0	--	<3.0	<3.0	181,000
MW3	05/19/03	98.00	20.11	77.89	--	--	--	--	--	--	--	--	--	--	--
MW3	03/11/04	98.00	19.06	78.94	--	--	--	--	--	--	--	--	--	--	--
MW3	06/16/04	98.00	21.53	76.47	--	--	--	--	--	--	--	--	--	--	--
MW3	09/15/04	98.00	22.40	75.60	--	--	--	--	--	--	--	--	--	--	--
MW3	11/24/04	98.00	22.37	75.63	--	--	--	--	--	--	--	--	--	--	--
MW3	02/10/05	98.00	22.36	75.64	--	--	--	--	--	--	--	--	--	--	--
MW3	09/02/05	98.00	23.52	74.48	--	--	--	--	--	--	--	--	--	--	--
MW3	12/29/05	98.00	NM	--	--	--	--	--	--	--	--	--	--	--	--
MW3	03/20/06	98.00	20.91	77.09	--	--	--	--	--	--	--	--	--	--	--
MW3	07/12/06	98.00	22.35	75.65	--	--	--	--	--	--	--	--	--	--	--
MW3	07/02/08	98.00	23.04	74.96	<100	<111	<111	<1.00	<1.00	<1.00	<3.00	<1.00	<5.00	<5.00	<2,000
MW3	07/24/08	98.00	NM	--	--	--	--	--	--	--	--	--	--	--	--
MW3	07/25/08	98.00	NM	--	--	--	--	--	--	--	--	--	--	--	--
MW3	03/26/09	98.00	NM	--	--	--	--	--	--	--	--	--	--	--	--
MW3	06/28/09	98.00	23.66	74.34	--	--	--	--	--	--	--	--	5.10	<5.00	--
MW3	01/13/10	98.00	22.98	75.02	--	--	--	--	--	--	--	--	--	--	--
MW3	06/15/10	98.00	24.25	73.75	--	--	--	--	--	--	--	--	--	--	--
MW3	09/16/10	98.00	24.47	73.53	--	--	--	--	--	--	--	--	--	--	--
MW3	12/10/10	98.00	22.24	75.76	--	--	--	--	--	--	--	--	--	--	--
MW3	03/17/11	98.00	20.27	77.73	--	--	--	--	--	--	--	--	--	--	--
MW3	06/07/11 c	201.82	20.51	181.31	--	--	--	--	--	--	--	--	--	--	--
Screened Interval Unknown ft bgs/ Total Well Depth 35 ft bgs															
MW4	04/23/92	NE	19.84	--	<50	--	--	<0.5	20.0	--	440	--	--	<3	--
MW4	07/16/92	NE	20.82	--	<50	--	--	<0.5	<0.5	140.0	0.8	--	--	<3	--
MW4	10/19/92	NE	21.85	--	--	--	--	--	--	--	--	--	--	--	--
MTC Method A Cleanup Levels															
800/1,000 a 500 500 5 1,000 700 1,000 20 15 15 N/A															

**TABLE 1**  
**CUMULATIVE GROUNDWATER ANALYTICAL RESULTS**

Former Exxon Station 73594  
13204 Northeast Highway 99  
Vancouver, Washington

Page 5 of 11

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)	MTBE (µg/L)	Total Pb (µg/L)	Diss Pb (µg/L)	TSS (µg/L)
MW4	02/25/93	NE	20.60	-	-	-	-	-	-	-	-	-	-	-	-
MW4	06/15/93	NE	21.32	-	<50	160	-	1.2	<0.5	<0.5	<0.5	-	<3	<3	-
MW4	10/25/93	NE	NM	-	<50	<50	-	<0.5	0.5	<0.5	0.9	-	-	<3	-
Destroyed															
Screened Interval 18-33 ft bgs/ Total Well Depth 33 ft bgs															
MW5	12/20/93	76.26	NM	-	<50	-	-	<0.5	<0.5	<0.5	2.5	-	<3.0	-	-
MW5	12/27/93	76.26	21.76	54.50	-	-	-	-	-	-	-	-	-	-	-
MW5	06/13/94	97.20	21.37	75.83	98	-	-	<0.5	<0.5	3.6	4.4	-	33.0	7.0	-
MW5	09/12/94	97.20	21.92	75.28	290	-	-	0.8	40.0	<0.5	<0.5	-	4.0	<3.0	-
MW5	12/12/94	97.20	20.65	76.55	<50	-	-	1.4	6.6	<0.5	0.6	-	2.0	-	-
MW5	02/22/95	97.20	NM	-	<50	-	-	<0.5	<0.5	<0.5	<1.0	-	<2.0	-	-
MW5	05/22/95	97.20	NM	-	-	-	-	-	-	-	-	-	<2.0	-	-
MW5	08/01/95	97.20	NM	-	<50	-	-	<0.5	<0.5	<0.5	<1.0	-	<2.0	-	-
MW5	10/31/95	97.20	NM	-	150	-	-	<0.5	9.4	9.4	5.6	-	11.0	-	-
MW5	01/24/96	97.20	NM	-	<50	-	-	<0.5	<0.5	1.5	<1.0	-	9.1	-	-
MW5	04/18/96	97.20	NM	-	<50	-	-	<0.5	<0.5	<0.5	<1.0	-	13.0	-	-
MW5	06/20/97	97.20	NM	-	<50	-	-	<0.5	<0.5	<0.5	<1.0	-	-	-	-
MW5	05/27/98	97.20	18.32	78.88	<50	-	-	<0.5	<0.5	<0.5	<1.0	-	-	-	-
MW5	11/19/98	97.20	21.45	75.75	-	-	-	-	-	-	-	-	-	-	-
MW5	11/23/99	97.20	21.49	75.71	-	-	-	-	-	-	-	-	-	-	-
MW5	05/09/00	97.20	NM	-	<50	-	-	<0.5	<0.5	<0.5	<1.0	<5.00	-	-	-
MW5	03/20/01	97.20	22.58	74.62	<50.0	-	-	<0.500	<0.500	<0.500	<1.00	-	-	-	-
MW5	06/22/01	97.20	22.40	74.80	<50.0	-	-	<0.500	0.528	<0.500	<1.00	-	-	-	-
MW5	09/14/01	97.20	22.65	74.55	<50.0	-	-	<0.500	<0.500	<0.500	<1.00	-	-	-	-
MW5	03/26/02	97.20	19.59	77.61	<100	-	-	<1.00	<1.00	<1.00	<1.00	-	-	-	-
MW5	07/11/02	97.20	20.78	76.42	<100	-	-	<1.0	<1.0	<1.0	<1.0	-	-	-	-
MW5	02/11/03	97.20	20.40	76.80	<100	-	-	<1.0	<1.0	<1.0	<1.0	-	<3.0	<3.0	67,700
MW5	05/19/03	97.20	19.25	77.95	-	-	-	-	-	-	-	-	-	-	-
MW5	03/11/04	97.20	NM	-	-	-	-	-	-	-	-	-	-	-	-
MW5	06/16/04	97.20	NM	-	-	-	-	-	-	-	-	-	-	-	-
MW5	09/15/04	97.20	21.90	75.30	-	-	-	-	-	-	-	-	-	-	-
MW5	11/24/04	97.20	22.90	74.30	-	-	-	-	-	-	-	-	-	-	-
MW5	02/10/05	97.20	22.85	74.35	-	-	-	-	-	-	-	-	-	-	-
MW5	09/02/05	97.20	22.04	75.16	-	-	-	-	-	-	-	-	-	-	-
MTCA Method A Cleanup Levels															
					800/1,000 <sup>a</sup>	500	500	5	1,000	700	1,000	20	15	15	N/A

**TABLE 1**  
**CUMULATIVE GROUNDWATER ANALYTICAL RESULTS**

Former Exxon Station 73594  
 13204 Northeast Highway 99  
 Vancouver, Washington  
 Page 6 of 11

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)	MTBE (µg/L)	Total Pb (µg/L)	Diss Pb (µg/L)	TSS (µg/L)
MW5	12/29/05	97.20	NM	--	--	--	--	--	--	--	--	--	--	--	--
MW5	03/20/06	97.20	20.40	76.80	--	--	--	--	--	--	--	--	--	--	--
MW5	07/12/06	97.20	21.60	75.60	--	--	--	--	--	--	--	--	--	--	--
MW5	07/02/08	97.20	22.57	74.63	<100	<125	<125	<1.00	<1.00	<1.00	<3.00	<1.00	<5.00	<5.00	3,600
MW5	07/24/08	97.20	NM	--	--	--	--	--	--	--	--	--	--	--	--
MW5	07/25/08	97.20	NM	--	--	--	--	--	--	--	--	--	--	--	--
MW5	03/26/09	97.20	NM	--	--	--	--	--	--	--	--	--	--	--	--
MW5	06/28/09	97.20	23.11	74.09	--	--	--	--	--	--	--	--	5.80	<5.00	--
MW5	01/13/10	97.20	NM	--	--	--	--	--	--	--	--	--	--	--	--
MW5	06/15/10	97.20	23.96	73.24	--	--	--	--	--	--	--	--	--	--	--
MW5	09/16/10	97.20	24.38	72.82	--	--	--	--	--	--	--	--	--	--	--
MW5	12/10/10	97.20	21.43	75.77	--	--	--	--	--	--	--	--	--	--	--
MW5	03/17/11	97.20	20.89	76.31	--	--	--	--	--	--	--	--	--	--	--
MW5	06/07/11 c	201.02	21.26	179.76	--	--	--	--	--	--	--	--	--	--	--
Screened Interval 18-33 ft bgs/ Total Well Depth 33 ft bgs															
MW6	12/20/93	76.24	NM	--	<50	--	--	<0.5	<0.5	<0.5	<0.5	--	4.0	--	--
MW6	12/27/93	76.24	21.75	54.49	--	--	--	--	--	--	--	--	--	--	--
MW6	06/13/94	97.29	21.46	75.83	<50	--	--	<0.5	<0.5	<0.5	<0.5	--	<3.0	<3.0	--
MW6	09/12/94	97.29	22.08	75.21	<50	--	--	<0.5	<0.5	<0.5	<0.5	--	3.7	<3.0	--
MW6	12/12/94	97.29	21.19	76.10	<50	--	--	<0.5	<0.5	<0.5	<0.5	--	<3.0	--	--
MW6	02/22/95	97.29	NM	--	<50	--	--	<0.5	<0.5	<0.5	<1.0	--	<2.0	--	--
MW6	08/01/95	97.29	NM	--	<50	--	--	<0.5	<0.5	<0.5	<1.0	--	<2.0	--	--
MW6	01/24/96	97.29	NM	--	<50	--	--	<0.5	<0.5	<0.5	<1.0	--	<2.0	--	--
MW6	06/20/97	97.29	NM	--	<50	--	--	<0.5	<0.5	<0.5	<1.0	--	--	--	--
MW6	11/19/98	97.29	21.20	76.09	--	--	--	--	--	--	--	--	--	--	--
MW6	11/23/99	97.29	21.64	75.65	--	--	--	--	--	--	--	--	--	--	--
MW6	03/20/01	97.29	22.72	74.57	<50.0	--	--	<0.500	<0.500	<0.500	<1.00	--	--	--	--
MW6	06/22/01	97.29	22.32	74.97	<50.0	--	--	<0.500	<0.500	<0.500	<1.00	--	--	--	--
MW6	09/14/01	97.29	22.62	74.67	<50.0	--	--	<0.500	<0.500	<0.500	<1.00	--	--	--	--
MW6	03/26/02	97.29	19.68	77.61	<100	--	--	<1.00	<1.00	<1.00	<1.00	--	--	--	--
MW6	07/11/02	97.29	20.90	76.39	<100	--	--	<1.0	<1.0	<1.0	<1.0	--	--	--	--
MW6	02/11/03	97.29	20.53	76.76	<100	<100	<100	<1.0	<1.0	<1.0	<1.0	--	<3.0	<3.0	168,000
MW6	05/19/03	97.29	19.68	77.61	--	--	--	--	--	--	--	--	--	--	--
MW6	03/11/04	97.29	19.71	77.58	--	--	--	--	--	--	--	--	--	--	--
MTCA Method A Cleanup Levels															
					800/1,000 <sup>a</sup>	500	500	5	1,000	700	1,000	20	15	15	N/A

**TABLE 1**  
**CUMULATIVE GROUNDWATER ANALYTICAL RESULTS**  
Former Exxon Station 73594  
13204 Northeast Highway 99  
Vancouver, Washington  
Page 7 of 11

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)	MTBE (µg/L)	Total Pb (µg/L)	Diss Pb (µg/L)	TSS (µg/L)	
MW6	06/16/04	97.29	21.10	76.19	-	-	-	-	-	-	-	-	-	-	-	
MW6	09/15/04	97.29	21.90	75.39	-	-	-	-	-	-	-	-	-	-	-	
MW6	11/24/04	97.29	21.97	75.32	-	-	-	-	-	-	-	-	-	-	-	
MW6	02/10/05	97.29	21.90	75.39	-	-	-	-	-	-	-	-	-	-	-	
MW6	09/02/05	97.29	NM	-	-	-	-	-	-	-	-	-	-	-	-	
MW6	12/29/05	97.29	NM	-	-	-	-	-	-	-	-	-	-	-	-	
MW6	03/20/06	97.29	20.49	76.80	-	-	-	-	-	-	-	-	-	-	-	
MW6	07/12/06	97.29	21.90	75.39	-	-	-	-	-	-	-	-	-	-	-	
MW6	07/02/08	97.29	22.60	74.69	<100	<100	<100	<1.00	<1.00	<1.00	<3.00	-	<5.00	<5.00	8,800	
MW6	07/24/08	97.29	NM	-	-	-	-	-	-	-	-	-	-	-	-	
MW6	07/25/08	97.29	NM	-	-	-	-	-	-	-	-	-	-	-	-	
MW6	03/26/09	97.29	NM	-	-	-	-	-	-	-	-	-	-	-	-	
MW6	06/28/09	97.29	23.19	74.10	-	-	-	-	-	-	-	-	<5.00	<5.00	-	
MW6	01/13/10	97.29	22.74	74.55	-	-	-	-	-	-	-	-	-	-	-	
MW6	06/15/10	97.29	24.08	73.21	-	-	-	-	-	-	-	-	-	-	-	
MW6	09/16/10	97.29	24.42	72.87	-	-	-	-	-	-	-	-	-	-	-	
MW6	12/10/10	97.29	21.93	75.36	-	-	-	-	-	-	-	-	-	-	-	
MW6	03/17/11	97.29	20.93	76.36	-	-	-	-	-	-	-	-	-	-	-	
MW6	06/07/11 c	201.08	21.19	179.89	-	-	-	-	-	-	-	-	-	-	-	
Screened Interval Unknown ft. bgs/ Total Well Depth 30 ft. bgs																
MW8	11/19/98	98.36	22.48	75.88	131,000	-	-	-	-	-	-	-	-	-	-	
MW8	11/26/99	98.36	22.72	75.64	460	-	-	-	-	-	-	-	-	-	-	
MW8	05/09/00	98.36	NM	-	<50	-	-	-	-	-	-	-	-	-	-	
MW8	03/20/01	98.36	22.05	76.31	<50.0	-	-	-	-	-	-	-	-	-	-	
MW8	06/22/01	98.36	23.34	75.02	<50.0	-	-	-	-	-	-	-	-	-	-	
MW8	09/14/01	98.36	24.20	74.16	<50.0	-	-	-	-	-	-	-	-	-	-	
MW8	03/26/02	98.36	20.81	77.55	<100	-	-	-	-	-	-	-	-	-	-	
MW8	07/11/02	98.36	22.10	76.26	<100	-	-	-	-	-	-	-	-	-	-	
MW8	02/11/03	98.36	21.50	76.86	<100	523	210	-	-	-	-	-	<3.0	4.0	67,700	
MW8	05/19/03	98.36	20.80	77.56	-	-	-	-	-	-	-	-	-	-	-	
MW8	03/11/04	98.36	NM	-	-	-	-	-	-	-	-	-	-	-	-	
MW8	06/16/04	98.36	22.25	76.11	-	-	-	-	-	-	-	-	-	-	-	
MW8	09/15/04	98.36	NM	-	-	-	-	-	-	-	-	-	-	-	-	
MW8	11/24/04	98.36	NM	-	-	-	-	-	-	-	-	-	-	-	-	
MTCA Method A Cleanup Levels																
					800/1,000 a	500	500	5	1,000	700	1,000	20	15	15	N/A	

**TABLE 1**  
**CUMULATIVE GROUNDWATER ANALYTICAL RESULTS**

Former Exxon Station 73594  
 13204 Northeast Highway 99  
 Vancouver, Washington

Page 8 of 11

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)	MTBE (µg/L)	Total Pb (µg/L)	Diss Pb (µg/L)	TSS (µg/L)
MW8	02/10/05	98.36	NM	-	-	-	-	-	-	-	-	-	-	-	-
MW8	09/02/05	98.36	24.02	74.34	-	-	-	-	-	-	-	-	-	-	-
MW8	12/29/05	98.36	NM	-	-	-	-	-	-	-	-	-	-	-	-
MW8	03/20/06	98.36	NM	-	-	-	-	-	-	-	-	-	-	-	-
MW8	07/12/06	98.36	NM	-	-	-	-	-	-	-	-	-	-	-	-
MW8	07/02/08	98.36	23.77	74.59	<100	202	127	<1.00	<1.00	<1.00	<3.00	<1.00	5.00	12.4	<2,130
MW8	07/24/08	98.36	NM	-	-	-	-	-	-	-	-	-	-	-	-
MW8	07/25/08	98.36	23.94	74.42	-	-	-	-	-	-	-	-	5.17	6.10	<2,000
MW8	03/26/09	98.36	24.28	74.08	-	-	-	-	-	-	-	-	<5.00	<5.00	1,200
MW8	03/26/09 b	98.36	24.04	74.32	-	-	-	-	-	-	-	-	7.70	5.80	-
MW8	06/28/09	98.36	24.34	74.02	-	-	-	-	-	-	-	-	-	-	-
MW8	01/13/10	98.36	23.75	74.61	-	-	-	-	-	-	-	-	-	-	-
Destroyed															
Screened Interval 15-40 ft bgs/ Total Well Depth 40 ft bgs															
MW8A	06/15/10	NE	23.14	-	-	-	-	-	-	-	-	-	12.5	11.5	-
MW8A	09/16/10	NE	23.54	-	-	-	-	-	-	-	-	-	5.17	6.10	-
MW8A	12/10/10	NE	28.36	-	-	-	-	-	-	-	-	-	5.17	6.10	-
MW8A	03/17/11	NE	23.48	-	-	-	-	-	-	-	-	-	5.17	6.10	-
MW8A	06/07/11 c	202.34	23.62	178.72	-	-	-	-	-	-	-	-	5.17	6.10	-
Screened Interval 15-30 ft bgs/ Total Well Depth 30 ft bgs															
MW9	02/11/03	99.08	21.81	77.27	<100	<143	<143	<1.0	<1.0	<1.0	<1.0	-	5.00	<3.0	1,030,000
MW9	05/19/03	99.08	21.33	77.75	<100	136	<111	4.30	9.0	1.5	10.1	-	5.00	<3.0	1,550,000
MW9	03/11/04	99.08	21.24	77.84	<100	<111	<111	<1.00	<1.0	<1.0	<1.0	-	<5.0	<5.0	-
MW9	06/16/04	99.08	22.76	76.32	<100	<111	<111	<1.00	<1.0	<1.0	<1.0	-	5.00	<5.0	-
MW9	09/15/04	99.08	23.57	75.51	<100	229	<100	<1.00	<1.0	<1.0	<1.0	-	5.00	<5.0	-
MW9	11/24/04	99.08	23.50	75.58	<100	-	-	1.9	1.90	1.5	5.1	-	5.00	<5.0	-
MW9	02/10/05	99.08	23.12	75.96	<100	-	-	<1.00	<1.0	<1.0	1.7	-	5.00	<5.0	-
MW9	09/02/05	99.08	25.31	73.77	<100	-	-	1.45	1.56	<1.00	3.38	-	5.00	<5.00	-
MW9	12/29/05	99.08	24.48	74.60	<100	-	-	<1.00	<1.00	<1.00	<1.00	-	-	<5.00	-
MW9	03/20/06	99.08	22.51	76.57	<100	-	-	<1.00	16.2	<1.00	<3.00	-	-	<5.00	-
MW9	07/12/06	99.08	23.78	75.30	<100	-	-	<1.00	2.20	<1.00	<3.00	-	-	<5.00	-
MW9	07/02/08	99.08	24.35	74.73	<100	<100	<100	<1.00	<1.00	<1.00	<3.00	<1.00	<5.00	<5.00	18,600
MW9	07/24/08	99.08	NM	-	-	-	-	-	-	-	-	-	-	-	-
MW9	07/25/08	99.08	NM	-	-	-	-	-	-	-	-	-	-	-	-
MTCA Method A Cleanup Levels															
					800/1,000 a	500	500	5	1,000	700	1,000	20	15	15	N/A



**TABLE 1**  
**CUMULATIVE GROUNDWATER ANALYTICAL RESULTS**  
 Former Exxon Station 73594  
 13204 Northeast Highway 99  
 Vancouver, Washington  
 Page 9 of 11

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)	MTBE (µg/L)	Total Pb (µg/L)	Diss Pb (µg/L)	TSS (µg/L)
MW9	03/26/09	99.08	NM	-	-	-	-	-	-	-	-	-	-	-	-
MW9	06/28/09	99.08	24.76	74.32	-	-	-	-	-	-	-	-	<5.00	<5.00	-
MW9	01/13/10	99.08	24.32	74.76	-	-	-	-	-	-	-	-	-	-	-
MW9	06/15/10	99.08	25.43	73.65	-	-	-	-	-	-	-	-	-	-	-
MW9	09/16/10	99.08	25.77	73.31	-	-	-	-	-	-	-	-	-	-	-
MW9	12/10/10	99.08	23.45	75.63	-	-	-	-	-	-	-	-	-	-	-
MW9	03/17/11	99.08	22.37	76.71	-	-	-	-	-	-	-	-	-	-	-
MW9	06/07/11 c	202.69	22.68	180.01	-	-	-	-	-	-	-	-	-	-	-
Screened Interval 15-30 ft bgs/ Total Well Depth 30 ft bgs															
MW10	02/11/03	98.88	21.87	77.01	<100	<100	<100	<1.0	<1.0	<1.0	<1.0	-	-	<3.0	9,960,000
MW10	05/19/03	98.88	21.35	77.53	134	<111	<111	3.8	26.2	3.8	26.2	-	-	<3.0	3,660,000
MW10	03/11/04	98.88	21.25	77.63	<100	<143	<143	<1.0	<1.0	<1.0	<1.0	-	10.0	<5.0	-
MW10	06/16/04	98.88	22.78	76.10	<100	<111	<111	1.2	4.8	1.2	4.8	-	-	<5.0	-
MW10	09/15/04	98.88	23.57	75.31	<100	<100	<100	<1.0	<1.0	<1.0	<1.0	-	-	<5.0	-
MW10	11/24/04	98.88	23.52	75.36	255	-	-	13.2	10.7	10.7	34.7	-	-	<5.0	-
MW10	02/10/05	98.88	23.25	75.63	<100	-	-	<1.0	1.1	1.1	3.5	-	-	<5.0	-
MW10	09/02/05	98.88	24.97	73.91	<100	-	-	<1.0	1.71	<1.0	2.45	-	-	<5.0	-
MW10	12/29/05	98.88	24.21	74.67	<100	-	-	<1.0	<1.0	<1.0	<1.0	-	-	<5.0	-
MW10	03/20/06	98.88	22.41	76.47	<100	-	-	<1.0	<1.0	<1.0	<3.00	-	-	<5.00	-
MW10	07/12/06	98.88	23.71	75.17	<100	-	-	<1.0	11.7	<1.0	<3.00	-	-	<5.00	-
MW10	07/02/08	98.88	24.29	74.59	<100	<105	<105	<1.00	<1.00	<1.00	<3.00	<1.00	<5.00	<5.00	<2,000
MW10	07/24/08	98.88	NM	-	-	-	-	-	-	-	-	-	-	-	-
MW10	07/25/08	98.88	NM	-	-	-	-	-	-	-	-	-	-	-	-
MW10	03/26/09	98.88	NM	-	-	-	-	-	-	-	-	-	-	-	-
MW10	06/28/09	98.88	24.82	74.06	-	-	-	-	-	-	-	-	<5.00	<5.00	-
MW10	01/13/10	98.88	24.27	74.61	-	-	-	-	-	-	-	-	-	-	-
MW10	06/15/10	98.88	25.59	73.29	-	-	-	-	-	-	-	-	-	-	-
MW10	09/16/10	98.88	25.89	72.99	-	-	-	-	-	-	-	-	-	-	-
MW10	12/10/10	98.88	23.59	75.29	-	-	-	-	-	-	-	-	-	-	-
MW10	03/17/11	98.88	22.34	76.54	-	-	-	-	-	-	-	-	-	-	-
MW10	06/07/11 c	202.88	22.62	180.26	-	-	-	-	-	-	-	-	-	-	-
Screened Interval 31-32 ft bgs/ Total Well Depth 32 ft bgs															
SP2	05/28/09	NE	NM	-	-	-	-	-	-	-	-	-	-	<5.00	-

**TABLE 1**  
**CUMULATIVE GROUNDWATER ANALYTICAL RESULTS**

Former Exxon Station 73594  
 13204 Northeast Highway 99  
 Vancouver, Washington

Page 10 of 11

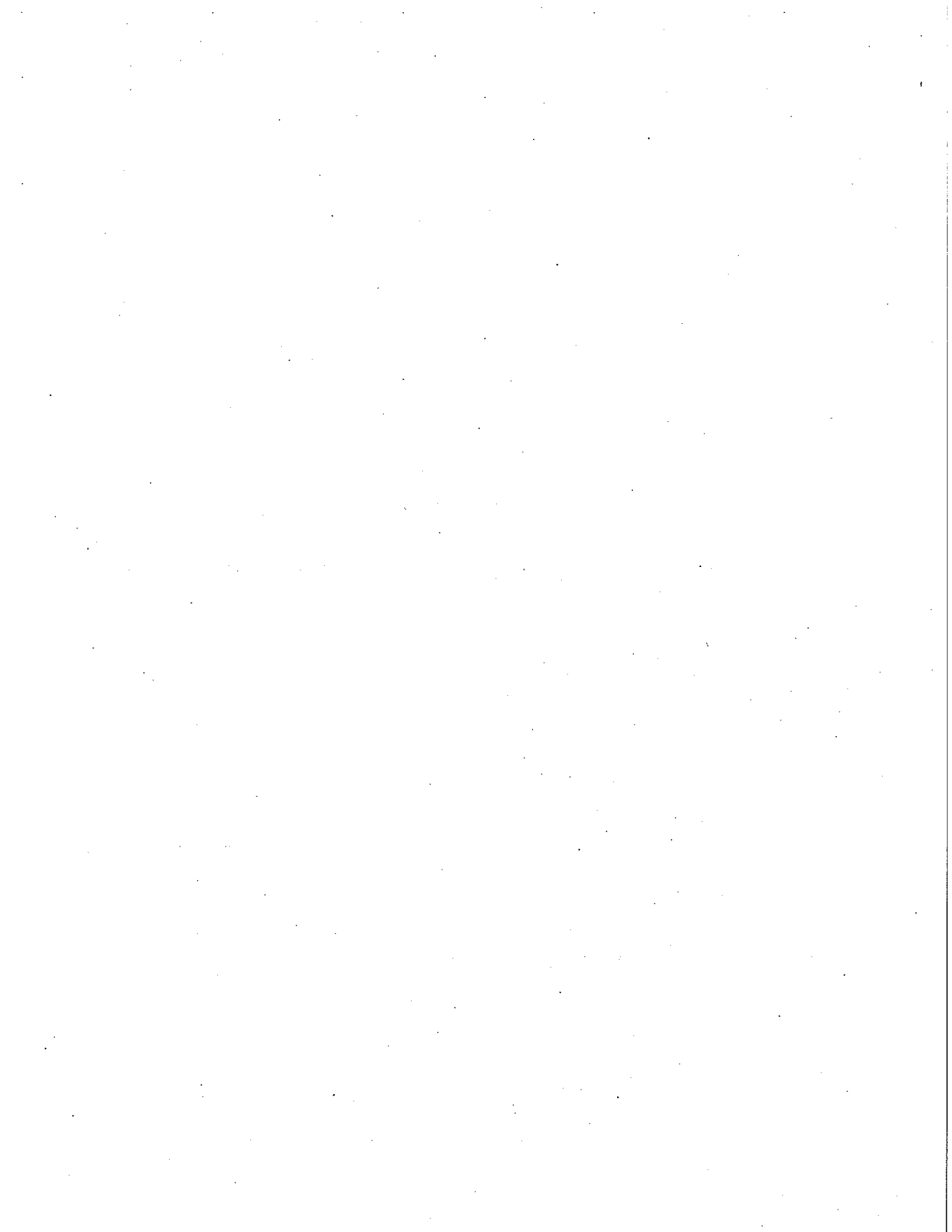
Well ID	Sampling Date	Wellhead Elev (feet)	DTW (feet)	GW Elev (feet)	TPHg (µg/L)	TPHd (µg/L)	TPHmo (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	Total Pb (µg/L)	Diss Pb (µg/L)	TSS (µg/L)
Screened Interval 31-32 ft bgs/ Total Well Depth 32 ft bgs															
SP3	05/28/09	NE	NM	--	--	--	--	--	--	--	--	--	██████████	<5.00	--
Screened Interval 31-32 ft bgs/ Total Well Depth 32 ft bgs															
SP4	05/28/09	NE	NM	--	--	--	--	--	--	--	--	--	██████████	<5.00	--

MTC Method A Cleanup Levels	800/1,000 a	500	5	1,000	700	1,000	20	15	15	N/A

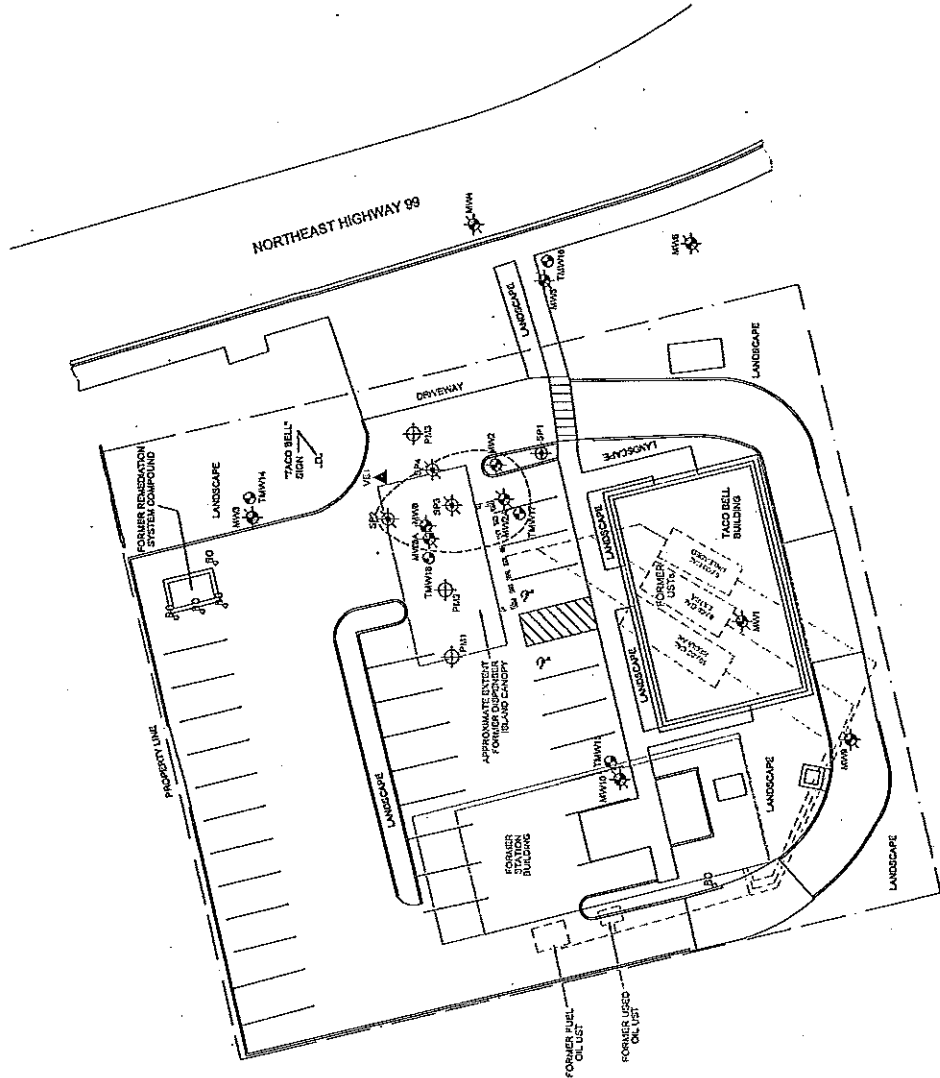
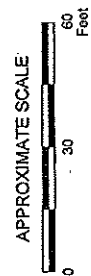
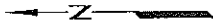
**TABLE 1**  
**CUMULATIVE GROUNDWATER ANALYTICAL RESULTS**  
 Former Exxon Station 73594  
 13204 Northeast Highway 99  
 Vancouver, Washington  
 Page 11 of 11

**EXPLANATION:**

- Wellhead elevations prior to 03/28/11 were taken from prior consultants' reports
- Data collected prior to 03/20/01 was taken from prior consultants' reports
- 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 elevation
- NM = Not Measured    N/A = No Applicable MTCA Method A Cleanup Level
- = Not analyzed or sampled
- TPH<sub>g</sub> = Total Petroleum Hydrocarbons as Gasoline in accordance with Ecology Method NWTPH-Gx
- TPH<sub>o</sub> and TPH<sub>m</sub> = Total Petroleum Hydrocarbons as Diesel and Motor 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 8260B or 8021B, refer to laboratory analytical reports
- Total Pb = Total Lead. Diss Pb = Dissolved Lead. Total and Dissolved Lead analyzed in accordance EPA Method 7421 or 6010B, refer to laboratory analytical reports.
- TSS = Total Suspended Solids in accordance with EPA Method 160.2 or ASTM Standard Method 2540D, refer to laboratory analytical reports
- < = Less than stated laboratory reporting limit
- Shaded values equal or exceed MTCA Method A Cleanup Levels
- a = TPH<sub>g</sub> cleanup level for groundwater is 800 µg/L if benzene is present, or 1,000 µg/L if benzene is not present
- b = No purge sample
- c = Wellhead elevations were resurveyed on 03/28/11 by Cardno WRG using NAVD 88



- Well Symbols in Red Indicate Dissolved and Total Lead Concentrations Which Exceed MTCA Method A Cleanup Levels
- Well Symbols in Blue Indicate Dissolved and Total Lead Concentrations Below MTCA Method A Cleanup Levels



SOURCE: Modified from a map provided by ExxonMobil Oil Corporation

FN 311110002

## HORIZONTAL EXTENT OF TOTAL AND DISSOLVED LEAD

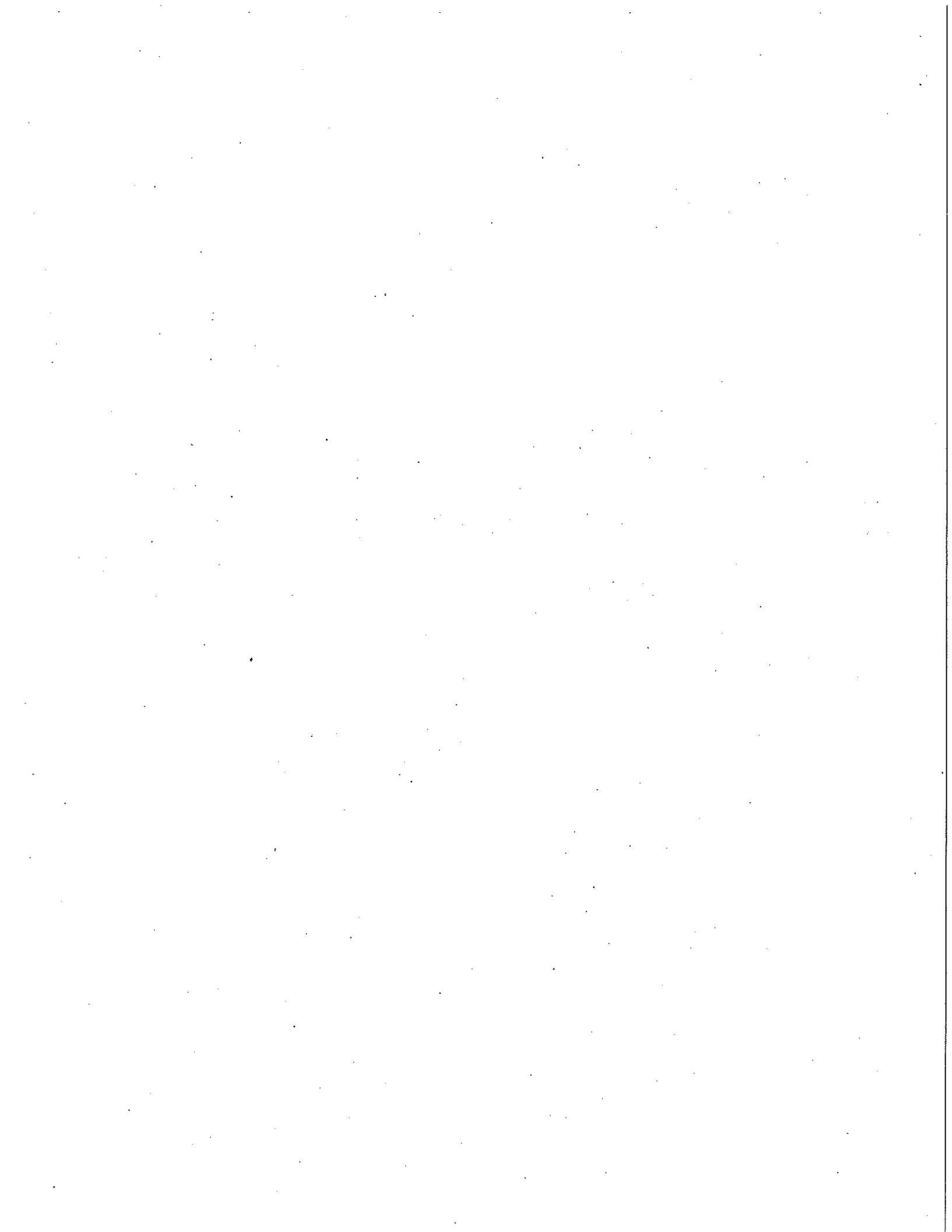
FORMER EXXON STATION 73498  
13204 Northeast Highway 99  
Vancouver, Washington

EXPLANATION	
MW10	Destroyed Groundwater Monitoring Well
TMW18	Temporary Groundwater Monitoring Well
PM3	Destroyed Pressure Monitoring Well

SP4	Destroyed Air Sparging Well
VE1	Destroyed Soil Vapor Extraction Well
---	Approximate Horizontal Extent of Lead Exceeding MTCA Method A Cleanup Level

PROJECT NO.  
31111

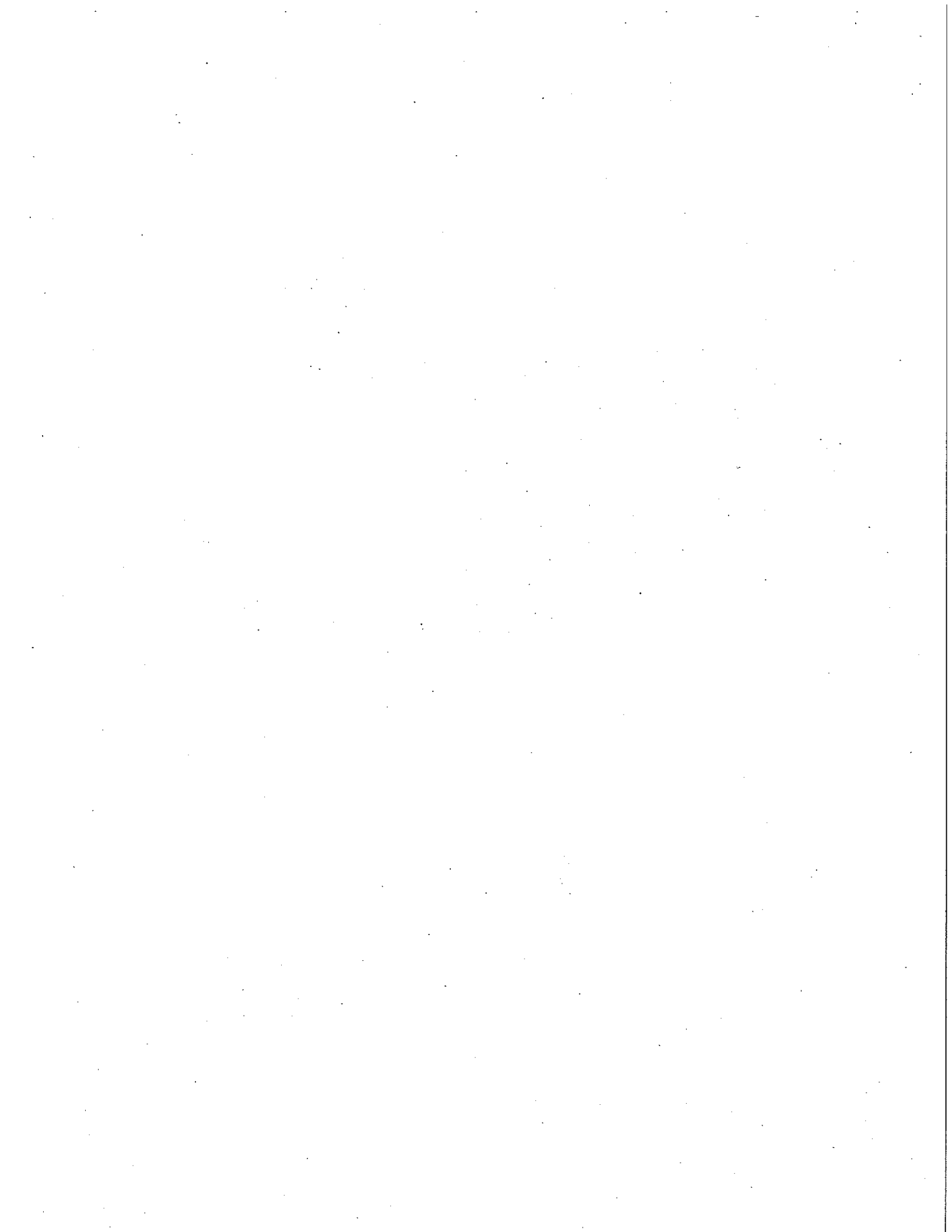
PLATE  
3  
NAG: 10/16/12



Ms. Jennifer Sedlachek  
August 5, 2013

## **ENCLOSURE A**

Environmental Covenant and Long-Term Groundwater Monitoring Plan





4971334 COV

RecFee - \$162.00 Pages: 41 - WASHINGTON STATE DEPARTMENT  
Clark County, WA 05/14/2013 11:36



RETURN ADDRESS

Thomas Middleton L.HG  
Washington State Dept of Ecology SWRO  
PO Box 47775  
Olympia, WA 98504-7440

Please print neatly or type information  
Document Title(s)

Environmental Covenant

Reference Numbers(s) of related documents:

Additional Reference #'s on page \_\_\_\_\_

Grantor(s) (Last, First and Middle Initial)

Border Express LLL

Additional grantors on page \_\_\_\_\_

Grantee(s) (Last, First and Middle Initial)

State of Washington Department of Ecology

Additional grantees on page \_\_\_\_\_

Legal Description (abbreviated form: i.e. lot, block plat or section, township, range, quarter/quarter)

#263 SEC 26 T3N R1E WM .60A

Additional legal is on page \_\_\_\_\_

Assessor's Property Tax Parcel/Account Number

186754000

Additional parcel #'s on page \_\_\_\_\_

The Auditor/Recorder will rely on the information provided on this form. The staff will not read the document to verify the accuracy or completeness of the Indexing information provided herein.

I am requesting an emergency nonstandard recording for an additional fee as provided in RCW 36.18.010. I understand that the recording processing requirements may cover up or otherwise obscure some part of the text of the original document.

Signature of Requesting Party

RECEIVED

APR 05 2013

WA State Department  
of Ecology (SWRO)

After Recording Return to:  
Thomas Middleton L.H.G.  
Washington State Department of Ecology  
Southwest Regional Office  
P.O. Box 47775  
Olympia, Washington 98504-7440

RECEIVED

MAY 16 2013

WA State Department  
of Ecology (SWRO)

### Environmental Covenant

**Grantor:** Border Express LLC  
**Grantee:** State of Washington, Department of Ecology  
**Legal:** #263 SEC 26 T3N R1EWM .60A  
**Tax Parcel Nos.:** 186754000  
**Cross Reference:** N/A

Grantor, Border Express LLC., hereby binds Grantor, its successors and assigns to the land use restrictions identified herein and grants such other rights under this environmental covenant (hereafter "Covenant") made this 14th day of February 2013 in favor of the State of Washington Department of Ecology (Ecology). Ecology shall have full right of enforcement of the rights conveyed under this Covenant pursuant to the Model Toxics Control Act, RCW 70.105D.030(1)(g), and the Uniform Environmental Covenants Act, 2007 Wash. Laws ch. 104, sec. 12.

This Declaration of Covenant is made pursuant to RCW 70.105D.030(1)(f) and (g) and WAC 173-340-440 by Border Express LLC, its successors and assigns, and the State of Washington Department of Ecology, its successors and assigns (hereafter "Ecology").

A remedial action (hereafter "Remedial Action") occurred at the property that is the subject of this Covenant. The Remedial Action conducted at the property is described in the following documents:

Cardno ERI. October 25, 2012. *Corrective Action Plan – Environmental Covenant Submittal, Former Exxon Station 73594, 13204 Northeast Highway 99, Vancouver, Washington.*

Cardno ERI. October 25, 2012. *Feasibility Study/Disproportionate Cost Analyses, Former Exxon Station 73594, 13204 Northeast Highway 99, Vancouver, Washington.*

Cardno ERI. August 25, 2011. *Groundwater Potability Evaluation – Request for Closure, Former Exxon Station 73594, 13204 Northeast Highway 99, Vancouver, Washington.*

Cardno ERI. January 7, 2011. *ExxonMobil Environmental Services Aquifer Test Report, Former Exxon Station 73594, 13204 Northeast Highway 99, Vancouver, Washington.*

Cardno ERI. June 13, 2011. *ExxonMobil Environmental Services Groundwater Monitoring Report, Former Exxon Station 73594, 13204 Northeast Highway 99, Vancouver, Washington.*

CH2M HILL Companies Ltd. (CH2M Hill). July 22, 1988. *Sensitive Receptor Risk Assessment and Divestment Environmental Investigation, Exxon Company USA, Store 7-3594, 13204 N.E. Highway 99, Vancouver, Washington.*

CH2M HILL Companies Ltd. (CH2M Hill). September 26, 1988. *Site Environmental Investigation, Exxon Company USA, R/S 7-3594, 13204 N.E. Highway 99, Vancouver, Washington.*

EA Engineering, Science, and Technology (EA). October 17, 1995. *Soil Vapor Extraction and Air Sparging System Installation at Former Exxon Station RS 7-3594, 13204 NE Highway 99, Vancouver, Washington.*

Enviro-Logic, Inc. (ELI). February 25, 1992. *Hydrocarbon Delineation Investigation, Former Exxon Service Station No. 7-3594, 13204 NE Highway 99, Vancouver, Washington.*

Enviro-Logic, Inc. (ELI). January 3, 1994. *Limited Subsurface Environmental Investigation, Former Exxon Service Station No. 7-3594, 13204 Northeast Highway 99, Vancouver, Washington.*

Environmental Resolutions, Inc. (ERI). September 19, 2002. *Confirmatory Boring and Soil Sampling Report, Former Exxon Station 7-3594, 13204 Northeast Highway 99, Vancouver, Washington.*

Environmental Resolutions, Inc. (ERI). March 18, 2003. *Monitoring Well Installation and Soil Sampling Report, Former Exxon Station 7-3594, 13204 Northeast Highway 99, Vancouver, Washington.*

Environmental Resolutions, Inc. (ERI). September 8, 2006. *Site Characterization Summary and Site Conceptual Model, Former Exxon Station 73594, 13204 Northeast Highway 99, Vancouver, Washington.*

Environmental Resolutions, Inc. (ERI). August 20, 2008. *Closure Report, Former Exxon Station 73594, 13204 Northeast Highway 99, Vancouver, Washington, Ecology VCP ID: SW 0447.*

Environmental Resolutions, Inc. (ERI). June 29, 2009. *ExxonMobil Environmental Services Sparge Well Groundwater Sampling Report, 13204 Northeast Highway 99, Vancouver, Washington.*

Environmental Resolutions, Inc. (ERI). December 3, 2009. *ExxonMobil Environmental Services Sensitive Receptor Survey, 13204 Northeast Highway 99, Vancouver, Washington.*

Environmental Resolutions, Inc. (ERI). September 14, 2010. *ExxonMobil Environmental Services Sparge Well Destruction, Installation and Groundwater Sampling Report, 13204 Northeast Highway 99, Vancouver, Washington.*

Environmental Resolutions, Inc. (ERI). January 29, 2010. *ExxonMobil Environmental Services Groundwater Monitoring Report, 13204 Northeast Highway 99, Vancouver, Washington.*

Washington State Department of Ecology (Ecology). November 24, 2008. *Letter Requiring Further Action at the following site: Former Exxon Station 7-3594, 13204 Northeast Highway 99, Vancouver, WA.*

These documents are on file at Ecology's Southwest Regional Office.

This Covenant is required because the Remedial Action resulted in residual concentrations of total and dissolved lead, which exceed the Model Toxics Control Act Method A Cleanup Level for groundwater established under WAC 173-340-704. Plate 3 from the FS/DCA report is attached to illustrate the remaining extent of total and dissolved lead present at the site.

The undersigned, Border Express LLC., is the fee owner of real property (hereafter "Property") in the County of Clark, State of Washington, that is subject to this Covenant. The Property is legally described as follows: #263 SEC 26 T3N R1EWM .60A.

Border Express LLC makes the following declaration as to limitations, restrictions, and uses to which the Property may be put and specifies that such declarations shall constitute covenants to run with the land, as provided by law and shall be binding on all parties and all persons claiming under them, including all current and future owners of any portion of or interest in the Property (hereafter "Owner")

Section 1.

No groundwater may be taken for any use from the Property.

Section 2. Any activity on the Property that may interfere with the integrity of the Remedial Action and continued protection of human health and the environment is prohibited.

Section 3. Any activity on the Property that may result in the release or exposure to the environment of a hazardous substance that remains on the Property as part of the Remedial Action, or create a new exposure pathway, is prohibited without prior written approval from Ecology.

Section 4. The Owner of the property must give thirty (30) day advance written notice to Ecology of the Owner's intent to convey any interest in the Property. No conveyance of title, easement, lease, or other interest in the Property shall be consummated by the Owner without adequate and complete provision for continued monitoring, operation, and maintenance of the Remedial Action.

Section 5. The Owner must restrict leases to uses and activities consistent with the Covenant and notify all lessees of the restrictions on the use of the Property.

Section 6. The Owner must notify and obtain approval from Ecology prior to any use of the Property that is inconsistent with the terms of this Covenant. Ecology may approve any inconsistent use only after public notice and comment.

Section 7. The Owner shall allow authorized representatives of Ecology the right to enter the Property at reasonable times for the purpose of evaluating the Remedial Action; to take samples, to inspect remedial actions conducted at the property, to determine compliance with this Covenant, and to inspect records that are related to the Remedial Action.

Section 8. The Owner of the Property reserves the right under WAC 173-340-440 to record an instrument that provides that this Covenant shall no longer limit use of the Property or be of any further force or effect. However, such an instrument may be recorded only if Ecology, after public notice and opportunity for comment, concurs.

Border Express LLC

[Signature]  
Thomas M. Cook  
President

Dated: March 26, 2013

STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

[Signature]  
Rebecca S. Lawson, P.E. LHG  
Section Manager  
Toxics Cleanup Program  
Southwest Regional Office

Dated: March 26, 2013

STATE OF Washington  
COUNTY OF Clark

On this 26<sup>th</sup> day of March, 2013, I certify that Thomas M. Cook  
\_\_\_\_\_ personally appeared before me, acknowledged that he/she signed this instrument, on  
oath stated that he/she was authorized to execute this instrument, and acknowledged it as the  
President [type of authority] of Border Express LLC [name of  
party being represented] to be the free and voluntary act and deed of such party for the uses  
and purposes mentioned in the instrument.

VONDA K. LARA  
NOTARY PUBLIC  
STATE OF WASHINGTON  
COMMISSION EXPIRES  
APRIL 9, 2013

[Signature]  
Notary Public in and for the State of  
Washington, residing at Vancouver.  
My appointment expires April 9, 2013.

## Exhibit A

### Legal Description

Abbreviated Legal Description from the Clark County Property Information Center:#263 SEC 26 T3N  
R1EWM .60A



Exhibit B

Long-Term Groundwater Sampling Work Plan

May 30, 2012  
Cardno ERI 31111.14.W03

Ms. Jennifer Sedlachek  
ExxonMobil Environmental Services  
4096 Piedmont Avenue #194  
Oakland, California 94611

Cardno ERI  
License ENVIRRI044JD

815 Industry Drive  
Tukwila, WA 98188  
USA

Phone 206 575 6220  
Toll-free 877 470 4334  
Fax 206 575 6423  
www.cardno.com

www.cardnoeri.com

**SUBJECT** Long-Term Groundwater Sampling Work Plan  
Former Exxon Station 73594  
13204 Northeast Highway 99  
Vancouver, Washington

Ms. Sedlachek:

At the request of ExxonMobil Environmental Services (EMES), on behalf of Exxon Mobil Corporation, Cardno ERI prepared this work plan for the subject site. Based on a review of historical groundwater data for the subject site and in accordance with correspondence with Mr. Tom Middleton of the Washington State Department of Ecology (Ecology), Cardno ERI proposes the following work:

- the decommissioning of all existing wells,
- the advancement of five soil borings for the purpose of collecting a grab groundwater sample from each boring to establish baseline total and dissolved lead concentrations; and
- subsequent boring advancement and grab groundwater sampling activities in 5-years' time to confirm total and dissolved lead concentrations.

Groundwater samples are being collected to confirm that concentrations of total and dissolved lead are confined to the source area in the vicinity of groundwater monitoring wells MW2A and MW8A. Additional groundwater samples to be collected in 5-years' time will be compared to the baseline results to confirm that total and dissolved lead concentrations in groundwater are not migrating off-site.

May 30, 2012  
Cardno ERI 31111.14.W03 Former Exxon Station 73594, Vancouver, Washington

## **SITE DESCRIPTION**

The subject property is located on the western side of Northeast Highway 99, 0.25 mile south of the intersection of Interstate 5 and Interstate 205 in the City of Vancouver, Clark County, Washington (Plate 1). The site is currently occupied by an operating Taco Bell restaurant and is located in a primarily commercial area. Locations of former USTs, existing groundwater monitoring wells and restaurant building, and other select site features are shown on Plate 2.

## **GEOLOGY AND HYDROGEOLOGY**

Semi-consolidated Quaternary-aged periglacial flood gravel, sand, and silt deposits are mapped as underlying the site and are underlain by Quaternary/Pliocene continental rocks and volcanic rocks of Grande-Ronde Basalt flows of Miocene age (USGS, 1963; USGS, 1987). Surface waters in the region drain as part of Salmon Creek watershed (Ecology, 2005).

The site lies at an elevation of 200 feet above msl, and the local topography slopes generally to the southeast. The average groundwater gradient historically ranges from northwest to southeast and groundwater is typically encountered at depths ranging from approximately 23 to 24 feet bgs (Cardno ERI, 2011a).

## **PREVIOUS WORK**

Soil and groundwater investigations have been conducted at the site since 1988. Previous work has included the drilling of soil borings, installation of wells, and collection of groundwater samples. For more detailed information regarding these investigations, refer to the documents listed in the reference section.

### **Soil Conditions**

A review of historical soil results indicated residual hydrocarbon concentrations remained in the vicinity of the former pump islands. In July 2008, Environmental Resolutions, Inc. (ERI) conducted confirmation boring activities indicating the samples were below the MTCA Method A Cleanup Levels (ERI, 2008). No residual hydrocarbon concentrations in soil remain at the subject site.

### **Groundwater Conditions**

Periodic groundwater sampling activities were initiated in 1988 (Table 1). A review of groundwater sampling results indicates total and dissolved lead concentrations in wells MW2A and MW8A and total lead concentrations in AS

May 30, 2012  
Cardno ERI 31111.14.W03 Former Exxon Station 73594, Vancouver, Washington

wells SP2, SP3, and SP4 exceeded the MTCA Method A Cleanup Levels. Concentrations of dissolved hydrocarbons are below the MTCA Method A Cleanup Levels in all other existing wells.

### Aquifer Testing

In 2010, Cardno ERI conducted an aquifer test to evaluate aquifer hydraulic properties and determine groundwater yield. The results of the aquifer test indicated a sustainable yield of less than 0.26 gpm, which is below the threshold for potability presented in the MTCA (Cardno ERI, 2011a). Based on these results, Cardno ERI prepared the *Groundwater Potability Evaluation – Request for Closure*, dated August 25, 2011, which requested that the shallow aquifer be reclassified as non-potable.

### Closure Activities

In 2002, ERI entered the subject site into Ecology's Voluntary Cleanup Program (VCP) (ERI, 2002). Following confirmation boring activities in August 2008, ERI requested a no further action (NFA) determination from Ecology. Ecology responded that they will not grant closure due to dissolved lead concentrations exceeding the MTCA Method A Cleanup Level in wells MW2 and MW8; however, Ecology acknowledged that hydrocarbons at the site have been addressed (Ecology, 2008).

In August 2011, Cardno ERI requested a NFA determination based on a review of environmental activities completed at the subject site indicating the substantive requirements of MTCA had been met (Washington Administrative Code (WAC) 173-340-350(7)) (Cardno ERI 2011a,b). In response to the NFA determination request, Mr. Middleton indicated via phone and email correspondence that all existing wells could be decommissioned and to achieve a NFA determination that a long-term groundwater sampling plan with an environmental covenant should be prepared.

### **PROPOSED WORK**

Based on a review of historical groundwater data for the subject site and in accordance with correspondence with Ecology, Cardno ERI proposes the decommissioning of all existing wells. Additionally, Cardno ERI proposes the advancement of five soil borings and subsequent boring advancement and grab groundwater sampling activities in 5-years' time as part of a long-term sampling plan. The purpose of the proposed work is to collect groundwater samples to establish baseline concentrations to confirm that total and dissolved lead concentration are confined to the source area in the vicinity of groundwater monitoring wells MW2A and MW8A. The subsequent samples are being collected to be compared to the baseline results to confirm that total and dissolved lead concentrations in groundwater are not migrating off-site.

May 30, 2012

Cardno ERI 31111.14.W03 Former Exxon Station 73594, Vancouver, Washington

The proposed well destruction and boring locations are shown on Plate 3. Drilling services will be provided by Cascade Drilling, LP. The procedures for well destruction, drilling, and decontamination are described in the field protocols (Appendix A). The fieldwork will be conducted under the advisement of a professional geologist and in accordance with applicable regulatory guidelines.

### **Pre-Field Activities**

Prior to conducting field activities, Cascade will obtain Washington start cards from Ecology. Cardno ERI will contract Applied Professional Services (APS) to locate underground utilities at the site.

### **Well Decommissioning**

Cardno ERI will observe Cascade decommission 14 on-site wells destroyed in accordance with WAC 173-160-460. The wells will be decommissioned by removing the well vaults and pressure grouting with a bentonite slurry from total depth to an estimated 3 feet bgs; AS wells SP1, SP2, SP3 and SP4 to depths ranging from 32.5 to 35 feet bgs, groundwater monitoring wells MW2A, MW3, MW5, MW6, MW8A, MW9 and MW10 to depths ranging from 30 to 40 feet bgs, pressure monitoring wells PM1, PM2 and PM3 to a depth of 16 feet bgs, and SVE well VE1 to a depth of 20 feet bgs. Each well will then be capped with 3 feet of concrete.

### **Subsurface Investigation**

Prior to drilling, the boring locations will be cleared with air knife clearance drilling equipment to 8 feet bgs in accordance with EMES subsurface clearance protocol. Following clearance activities, Cardno ERI will observe Cascade advance five soil borings using direct push drilling technology to approximately 25 to 30 feet bgs. The borings will be advanced past observed groundwater in each location.

Following direct-push advancement, temporary monitoring wells will be installed in each boring. The temporary monitoring wells will be constructed by installing 3/4-inch diameter, schedule 40, factory-slotted polyvinyl chloride (PVC) casing with 0.010-inch slots with the screened interval extending from approximately 30 to 25 feet bgs. Blank two-inch diameter PVC casing will be placed from the top of the screened casing to grade.

Following installation, the temporary wells will be developed by agitating the water with a peristaltic pump and purged at rates not exceeding the recharge rate of the well until the groundwater runs clear. Immediately following development, groundwater samples will be collected from the temporary wells using a peristaltic pump.

Following the collection of a groundwater sample, the PVC casing will be removed from each boring location, and the borings will be backfilled with bentonite from total depth to approximately two feet bgs and hydrated with water.

May 30, 2012  
Cardno ERI 31111.14.W03 Former Exxon Station 73594, Vancouver, Washington

The borings will then be finished with concrete from approximately two feet bgs to grade. During the construction of the temporary wells, factory-sealed PVC casing will be used to reduce the probability of cross-contamination and all casing joints will be flush-threaded. No glues, chemical cements, or solvents will be used in well construction.

### **Five Year Assessment**

Cardno ERI will complete activities discussed above in five years' time in accordance with the Periodic Review requirements set forth in WAC 173-340-420. Soil borings will be completed immediately adjacent to the proposed boring locations shown on Plate 3.

### **Laboratory Analyses**

Grab groundwater samples will be submitted for analysis to TestAmerica Laboratories, Inc. (TestAmerica), located in Nashville, Tennessee. The samples will be analyzed for total and dissolved lead in accordance with EPA Method 6010B.

### **Waste Management Plan**

The soil, purge water, and decontamination water generated during drilling activities will be temporarily stored on site in DOT-approved, 55-gallon drums. Purge water and decontamination water will be transported by Emerald Services, Inc. (Emerald) to the Emerald Services Airport Way Facility for disposal and soil will be transported by Allied Waste Services to the Roosevelt Regional Landfill for disposal. Waste disposal documentation for soil and water will be included in the report.

### **Report**

After completion of the proposed field activities, a report summarizing field and laboratory procedures, resource protection logs, boring logs, and laboratory results will be submitted to EMES and Ecology. The report will be signed by a State of Washington professional geologist.

### **LIMITATIONS**

For any documents cited that were not generated by ERI, the data taken from those documents is used "as is" and is assumed to be accurate. ERI does not guarantee the accuracy of this data and makes no warranties for the referenced work performed nor the inferences or conclusions stated in these documents.

May 30, 2012

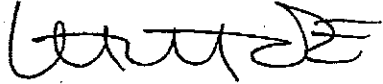
Cardno ERI 31111.14.W03 Former Exxon Station 73594, Vancouver, Washington

This document was prepared under the guidance of a licensed geologist and in accordance with generally accepted standards of environmental, geological and engineering practices in Washington at the time of investigation. No soil engineering or geotechnical references are implied or should be inferred. The evaluation of the geologic conditions at the site for this investigation is made from a limited number of data points. Subsurface conditions may vary away from these data points.

May 30, 2012  
Cardno ERI 31111.14.W03 Former Exxon Station 73594, Vancouver, Washington

For any questions concerning the content of this work plan, please contact Mr. Justin Foslien, Cardno ERI Project Manager for this site, at 206 394 7230.

Sincerely,



on behalf of

Nicholas A. Gerkin  
Staff Scientist  
for Cardno ERI  
Direct Line 206 394 7224  
Email: [nicholas.gerkin@cardno.com](mailto:nicholas.gerkin@cardno.com)



Justin Foslien, L.G. 2540  
Project Manager  
for Cardno ERI  
Direct Line 206 394 7230  
Email: [justin.foslien@cardno.com](mailto:justin.foslien@cardno.com)

**ENCLOSURES**

References  
Acronym List

- Plate 1      Site Location Map
- Plate 2      Generalized Site Plan
- Plate 3      Proposed Well Decommissioning and Soil Boring Locations Map
  
- Table 1      Cumulative Groundwater Analytical Results
  
- Appendix A    Field Protocols



May 30, 2012

Cardno ERI 31111.14.W03 Former Exxon Station 73594, Vancouver, Washington

## REFERENCES

Cardno ERI. August 25, 2011a. *Groundwater Potability Evaluation – Request for Closure Report, Former Exxon Station 73594, 13204 Northeast Highway 99, Vancouver, Washington.*

Cardno ERI. August 25, 2011b. *Proposal to Destroy Monitoring Wells Letter, Former Exxon Station 73594, 13204 Northeast Highway 99, Vancouver, Washington.*

CH2M HILL Companies Ltd. (CH2M Hill). July 22, 1988. *Sensitive Receptor Risk Assessment and Divestment Environmental Investigation, Exxon Company USA, Store 7-3594, 13204 N.E. Highway 99, Vancouver, Washington.*

CH2M HILL Companies Ltd. (CH2M Hill). September 26, 1988. *Site Environmental Investigation, Exxon Company USA, R/S 7-3594, 13204 N.E. Highway 99, Vancouver, Washington.*

EA Engineering, Science, and Technology (EA). October 17, 1995. *Soil Vapor Extraction and Air Sparging System Installation at Former Exxon Station RS 7-3594, 13204 NE Highway 99, Vancouver, Washington.*

Enviro-Logic, Inc. (ELI). February 25, 1992. *Hydrocarbon Delineation Investigation, Former Exxon Service Station No. 7-3594, 13204 NE Highway 99, Vancouver, Washington.*

Enviro-Logic, Inc. (ELI). January 3, 1994. *Limited Subsurface Environmental Investigation, Former Exxon Service Station No. 7-3594, 13204 Northeast Highway 99, Vancouver, Washington.*

Environmental Resolutions, Inc. (ERI). September 19, 2002. *Confirmatory Boring and Soil Sampling Report, Former Exxon Station 7-3594, 13204 Northeast Highway 99, Vancouver, Washington.*

Environmental Resolutions, Inc. (ERI). March 18, 2003. *Monitoring Well Installation and Soil Sampling Report, Former Exxon Station 7-3594, 13204 Northeast Highway 99, Vancouver, Washington.*

Environmental Resolutions, Inc. (ERI). August 20, 2008. *Closure Report, Former Exxon Station 73594, 13204 Northeast Highway 99, Vancouver, Washington, Ecology VCP ID: SW 0447.*

Environmental Resolutions, Inc. (ERI). May 4, 2009a. *ExxonMobil Environmental Services Company Groundwater Monitoring Report, 13204 Northeast Highway 99, Vancouver, Washington.*

May 30, 2012

Cardno ERI 31111.14.W03 Former Exxon Station 73594, Vancouver, Washington

Environmental Resolutions, Inc. (ERI). June 29, 2009b. *ExxonMobil Environmental Services Company Sparge Well Groundwater Sampling Report, 13204 Northeast Highway 99, Vancouver, Washington.*

Environmental Resolutions, Inc. (ERI). January 29, 2010. *ExxonMobil Environmental Services Company Groundwater Monitoring Report, 13204 Northeast Highway 99, Vancouver, Washington.*

Environmental Resolutions, Inc. (ERI). April 8, 2010. *Work Plan for Destruction and Installation of Two Groundwater Monitoring Wells, Former Exxon Station 73594, 13204 Northeast Highway 99, Vancouver, Washington.*

United States Geological Survey (USGS). 1963. *Geology of Portland, Oregon, and Adjacent Areas: U.S. Geological Survey Bulletin 1119, 119p.* URL:

[[http://vulcan.wr.usgs.gov/Volcanoes/Oregon/Publications/Bulletin1119/geologic\\_history.html](http://vulcan.wr.usgs.gov/Volcanoes/Oregon/Publications/Bulletin1119/geologic_history.html)]

United States Geological Survey (USGS). 1987. *Geologic Map of the Vancouver Quadrangle, Washington and Oregon: Washington Division of Geology and Earth Resources, Open File Report 87-10, scale 1:100000.*

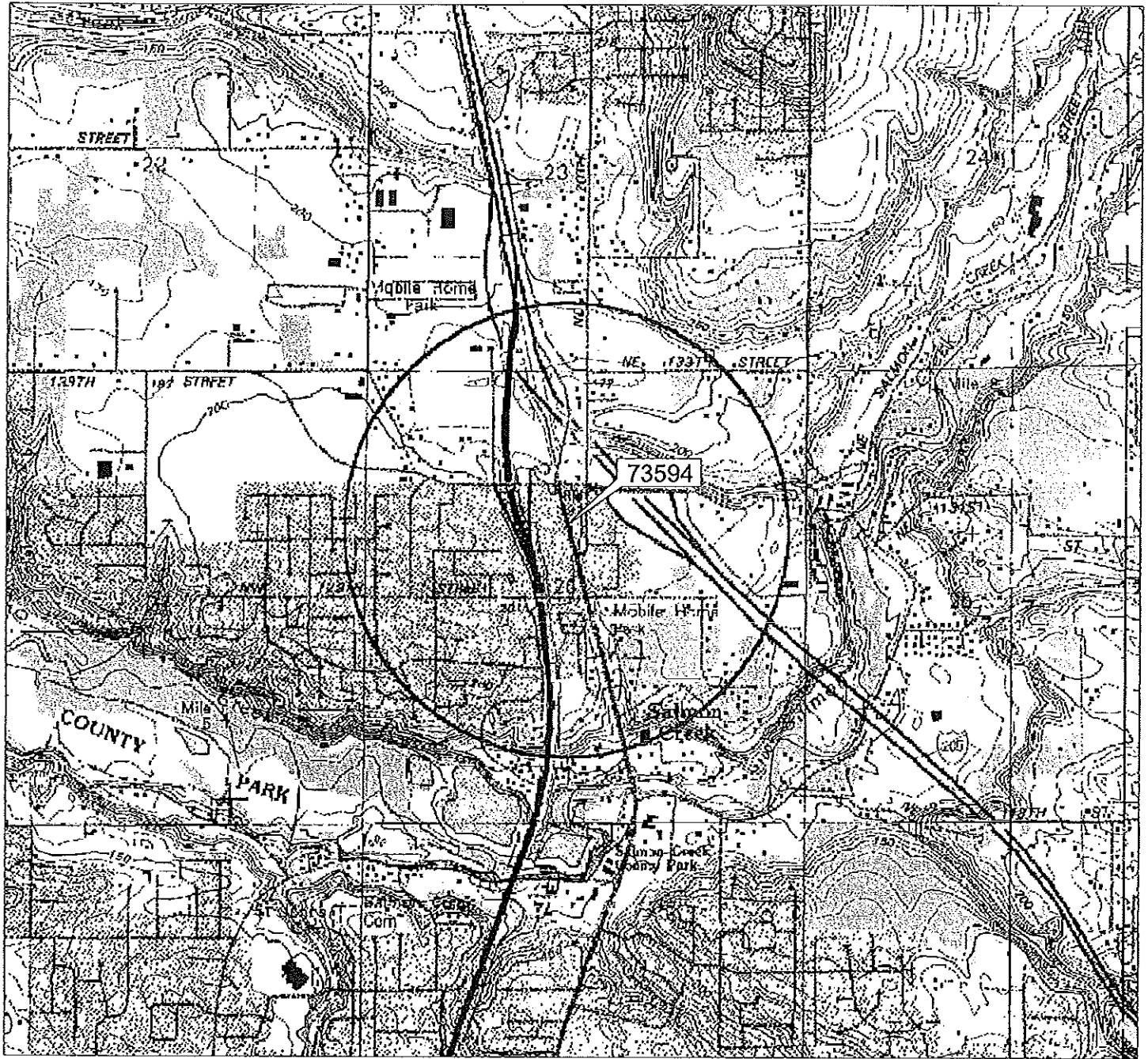
Washington State Department of Ecology (Ecology). March 2005. *Salmon Creek Watershed Bacteria and Turbidity Total Maximum Daily Load (Water Cleanup Plan), Publication Number 05-10-037.* URL: [<http://www.ecy.wa.gov/pubs/0510037.pdf>]

Washington State Department of Ecology (Ecology). November 24, 2008. *Letter Requiring Further Action at the following site: Former Exxon Station 7-3594, 13204 Northeast Highway 99, Vancouver, WA.*

May 30, 2012  
 Cardno ERI 31111.14.W03 Former Exxon Station 73594, Vancouver, Washington

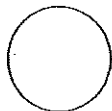
## ACRONYM LIST

µg/L	Micrograms per liter	NEPA	National Environmental Policy Act
µs	Microsiemens	NGVD	National Geodetic Vertical Datum
1,2-DCA	1,2-dichloroethane	NPDES	National Pollutant Discharge Elimination System
acfm	Actual cubic feet per minute	O&M	Operations and Maintenance
AS	Air sparge	ORP	Oxidation-reduction potential
bgs	Below ground surface	OSHA	Occupational Safety and Health Administration
BTEX	Benzene, toluene, ethylbenzene, and total xylenes	OVA	Organic vapor analyzer
CEQA	California Environmental Quality Act	P&ID	Process & Instrumentation Diagram
cfm	Cubic feet per minute	PAH	Polycyclic aromatic hydrocarbon
COC	Chain of Custody	PCB	Polychlorinated biphenyl
CPT	Cone Penetration (Penetrometer) Test	PCE	Tetrachloroethene or perchloroethylene
DIPE	Di-isopropyl ether	PID	Photo-ionization detector
DO	Dissolved oxygen	PLC	Programmable logic control
DOT	Department of Transportation	POTW	Publicly owned treatment works
DPE	Dual-phase extraction	ppmv	Parts per million by volume
DTW	Depth to water	PQL	Practical quantitation limit
EDB	1,2-dibromoethane	psi	Pounds per square inch
EPA	Environmental Protection Agency	PVC	Polyvinyl chloride
ESL	Environmental screening level	QA/QC	Quality assurance/quality control
ETBE	Ethyl tertiary butyl ether	RBSL	Risk-based screening levels
FID	Flame-ionization detector	RCRA	Resource Conservation and Recovery Act
fpm	Feet per minute	RL	Reporting limit
GAC	Granular activated carbon	scfm	Standard cubic feet per minute
gpd	Gallons per day	SSTL	Site-specific target level
gpm	Gallons per minute	STLC	Soluble threshold limit concentration
GWPTS	Groundwater pump and treat system	SVE	Soil vapor extraction
HVOC	Halogenated volatile organic compound	SVOC	Semivolatile organic compound
J	Estimated value between MDL and PQL (RL)	TAME	Tertiary amyl methyl ether
LEL	Lower explosive limit	TBA	Tertiary butyl alcohol
LPC	Liquid-phase carbon	TCE	Trichloroethene
LRP	Liquid-ring pump	TOC	Top of well casing elevation; datum is msl
LUFT	Leaking underground fuel tank	TOG	Total oil and grease
LUST	Leaking underground storage tank	TPHd	Total petroleum hydrocarbons as diesel
MCL	Maximum contaminant level	TPHg	Total petroleum hydrocarbons as gasoline
MDL	Method detection limit	TPHmo	Total petroleum hydrocarbons as motor oil
mg/kg	Milligrams per kilogram	TPHs	Total petroleum hydrocarbons as stoddard solvent
mg/L	Milligrams per liter	TRPH	Total recoverable petroleum hydrocarbons
mg/m <sup>3</sup>	Milligrams per cubic meter	UCL	Upper confidence level
MPE	Multi-phase extraction	USCS	Unified Soil Classification System
MRL	Method reporting limit	USGS	United States Geologic Survey
msl	Mean sea level	UST	Underground storage tank
MTBE	Methyl tertiary butyl ether	VCP	Voluntary Cleanup Program
MTCA	Model Toxics Control Act	VOC	Volatile organic compound
NAI	Natural attenuation indicators	VPC	Vapor-phase carbon
NAPL	Non-aqueous phase liquid		



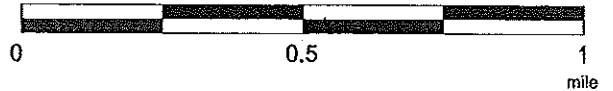
FN 31110001

**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 73594  
13204 Northeast Highway 99  
Vancouver, Washington

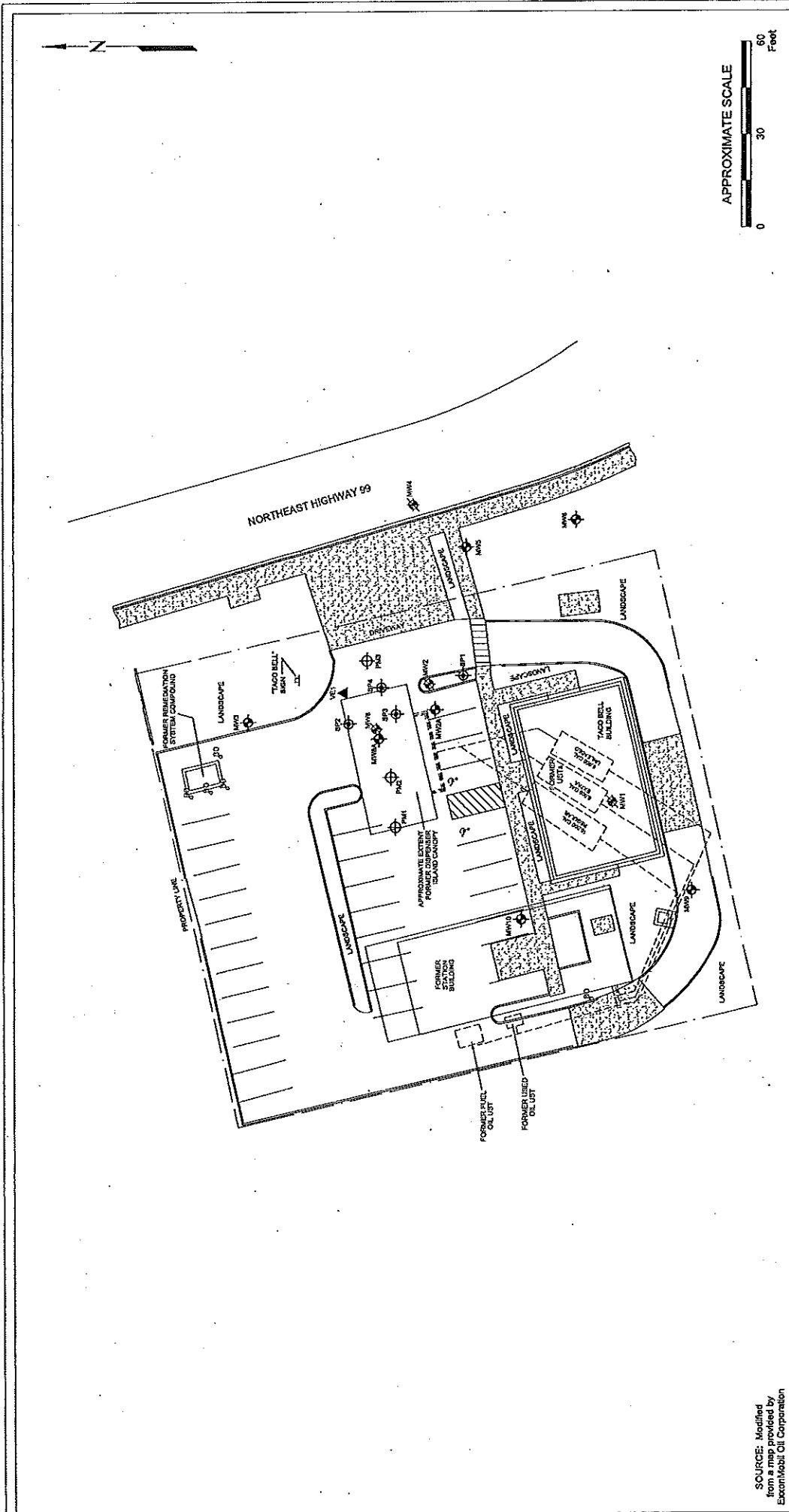
**PROJECT NO.**

31111

**PLATE**

1

NAG: 04/16/12



SOURCE: Modified from site plan provided by ExxonMobil Oil Corporation  
FN 31110002



### GENERALIZED SITE PLAN

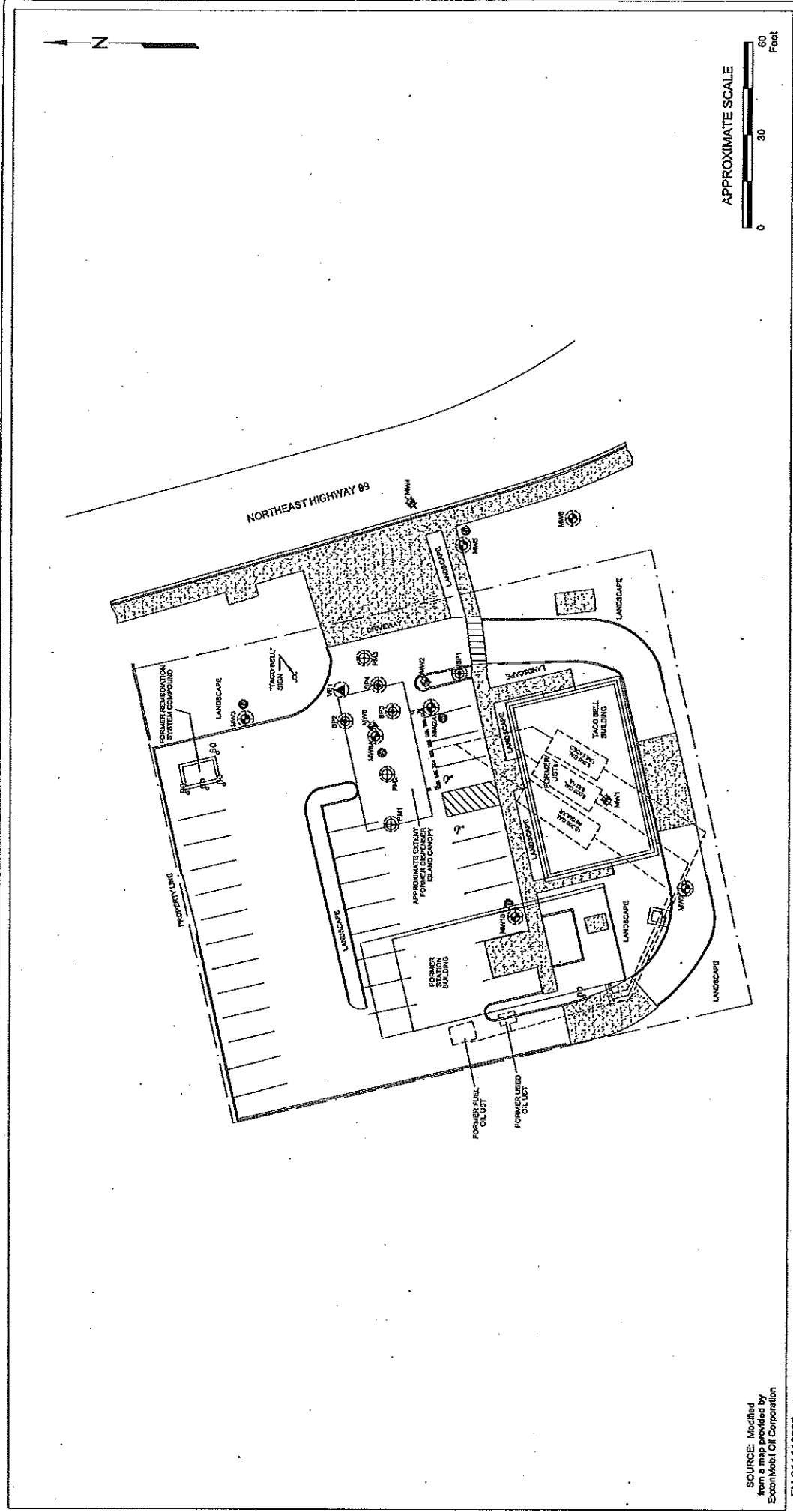
FORMER EXXON STATION 73498  
13204 Northeast Highway 99  
Vancouver, Washington

#### EXPLANATION

- MW10 Groundwater Monitoring Well
- MW8 Destroyed Groundwater Monitoring Well
- SP4 Air Sparging Well
- VE1 Soil Vapor Extraction Well
- PM3 Pressure Monitoring Well

PROJECT NO.  
31111

PLATE  
2  
NAG: 04/16/12



SOURCE: Modified from a map provided by Exxon/Mobil Oil Corporation

FN 31110002



Shaping the Future

**PROPOSED WELL DECOMMISSIONING AND SOIL BORING LOCATIONS MAP**

FORMER EXXON STATION 73498  
13204 Northeast Highway 99  
Vancouver, Washington

**EXPLANATION**

MW10	Groundwater Monitoring Well
MW8	Destroyed Groundwater Monitoring Well
PM3	Pressure Monitoring Well
SP4	Air Sparging Well
VE1	Soil Vapor Extraction Well
	Proposed Soil Boring Location
	Proposed Decommissioned Well

PROJECT NO.  
31111

PLATE  
3  
NAG: 04/16/12

**TABLE 1**  
**CUMULATIVE GROUNDWATER ANALYTICAL RESULTS**  
Former Exxon Station 73594  
13204 Northeast Highway 99  
Vancouver, Washington  
Page 1 of 11

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)	MTBE (µg/L)	Total Pb (µg/L)	Diss Pb (µg/L)	TSS (µg/L)
Screened Interval 15-35 ft bgs/ Total Well Depth 35 ft bgs															
MW1	04/05/88	100.03	22.49	77.54	-	-	-	<25.0	<1.0	<1.0	<1.0	-	-	-	-
MW1	07/20/88	100.03	22.90	77.13	-	-	-	-	-	-	-	-	-	-	-
MW1	03/27/89	100.03	21.70	78.33	-	-	-	<1.0	0.5	0.6	1.7	-	-	-	-
MW1	05/24/89	100.03	21.55	78.48	-	-	-	<1.0	<1.0	<1.0	<1.0	-	-	-	-
MW1	06/19/89	100.03	NM	-	-	-	-	<1.0	1.0	<1.0	<1.0	-	-	-	-
MW1	12/03/90	100.03	NM	-	-	-	-	<1.0	<1.0	<1.0	<1.0	-	-	-	-
MW1	12/10/90	100.03	22.78	77.25	-	-	-	<1.0	<1.0	<1.0	<1.0	-	-	-	-
MW1	03/05/91	100.03	22.04	77.99	-	-	-	<1.0	<1.0	<1.0	<1.0	-	-	-	-
MW1	05/20/91	100.03	21.25	78.78	-	-	-	<0.5	<0.5	<0.5	1.1	-	-	-	-
MW1	08/28/91	100.03	22.64	77.39	-	-	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
MW1	04/23/92	NE	21.67	-	52	-	-	0.8	0.6	<0.5	<0.5	-	-	-	-
MW1	07/16/92	NE	22.67	-	70	-	-	<0.5	0.7	0.7	<0.5	-	-	-	-
MW1	10/19/92	NE	23.68	-	90	-	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
MW1	02/25/93	NE	22.35	-	<50	-	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
MW1	06/04/93	NE	NM	-	-	-	-	<1.0	<1.0	-	<1.0	-	-	-	-
MW1	06/15/93	NE	21.23	-	<50	-	-	<0.5	<0.5	<0.5	<0.5	-	5.0	5.0	-
MW1	12/03/93	NE	NM	-	-	-	-	<1.0	<1.0	<1.0	<1.0	-	-	-	-
MW1	02/18/94	NE	NM	-	-	-	-	<1.0	<1.0	<1.0	<1.0	-	-	-	-
MW1	09/01/94	NE	NM	-	-	-	-	<1.0	<1.0	<1.0	<1.0	-	-	-	-
MW1	12/04/94	NE	NM	-	-	-	-	<1.0	<1.0	<1.0	<1.0	-	-	-	-
Destroyed															
Screened Interval 15-35 ft bgs/ Total Well Depth 35 ft bgs															
MW2	04/05/88	99.60	22.74	76.86	-	-	-	8.0	2.0	2.0	5.0	-	-	-	-
MW2	07/20/88	99.60	22.40	77.20	-	-	-	-	-	-	-	-	-	-	-
MW2	03/27/89	99.60	21.45	78.15	-	-	-	2.2	0.7	0.7	4.8	-	-	-	-
MW2	05/24/89	99.60	21.65	77.95	-	-	-	3.0	2.0	2.0	19.0	-	-	-	-
MW2	06/19/89	99.60	NM	-	-	-	-	5.0	<1.0	<1.0	12.0	-	-	-	-
MW2	12/03/90	99.60	NM	-	-	-	-	19.0	2.7	2.7	12.0	-	-	-	-
MW2	12/10/90	99.60	22.76	76.84	-	-	-	-	-	-	-	-	-	-	-
MW2	03/05/91	99.60	22.13	77.47	-	-	-	52.0	3.1	3.1	23.0	-	-	-	-
MW2	05/20/91	99.60	21.30	78.30	-	-	-	<1.0	2.1	2.1	1.4	-	-	-	-
MW2	08/28/91	99.60	22.45	77.15	-	-	-	12.0	1.2	1.2	7.9	-	-	-	-
MW2	04/23/92	76.52	21.75	54.77	-	-	-	0.6	2.4	2.4	1.1	-	-	-	-
MTCA Method A Cleanup Levels															
			800/1,000 <sup>a</sup>	500	500	500	500	5	1,000	700	1,000	20	15	15	N/A

**TABLE 1**  
**CUMULATIVE GROUNDWATER ANALYTICAL RESULTS**

Former Exxon Station 73594  
 13204 Northeast Highway 99  
 Vancouver, Washington

Page 2 of 11

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)	MTBE (µg/L)	Total Pb (µg/L)	Diss Pb (µg/L)	TSS (µg/L)
MW2	07/16/92	76.52	22.42	54.10	<2.00	<2.00	<2.00	<2.00	66.0	6.9	40.0	-	-	-	-
MW2	10/19/92	76.52	23.44	53.08	<2.00	<2.00	<2.00	<2.00	150.0	8.9	100.0	-	-	-	-
MW2	02/25/93	76.52	22.14	54.38	<2.00	<2.00	<2.00	<2.00	220.0	12.0	150.0	-	-	-	-
MW2	06/15/93	76.52	21.22	55.30	<2.00	<2.00	<2.00	<2.00	390.0	81.0	290.0	-	6.0	<3.0	-
MW2	12/27/93	76.52	22.86	53.66	-	-	-	-	-	-	-	-	-	-	-
MW2	06/13/94	98.56	22.63	75.93	<1.00	<1.00	<1.00	<1.00	2.6	75.0	17.0	-	4.0	<3.0	-
MW2	09/12/94	98.56	23.32	75.24	<1.00	<1.00	<1.00	<1.00	340.0	270.0	560.0	-	7.9	<3.0	-
MW2	12/12/94	98.56	22.31	76.25	<1.00	<1.00	<1.00	<1.00	0.5	20.0	0.9	-	<3.0	-	-
MW2	02/22/95	98.56	NM	-	<1.00	<1.00	<1.00	<1.00	0.7	4.1	2.6	-	<2.0	-	-
MW2	05/22/95	98.56	NM	-	<1.00	<1.00	<1.00	<1.00	510	410	970	-	<2.0	-	-
MW2	08/01/95	98.56	NM	-	<1.00	<1.00	<1.00	<1.00	<2.00	<2.00	<2.00	-	<2.0	-	-
MW2	01/24/96	98.56	NM	-	<50	<50	<50	<50	<0.5	<0.5	<1.0	-	13.0	-	-
MW2	04/18/96	98.56	NM	-	<50	<50	<50	<50	<0.5	<0.5	<1.0	-	10.0	-	-
MW2	06/20/97	98.56	NM	-	<50	<50	<50	<50	<0.5	<0.5	<1.0	-	-	-	-
MW2	05/27/98	98.56	20.76	77.80	115	115	115	115	<1.0	6.3	<2.0	-	-	-	-
MW2	11/19/98	98.56	22.87	75.69	<3.00	<3.00	<3.00	<3.00	<25.0	<25.0	<50.0	-	-	-	-
MW2	11/23/99	98.56	24.07	74.49	<250	<250	<250	<250	<1	<1	<1	-	-	-	-
MW2	05/09/00	98.56	NM	-	<50	<50	<50	<50	<0.5	<0.5	<1	-	-	-	-
MW2	03/20/01	98.56	23.05	75.51	<50.0	<50.0	<50.0	<50.0	<0.5	<0.5	<1.0	<5.00	-	-	-
MW2	06/22/01	98.56	23.62	74.94	<50.0	<50.0	<50.0	<50.0	<0.500	<0.500	<1.00	-	-	-	-
MW2	09/14/01	98.56	23.86	74.70	<50.0	<50.0	<50.0	<50.0	<0.500	<0.500	<1.00	-	-	-	-
MW2	03/26/02	98.56	21.08	77.48	<100	<100	<100	<100	<1.00	<1.00	<1.00	-	-	-	-
MW2	07/11/02	98.56	22.35	76.21	<100	<100	<100	<100	<1.0	<1.0	<1.0	-	-	-	-
MW2	02/11/03	98.56	20.50	78.06	<100	<100	<100	<100	<1.0	<1.0	<1.0	-	<3.0	<3.0	64,100
MW2	05/19/03	98.56	21.10	77.46	-	-	-	-	-	-	-	-	-	-	-
MW2	03/11/04	98.56	21.05	77.51	-	-	-	-	-	-	-	-	-	-	-
MW2	06/16/04	98.56	NM	-	-	-	-	-	-	-	-	-	-	-	-
MW2	09/15/04	98.56	NM	-	-	-	-	-	-	-	-	-	-	-	-
MW2	11/24/04	98.56	NM	-	-	-	-	-	-	-	-	-	-	-	-
MW2	02/10/05	98.56	NM	-	-	-	-	-	-	-	-	-	-	-	-
MW2	09/02/05	98.56	NM	-	-	-	-	-	-	-	-	-	-	-	-
MW2	12/29/05	98.56	NM	-	-	-	-	-	-	-	-	-	-	-	-
MW2	03/20/06	98.56	NM	-	-	-	-	-	-	-	-	-	-	-	-
MW2	07/12/06	98.56	NM	-	-	-	-	-	-	-	-	-	-	-	-

MTCA Method A Cleanup Levels

800/1,000 a 500 500 5 1,000 700 1,000 20 15 15 N/A



**TABLE 1**  
**CUMULATIVE GROUNDWATER ANALYTICAL RESULTS**

Former Exxon Station 73594  
 13204 Northeast Highway 99  
 Vancouver, Washington

Page 3 of 11

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)	MTBE (µg/L)	Total Pb (µg/L)	Diss Pb (µg/L)	TSS (µg/L)
MW2	07/02/08	98.56	24.02	74.54	<100	363	179	<1.00	<1.00	<1.00	<3.00	<1.00	1.1	1.1	<2,000
MW2	07/24/08	98.56	24.16	74.40	-	-	-	-	-	-	-	-	8.3	8.3	<2,130
MW2	07/25/08	98.56	NM	-	-	-	-	-	-	-	-	-	-	-	-
MW2	03/26/09	98.56	24.44	74.12	-	-	-	-	-	-	-	-	18.1	18.1	4,200
MW2	03/26/09 b	98.56	24.29	74.27	-	-	-	-	-	-	-	-	17.5	17.5	-
MW2	06/28/09	98.56	24.61	73.95	-	-	-	-	-	-	-	-	9.7	9.7	-
MW2	01/13/10	98.56	24.05	74.51	-	-	-	-	-	-	-	-	13.5	13.5	-
Destroyed															
Screened Interval 15-40 ft bgs/ Total Well Depth 40 ft bgs															
MW2A	06/15/10	NE	23.08	-	-	-	-	-	-	-	-	-	<5.00	<5.00	-
MW2A	09/16/10	NE	23.31	-	-	-	-	-	-	-	-	-	13.5	14.9	-
MW2A	12/10/10	NE	24.62	-	-	-	-	-	-	-	-	-	13.5	13.5	-
MW2A	03/17/11	NE	22.26	-	-	-	-	-	-	-	-	-	13.5	13.5	-
MW2A	06/07/11 c	202.24	22.48	179.76	-	-	-	-	-	-	-	-	13.5	13.5	-
Screened Interval 20-35 ft bgs/ Total Well Depth 35 ft bgs															
MW3	07/20/88	99.80	22.72	77.08	-	<50	-	1.0	<1.0	<2.0	4.0	-	-	-	-
MW3	03/27/89	99.80	21.55	78.25	-	-	-	<4.1	<0.5	<0.6	<1.0	-	-	-	-
MW3	05/24/89	99.80	21.16	78.64	-	-	-	-	-	-	-	-	-	-	-
MW3	12/10/90	99.80	22.26	77.54	-	-	-	1.4	<1.0	<1.0	<1.0	-	-	-	-
MW3	03/05/91	99.80	21.51	78.29	-	-	-	<1.0	<1.0	<1.0	<1.0	-	-	-	-
MW3	05/20/91	99.80	20.60	79.20	-	-	-	<1.0	<1.0	<1.0	<1.0	-	-	-	-
MW3	08/28/91	99.80	22.20	77.60	-	-	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
MW3	04/23/92	76.66	21.21	55.45	<50	-	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
MW3	07/16/92	76.66	22.23	54.43	<50	-	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
MW3	10/19/92	76.66	23.30	53.36	70	-	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
MW3	02/25/93	76.66	21.97	54.69	<50	-	-	1.1	<0.5	<0.5	<0.5	-	-	-	-
MW3	06/15/93	76.66	20.82	55.84	<50	-	-	<0.5	<0.5	<0.5	<0.5	-	-	<3.0	-
MW3	12/27/93	76.66	22.16	54.50	-	-	-	-	-	-	-	-	-	-	-
MW3	06/13/94	98.00	21.94	76.06	<50	-	-	<0.5	<0.5	<0.5	<0.5	-	13.0	<3.0	-
MW3	09/12/94	98.00	22.71	75.29	<50	-	-	<0.5	0.6	<0.5	<0.5	-	6.3	<3.0	-
MW3	12/12/94	98.00	21.54	76.46	<50	-	-	<0.5	<0.5	<0.5	<0.5	-	<3.0	-	-
MW3	02/22/95	98.00	NM	-	<50	-	-	<0.5	<0.5	<0.5	<1.0	-	<2.0	-	-
MW3	08/01/95	98.00	NM	-	<50	-	-	0.9	1.4	<0.5	2.0	-	<2.0	-	-
MW3	01/24/96	98.00	NM	-	<50	-	-	<0.5	<0.5	<0.5	<1.0	-	4.3	-	-

**TABLE 1**  
**CUMULATIVE GROUNDWATER ANALYTICAL RESULTS**  
 Former Exxon Station 73594  
 13204 Northeast Highway 99  
 Vancouver, Washington  
 Page 4 of 11

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)	MTBE (µg/L)	Total Pb (µg/L)	Diss Pb (µg/L)	TSS (µg/L)
MW3	06/20/97	98.00	NM	--	<50	--	--	<0.5	<0.5	<0.5	<1.0	--	--	--	--
MW3	11/19/98	98.00	21.95	76.05	--	--	--	--	--	--	--	--	--	--	--
MW3	11/23/99	98.00	22.27	75.73	--	--	--	--	--	--	--	--	--	--	--
MW3	03/20/01	98.00	23.15	74.85	<50.0	--	--	<0.500	<0.500	<0.500	<1.00	--	--	--	--
MW3	06/22/01	98.00	23.70	74.30	<50.0	--	--	<0.500	<0.500	<0.500	<1.00	--	--	--	--
MW3	09/14/01	98.00	23.42	74.58	<50.0	--	--	<0.500	<0.500	<0.500	<1.00	--	--	--	--
MW3	03/26/02	98.00	20.06	77.94	<100	--	--	<1.00	<1.00	<1.00	<1.00	--	--	--	--
MW3	07/11/02	98.00	21.43	76.57	<100	--	--	<1.0	<1.0	<1.0	<1.0	--	--	--	--
MW3	02/11/03	98.00	20.75	77.25	<100	<100	<100	<1.0	<1.0	<1.0	<1.0	--	<3.0	<3.0	181,000
MW3	05/19/03	98.00	20.11	77.89	--	--	--	--	--	--	--	--	--	--	--
MW3	03/11/04	98.00	19.06	78.94	--	--	--	--	--	--	--	--	--	--	--
MW3	06/16/04	98.00	21.53	76.47	--	--	--	--	--	--	--	--	--	--	--
MW3	09/15/04	98.00	22.40	75.60	--	--	--	--	--	--	--	--	--	--	--
MW3	11/24/04	98.00	22.37	75.63	--	--	--	--	--	--	--	--	--	--	--
MW3	02/10/05	98.00	22.36	75.64	--	--	--	--	--	--	--	--	--	--	--
MW3	09/02/05	98.00	23.52	74.48	--	--	--	--	--	--	--	--	--	--	--
MW3	12/29/05	98.00	NM	--	--	--	--	--	--	--	--	--	--	--	--
MW3	03/20/06	98.00	20.91	77.09	--	--	--	--	--	--	--	--	--	--	--
MW3	07/12/06	98.00	22.35	75.65	--	--	--	--	--	--	--	--	--	--	--
MW3	07/02/08	98.00	23.04	74.96	<100	<111	<111	<1.00	<1.00	<1.00	<3.00	<1.00	<5.00	<5.00	<2,000
MW3	07/24/08	98.00	NM	--	--	--	--	--	--	--	--	--	--	--	--
MW3	07/25/08	98.00	NM	--	--	--	--	--	--	--	--	--	--	--	--
MW3	03/26/09	98.00	NM	--	--	--	--	--	--	--	--	--	--	--	--
MW3	06/28/09	98.00	23.66	74.34	--	--	--	--	--	--	--	--	5.10	<5.00	--
MW3	01/13/10	98.00	22.98	75.02	--	--	--	--	--	--	--	--	--	--	--
MW3	06/15/10	98.00	24.25	73.75	--	--	--	--	--	--	--	--	--	--	--
MW3	09/16/10	98.00	24.47	73.53	--	--	--	--	--	--	--	--	--	--	--
MW3	12/10/10	98.00	22.24	75.76	--	--	--	--	--	--	--	--	--	--	--
MW3	03/17/11	98.00	20.27	77.73	--	--	--	--	--	--	--	--	--	--	--
MW3	06/07/11 c	201.82	20.51	181.31	--	--	--	--	--	--	--	--	--	--	--
Screened Interval Unknown ft bgs/ Total Well Depth 35 ft bgs															
MW4	04/23/92	NE	19.84	--	<50	--	--	<0.5	20.0	--	440	--	--	<3	--
MW4	07/16/92	NE	20.82	--	<50	--	--	<0.5	<0.5	140.0	0.8	--	--	<3	--
MW4	10/19/92	NE	21.85	--	--	--	--	--	--	--	--	--	--	--	--
MTCA Method A Cleanup Levels															
					800/1,000 a	500	500	5	1,000	700	1,000	20	15	15	N/A

**TABLE 1**  
**CUMULATIVE GROUNDWATER ANALYTICAL RESULTS**

Former Exxon Station 73594  
13204 Northeast Highway 99  
Vancouver, Washington

Page 5 of 11

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)	MTBE (µg/L)	Total Pb (µg/L)	Diss Pb (µg/L)	TSS (µg/L)
MW4	02/25/93	NE	20.60	-	-	-	-	-	-	-	-	-	-	-	-
MW4	06/15/93	NE	21.32	-	<50	160	-	1.2	<0.5	<0.5	<0.5	-	<3	<3	-
MW4	10/25/93	NE	NM	-	<50	<50	-	<0.5	0.5	<0.5	0.9	-	-	<3	-
Destroyed															
Screened Interval 18-33 ft bgs/ Total Well Depth 33 ft bgs															
MW5	12/20/93	76.26	NM	-	<50	-	-	<0.5	<0.5	<0.5	2.5	-	<3.0	-	-
MW5	12/27/93	76.26	21.76	54.50	-	-	-	-	-	-	-	-	-	-	-
MW5	06/13/94	97.20	21.37	75.83	98	-	-	<0.5	<0.5	3.6	4.4	-	7.0	-	-
MW5	09/12/94	97.20	21.92	75.28	290	-	-	0.8	40.0	<0.5	<0.5	-	<3.0	-	-
MW5	12/12/94	97.20	20.65	76.55	<50	-	-	1.4	6.6	<0.5	0.6	-	-	-	-
MW5	02/22/95	97.20	NM	-	<50	-	-	<0.5	<0.5	<0.5	<1.0	-	<2.0	-	-
MW5	05/22/95	97.20	NM	-	-	-	-	-	-	-	-	-	<2.0	-	-
MW5	08/01/95	97.20	NM	-	<50	-	-	<0.5	<0.5	<0.5	<1.0	-	<2.0	-	-
MW5	10/31/95	97.20	NM	-	150	-	-	<0.5	<0.5	9.4	5.6	-	11.0	-	-
MW5	01/24/96	97.20	NM	-	<50	-	-	<0.5	<0.5	1.5	<1.0	-	9.1	-	-
MW5	04/18/96	97.20	NM	-	<50	-	-	<0.5	<0.5	<0.5	<1.0	-	13.0	-	-
MW5	06/20/97	97.20	NM	-	<50	-	-	<0.5	<0.5	<0.5	<1.0	-	-	-	-
MW5	05/27/98	97.20	18.32	78.88	<50	-	-	<0.5	<0.5	<0.5	<1.0	-	-	-	-
MW5	11/19/98	97.20	21.45	75.75	-	-	-	-	-	-	-	-	-	-	-
MW5	11/23/99	97.20	21.49	75.71	-	-	-	-	-	-	-	-	-	-	-
MW5	05/09/00	97.20	NM	-	<50	-	-	<0.5	<0.5	<0.5	<1.0	<5.00	-	-	-
MW5	03/20/01	97.20	22.58	74.62	<50.0	-	-	<0.500	<0.500	<0.500	<1.00	-	-	-	-
MW5	06/22/01	97.20	22.40	74.80	<50.0	-	-	<0.500	0.528	<0.500	<1.00	-	-	-	-
MW5	09/14/01	97.20	22.65	74.55	<50.0	-	-	<0.500	<0.500	<0.500	<1.00	-	-	-	-
MW5	03/26/02	97.20	19.59	77.61	<100	-	-	<1.00	<1.00	<1.00	<1.00	-	-	-	-
MW5	07/11/02	97.20	20.78	76.42	<100	-	-	<1.0	<1.0	<1.0	<1.0	-	-	-	-
MW5	02/11/03	97.20	20.40	76.80	<100	<100	<100	<1.0	<1.0	<1.0	<1.0	-	<3.0	<3.0	67,700
MW5	05/19/03	97.20	19.25	77.95	-	-	-	-	-	-	-	-	-	-	-
MW5	03/11/04	97.20	NM	-	-	-	-	-	-	-	-	-	-	-	-
MW5	06/16/04	97.20	NM	-	-	-	-	-	-	-	-	-	-	-	-
MW5	09/15/04	97.20	21.90	75.30	-	-	-	-	-	-	-	-	-	-	-
MW5	11/24/04	97.20	22.90	74.30	-	-	-	-	-	-	-	-	-	-	-
MW5	02/10/05	97.20	22.85	74.35	-	-	-	-	-	-	-	-	-	-	-
MW5	09/02/05	97.20	22.04	75.16	-	-	-	-	-	-	-	-	-	-	-

MTCA Method A Cleanup Levels

800/1,000<sup>a</sup> 500

5

1,000

700

1,000

20

15

15

N/A

**TABLE 1**  
**CUMULATIVE GROUNDWATER ANALYTICAL RESULTS**

Former Exxon Station 73594  
 13204 Northeast Highway 99  
 Vancouver, Washington

Page 6 of 11

Well ID	Sampling Date	Wellhead Elev (feet)	DTW (feet)	GW Elev (feet)	TPHg (µg/L)	TPHm (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	Total Pb (µg/L)	Diss Pb (µg/L)	TSS (µg/L)
MW5	12/29/05	97.20	NM	-	-	-	-	-	-	-	-	-	-	-
MW5	03/20/06	97.20	20.40	76.80	-	-	-	-	-	-	-	-	-	-
MW5	07/12/06	97.20	21.60	75.60	-	-	-	-	-	-	-	-	-	-
MW5	07/02/08	97.20	22.57	74.63	<100	<125	<1.00	<1.00	<1.00	<3.00	<1.00	<5.00	<5.00	3,600
MW5	07/24/08	97.20	NM	-	-	-	-	-	-	-	-	-	-	-
MW5	07/25/08	97.20	NM	-	-	-	-	-	-	-	-	-	-	-
MW5	03/26/09	97.20	NM	-	-	-	-	-	-	-	-	-	-	-
MW5	06/28/09	97.20	23.11	74.09	-	-	-	-	-	-	-	5.80	<5.00	-
MW5	01/13/10	97.20	NM	-	-	-	-	-	-	-	-	-	-	-
MW5	06/15/10	97.20	23.96	73.24	-	-	-	-	-	-	-	-	-	-
MW5	09/16/10	97.20	24.38	72.82	-	-	-	-	-	-	-	-	-	-
MW5	12/10/10	97.20	21.43	75.77	-	-	-	-	-	-	-	-	-	-
MW5	03/17/11	97.20	20.89	76.31	-	-	-	-	-	-	-	-	-	-
MW5	06/07/11 c	201.02	21.26	179.76	-	-	-	-	-	-	-	-	-	-
Screened Interval 18-33 ft bgs/ Total Well Depth 33 ft bgs														
MW6	12/20/93	76.24	NM	-	<50	-	<0.5	<0.5	<0.5	<0.5	-	4.0	-	-
MW6	12/27/93	76.24	21.75	54.49	-	-	-	-	-	-	-	-	-	-
MW6	06/13/94	97.29	21.46	75.83	<50	-	<0.5	<0.5	<0.5	<0.5	-	<3.0	<3.0	-
MW6	09/12/94	97.29	22.08	75.21	<50	-	<0.5	<0.5	<0.5	<0.5	-	3.7	<3.0	-
MW6	12/12/94	97.29	21.19	76.10	<50	-	<0.5	<0.5	<0.5	<0.5	-	<3.0	<3.0	-
MW6	02/22/95	97.29	NM	-	<50	-	<0.5	<0.5	<0.5	<1.0	-	<2.0	-	-
MW6	08/01/95	97.29	NM	-	<50	-	<0.5	<0.5	<0.5	<1.0	-	<2.0	-	-
MW6	01/24/96	97.29	NM	-	<50	-	<0.5	<0.5	<0.5	<1.0	-	<2.0	-	-
MW6	06/20/97	97.29	NM	-	<50	-	<0.5	<0.5	<0.5	<1.0	-	<2.0	-	-
MW6	11/19/98	97.29	21.20	76.09	-	-	-	-	-	-	-	-	-	-
MW6	11/23/99	97.29	21.64	75.65	-	-	-	-	-	-	-	-	-	-
MW6	03/20/01	97.29	22.72	74.57	<50.0	-	<0.500	<0.500	<0.500	<1.00	-	-	-	-
MW6	06/22/01	97.29	22.32	74.97	<50.0	-	<0.500	<0.500	<0.500	<1.00	-	-	-	-
MW6	09/14/01	97.29	22.62	74.67	<50.0	-	<0.500	<0.500	<0.500	<1.00	-	-	-	-
MW6	03/26/02	97.29	19.68	77.61	<100	-	<1.00	<1.00	<1.00	<1.00	-	-	-	-
MW6	07/11/02	97.29	20.90	76.39	<100	-	<1.0	<1.0	<1.0	<1.0	-	-	-	-
MW6	02/11/03	97.29	20.53	76.76	<100	<100	<1.0	<1.0	<1.0	<1.0	-	<3.0	<3.0	168,000
MW6	05/19/03	97.29	19.68	77.61	-	-	-	-	-	-	-	-	-	-
MW6	03/11/04	97.29	19.71	77.58	-	-	-	-	-	-	-	-	-	-

**TABLE 1**  
**CUMULATIVE GROUNDWATER ANALYTICAL RESULTS**

Former Exxon Station 73594  
13204 Northeast Highway 99  
Vancouver, Washington

Page 7 of 11

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)	MTBE (µg/L)	Total Pb (µg/L)	Diss Pb (µg/L)	TSS (µg/L)	
MW6	06/16/04	97.29	21.10	76.19	-	-	-	-	-	-	-	-	-	-	-	
MW6	09/15/04	97.29	21.90	75.39	-	-	-	-	-	-	-	-	-	-	-	
MW6	11/24/04	97.29	21.97	75.32	-	-	-	-	-	-	-	-	-	-	-	
MW6	02/10/05	97.29	21.90	75.39	-	-	-	-	-	-	-	-	-	-	-	
MW6	09/02/05	97.29	NM	-	-	-	-	-	-	-	-	-	-	-	-	
MW6	12/29/05	97.29	NM	-	-	-	-	-	-	-	-	-	-	-	-	
MW6	03/20/06	97.29	20.49	76.80	-	-	-	-	-	-	-	-	-	-	-	
MW6	07/12/06	97.29	21.90	75.39	-	-	-	-	-	-	-	-	-	-	-	
MW6	07/02/08	97.29	22.60	74.69	<100	<100	<100	<1.00	<1.00	<1.00	<3.00	-	<5.00	<5.00	8,800	
MW6	07/24/08	97.29	NM	-	-	-	-	-	-	-	-	-	-	-	-	
MW6	07/25/08	97.29	NM	-	-	-	-	-	-	-	-	-	-	-	-	
MW6	03/26/09	97.29	NM	-	-	-	-	-	-	-	-	-	-	-	-	
MW6	06/28/09	97.29	23.19	74.10	-	-	-	-	-	-	-	-	<5.00	<5.00	-	
MW6	01/13/10	97.29	22.74	74.55	-	-	-	-	-	-	-	-	-	-	-	
MW6	06/15/10	97.29	24.08	73.21	-	-	-	-	-	-	-	-	-	-	-	
MW6	09/16/10	97.29	24.42	72.87	-	-	-	-	-	-	-	-	-	-	-	
MW6	12/10/10	97.29	21.93	75.36	-	-	-	-	-	-	-	-	-	-	-	
MW6	03/17/11	97.29	20.93	76.36	-	-	-	-	-	-	-	-	-	-	-	
MW6	06/07/11 c	201.08	21.19	179.89	-	-	-	-	-	-	-	-	-	-	-	
Screened Interval Unknown ft bgs/ Total Well Depth 30 ft bgs																
MW8	11/19/98	98.36	22.48	75.88	100	100	-	-	-	-	-	-	-	-	-	
MW8	11/26/99	98.36	22.72	75.64	460	-	-	-	-	-	-	-	-	-	-	
MW8	05/09/00	98.36	NM	-	<50	-	-	-	<1	<1	4.3	87	-	-	-	
MW8	03/20/01	98.36	22.05	76.31	<50.0	-	-	-	<0.5	<0.5	<1.0	<5.00	-	-	-	
MW8	06/22/01	98.36	23.34	75.02	<50.0	-	-	-	<0.500	<0.500	<1.00	-	-	-	-	
MW8	09/14/01	98.36	24.20	74.16	<50.0	-	-	-	<0.500	<0.500	<1.00	-	-	-	-	
MW8	03/26/02	98.36	20.81	77.55	<100	-	-	-	<1.00	<1.00	<1.00	-	-	-	-	
MW8	07/11/02	98.36	22.10	76.26	<100	-	-	-	<1.0	<1.0	<1.0	-	-	-	-	
MW8	02/11/03	98.36	21.50	76.86	<100	-	210	-	<1.0	<1.0	<1.0	-	<3.0	4.0	67,700	
MW8	05/19/03	98.36	20.80	77.56	-	-	-	-	-	-	-	-	-	-	-	
MW8	03/11/04	98.36	NM	-	-	-	-	-	-	-	-	-	-	-	-	
MW8	06/16/04	98.36	22.25	76.11	-	-	-	-	-	-	-	-	-	-	-	
MW8	09/15/04	98.36	NM	-	-	-	-	-	-	-	-	-	-	-	-	
MW8	11/24/04	98.36	NM	-	-	-	-	-	-	-	-	-	-	-	-	
MTCA Method A Cleanup Levels																
800/1,000 a 500 500 5 1,000 700 1,000 20 15 15 N/A																

**TABLE 1**  
**CUMULATIVE GROUNDWATER ANALYTICAL RESULTS**

Former Exxon Station 73594  
 13204 Northeast Highway 99  
 Vancouver, Washington

Page 8 of 11

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)	MTBE (µg/L)	Total Pb (µg/L)	Total Diss Pb (µg/L)	TSS (µg/L)
MW8	02/10/05	98.36	NM	-	-	-	-	-	-	-	-	-	-	-	-
MW8	09/02/05	98.36	24.02	74.34	-	-	-	-	-	-	-	-	-	-	-
MW8	12/29/05	98.36	NM	-	-	-	-	-	-	-	-	-	-	-	-
MW8	03/20/06	98.36	NM	-	-	-	-	-	-	-	-	-	-	-	-
MW8	07/12/06	98.36	NM	-	-	-	-	-	-	-	-	-	-	-	-
MW8	07/02/08	98.36	23.77	74.59	<100	202	127	<1.00	<1.00	<1.00	<3.00	<1.00	15.0	12.4	<2,130
MW8	07/24/08	98.36	NM	-	-	-	-	-	-	-	-	-	-	-	-
MW8	07/25/08	98.36	23.94	74.42	-	-	-	-	-	-	-	-	-	-	<2,000
MW8	03/26/09	98.36	24.28	74.08	-	-	-	-	-	-	-	-	5.17	6.10	1,200
MW8	03/26/09 b	98.36	24.04	74.32	-	-	-	-	-	-	-	-	<5.00	<5.00	-
MW8	06/28/09	98.36	24.34	74.02	-	-	-	-	-	-	-	-	7.70	5.80	-
MW8	01/13/10	98.36	23.75	74.61	-	-	-	-	-	-	-	-	-	-	-
Destroyed															
Screened Interval 15-40 ft bgs/ Total Well Depth 40 ft bgs															
MW8A	06/15/10	NE	23.14	-	-	-	-	-	-	-	-	-	12.5	11.5	-
MW8A	09/16/10	NE	23.54	-	-	-	-	-	-	-	-	-	-	-	-
MW8A	12/10/10	NE	28.36	-	-	-	-	-	-	-	-	-	-	-	-
MW8A	03/17/11	NE	23.48	-	-	-	-	-	-	-	-	-	-	-	-
MW8A	06/07/11 c	202.34	23.62	178.72	-	-	-	-	-	-	-	-	-	-	-
Screened Interval 15-30 ft bgs/ Total Well Depth 30 ft bgs															
MW9	02/11/03	99.08	21.81	77.27	<100	<143	<143	<1.0	<1.0	<1.0	<1.0	-	<3.0	<3.0	1,030,000
MW9	05/19/03	99.08	21.33	77.75	<100	136	<111	4.30	9.0	1.5	10.1	-	<3.0	<3.0	1,550,000
MW9	03/11/04	99.08	21.24	77.84	<100	<111	<111	<1.00	<1.0	<1.0	<1.0	-	<5.0	<5.0	-
MW9	06/16/04	99.08	22.76	76.32	<100	<111	<111	<1.00	<1.0	<1.0	<1.0	-	<5.0	<5.0	-
MW9	09/15/04	99.08	23.57	75.51	<100	229	<100	<1.00	<1.0	<1.0	<1.0	-	<5.0	<5.0	-
MW9	11/24/04	99.08	23.50	75.58	<100	-	-	1.9	1.90	1.5	5.1	-	<5.0	<5.0	-
MW9	02/10/05	99.08	23.12	75.96	<100	-	-	<1.00	<1.0	<1.0	1.7	-	<5.0	<5.0	-
MW9	09/02/05	99.08	25.31	73.77	<100	-	-	1.45	1.56	<1.00	3.38	-	<5.00	<5.00	-
MW9	12/29/05	99.08	24.48	74.60	<100	-	-	<1.00	<1.00	<1.00	<1.00	-	<5.00	<5.00	-
MW9	03/20/06	99.08	22.51	76.57	<100	-	-	<1.00	<1.00	<1.00	<1.00	-	<5.00	<5.00	-
MW9	07/12/06	99.08	23.78	75.30	<100	-	-	<1.00	16.2	<1.00	<3.00	-	<5.00	<5.00	-
MW9	07/02/08	99.08	24.35	74.73	<100	<100	<100	<1.00	2.20	<1.00	<3.00	-	<5.00	<5.00	-
MW9	07/24/08	99.08	NM	-	-	-	-	<1.00	<1.00	<1.00	<3.00	<1.00	<5.00	<5.00	18,600
MW9	07/25/08	99.08	NM	-	-	-	-	-	-	-	-	-	-	-	-
MTCA Method A Cleanup Levels															
					800/1,000 a	500	500	5	1,000	700	1,000	20	15	15	N/A

**TABLE 1**  
**CUMULATIVE GROUNDWATER ANALYTICAL RESULTS**  
 Former Exxon Station 73594  
 13204 Northeast Highway 99  
 Vancouver, Washington  
 Page 9 of 11

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)	MTBE (µg/L)	Total Pb (µg/L)	Diss Pb (µg/L)	TSS (µg/L)
MW9	03/26/09	99.08	NM	-	-	-	-	-	-	-	-	-	-	-	-
MW9	06/28/09	99.08	24.76	74.32	-	-	-	-	-	-	-	-	<5.00	<5.00	-
MW9	01/13/10	99.08	24.32	74.76	-	-	-	-	-	-	-	-	-	-	-
MW9	06/15/10	99.08	25.43	73.65	-	-	-	-	-	-	-	-	-	-	-
MW9	09/16/10	99.08	25.77	73.31	-	-	-	-	-	-	-	-	-	-	-
MW9	12/10/10	99.08	23.45	75.63	-	-	-	-	-	-	-	-	-	-	-
MW9	03/17/11	99.08	22.37	76.71	-	-	-	-	-	-	-	-	-	-	-
MW9	06/07/11 c	202.69	22.68	180.01	-	-	-	-	-	-	-	-	-	-	-
Screened Interval 15-30 ft bgs/ Total Well Depth 30 ft bgs															
MW10	02/11/03	98.88	21.87	77.01	<100	<100	<100	<1.0	<1.0	<1.0	<1.0	-	110	<3.0	9,960,000
MW10	05/19/03	98.88	21.35	77.53	134	<111	<111	21.1	3.8	26.2	26.2	-	210	<3.0	3,660,000
MW10	03/11/04	98.88	21.25	77.63	<100	<143	<143	<1.00	<1.0	<1.0	<1.0	-	10.0	<5.0	-
MW10	06/16/04	98.88	22.78	76.10	<100	<111	<111	<1.00	2.1	1.2	4.8	-	17.0	<5.0	-
MW10	09/15/04	98.88	23.57	75.31	<100	<111	<100	<1.00	<1.0	<1.0	<1.0	-	25.0	<5.0	-
MW10	11/24/04	98.88	23.52	75.36	255	-	-	13.2	10.7	34.7	34.7	-	25.0	<5.0	-
MW10	02/10/05	98.88	23.25	75.63	<100	-	-	<1.00	1.2	1.1	3.5	-	25.0	<5.0	-
MW10	09/02/05	98.88	24.97	73.91	<100	-	-	<1.00	1.71	<1.00	2.45	-	31.0	<5.00	-
MW10	12/29/05	98.88	24.21	74.67	<100	-	-	<1.00	<1.00	<1.00	<1.00	-	13.0	<5.00	-
MW10	03/20/06	98.88	22.41	76.47	<100	-	-	<1.00	<1.00	<1.00	<3.00	-	-	<5.00	-
MW10	07/12/06	98.88	23.71	75.17	<100	-	-	<1.00	11.7	<1.00	<3.00	-	-	<5.00	-
MW10	07/02/08	98.88	24.29	74.59	<100	<105	<105	<1.00	<1.00	<1.00	<3.00	<1.00	<5.00	<5.00	<2,000
MW10	07/24/08	98.88	NM	-	-	-	-	-	-	-	-	-	-	-	-
MW10	07/25/08	98.88	NM	-	-	-	-	-	-	-	-	-	-	-	-
MW10	03/26/09	98.88	NM	-	-	-	-	-	-	-	-	-	-	-	-
MW10	06/28/09	98.88	24.82	74.06	-	-	-	-	-	-	-	-	<5.00	<5.00	-
MW10	01/13/10	98.88	24.27	74.61	-	-	-	-	-	-	-	-	-	-	-
MW10	06/15/10	98.88	25.59	73.29	-	-	-	-	-	-	-	-	-	-	-
MW10	09/16/10	98.88	25.89	72.99	-	-	-	-	-	-	-	-	-	-	-
MW10	12/10/10	98.88	23.59	75.29	-	-	-	-	-	-	-	-	-	-	-
MW10	03/17/11	98.88	22.34	76.54	-	-	-	-	-	-	-	-	-	-	-
MW10	06/07/11 c	202.88	22.62	180.26	-	-	-	-	-	-	-	-	-	-	-
Screened Interval 31-32 ft bgs/ Total Well Depth 32 ft bgs															
SP2	05/28/09	NE	NM	-	-	-	-	-	-	-	-	-	-	<5.00	-

**TABLE 1**  
**CUMULATIVE GROUNDWATER ANALYTICAL RESULTS**

Former Exxon Station 73594  
 13204 Northeast Highway 99  
 Vancouver, Washington

Page 10 of 11

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)	MTBE (µg/L)	Total Pb (µg/L)	Diss Pb (µg/L)	TSS (µg/L)
Screened Interval 31-32 ft bgs/ Total Well Depth 32 ft bgs															
SP3	05/28/09	NE	NM	--	--	--	--	--	--	--	--	--	<5.00	<5.00	--
Screened Interval 31-32 ft bgs/ Total Well Depth 32 ft bgs															
SP4	05/28/09	NE	NM	--	--	--	--	--	--	--	--	--	<5.00	<5.00	--

MTCA Method A Cleanup Levels	800/1,000 <sup>a</sup>	500	5	1,000	700	1,000	1,000	20	15	15	N/A



**TABLE 1**  
**CUMULATIVE GROUNDWATER ANALYTICAL RESULTS**  
 Former Exxon Station 73594  
 13204 Northeast Highway 99  
 Vancouver, Washington  
 Page 11 of 11

**EXPLANATION:**

Wellhead elevations prior to 03/28/11 were taken from prior consultants' reports  
 Data collected prior to 03/20/01 was taken from prior consultants' reports  
 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 elevation  
 NM = Not Measured N/A = No Applicable MTCA Method A Cleanup Level  
 -- = Not analyzed or sampled  
 TPHg = Total Petroleum Hydrocarbons as Gasoline in accordance with Ecology Method NWTPH-Gx  
 TPHd and TPHmo = Total Petroleum Hydrocarbons as Diesel and Motor 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 8260B or 8021B, refer to laboratory analytical reports  
 Total Pb = Total Lead. Diss Pb = Dissolved Lead. Total and Dissolved Lead analyzed in accordance EPA Method 7421 or 6010B, refer to laboratory analytical reports.  
 TSS = Total Suspended Solids in accordance with EPA Method 160.2 or ASTM Standard Method 2540D, refer to laboratory analytical reports  
 < = Less than stated laboratory reporting limit  
 Shaded values equal or exceed 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 = No purge sample  
 c = Wellhead elevations were resurveyed on 03/28/11 by Cardno WRG using NAVD 88

**APPENDIX A**

**FIELD PROTOCOLS**

**Cardno ERI  
Soil Boring and Well Installation  
Field Protocol**

**Preliminary Activities**

Prior to the onset of field activities at the site, Cardno ERI obtains the appropriate permit(s) from the governing agency(s). Advance notification is made as required by the agency(s) prior to the start of work. Cardno ERI marks the borehole locations and contacts the local one call utility locating service at least 48 hours prior to the start of work to mark buried utilities. Borehole locations may also be checked for buried utilities by a private geophysical surveyor. Prior to drilling, the borehole location is cleared in accordance with the client's procedures. Fieldwork is conducted under the advisement of a registered professional geologist and in accordance with an updated site-specific safety plan prepared for the project, which is available at the job site during field activities.

**Drilling and Soil Sampling Procedures**

Cardno ERI contracts a licensed driller to advance the boring and collect soil samples. The specific drilling method (e.g., hollow-stem auger, direct push method, or sonic drilling), sampling method [e.g., core barrel or California-modified split spoon sampler (CMSSS)] and sampling depths are documented on the boring log and may be specified in a work plan. Soil samples are typically collected at the capillary fringe and at 5-foot intervals to the total depth of the boring. To determine the depth of the capillary fringe prior to drilling, the static groundwater level is measured with a water level indicator in the closest monitoring well to the boring location, if available.

The borehole is advanced to just above the desired sampling depth. For CMSSSs, the sampler is placed inside the auger and driven to a depth of 18 inches past the bit of the auger. The sampler is driven into the soil with a standard 140-pound hammer repeatedly dropped from a height of 30 inches onto the sampler. The number of blows required to drive the sampler each 6-inch increment is recorded on the boring log. For core samplers (e.g., direct push), the core is driven 18 inches using the rig apparatus.

Soil samples are preserved in the metal or plastic sleeve used with the CMSSS or core sampler, in glass jars or other manner required by the local regulatory agency (e.g., Environmental Protection Agency Method 5035). Sleeves are removed from the sample barrel, and the lowermost sample sleeve is immediately sealed with Teflon™ tape, capped and labeled. Samples are placed in a cooler chilled to 4° Celsius and transported to a state-certified laboratory. The samples are transferred under chain-of-custody (COC) protocol.

**Field Screening Procedures**

Cardno ERI places the soil from the middle of the sampling interval into a plastic re-sealable bag. The bag is placed away from direct sunlight for approximately 20 minutes, after which the tip of a photo-ionization detector (PID) or similar device is inserted through the plastic bag to measure organic vapor concentrations in the headspace. The PID measurement is recorded on the boring log. At a minimum, the PID or other device is calibrated on a daily basis in accordance with manufacturer's specifications using a hexane or isobutylene standard. The calibration gas and concentration are recorded on a calibration log. Instruments such as the PID are useful for evaluating relative concentrations of volatilized hydrocarbons, but they do not measure the concentration of petroleum hydrocarbons in the soil matrix with the same precision as laboratory analysis. Cardno ERI trained personnel describe the soil in the bag according to the Unified Soil Classification System and record the description on the boring log, which is included in the final report.

**Air Monitoring Procedures**

Cardno ERI performs a field evaluation for volatile hydrocarbon concentrations in the breathing zone using a calibrated PID or lower explosive level meter.

### **Groundwater Sampling**

A groundwater sample, if desired, is collected from the boring by using Hydropunch™ sampling technology or installing a well in the borehole. In the case of using Hydropunch™ technology, after collecting the capillary fringe soil sample, the boring is advanced to the top of the soil/groundwater interface and a sampling probe is pushed to approximately 2 feet below the top of the static water level. The probe is opened by partially withdrawing it and thereby exposing the screen. A new or decontaminated bailer is used to collect a water sample from the probe. The water sample is then emptied into laboratory-supplied containers constructed of the correct material and with the correct volume and preservative to comply with the proposed laboratory test. The container is slowly filled with the retrieved water sample until no headspace remains and then promptly sealed with a Teflon-lined cap, checked for the presence of bubbles, labeled, entered onto a COC record and placed in chilled storage at 4° Celsius. Laboratory-supplied trip blanks accompany the water samples as a quality assurance/quality control procedure. Equipment blanks may be collected as required. The samples are kept in chilled storage and transported under COC protocol to a client-approved, state-certified laboratory for analysis.

### **Backfilling of Soil Boring**

If a well is not installed, the boring is backfilled from total depth to approximately 5 feet below ground surface (bgs) with either neat cement or bentonite grout using a tremie pipe. The boring is backfilled from 5 feet bgs to approximately 1 foot bgs with hydrated bentonite chips. The borehole is completed from 1 foot bgs to surface grade with material that best matches existing surface conditions and meets local agency requirements. Site-specific backfilling details are shown on the respective boring log.

### **Well Construction**

A well (if constructed) is completed using materials documented on the boring log or specified in a work plan. The well is constructed with slotted casing across the desired groundwater sampling depth(s) and completed with blank casing to within 6 inches of surface grade. No further construction is conducted on temporary wells. For permanent wells, the annular space of the well is backfilled with Monterey sand from the total depth to approximately 2 feet above the top of the screened casing. A hydrated granular bentonite seal is placed on top of the sand filter pack. Grout may be placed on top of the bentonite seal to the desired depth using a tremie pipe. The well may be completed to surface grade with a 1-foot thick concrete pad. A traffic-rated well vault and locking cap for the well casing may be installed to protect against surface-water infiltration and unauthorized entry. Site-specific well construction details including type of well, well depth, casing diameter, slot size, length of screen interval and sand size are documented on the boring log or specified in the work plan.

### **Well Development and Sampling**

If a permanent groundwater monitoring well is installed, the grout is allowed to cure a minimum of 48 hours before development. Cardno ERI personnel or a contracted driller use a submersible pump or surge block to develop the newly installed well. Prior to development, the pump is decontaminated by allowing it to run and re-circulate while immersed in a non-phosphate solution followed by successive immersions in potable water and de-ionized water baths. The well is developed until sufficient well casing volumes are removed so that turbidity is within allowable limits and pH, conductivity and temperature levels stabilize in the purge water. The volume of groundwater extracted is recorded on a log.

Following development, groundwater within the well is allowed to recharge until at least 80% of the drawdown is recovered. A new or decontaminated bailer is slowly lowered past the air/water interface in the well, and a water sample is collected and checked for the presence of non-aqueous phase liquid, sheen or emulsions. The water sample is then emptied into laboratory-supplied containers as discussed above.

**Surveying**

If required, wells are surveyed by a licensed land surveyor relative to an established benchmark of known elevation above mean sea level to an accuracy of +/- 0.01 foot. The casing is notched or marked on one side to identify a consistent surveying and measuring point.

**Decontamination Procedures**

Cardno ERI or the contracted driller decontaminates soil and water sampling equipment between each sampling event with a non-phosphate solution, followed by a minimum of two tap water rinses. De-ionized water may be used for the final rinse. Downhole drilling equipment is steam-cleaned prior to drilling the borehole and at completion of the borehole.

**Waste Treatment and Soil Disposal**

Soil cuttings generated from the drilling or sampling are stored on site in labeled, Department of Transportation-approved, 55-gallon drums or other appropriate storage container. The soil is removed from the site and transported under manifest to a client- and regulatory-approved facility for recycling or disposal. Decontamination fluids and purge water from well development and sampling activities, if conducted, are stored on site in labeled, regulatory-approved storage containers. Fluids are subsequently transported under manifest to a client- and regulatory-approved facility for disposal or treated with a permitted mobile or fixed-base carbon treatment system.

## **Cardno ERI Well Destruction Field Protocol**

All destruction techniques and methods should be Environmental Protection Agency, American Society of Testing and Materials and appropriate regulatory agency approved methodologies.

### **Preliminary Activities**

Prior to the onset of field activities at the site, Cardno ERI obtains the appropriate permit(s) from the governing agency(s). Advance notification is made as required by the agency(s) prior to the start of work. Cardno ERI marks the borehole locations and contacts the local one call utility locating service at least 48 hours prior to the start of work to mark buried utilities. Borehole locations may also be checked for buried utilities by a private geophysical surveyor. Prior to well destruction, the well borehole is cleared in accordance with the client's procedures. Fieldwork is conducted under the advisement of a registered professional geologist and in accordance with an updated site-specific safety plan prepared for the project, which is available at the job site during field activities.

### **Overdrilling Well Destruction Procedures**

Each well to be destroyed is overdrilled to its respective total depth. The drill rig is equipped with a continuous flight hollow-stem auger of equal or greater size than the original well borehole. After the annular space backfill and casing(s) are removed from each well by overdrilling, the well borehole is backfilled by pumping the agency-specified sealing material through a tremie pipe placed within the augers to the total depth of the borehole. Each well borehole is backfilled from its respective total depth to within approximately 5 feet of surface grade. After the seal hardens, the remaining annular space of each well borehole is backfilled with hydrated bentonite chips to approximately 2 feet below ground surface (bgs) followed by sand to the base of the pavement, or 6 inches below grade if no pavement is present. The destruction of each well is completed to surface grade with material that best matches existing surface conditions and meets local agency requirements.

### **Pressure Grouting Well Destruction Procedures**

Due to the potential close proximity of wells to buried utility lines, subsurface structures or surface structures, wells may be destroyed in place by pressure grouting. Prior to pressure grouting a well, the total depth of the well's casing is measured and compared to the well's original borelog and construction details to verify that obstructions are not present. If present, obstructions that would prevent adequate filling of the well must be removed before pressure grouting. An agency-specified sealing material is then pumped under pressure into the casing of the well. Pressure grouting must be continued until a sufficient amount of sealing material has been emplaced to ensure that the sand filter pack and well casing are filled to within 5 feet of surface grade. The amount of sealing material needed can be calculated using the following equation:

$$\text{Sealant (cubic feet)} = L * (R_b^2 + 2.1 * R_c^2)$$

Where L is the length of casing (feet) to be filled (total length minus 5 feet),

$R_b$  is the radius (feet) of the borehole and

$R_c$  is the radius (feet) of the casing.

After the seal hardens, the well casing is removed to a depth required by client or local agency. The open hole is backfilled with 3 feet of hydrated bentonite chips followed by 1½ feet of sand to approximately 6 inches bgs. The remaining hole is completed with material that best matches existing surface conditions and meets local agency requirements.

**Soil Sampling Procedures**

If drilling has not been recently conducted at the site, Cardno ERI collects a profile sample from the soil cuttings using a 6-inch long brass sleeve. The brass sleeve is sealed with Teflon™ tape, capped, placed in a cooler chilled to 4° Celsius and transported to a state-certified laboratory under proper chain-of-custody protocol.

**Air Monitoring Procedures**

Cardno ERI performs a field evaluation for volatile hydrocarbon concentrations in the breathing zone using a calibrated photo-ionization detector or lower explosive level meter.

**Waste Treatment and Soil Disposal**

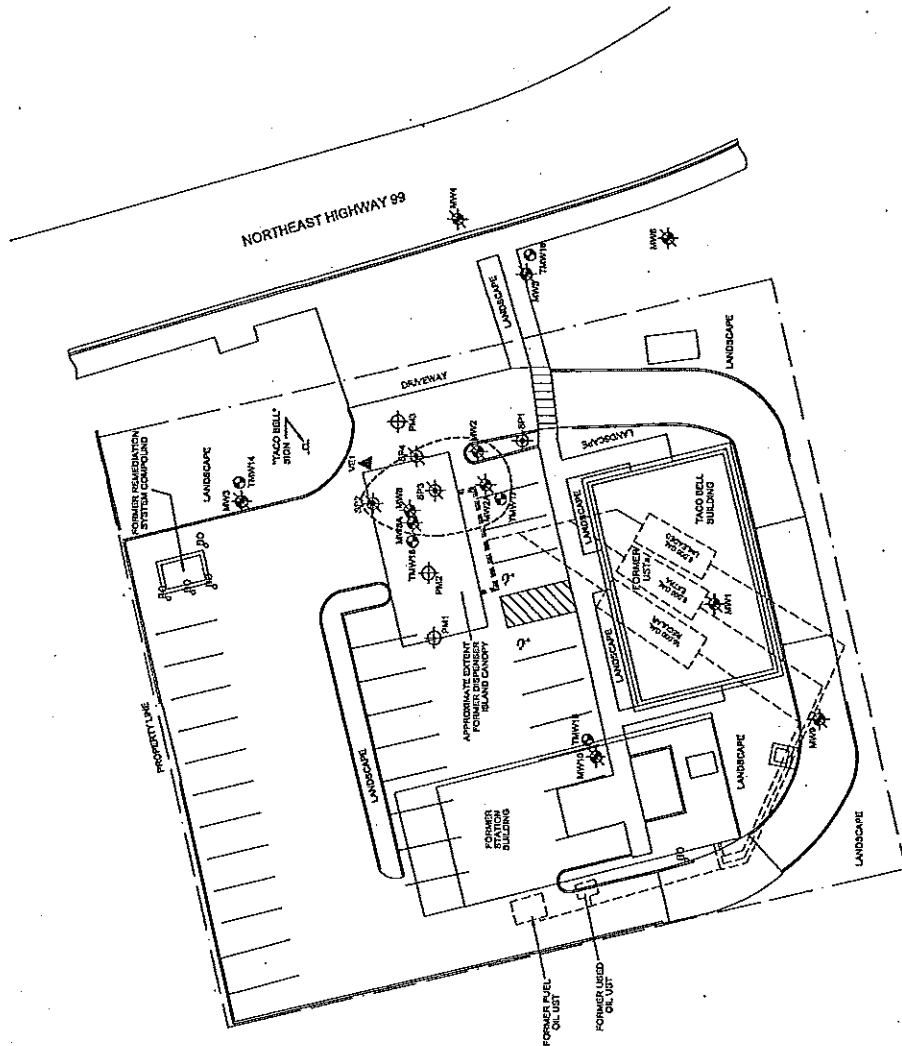
Soil cuttings generated from the well destruction are stored on site in labeled, Department of Transportation-approved, 55-gallon drums or other appropriate storage container. The soil is removed from the site and transported under manifest to a client- and regulatory-approved facility for recycling or disposal. Decontamination fluids are stored on site in labeled, regulatory-approved storage containers. Fluids are subsequently transported under manifest to a client- and regulatory-approved facility for disposal or treated with a permitted mobile or fixed-base carbon treatment system.

Exhibit C

Horizontal Extent of Total and Dissolved Lead



Well Symbols in Red Indicate Dissolved and Total Lead Concentrations Which Exceed MTCA Method A Cleanup Levels  
 Well Symbols in Blue Indicate Dissolved and Total Lead Concentrations Below MTCA Method A Cleanup Levels



SOURCE: Modified from a map provided by Exxon/Mobil Oil Corporation

FN 311110002



Shaping the Future

**HORIZONTAL EXTENT OF TOTAL AND DISSOLVED LEAD**  
 FORMER EXXON STATION 73498  
 13204 Northeast Highway 99  
 Vancouver, Washington

**EXPLANATION**

MW10	Destroyed Groundwater Monitoring Well	SP4	Destroyed Air Sparging Well
TAW18	Temporary Groundwater Monitoring Well	VE1	Destroyed Soil Vapor Extraction Well
PM3	Destroyed Pressure Monitoring Well		Approximate Horizontal Extent of Lead Exceeding MTCA Method A Cleanup Level

PROJECT NO. 31111

PLATE 3  
 NAG: 10/16/12

