July 7, 2017
Cardno 031104CX.LR17

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Ms. Carol A. Johnston
Washington State Department of Ecology
Southwest Regional Office
P.O. Box 4775
Olympia, Washington 98504-7775

SUBJECT **Supplemental Closure Request**
Former Exxon Station 72454
4603 Lacey Boulevard Southeast
Seattle, Washington

Ms. Johnston:

At the request of ExxonMobil Environmental Services Company (EMES), on behalf of Exxon Mobil Corporation, Cardno has prepared the enclosed *Supplemental Closure Request*, presenting the results of supplemental evaluation of the post-remediation soil and groundwater compliance sampling as summarized in Cardno's *Confirmation Boring and Closure Request Report,* dated August 11, 2015.

As detailed in the enclosed report, an evaluation of current and historical site data indicates that concentrations of hydrocarbons and lead in soil and groundwater at the subject site are protective of human health and the environment, and that no further action is required at the site. Therefore, Cardno requests a no further action determination under Model Remedy 5 as outlined in the Washington State Department of Ecology's *Model Remedies for Sites with Petroleum Impacts to Groundwater*.

Cardno and EMES greatly appreciate your cooperation in this matter. Please contact Mr. Michael J. Miller, Cardno Project Manager for this site, at 206 767 2360 or Ms. Jennifer C. Sedlachek, EMES Project Manager for this site, at 925 787 4718, with questions.

Sincerely,

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ENCLOSURE
Cardno's *Supplemental Closure Request*, dated July 7, 2017

cc: w/ enclosure
Mr. Mark Johnson, HomeStreet Bank (*Electronic copy via USPS)*
Mr. Ashok Sharma, Hariom Enterprises, Inc. *(Electronic copy via USPS)*
Ms. Jennifer C. Sedlachek, ExxonMobil Environmental Services Company *(Filed in project folder)*

Supplemental Closure Request

Former Exxon Station 72454
4603 Lacey Boulevard Southeast
Lacey, Washington

Cardno 031104CX.R17

Prepared for
ExxonMobil Environmental Services Company

July 7, 2017

Cardno
Shaping the Future

Supplemental Closure Request

Former Exxon Station 72454
4603 Lacey Boulevard Southeast
Lacey, Washington

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July 7, 2017

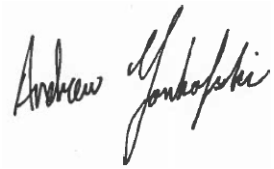

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Table of Contents

1 Introduction 1

2 Background 1

2.1 Site Description 1

2.2 Geology and Hydrogeology 1

3 Previous Work 1

4 Current Site Conditions 2

5 Total Lead 2

5.1 Correlation between Hydrocarbons and Total Lead Concentrations in Groundwater 3

5.2 Correlation Between Groundwater Elevation and Total Lead in Groundwater 4

5.3 Background and Upgradient Total Lead Concentrations 5

6 Vapor Intrusion 6

7 Conclusions 6

8 Recommendations 7

9 Contact Information 7

10 Limitations 7

11 References 8

12 Acronym List 9

Figures

Figure 1 Linear Regression Statistics for Correlation Between Total Lead and Constituents of Concern 4

Figure 2 Linear Regression Statistics for Correlation Between Groundwater Elevation and Total Lead Concentrations **5**

Graphs

Graph 1 Hydrocarbons vs. Total Lead Concentrations in Groundwater 3

Graph 2 BTEX vs. Total Lead Concentrations in Groundwater 4

Graph 3 Groundwater Elevations vs. Total Lead Concentrations 5

Plates

Plate 1 Site Location Map
Plate 2 Generalized Site Plan
Plate 3 Current Groundwater Conditions Map
Plate 4 Current Soil Conditions Map
Plate 5 Cross Section Traverse Map
Plate 6 Cross Section A – A'

Tables

Table 1 Cumulative Soil Analytical Results
Table 2 Cumulative Soil Analytical Results – Volatile Petroleum Hydrocarbons
Table 3 Cumulative Soil Analytical Results – Extractable Petroleum Hydrocarbons
Table 4 Cumulative Soil Analytical Results – Additional VOCs
Table 5 Cumulative Soil Analytical Results – Polycyclic Aromatic Hydrocarbons
Table 6 Grab Groundwater Analytical Results – 05/04/15
Table 7 Cumulative Groundwater Analytical Results

Appendices

Appendix A Select Sheets From Ecology's *Natural Background Soil Metals Concentrations in Washington State*, dated October 1994

1 Introduction

At the request of ExxonMobil Environmental Services Company (EMES), on behalf of Exxon Mobil Corporation (ExxonMobil), Cardno has prepared this report presenting results of supplemental evaluation of the post-remediation soil and groundwater compliance sampling, summarized in Cardno's *Confirmation Boring and Closure Request Report*, dated August 11, 2015 (Cardno, 2015). Analyses of the correlations between total lead and hydrocarbons concentrations and between total lead and groundwater elevations were performed. Additionally, this report summarizes the assessment of the vapor intrusion pathway. A review of historical and current soil and groundwater data indicates the subject site has been characterized in accordance with the MTCA Method A Cleanup Levels for groundwater and MTCA Method B Cleanup Levels for soil, as outlined by the Washington State Department of Ecology's (Ecology) *Model Remedies for Sites with Petroleum Impacts to Groundwater* Model Remedy 5 (Ecology, 2016b). This supplemental report demonstrates complete site characterization under the MTCA.

2 Background

2.1 Site Description

The site is located on the southeast corner of the intersection of Lacey Boulevard Southeast and College Street Southeast, in the City of Lacey, Thurston County, Washington (Plate 1). The site is currently occupied by a Chevron-branded gasoline service station. The locations of the existing and former USTs, dispenser islands, groundwater monitoring wells, station building, and other select site features are shown on Plate 2.

2.2 Geology and Hydrogeology

The subject site is at an approximate elevation of 200 feet above msl (USGS, 1994). The local topography slopes toward the east-southeast. Geological deposits in the site vicinity consist of Quaternary Vashon recessional outwash, including moderately permeable sand and gravel deposits (USGS, 1994). Historical investigations indicated silty sand has been the predominant component encountered from surface to 20 feet bgs, with pockets of silty clays and clays from 10 feet bgs to 35 feet bgs, the maximum depth explored (Cardno, 2015). Groundwater at the site is encountered at an average depth of 17 feet bgs. Groundwater at the site predominately flows to the northwest with a magnitude ranging from 0.00 to 0.06 (Cardno, 2015).

3 Previous Work

Previous environmental investigations have been conducted at the site by various consultants beginning in 1986. In October 2000, Cardno became the designated environmental consultant for the site. All available previous consultants' records, reports, and files were transferred to Cardno at that time. Cumulative soil analytical results are summarized in Tables 1 through 5. Cumulative groundwater analytical results are summarized in Tables 6 and 7.

In May 2015, Cardno completed post-remediation compliance sampling in accordance with Cardno's *Voluntary Cleanup Program Application and Confirmation Boring Work Plan,* dated October 7, 2013 (Cardno, 2013). The work characterized current hydrocarbon concentrations in soil and groundwater and included the collection of soil samples in the vicinity of historical sample locations that exceeded the MTCA Method A Cleanup Levels as well as the collection of two downgradient grab groundwater samples in the City of Lacey right-of-way, Lacey Boulevard Southeast.

Cardno's *Confirmation Boring and Closure Request Report* summarized historical investigations and presented the results of post-remedial compliance sampling (Cardno, 2015). Results of compliance sampling indicated groundwater concentrations less than the MTCA Method A Cleanup Levels. Following the guidance described in Model Remedy 5, soil was evaluated in accordance with the MTCA Method B criteria and a site-specific direct contact total petroleum hydrocarbon (TPH) cleanup was calculated using Ecology's *MTCA Method B Workbook Tools for Calculating Cleanup Levels for Petroleum-Contaminated Sites*. A comparison of current and historical soil data indicated that all hydrocarbon concentrations were less than the MTCA Method B Cleanup Levels. For this report, soil samples in the vadose zone have been compared to the MTCA Method A Cleanup Levels for the purposes of a vapor intrusion assessment.

4 Current Site Conditions

Current site conditions empirically demonstrate that hydrocarbons in soil are not leaching to groundwater as groundwater concentrations are less than the MTCA Method A Cleanup Levels (Plate 3), and sufficient time has elapsed for the migration of residual hydrocarbons from soil to the adjacent groundwater table in accordance with Washington Administrative Code (WAC) 173-340-747(9) (WAC, 2007).

Current and historical TPH concentrations are less than the site-specific MTCA Method B Cleanup Level and all other analytes are less than the applicable published MTCA Method B Cleanup Levels (Plate 4; Tables 1 through 5). Current soil conditions indicate the site is protective of human health and the environmental in accordance with WAC 173-340-740(3)(b)(iii)(B).

Based on the results of previous investigations, the nature and extent of hydrocarbons in soil and groundwater have been vertically and horizontally delineated.

5 Total Lead

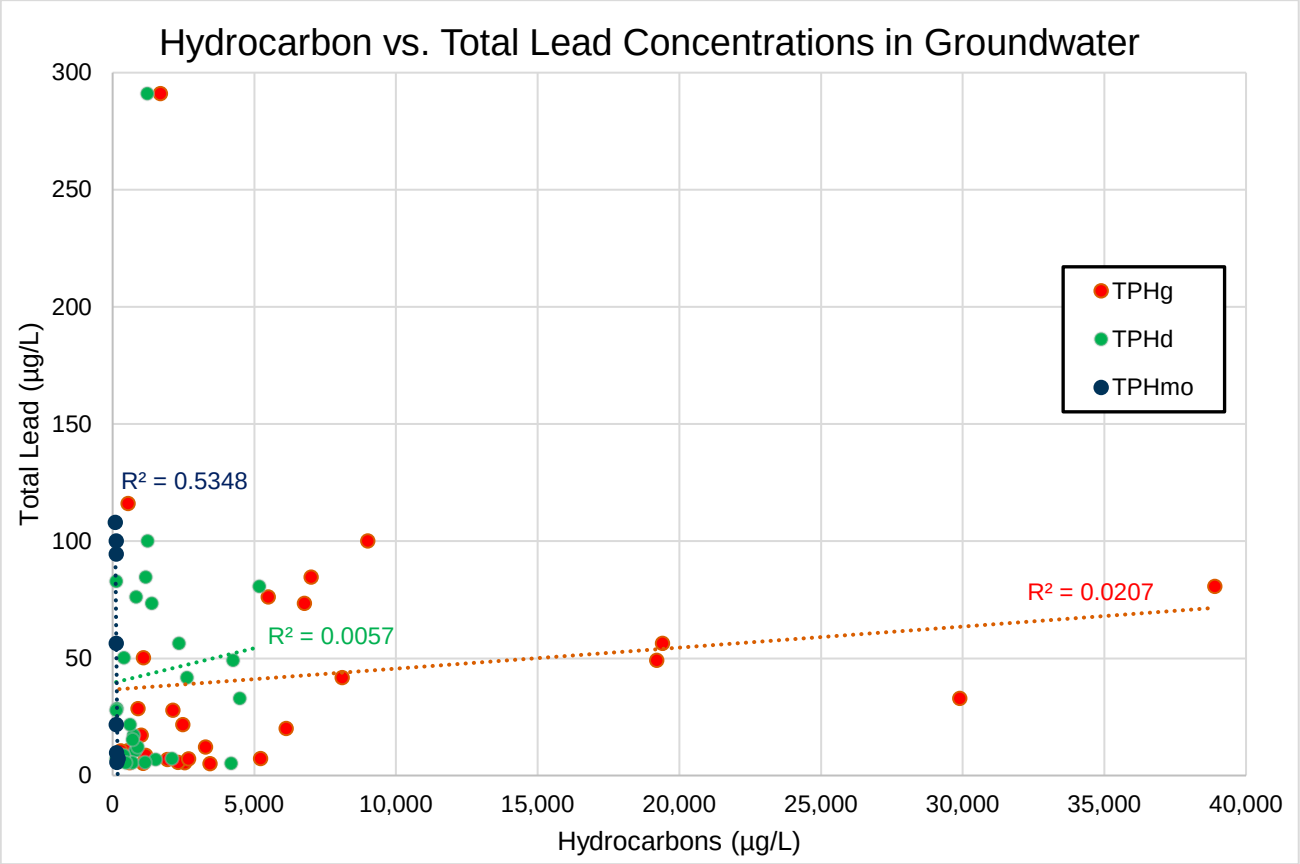
Since environmental investigations began at the site, soil and groundwater samples have been analyzed for lead which was a common additive to gasoline prior to the 1970s. Lead also occurs in the State of Washington in soil at background levels due to a combination of human and natural processes. The range of natural background levels is established in Ecology's *Natural Background Soil Metals Concentrations in Washington State*, dated October 1994 (Ecology, 1994). Ecology established a median and 90th percentile background lead concentration in soil for the Puget Sound region of 9.8 and 16.83 mg/kg, respectively (Appendix A). Total lead concentrations in soil samples collected from the site have been consistently less than the MTCA Method A Cleanup Level and the 90th percentile background lead concentrations for the Puget Sound region (Table 1). Additionally, the median total lead concentration from soil samples collected at the site is 5.05 mg/kg, which is below the median background lead concentration for the region (Table 1).

Total lead in groundwater has been detected at a maximum concentration of 291 µg/L which was observed in well MW4 in December 2010 (Table 7). However, dissolved lead concentrations in groundwater samples collected at the site have all been less than the MTCA Method A Cleanup Level of 15 µg/L, with the exception of one detection of dissolved lead concentrations above the laboratory MRL, detected in well MW5 at a concentration of 5.20 in March 2013 (Table 7). Section 5.1 discusses the correlation between total lead and hydrocarbon concentrations, Section 5.2 discusses the correlation between total lead and groundwater elevation, and Section 5.3 summarizes possible sources for total lead concentrations in groundwater observed at the site.

5.1 Correlation between Hydrocarbons and Total Lead Concentrations in Groundwater

Samples from monitoring wells MW4, MW8, MW10, and MW11 have historically contained the greatest concentrations of TPHg and BTEX in groundwater (Table 7). Samples with concentrations of TPHg and BTEX exceeding the MTCA Method A Cleanup Levels did not have detectable concentrations of dissolved lead. If concentrations of total and dissolved lead present at the site were associated with the historical hydrocarbon release, elevated concentrations of total and/or dissolved lead should be expected to correlate with the highest hydrocarbon concentrations. Historical analytical data was used to compare the correlation between TPHg, TPHd, TPHmo, and BTEX versus total lead. Linear regression analyses were performed to compare concentrations for each sampling event where hydrocarbon concentrations were above the laboratory MRL. Regression fits indicate that there is a lack of correlation between TPHg, TPHd, and TPHmo concentrations and total lead concentrations (Graph 1). Likewise, regression analyses comparing BTEX concentrations to total lead concentrations also indicate a lack of correlation (Graph 2). A summary of each constituent of concern and the respective coefficient of determination are presented in Figure 1.

Graph 1 – Hydrocarbons vs. Total Lead Concentrations in Groundwater



Graph 2 – BTEX vs. Total Lead Concentrations in Groundwater

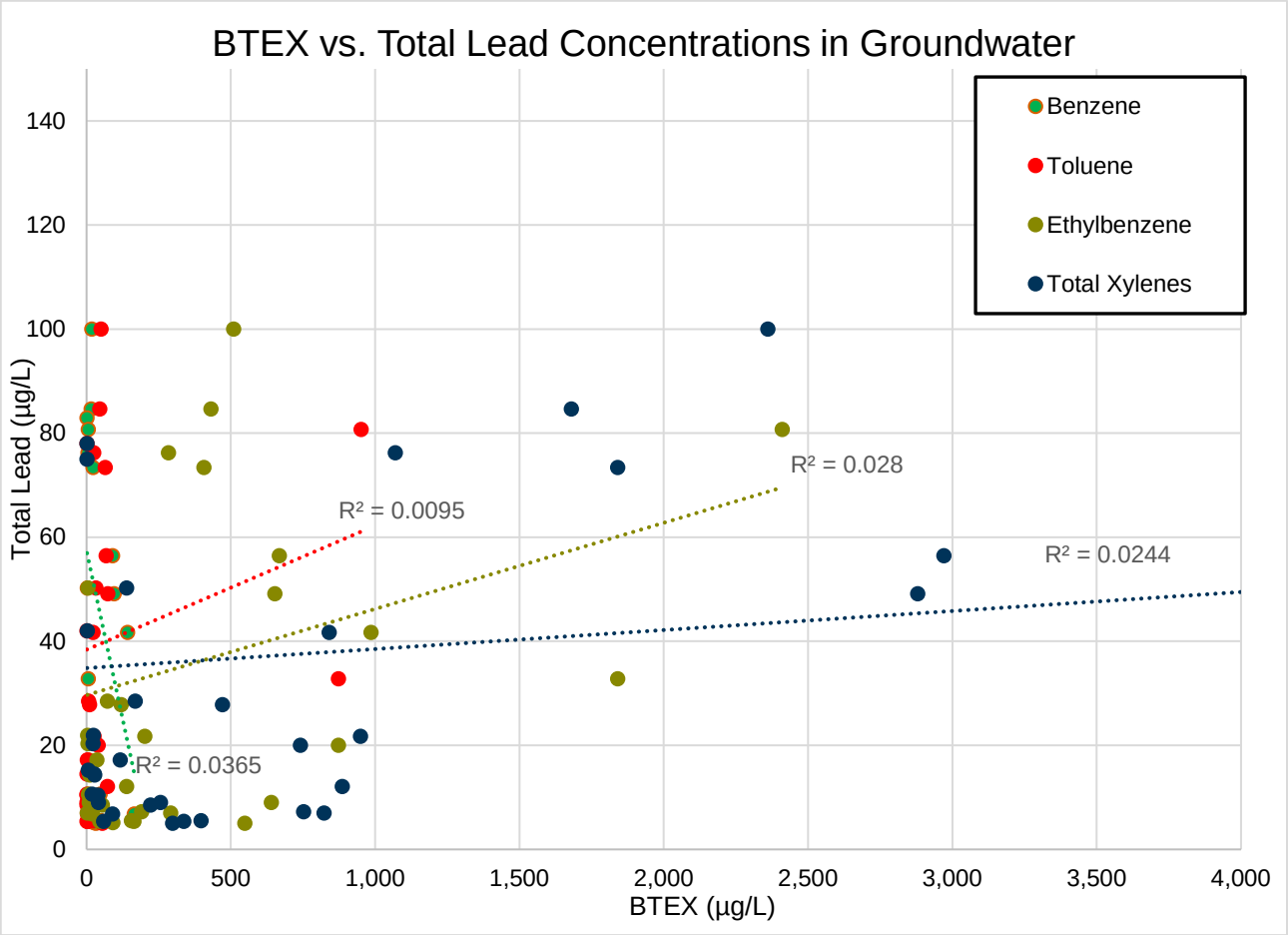


Figure 1 - Linear Regression Statistics for Correlation Between Total Lead and Constituents of Concern

Constiuent	Coefficient of Determination (R^2)
TPHg	0.021
TPHd	0.006
TPHmo	0.054
Benzene	0.037
Toluene	0.010
Ethylbenze	0.028
Total Xylenes	0.024

5.2 Correlation Between Groundwater Elevation and Total Lead in Groundwater

A review of groundwater elevation data collected between 2002 and 2013 indicates that total lead concentrations in groundwater do not correlate to the elevation of groundwater at the site. Monitoring wells MW4, MW8, MW10, and MW11 were selected for modeling due to the historically highest concentrations of total lead in groundwater. Graph 3 demonstrates a lack of correlation between groundwater elevation and total lead concentrations, and Figure 2 presents a summary of coefficients of determination between groundwater elevation at each well and total lead concentrations.

Graph 3 - Groundwater Elevations vs. Total Lead Concentrations

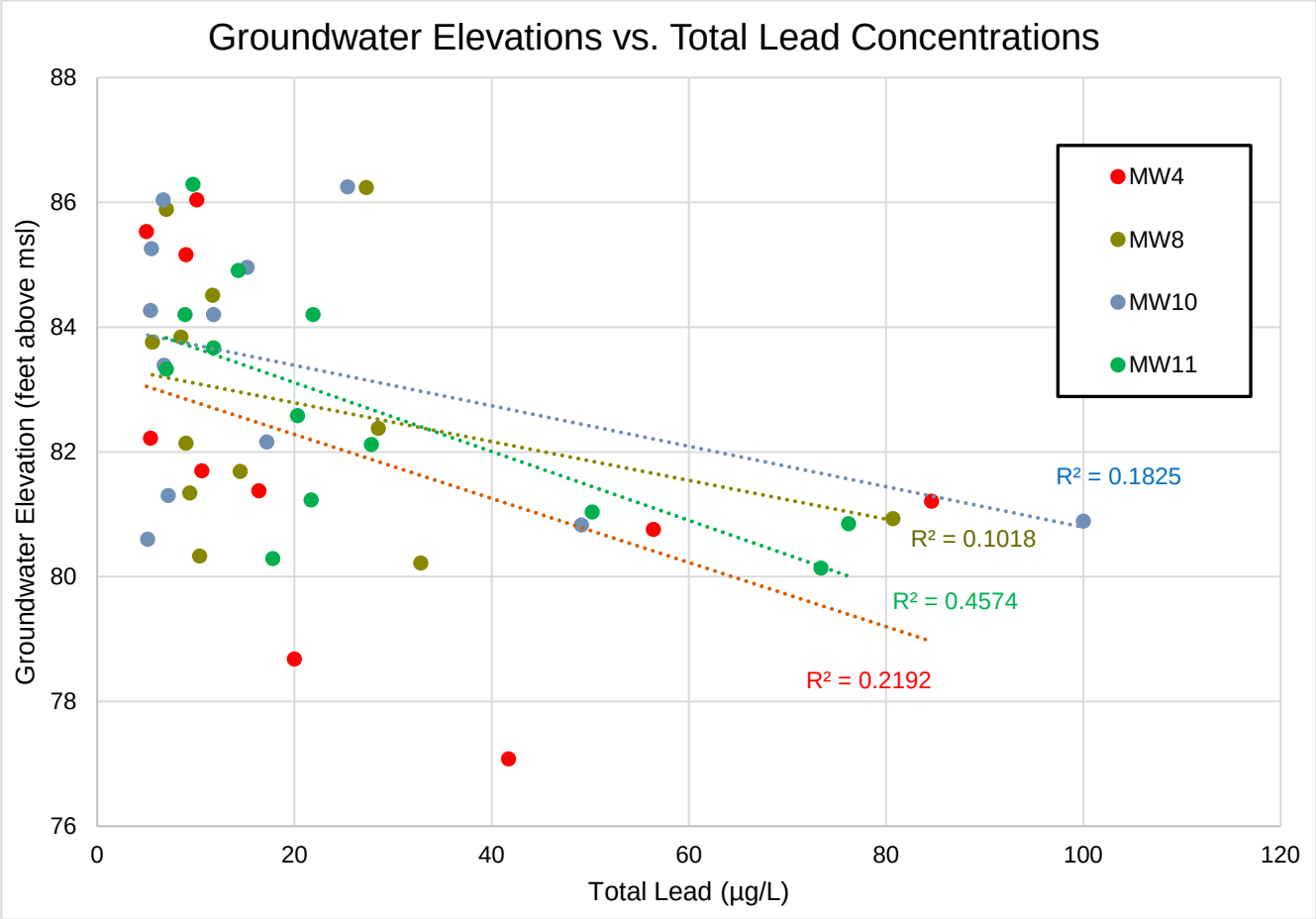


Figure 2 - Linear Regression Statistics for Correlation Between Groundwater Elevation and Total Lead Concentrations

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

5.3 Background and Upgradient Total Lead Concentrations

Concentrations of total lead have been detected in groundwater upgradient from the locations of the former UST and product piping lines. Additionally, total lead concentrations in all soil samples collected from the site have never exceeded the MTCA Method A Cleanup Levels. The concentrations of total lead in upgradient groundwater, combined with the absence of total lead in soil on the site, suggests that observed concentrations of total lead in groundwater are not associated with hydrocarbon releases at the site.

6 Vapor Intrusion

The vapor intrusion pathway was assessed by comparing concentrations of hydrocarbons in the vadose zone to the MTCA Method A Cleanup Levels. A cross section was generated across the area of the latest confirmation borings showing current and historical soil concentrations and water levels. The cross section transect is presented on Plate 5. No soil remains in the vadose zone above the MTCA Method A Cleanup Levels (Plate 6). In February 2016, Ecology revised the draft guidance for evaluating soil vapor intrusion (Ecology, 2016a). The guidance states:

> *If there is no volatile contamination in the vadose zone soils (near current or future buildings of concern), no LNAPL* [light NAPL]*, and shallow groundwater volatile concentrations are sufficiently low (below "screening levels" and expected to stay that way), there is no further need to assess the pathway.*

The vadose zone was defined as the zone between the ground surface and shallowest groundwater encountered in the history of the site. The zone between the seasonally shallowest groundwater observed at the site and the deepest groundwater observed at the site was defined as the zone of intermittent saturation, and the zone below the deepest groundwater at the site was defined as the saturated zone (Plate 6). No soil containing residual hydrocarbons exceeding the MTCA Method A Cleanup Levels remains at the Site in the vadose zone. Due to a lack of volatile constituents of concern in the vadose zone, an absence of LNAPL, and shallow groundwater concentrations less than the MTCA Method A Cleanup Levels, the vapor intrusion pathway is incomplete and, therefore, no further assessment is needed.

7 Conclusions

Based on the information presented in this report, the extent of hydrocarbons in soil and groundwater has been vertically and horizontally delineated. Current site conditions indicate that that soil and groundwater concentrations are below the applicable MTCA Cleanup Levels and are protective of human health and the environment.

Model Remedy 5, as outlined in Ecology's *Model Remedies for Sites with Petroleum Impacts to Groundwater* (Ecology, 2016b), identifies that soil on the site must meet the MTCA Method B Cleanup Levels that are protective of the direct contact pathway, groundwater on the site must meet the MTCA Method A Cleanup Levels, and that the vapor intrusion pathway must be addressed.

The subject site has been horizontally and vertically delineated and all historical soil samples are less than the MTCA Method B Cleanup Levels (Plate 4; Tables 1 through 5). Based on evaluation of historical and current site conditions, remaining soil concentrations are protective of human health and the environment via direct contact in accordance with WAC 173-340-740(3)(b)(iii)(B).

Hydrocarbon concentrations in groundwater have been less than the MTCA Method A Cleanup Levels since 2011 (Tables 6 and 7). Each existing groundwater monitoring well was sampled a minimum of four consecutive quarters with hydrocarbon concentrations detected less than the MTCA Method A Cleanup Levels (Plate 3). Total lead values remain at concentrations exceeding the MTCA Method A Cleanup Level in groundwater; however, dissolved lead concentrations are less than the MTCA Method A Cleanup Level, and groundwater is protective of human health and the environment.

Current site conditions empirically demonstrate that that concentrations of residual hydrocarbons in soil are not leaching to groundwater as groundwater concentrations are less than the MTCA Method A Cleanup Levels, and that sufficient time has elapsed for the migration of residual concentrations of hydrocarbons from soil to the adjacent groundwater table in accordance with WAC 173-340-747(9).

No soil containing residual hydrocarbon concentrations exceeding the MTCA Method A Cleanup Levels remain in the vadose zone. Therefore, the vapor intrusion pathway is incomplete.

8 Recommendations

Cardno recommends submitting this report to Ecology with a request for a no further action determination based on all requirements outlined in Model Remedy 5 in Ecology's *Model Remedies for Sites with Petroleum Impacts to Groundwater* having been satisfied.

9 Contact Information

> The responsible party contact is Ms. Jennifer C. Sedlachek, ExxonMobil Environmental Services Company, 4096 Piedmont Avenue #194, Oakland, California 94611.

> The consultant contact is Mr. Michael J. Miller, Cardno, 801 Second Avenue, Suite 700, Seattle, Washington 98104.

> The agency contact is Ms. Carol Johnston, Washington State Department of Ecology, Southwest Regional Office, P.O. Box 4775, Olympia, Washington 98504-7775

10 Limitations

For documents cited that were not generated by Cardno, the data taken from those documents is used "as is" and is assumed to be accurate. Cardno 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.

This report and the work performed have been undertaken in good faith, with due diligence and with the expertise, experience, capability and specialized knowledge necessary to perform the work in a good and workmanlike manner and within all accepted standards pertaining to providers of environmental services 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.

11 References

Cardno ERI (Cardno). October 7, 2013. *Voluntary Cleanup Program Application and Confirmation Boring Work Plan, Former Exxon Station 72454, 4603 Lacey Boulevard, Lacey, Washington.*

Cardno. August 11, 2015. *Confirmation Boring and Closure Request Report, Former Exxon Station 72454, 4603 Lacey Boulevard, Lacey, Washington.*

United States Geological Survey (USGS). 1994. http://www.mytopo.com. *Geologic Map of the 7.5' Lacey, Washington Quadrangle Map.*

Washington Administrative Code (WAC). October 12, 2007. *Chapter 173-340 Model Toxics Control Act – Cleanup*. http://apps.leg.wa.gov/WAC/default.aspx?cite=173-340. Accessed June 5, 2015.

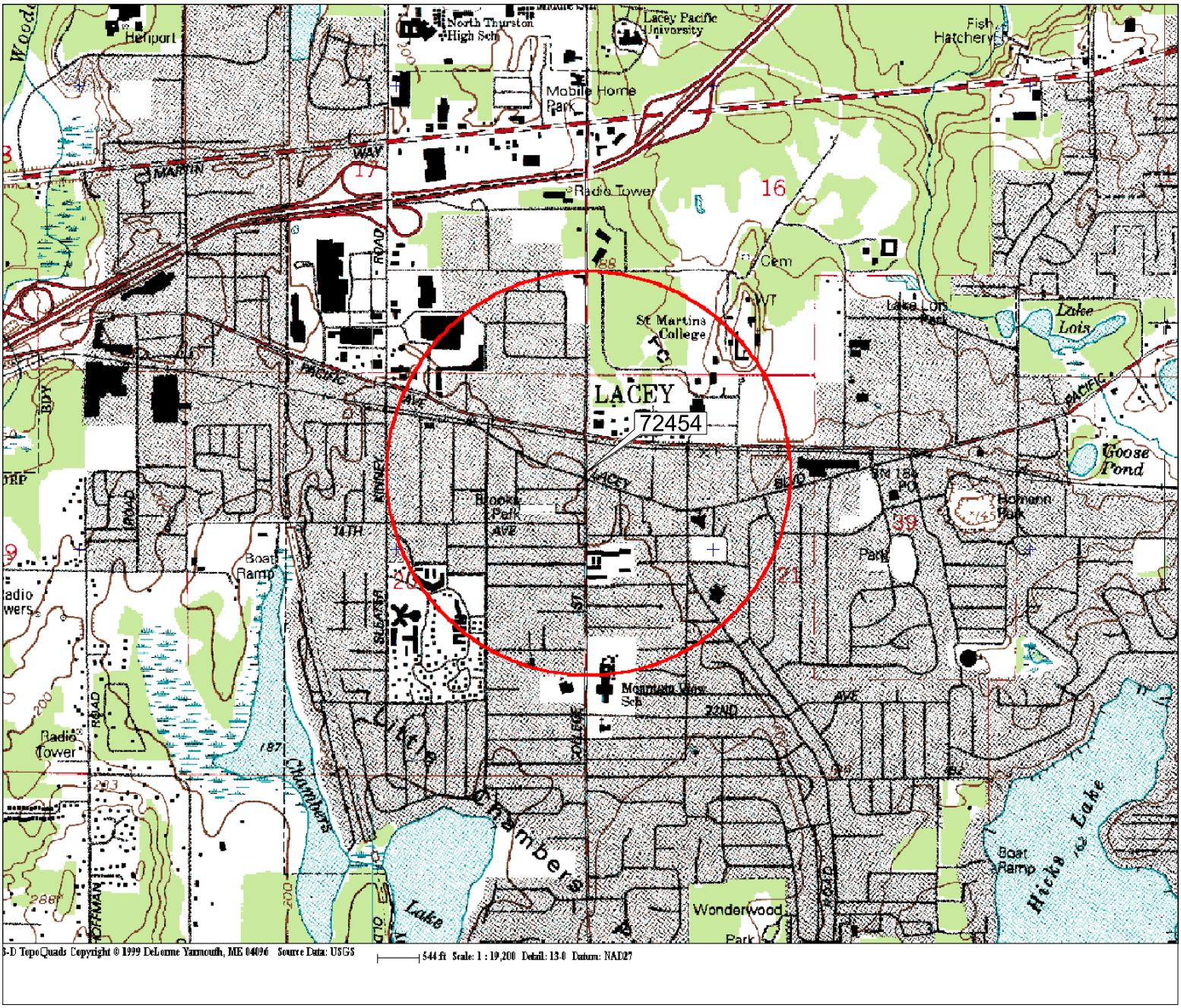
Washington State Department of Ecology (Ecology). October 1994. *Natural Background Soil Metals Concentrations in Washington State. Publication No. 94-115.*

Washington State Department of Ecology (Ecology). February 2016a. *Guidance for Evaluating Soil Vapor Intrusion in Washington State: Investigation and Remedial Action. Publication No. 09-09-047.*

Washington State Department of Ecology (Ecology). August 2016b. *Model Remedies for Sites with Petroleum Impacts to Groundwater. Toxics Cleanup Program. Publication No. 16-09-057.*

12 Acronym List

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



FN 0311040001

EXPLANATION

1/2-mile radius circle

N

APPROXIMATE SCALE

0 0.5 1 mile

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

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SITE LOCATION MAP

FORMER EXXON STATION 72454
4603 Lacey Boulevard Southeast
Lacey, Washington

PROJECT NO.
031104

PLATE
1
NAG: 11/02/11

MW2 and MW3 covered or paved over by the City of Lacey road improvements and are presumed destroyed

Sample locations for W0-1 through WO-5; SPI-1 through NPI-3; and SECF6 are unknown

N

SHELL SERVICE STATION

LACEY BOULEVARD SOUTHEAST

COLLEGE STREET SOUTHEAST

"CHEVRON" SIGN

LANDSCAPE

DRIVEWAY

FORMER USED OIL TANK

Dry Well Excavation

APPROXIMATE LOCATION OF FORMER DRY WELLS

GASOLINE TANK EXCAVATION

FORMER SWSW

USTs

PUMP ISLANDS

SECW6

SWCW

SWCF

SW6

BOLLARD

AIR

NESW

FORMER HEATING OIL TANK

PHONE BOOTH

STATION BUILDING

FENCED STORAGE AREA

FENCE POST

PROPERTY LINE

FENCE

TRASH

CHIROPRACTIC OFFICE

TIRE STORE

MW1 MW2 MW3 MW4 MW5 MW6 MW7 MW8 MW9 MW10 MW11 MW12 MW13

AS1 AS2 AS3 AS4 AS5 AS6

B21 B24 B25 B26 B27 B28 B29 B30 B31

P1 P2 P3 P4 P5

SP1 SP2 SP3 SP4 SP5

S-1 S-2 S-3 S-4 S-5 S-6 S-7 S-8 S-9 S-11 S-12 S-13 S-14 S-15 S-16 S-17 S-18 S-19 S-21 S-23 S-24 S-25 S-26 S-27 S-28 S-29 S-31 S-32

APPROXIMATE SCALE

0 25 50 Feet

SOURCE: Modified from maps provided by ExxonMobil Oil Corporation

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GENERALIZED SITE PLAN

FORMER EXXON STATION 72454
4603 Lacey Boulevard Southeast
Lacey, Washington

EXPLANATION

- MW13 — Groundwater Monitoring Well
- AS6 — Air Sparge Well
- MW3 — Destroyed Groundwater Monitoring Well
- B31 — Historical Soil Boring
- B30 — Temporary Monitoring Well / Grab Groundwater Sample Location

PROJECT NO. 031104

PLATE 2

RRT: 06/17/15

Laboratory Results in µg/L

MW10	Well ID
12/30/13	Sample Date
<100	Total Petroleum Hydrocarbons as Gasoline
141	Total Petroleum Hydrocarbons as Diesel
<97.1	Total Petroleum Hydrocarbons as Oil
<1.00	Benzene
<1.00	Toluene
3.38	Ethylbenzene
5.02	Total Xylenes
<5.00	Dissolved Lead

<1.00 = Less than the Stated Laboratory Reporting Limit

µg/L = Micrograms per Liter

Numbers or Well Symbols in Red Indicate Dissolved Concentrations Which Exceed MTCA Method A Cleanup Levels

Numbers or Well Symbols in Blue Indicate Dissolved Concentrations Less Than MTCA Method A Cleanup Levels

No Data Available for Numbers and Well Symbols in Black

c = Analyses could not be performed due to low sample volume recovery

Data boxes present groundwater analytical results from the four most recent sampling events for each existing well

MW10			
12/03/12	04/29/13	06/26/13	12/30/13
239	<100	<100	<100
215	<97.1	<95.2	141
<94.3	<97.1	<95.2	<97.1
<1.00	<1.00	<1.00	<1.00
<1.00	<1.00	<1.00	<1.00
8.16	<1.00	<1.00	3.38
17.2	<3.00	<3.00	5.02
<5.00	<5.00	<5.00	<5.00

MW6			
03/10/11	06/16/11	12/04/12	04/02/13
<100	<100	<100	<100
<100	<99.0	<96.2	<95.2
<100	<248	<96.2	<95.2
<1.00	<1.00	<1.00	<1.00
<1.00	<1.00	<1.00	<1.00
<1.00	<1.00	<1.00	<1.00
<3.00	<3.00	<3.00	<3.00
<5.00	<5.00	<5.00	<5.00

MW8			
12/03/12	04/02/13	06/26/13	12/30/13
899	<100	<100	<100
153	<95.2	<95.2	<94.3
<100	<95.2	<95.2	<94.3
<1.00	<1.00	<1.00	<1.00
7.28	<1.00	<1.00	<1.00
71.7	<1.00	<1.00	<1.00
168	<3.00	<3.00	<3.00
<5.00	<5.00	<5.00	<5.00

MW7			
12/20/10	03/10/11	06/16/11	12/04/12
<100	<100	<100	<100
<95.2	<99.0	<99.0	<100
<95.2	<99.0	<248	<100
<1.00	<1.00	<1.00	<1.00
<1.00	<1.00	<1.00	<1.00
<1.00	<1.00	<1.00	<1.00
<3.00	<3.00	<3.00	<3.00
<5.00	<5.00	<5.00	<5.00

W-15-B29
05/04/15
<100
<93.5
<93.5
<1.00
<1.00
<1.00
<2.00
<5.00

MW5			
03/10/11	06/16/11	12/03/12	03/26/13
<100	<100	<100	<100
<102	<97.1	<94.3	<94.3
<102	<243	132	<94.3
<1.00	<1.00	<1.00	<1.00
<1.00	<1.00	<1.00	<1.00
<1.00	<1.00	<1.00	<1.00
<3.00	<3.00	<3.00	<3.00
<5.00	5.20	<5.00	5.20

W-15-B30
05/04/15
<100
<95.7
<95.7
<1.00
<1.00
<1.00
<2.00
<5.00

MW4			
06/25/12	04/02/13	06/26/13	12/30/13
<100	<100	<100	<100
<96.2	--c	<95.2	<98.0
<96.2	--c	96.7	<98.0
<1.00	<1.00	<1.00	<1.00
<1.00	<1.00	<1.00	<1.00
<1.00	<1.00	<1.00	<1.00
<3.00	<3.00	<3.00	<3.00
<5.00	--c	<5.00	<5.00

MW11			
12/04/12	04/02/13	06/26/13	12/30/13
<100	<100	<100	<100
<100	<95.2	<96.2	<97.1
<100	<95.2	<96.2	<97.1
<1.00	<1.00	<1.00	<1.00
<1.00	<1.00	<1.00	<1.00
<1.00	11.0	<1.00	<1.00
<3.00	27.5	15.4	<3.00
<5.00	<5.00	<5.00	<5.00

MW1			
09/25/11	04/02/13	06/26/13	12/30/13
<100	<100	<100	<100
<97.1	--c	<96.2	<96.2
<243	--c	<96.2	<96.2
<1.00	<1.00	<1.00	<1.00
<1.00	<1.00	<1.00	<1.00
<1.00	<1.00	<1.00	<1.00
<3.00	<3.00	<3.00	<3.00
<5.00	--c	<5.00	<5.00

MW9			
09/25/11	06/25/12	12/03/12	04/02/13
<100	<100	<100	<100
<94.3	<95.2	<94.3	<95.2
<236	<95.2	<94.3	<95.2
<1.00	<1.00	<1.00	<1.00
<1.00	<1.00	<1.00	<1.00
<1.00	<1.00	<1.00	<1.00
<3.00	<3.00	<3.00	<3.00
<5.00	<5.00	<5.00	<5.00

MW13			
09/25/11	04/02/13	06/26/13	12/30/13
<100	<100	<100	<100
<95.2	<95.2	<95.2	<96.2
<238	<95.2	<95.2	<96.2
<1.00	<1.00	<1.00	<1.00
<1.00	<1.00	<1.00	<1.00
<1.00	<1.00	<1.00	<1.00
<3.00	<3.00	<3.00	<3.00
<5.00	<5.00	<5.00	<5.00

MW12			
12/04/12	04/02/13	06/26/13	12/30/13
<100	<100	<100	<100
<95.2	<95.2	<99.0	<94.3
<95.2	<95.2	<99.0	<94.3
<1.00	<1.00	<1.00	<1.00
<1.00	<1.00	<1.00	<1.00
<1.00	<1.00	<1.00	<1.00
<3.00	<3.00	<3.00	<3.00
<5.00	<5.00	<5.00	<5.00

SOURCE: Modified from maps provided by ExxonMobil Oil Corporation

APPROXIMATE SCALE

0 30 60 Feet

FN 0311040002

Cardno Shaping the Future

CURRENT GROUDNWATER CONDITIONS MAP

FORMER EXXON STATION 72454

4603 Lacey Boulevard Southeast

Lacey, Washington

EXPLANATION

MW13 Groundwater Monitoring Well

B30 Temporary Monitoring Well Grab Groundwater Sample Location

AS6 Air Sparge Well

MW3 Destroyed Groundwater Monitoring Well

PROJECT NO. 031104

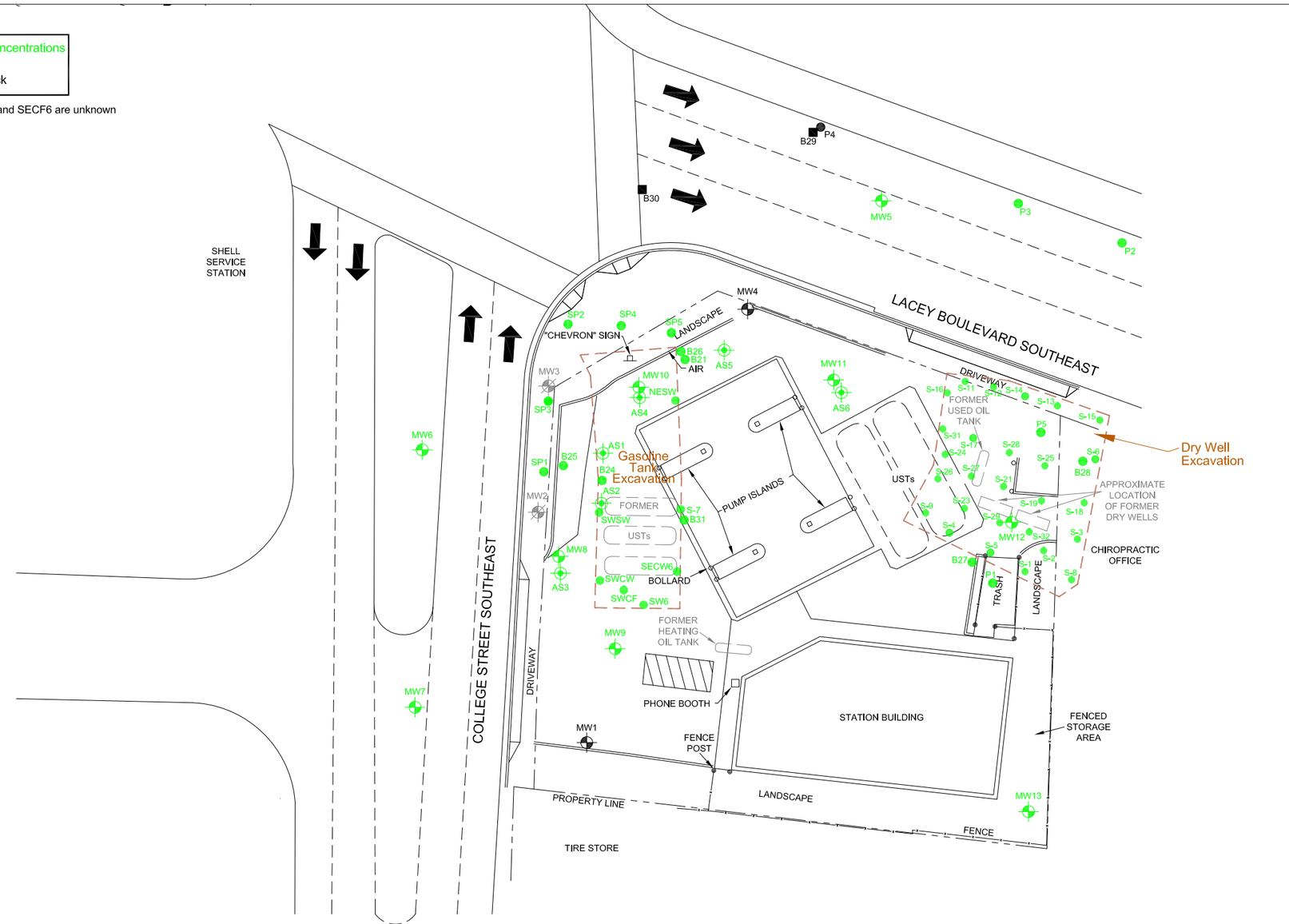
PLATE 3

RRT: 06/17/15

Numbers or Symbols in Green Indicate Residual Concentrations Less Than the MTCA Method B Cleanup Levels

No Data Available for Numbers and Symbols in Black

Sample locations for W0-1 through WO-5; SPI-1 through NPI-3; and SECF6 are unknown



APPROXIMATE SCALE

0 30 60 Feet

SOURCE: Modified from maps provided by ExxonMobil Oil Corporation

FN 0311040002

Cardno® Shaping the Future

CURRENT SOIL CONDITIONS MAP

FORMER EXXON STATION 72454
4603 Lacey Boulevard Southeast
Lacey, Washington

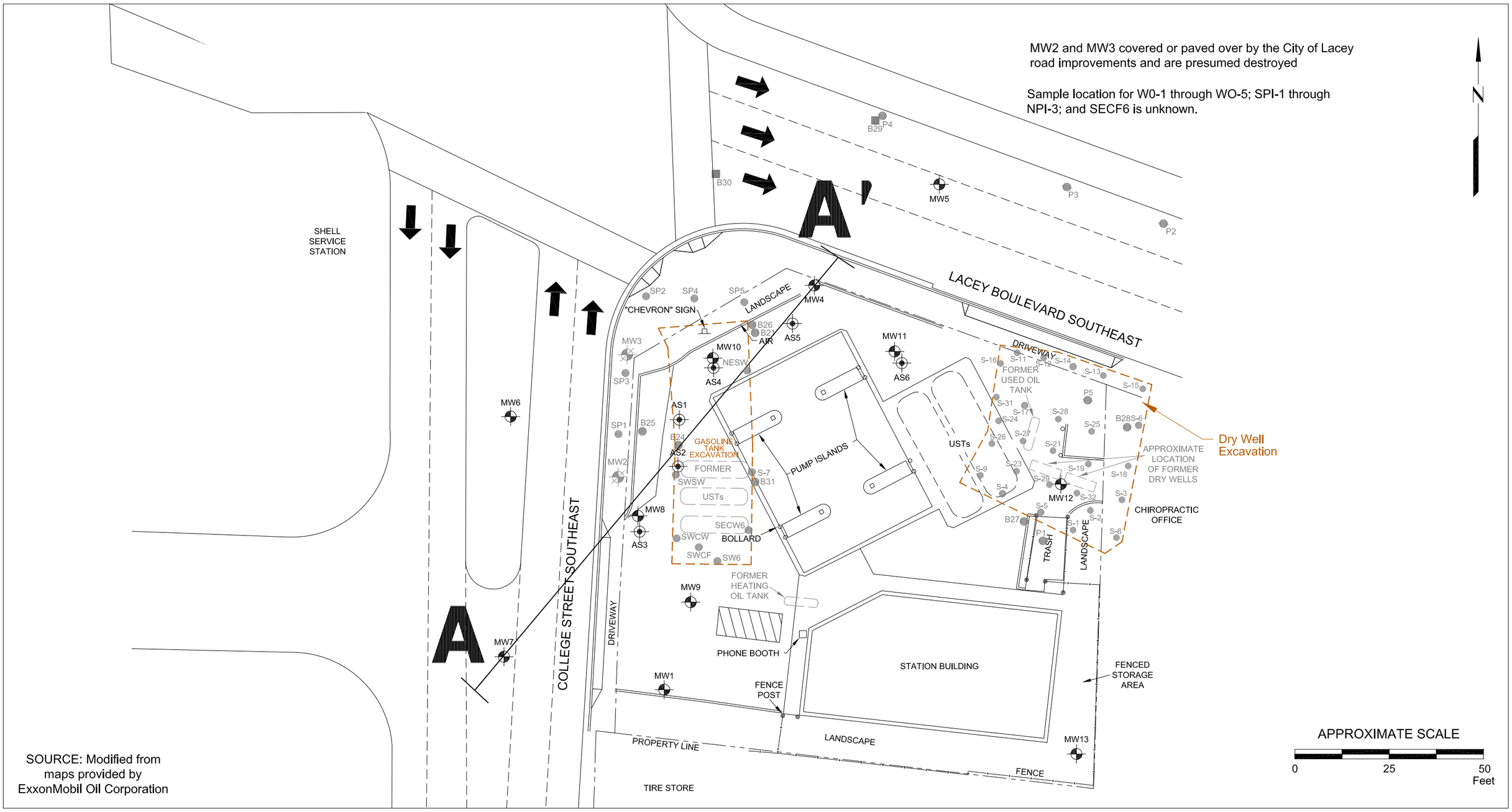
EXPLANATION

- MW13 — Groundwater Monitoring Well
- AS6 — Air Sparge Well
- MW3 — Destroyed Groundwater Monitoring Well
- B31 — Historical Soil Boring
- B30 — Temporary Monitoring Well / Grab Groundwater Sample Location

PROJECT NO. 031104

PLATE 4

RRT: 06/17/15



SOURCE: Modified from maps provided by ExxonMobil Oil Corporation

FN 0311040002

Cardno
Shaping the Future

CROSS SECTION TRAVERSE MAP

FORMER EXXON STATION 72454
4603 Lacey Boulevard Southeast
Lacey, Washington

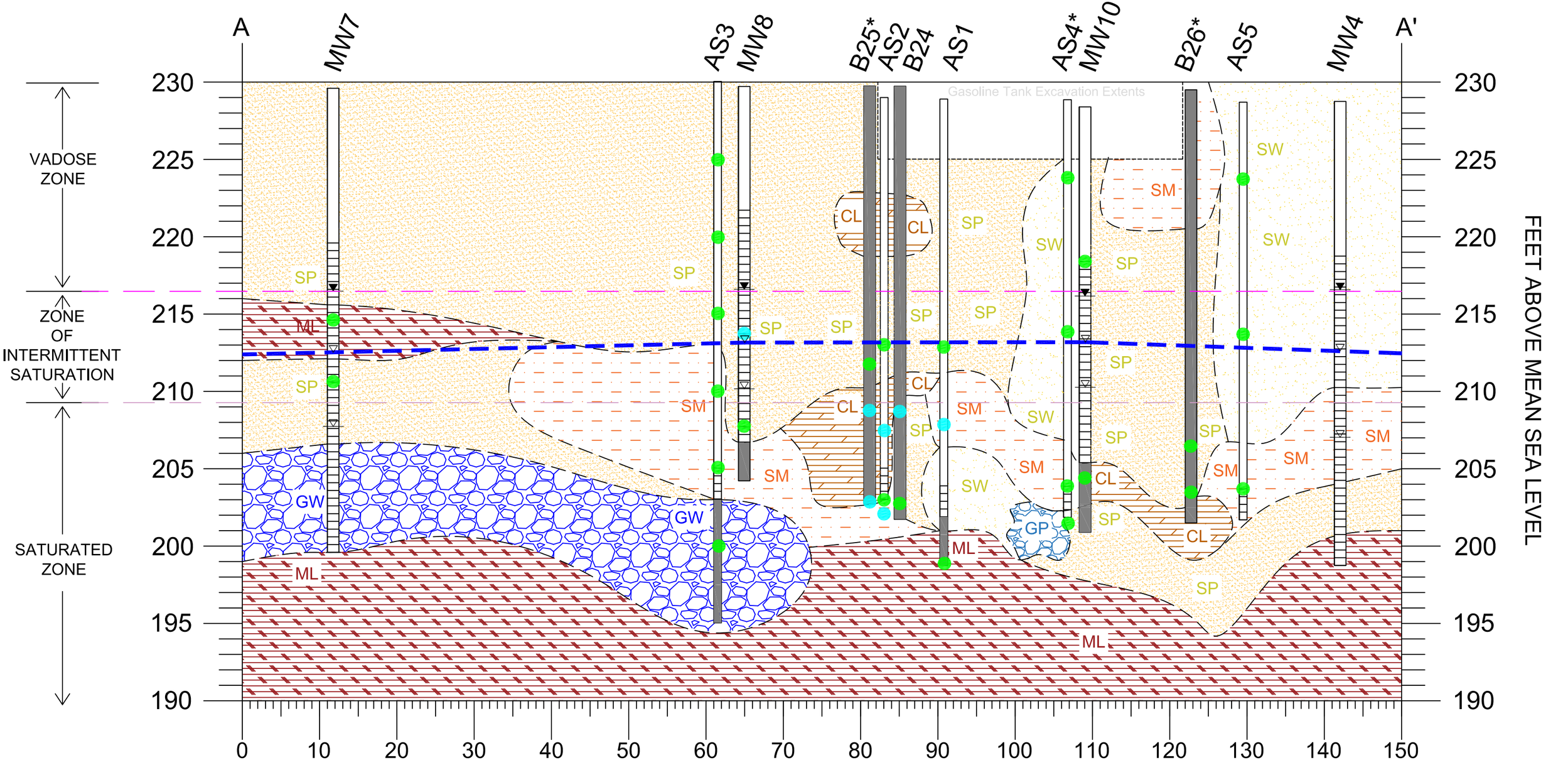
EXPLANATION

- MW13 — Groundwater Monitoring Well
- AS6 — Air Sparge Well
- MW3 — Destroyed Groundwater Monitoring Well
- B31 — Historical Soil Boring
- B30 — Temporary Monitoring Well / Grab Groundwater Sample Location

PROJECT NO. 031104

PLATE 5

RRT: 06/17/15



FN 0311040003

* = Boring or well projected onto cross section

Hydrocarbon Concentrations in Soil Less Than the MTCA Method A Cleanup Levels

Hydrocarbon Concentrations in Soil Less Than the MTCA Method B Cleanup Levels

Vertical exaggeration = 2x

Cardno® Shaping the Future

CROSS SECTION A-A'

FORMER EXXON STATION 72454
4603 Lacey Boulevard Southeast
Lacey, Washington

EXPLANATION

- Well Graded Gravel (GW)
- Poorly Graded Gravel (GP)
- Well Graded Sand (SW)
- Poorly Graded Sand (SP)
- Silty Sand (SM)
- Clayey Silt - Low Plasticity (ML)
- Silty Clay - Low Plasticity (CL)
- Minimum Groundwater Elevation Observed
- Maximum Groundwater Elevation Observed
- Average Groundwater Elevation Observed
- Soil Sample Location
- Well Screen Interval
- Minimum Inferred Water Table
- Maximum Inferred Water Table
- Average Inferred Water Table
- Inferred Lithologic Contacts
- Backfill Interval

PROJECT 031104

PLATE 6

AJRY: 06/23/17

TABLE 1
CUMULATIVE SOIL ANALYTICAL RESULTS
Former Exxon Station 72454
4603 Lacey Boulevard
Lacey, Washington

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

Continued on page 2

TABLE 1
CUMULATIVE SOIL ANALYTICAL RESULTS
Former Exxon Station 72454
4603 Lacey Boulevard
Lacey, Washington

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

Continued on page 3

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CUMULATIVE SOIL ANALYTICAL RESULTS
Former Exxon Station 72454
4603 Lacey Boulevard
Lacey, Washington

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

Continued on Page 4

TABLE 1
CUMULATIVE SOIL ANALYTICAL RESULTS
Former Exxon Station 72454
4603 Lacey Boulevard
Lacey, Washington

Sample Name	Sample Date	Depth (ft bgs)	Location	TPHg (mg/kg)	TPHd (mg/kg)	TPHmo (mg/kg)	B (mg/kg)	T (mg/kg)	E (mg/kg)	X (mg/kg)	Total Pb (mg/kg)

EXPLANATION:
mg/kg= Miligrams per kilogram
ft bgs= Feet below ground surface
TPHg = Total Petroleum Hydrocarbons as gasoline in accordance with Ecology Method WTPH-G or Ecology Method NWTPH-Gx
TPHd = Total Petroleum Hydrocarbons as diesel; TPHmo = Total Petroleum Hydrocarbons as oil
TPHd and TPHmo analyses in accordance with Ecology Method WTPH-D (extended) or Ecology Method NWTPH-Dx, refer to laboratory reports
B = Benzene; T = Toluene; E = Ethylbenzene; X = Total xylenes
BTEX = Aromatic compounds in accordance with EPA Method 8021B or 8260B, refer to laboratory reports
Shaded values equal or exceed the applicable MTCA cleanup levels
ND = Not detected
-- = Not analyzed
NA = Not applicable
< = Less than the stated laboratory reporting limit
a = TPHg soil cleanup level is 30 mg/kg unless benzene is not detected in the sample, or if toluene, ethylbenzene, and total xylenes constitute less than 1% of the TPHg in the samples. If these conditions are met, the cleanup level for TPHg may be elevated to 100 mg/kg.
b = Total TPH cleanup level calculated using Ecology's worksheet A2.1B Worksheet for Calculating Soil Cleanup Levels for Protection of Human Health
c = Results may be elevated due to carryover from previously analyzed sample

TABLE 2
CUMULATIVE SOIL ANALYTICAL RESULTS
VOLATILE PETROLEUM HYDROCARBONS
Former Exxon Station 72454
4603 Lacey Boulevard
Lacey, Washington

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

EXPLANATION:

mg/kg = milligram per kilogram

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

< = Less than the stated laboratory reporting limit

a = Sample was prepped or analyzed beyond the specified time

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

TABLE 3
CUMULATIVE SOIL ANALYTICAL RESULTS
EXTRACTABLE PETROLEUM HYDROCARBONS
Former Exxon Station 72454
4603 Lacey Boulevard
Lacey, Washington

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

EXPLANATION:
mg/kg = milligram per kilogram
Analyses performed in accordance with Washington Department of Ecology Method NWTPH-EPH
< = Less than the stated laboratory reporting limit
a = Instrument related quality control outside acceptable control limits
J = Denotes a result that is an estimated value, between the laboratory method detection limit and the method reporting limit

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

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

EXPLANATION:
mg/kg = milligram per kilogram
MTBE = Methyl tert-butyl ether
EDB = 1,2-Dibromoethane; EDC = 1,2-Dichloroethane
2-Methyl = 2-Methylnaphthalene
Naphthalene, n-Hexane, MTBE, EDB and EDC in accordance with WDOE Interim TPH Policy Method in accordance with 8260B, see laboratory report
PAHs in accordance with EPA Method 8270C
< = Less than the stated laboratory reporting limit

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

Sample Name		S-20-B19		S-25-B22		S-21-B24		S-27-B25		MTCA Method B Cleanup Level	S-23-B26		MTCA Method B Cleanup Level
Sample Date		11/11/10		11/11/10		05/05/15		05/05/15			05/05/15		
Sample Depth (ft bgs)		20		25		21		27			23		
	TEF		TEF*value		TEF*value		TEF*value		TEF*value			TEF*value	
B(a)A	0.1	< 0.00209	0.00010	< 0.00414	0.00021	< 0.00330	0.00017	< 0.00332	0.00017	1.37	< 0.00311	0.00016	1.37
B(a)P	1	< 0.00417	0.00209	< 0.00414	0.00207	< 0.00330	0.00165	< 0.00332	0.00166	0.137	< 0.00311	0.00156	0.137
B(b)F	0.1	< 0.00417	0.00021	< 0.00414	0.00021	< 0.00330	0.00017	< 0.00332	0.00017	1.37	< 0.00311	0.00016	1.37
B(k)F	0.1	< 0.00417	0.00021	< 0.00414	0.00021	< 0.00330	0.00017	< 0.00332	0.00017	13.7	< 0.00311	0.00016	13.7
Chrysene	0.01	< 0.00167	0.00001	< 0.00414	0.00002	< 0.00330	0.00002	< 0.00332	0.00002	137	< 0.00311	0.00002	137
DBA	0.1	< 0.00417	0.00021	< 0.00414	0.00021	< 0.00330	0.00017	< 0.00332	0.00017	0.137	< 0.00311	0.00016	0.137
IP	0.1	< 0.00417	0.00021	< 0.00414	0.00021	< 0.00330	0.00017	< 0.00332	0.00017	1.37	< 0.00311	0.00016	1.37

Sum TEF Values	0.003	0.003	0.002	0.003	0.002
MTCA Method A Cleanup Level	0.1	0.1	0.1	0.1	0.1

EXPLANATION:

All units are milligram per kilogram

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

TABLE 6
GRAB GROUNDWATER ANALYTICAL RESULTS - 05/04/15
Former Exxon Station 72454
4603 Lacey Boulevard
Lacey, Washington

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

EXPLANATION:
µg/L = Micrograms per Liter
TPHg = Total Petroleum Hydrocarbons as Gasoline in accordance with Ecology Method NWTPH-Gx
TPHd and TPHmo = Total Petroleum Hydrocarbons as Diesel and Oil, respectively, in accordance with Ecology Method NWTPH-Dx
B = Benzene; T = Toluene; E = Ethylbenzene; X = Total Xylenes
BTEX = volatile organic compounds in accordance with EPA Method 8260B
Total and Diss Pb = Total and Dissolved Lead in accordance with EPA Method 6010C
< = Less than the stated laboratory reporting limit
a = TPHg cleanup level for groundwater is 800 µg/L if benzene is present, or 1,000 µg/L if benzene is not present

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

Well ID	Sampling Date	Wellhead Elev (feet)	DTW (feet)	GW Elev (feet)	TPHg (µg/L)	TPHd (µg/L)	TPHmo (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	Total Pb (µg/L)	Diss Pb (µg/L)	Ethanol (µg/L)
Screened Interval 10-30 ft bgs \ Total Depth 30 ft bgs														
MW1	10/30/98	99.63	22.50	77.13	<100	--	--	<1.00	<1.00	<1.00	<1.00	--	--	--
MW1	12/17/99	99.63	16.50	83.13	<100	--	--	<1.00	<1.00	<1.00	<1.00	--	--	--
MW1	04/07/00	99.63	13.85	85.78	<100	--	--	<1.00	<1.00	<1.00	<1.00	--	--	--
MW1	12/28/00	99.63	20.10	79.53	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00	--	--	--
MW1	03/26/01	99.63	21.17	78.46	<50.0	--	--	<0.500	<0.500	<0.500	<1.00	--	--	--
MW1	06/12/01	99.63	21.60	78.03	105	--	--	**5.74**	8.48	5.01	11.3	--	--	--
MW1	09/24/01	99.63	23.32	76.31	77.6	--	--	1.38	4.41	2.01	12.7	--	--	--
MW1	03/20/02	99.63	14.37	85.26	<100	--	--	<1.00	4.1	1.5	9.3	<3.00	--	--
MW1	12/18/02	99.63	20.36	79.27	<100	--	--	<1.0	<1.0	<1.0	<1.0	**48**	--	--
MW1	10/28/04	99.63	21.19	78.44	<100	<100	<100	<1.00	<1.0	<1.0	<1.0	<5.00	<5.0	<100
MW1	12/13/05	99.63	21.71	77.92	231	<111	<111	**20.1**	<1.00	24.9	22.5	<5.00	<5.00	<100
MW1	12/19/06	99.63	16.10	83.53	<100	<133	<133	1.17	<1.00	15	25.1	--	--	--
MW1	03/27/07	99.63	12.94	86.69	<100	<133	<133	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	--
MW1	06/18/07	99.63	14.57	85.06	<100	<125	<125	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	--
MW1	09/26/07	99.63	17.66	81.97	<250	--	--	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	--
MW1	11/27/07	99.63	18.28	81.35	<250	<105	<105	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	--
MW1	02/27/08	99.63	14.42	85.21	<100	<100	<100	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	--
MW1	06/04/08	99.63	15.46	84.17	<100	<95.2	<95.2	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	--
MW1	09/15/08	99.63	18.62	81.01	<100	<99.0	<99.0	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	--
MW1	11/12/08	99.63	17.94	81.69	<100	<108	<108	<1.00	<1.00	<1.00	<3.00	**22.2**	<5.00	--
MW1	03/31/09	99.63	17.76	81.87	<100	<105	<105	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	--
MW1	06/30/09	99.63	16.39	83.24	539	<94.3	<94.3	<1.00	<1.00	<1.00	<3.00	**116**	<5.00	--
MW1	09/30/09	99.63	19.68	79.95	--	--	--	--	--	--	--	--	--	--
MW1	12/18/09	99.63	18.54	81.09	<100	<94.3	96.0	<1.00	<1.00	<1.00	<3.00	**108**	<5.00	--
MW1	03/31/10	99.63	17.56	82.07	<100	<98.0	<98.0	<1.00	<1.00	<1.00	<3.00	**68.7**	<5.00	--
MW1	06/02/10	99.63	17.02	82.61	<100	<95.2	<95.2	<1.00	<1.00	<1.00	<3.00	**76.5**	<5.00	--
MW1	09/07/10	99.63	17.67	81.96	--	--	--	--	--	--	--	--	--	--
MW1	12/20/10	99.63	16.09	83.54	--	--	--	--	--	--	--	--	--	--
MW1	03/10/11	99.63	13.31	86.32	--	--	--	--	--	--	--	--	--	--
MW1	06/16/11 d	202.50	13.12	189.38	<100	<100	<250	<1.00	<1.00	<1.00	<3.00	**32.4**	<5.00	--
MW1	06/17/11	202.50	NM	--	--	--	--	--	--	--	--	--	--	--
MW1	09/25/11	202.50	16.30	186.20	<100	<97.1	<243	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	--
MW1	12/30/11	202.50	16.95	185.55	--	--	--	--	--	--	--	--	--	--
MW1	06/25/12	202.50	NM	--	--	--	--	--	--	--	--	--	--	--
MW1	12/03/12	202.50	17.02	185.48	--	--	--	--	--	--	--	--	--	--
MW1	12/04/12	202.50	15.75	186.75	--	--	--	--	--	--	--	--	--	--
MW1	03/26/13	202.50	NM	--	--	--	--	--	--	--	--	--	--	--
MTCA Method A Cleanup Levels					800/1,000[a]	500	500	5	1,000	700	1,000	15	15	N/A

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

Well ID	Sampling Date	Wellhead Elev (feet)	DTW (feet)	GW Elev (feet)	TPHg (µg/L)	TPHd (µg/L)	TPHmo (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	Total Pb (µg/L)	Diss Pb (µg/L)	Ethanol (µg/L)
MW1	04/02/13	202.50	14.73	187.77	<100	--c	--c	<1.00	<1.00	<1.00	<3.00	--c	--c	--
MW1	04/29/13	202.50	NM	--	--	--	--	--	--	--	--	--	--	--
MW1	06/26/13	202.50	15.32	187.18	<100	<96.2	<96.2	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	--
MW1	12/30/13	202.50	18.30	184.20	<100	<96.2	<96.2	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	--
Screened Interval 10-30 ft bgs \ Total Depth 30 ft bgs														
MW2	10/30/98	99.45	22.10	77.35	85,000	--	--	610	12,000	1,100	10,000	--	--	--
MW2	12/17/99	99.45	16.30	83.15	2,800	--	--	22	430	79	570	--	--	--
MW2	04/07/00	99.45	13.45	86.00	2,400	--	--	13	250	40	300	--	--	--
MW2	12/28/00	99.45	19.80	79.65	55,200	514	<750	1,020	9,620	1,230	6,210	--	--	--
MW2	03/26/01	99.45	20.95	78.50	26,000	--	--	634	4,660	601	3,020	--	--	--
MW2	06/12/01	99.45	21.32	78.13	9,380	--	--	385	1,650	264	1,140	--	--	--
MW2	09/24/01	99.45	23.06	76.39	6,650	--	--	356	1,660	211	999	--	--	--
MW2	03/20/02	99.45	14.16	85.29	3,430	--	--	32.5	54.6	548	298	5.00	--	--
MW2	12/18/02 b	99.45	20.03	79.42	51,600	--	--	380	17,000	1,980	11,100	<3.00	--	--
			Destroyed											
Screened Interval 10-30 ft bgs \ Total Depth 30 ft bgs														
MW3	10/30/98	99.16	21.75	77.41	<100	--	--	<1.00	<1.00	<1.00	<1.00	--	--	--
MW3	12/17/99	99.16	16.20	82.96	<100	--	--	<1.00	<1.00	<1.00	<1.00	--	--	--
MW3	04/07/00	99.16	13.25	85.91	<100	--	--	<1.00	<1.00	<1.00	<1.00	--	--	--
MW3	12/28/00	99.16	19.40	79.76	1,080	467	<750	9.19	196	35.9	137	--	--	--
MW3	03/26/01	99.16	20.46	78.70	621	--	--	6.92	110	16.4	71.6	--	--	--
MW3	06/12/01	99.16	20.90	78.26	Casing obstructed		--	--	--	--	--	--	--	--
MW3	09/24/01	99.16	22.48	76.68	532	--	--	68.8	238	13.4	61.1	--	--	--
MW3	03/20/02	99.16	13.90	85.26	<100	--	--	<1.00	3.20	3.70	9.20	<3.00	--	--
MW3	12/18/02 b	99.16	19.66	79.50	<100	--	--	<1.00	<1.00	<1.00	<1.00	--	--	--
			Destroyed											
Screened Interval 10-30 ft bgs \ Total Depth 30 ft bgs														
MW4	10/30/98	98.77	21.35	77.42	34,000	--	--	460	5,300	1,000	3,100	--	--	--
MW4	12/17/99	98.77	15.75	83.02	8,100	--	--	67	660	710	2,000	--	--	--
MW4	04/07/00	98.77	12.90	85.87	3,300	--	--	12	68	230	810	--	--	--
MW4	12/28/00	98.77	19.05	79.72	20,300	548	<750	29.4	590	1,160	3,860	--	--	--
MW4	03/26/01	98.77	20.18	78.59	17,200	--	--	<25.0	117	1,280	3,100	--	--	--
MW4	06/12/01	98.77	20.88	77.89	6,500	--	--	40.1	325	281	778	--	--	--
MW4	09/24/01	98.77	NM	--	4,450	--	--	41.5	114	602	5,190	--	--	--
MW4	03/20/02	98.77	13.61	85.16	4,330	--	--	25.3	9.50	640	256	9.00	--	--
MW4	12/18/02	98.77	19.39	79.38	4,330	--	--	56.5	28.3	631	324	--	--	--
MW4	10/28/04	98.77	20.09	78.68	6,120	<100	<100	86	40.3	872	741	20	<5.0	<100
MTCA Method A Cleanup Levels					800/1,000a	500	500	5	1,000	700	1,000	15	15	N/A

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

Well ID	Sampling Date	Wellhead Elev (feet)	DTW (feet)	GW Elev (feet)	TPHg (µg/L)	TPHd (µg/L)	TPHmo (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	Total Pb (µg/L)	Diss Pb (µg/L)	Ethanol (µg/L)
MW4	12/13/05	98.77	21.69	77.08	**8,100**	**2,620**	<114	**142**	21.9	**985**	840	**41.7**	<5.00	<100
MW4	12/19/06	98.77	15.45	83.32	**5,950**	**1,790**	<125	**174**	26.2	**736**	**1,160**	--	--	--
MW4	03/27/07	98.77	12.17	86.60	**853**	362	<133	**39.8**	3.53	109	199	<5.00	<5.00	--
MW4	06/18/07	98.77	13.64	85.13	**1,380**	496	<93.9	**29.4**	8.27	178	362	<5.00	<5.00	--
MW4	09/26/07	98.77	16.58	82.19	**1,630**	--	--	**51.3**	5.55	156	267	<5.00	<5.00	--
MW4	11/27/07	98.77	17.72	81.05	**1,540**	**599**	<105	**75.5**	6.34	194	303	<5.00	<5.00	--
MW4	02/27/08	98.77	13.55	85.22	**1,240**	**655**	<100	**46.0**	8.10	177	313	<5.00	<5.00	--
MW4	06/04/08	98.77	14.56	84.21	346	131	<94.3	**7.71**	1.47	47.5	90.8	<5.00	<5.00	--
MW4	09/15/08	98.77	17.52	81.25	**1,800**	**570**	<102	**29.7**	4.50	167	310	<5.00	<5.00	--
MW4	11/12/08	98.77	17.56	81.21	**7,000**	**1,160**	<95.2	**15.6**	46.0	431	**1,680**	**84.6**	<5.00	--
MW4	03/31/09	98.77	17.37	81.40	**1,570**	**1,080**	<111	**45.8**	4.64	166	39.4	<5.00	<5.00	--
MW4	06/30/09	98.77	16.18	82.59	**2,880**	**913**	<94.3	**37.2**	7.23	200	274	<5.00	<5.00	--
MW4	09/30/09	98.77	18.61	80.16	**3,950**	**1,260**	<105	**25.4**	10.5	338	707	<5.00	<5.00	--
MW4	12/18/09	98.77	18.01	80.76	**19,400**	**2,340**	131	**89.6**	67.6	668	**2,970**	**56.4**	<5.00	--
MW4	03/31/10	98.77	17.07	81.70	544	**799**	<97.1	**46.5**	1.04	6.74	19.6	10.6	<5.00	--
MW4	06/02/10	98.77	16.55	82.22	**2,540**	**690**	<105	**14.8**	3.83	164	337	5.40	<5.00	--
MW4	09/07/10	98.77	16.81	81.96	**1,130**	279	<105	**10.3**	2.09	112	105	--c	--c	--
MW4	12/20/10	98.77	15.63	83.14	**1,680**	**1,220**	<105	**6.07**	5.75	98.4	204	**291**	<5.00	<100
MW4	03/10/11	98.77	13.24	85.53	**<100**	<96.2	<96.2	<1.00	<1.00	<1.00	<3.00	5.00	<5.00	<100
MW4	06/16/11 d	201.75	12.73	189.02	--	--	--	--	--	--	--	--	--	--
MW4	06/17/11	201.75	12.73	189.02	**<100**	<99.0	<248	<1.00	<1.00	<1.00	<3.00	10.1	<5.00	--
MW4	09/25/11	201.75	15.47	186.28	**<100**	<102	<255	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	--
MW4	12/30/11	201.75	16.32	185.43	--	--	--	--	--	--	--	--	--	--
MW4	06/25/12	201.75	14.36	187.39	**<100**	<96.2	<96.2	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	--
MW4	12/03/12	201.75	18.23	183.52	--	--	--	--	--	--	--	--	--	--
MW4	12/04/12	201.75	NM	--	--	--	--	--	--	--	--	--	--	--
MW4	03/26/13	201.75	NM	--	--	--	--	--	--	--	--	--	--	--
MW4	04/02/13	201.75	13.93	187.82	**<100**	--c	--c	<1.00	<1.00	<1.00	<3.00	--c	--c	--
MW4	04/29/13	201.75	NM	--	--	--	--	--	--	--	--	--	--	--
MW4	06/26/13	201.75	14.61	187.14	**<100**	<95.2	96.7	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	--
MW4	12/30/13	201.75	17.39	184.36	**<100**	<98.0	<98.0	<1.00	<1.00	<1.00	<3.00	**16.4**	<5.00	--
Screened Interval 10-30 ft bgs \ Total Depth 30 ft bgs														
MW5	12/18/02	98.56	19.17	79.39	**<100**	<100	<100	<1.0	1.5	<1.0	1.6	**78.0**	--	--
MW5	10/28/04	98.56	NM	--	--	--	--	--	--	--	--	--	--	--
MW5	12/13/05	98.56	20.48	78.08	**<100**	122	<103	1.62	<1.00	<1.00	<3.00	**82.9**	<5.00	<100
MW5	12/19/06	98.56	Inaccessible		--	--	--	--	--	--	--	--	--	--
MW5	03/27/07	98.56	Inaccessible		--	--	--	--	--	--	--	--	--	--
MTCA Method A Cleanup Levels					800/1,000[a]	500	500	5	1,000	700	1,000	15	15	N/A

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

Well ID	Sampling Date	Wellhead Elev (feet)	DTW (feet)	GW Elev (feet)	TPHg (µg/L)	TPHd (µg/L)	TPHmo (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	Total Pb (µg/L)	Diss Pb (µg/L)	Ethanol (µg/L)
MW5	06/18/07	98.56	Inaccessible		--	--	--	--	--	--	--	--	--	--
MW5	09/26/07	98.56	Inaccessible		--	--	--	--	--	--	--	--	--	--
MW5	11/27/07	98.56	Inaccessible		--	--	--	--	--	--	--	--	--	--
MW5	02/27/08	98.56	Inaccessible		--	--	--	--	--	--	--	--	--	--
MW5	06/04/08	98.56	14.34	84.22	<100	<95.2	<95.2	<1.00	<1.00	<1.00	<3.00	7.60	<5.00	--
MW5	09/15/08	98.56	17.31	81.25	<100	<103	<103	<1.00	<1.00	<1.00	<3.00	11.0	<5.00	--
MW5	11/12/08	98.56	18.42	80.14	<100	<97.1	<97.1	<1.00	<1.00	<1.00	<3.00	**49.9**	<5.00	--
MW5	03/31/09	98.56	NM	--	--	--	--	--	--	--	--	--	--	--
MW5	06/30/09	98.56	NM	--	--	--	--	--	--	--	--	--	--	--
MW5	09/30/09	98.56	18.30	80.26	<100	<99.0	<99.0	<1.00	<1.00	<1.00	<3.00	10.6	<5.00	--
MW5	12/18/09	98.56	17.72	80.84	<100	<96.2	<96.2	<1.00	<1.00	<1.00	<3.00	11.2	<5.00	--
MW5	03/31/10	98.56	14.93	83.63	<100	<95.2	<95.2	<1.00	<1.00	<1.00	<3.00	13.6	<5.00	--
MW5	06/02/10	98.56	14.34	84.22	<100	<96.2	<96.2	<1.00	<1.00	<1.00	<3.00	**46.5**	<5.00	--
MW5	09/07/10	98.56	NM	--	--	--	--	--	--	--	--	--	--	--
MW5	12/20/10	98.56	15.22	83.34	<100	<95.2	<95.2	<1.00	<1.00	<1.00	<3.00	**44.6**	<5.00	--
MW5	03/10/11	98.56	12.50	86.06	<100	<102	<102	<1.00	<1.00	<1.00	<3.00	**40.1**	<5.00	--
MW5	06/16/11 d	201.38	12.28	189.10	<100	<97.1	<243	<1.00	<1.00	<1.00	<3.00	**46.8**	<5.00	--
MW5	06/17/11	201.38	NM	--	--	--	--	--	--	--	--	--	--	--
MW5	09/25/11	201.38	NM	--	--	--	--	--	--	--	--	--	--	--
MW5	12/30/11	201.38	NM	--	--	--	--	--	--	--	--	--	--	--
MW5	06/25/12	201.38	NM	--	--	--	--	--	--	--	--	--	--	--
MW5	12/03/12	201.38	17.76	183.62	<100	<94.3	132	<1.00	<1.00	<1.00	<3.00	9.70	<5.00	--
MW5	03/26/13	210.38	13.48	196.90	<100	<94.3	<94.3	<1.00	<1.00	<1.00	<3.00	7.70	5.20	--
MW5	04/02/13	210.38	NM	--	--	--	--	--	--	--	--	--	--	--
MW5	04/29/13	210.38	NM	--	--	--	--	--	--	--	--	--	--	--
MW5	06/26/13	210.38	NM	--	--	--	--	--	--	--	--	--	--	--
MW5	12/30/13	210.38	NM	--	--	--	--	--	--	--	--	--	--	--
Screened Interval 10-30 ft bgs \ Total Depth 30 ft bgs														
MW6	12/18/02	99.94	20.55	79.39	<100	<100	<100	<1.0	1	<1.0	1.5	**75.0**	--	--
MW6	10/28/04	99.94	NM	--	--	--	--	--	--	--	--	--	--	--
MW6	12/13/05	99.94	NM	--	--	--	--	--	--	--	--	--	--	--
MW6	12/19/06	99.94	Inaccessible		--	--	--	--	--	--	--	--	--	--
MW6	03/27/07	99.94	Inaccessible		--	--	--	--	--	--	--	--	--	--
MW6	06/18/07	99.94	Inaccessible		--	--	--	--	--	--	--	--	--	--
MW6	09/26/07	99.94	Inaccessible		--	--	--	--	--	--	--	--	--	--
MW6	11/27/07	99.94	Inaccessible		--	--	--	--	--	--	--	--	--	--
MW6	02/27/08	99.94	Inaccessible		--	--	--	--	--	--	--	--	--	--
MTCA Method A Cleanup Levels					800/1,000[a]	500	500	5	1,000	700	1,000	15	15	N/A

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

Well ID	Sampling Date	Wellhead Elev (feet)	DTW (feet)	GW Elev (feet)	TPHg (µg/L)	TPHd (µg/L)	TPHmo (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	Total Pb (µg/L)	Diss Pb (µg/L)	Ethanol (µg/L)
MW6	06/04/08	99.94	16.82	83.12	<100	<96.2	<96.2	<1.00	<1.00	<1.00	<3.00	14.6	<5.00	<100
MW6	09/15/08	99.94	19.95	79.99	<100	<104	<104	<1.00	<1.00	<1.00	<3.00	**15.8**	<5.00	--
MW6	11/12/08	99.94	21.01	78.93	<100	<111	<111	<1.00	<1.00	<1.00	<3.00	**80.5**	<5.00	--
MW6	03/31/09	99.94	20.89	79.05	<100	<105	<105	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	--
MW6	06/30/09	99.94	18.89	81.05	<100	<95.2	<95.2	<1.00	<1.00	<1.00	<3.00	**94.7**	<5.00	--
MW6	09/30/09	99.94	NM	--	--	--	--	--	--	--	--	--	--	--
MW6	12/18/09	99.94	18.38	81.56	<100	<105	<105	<1.00	<1.00	<1.00	<3.00	**67.0**	<5.00	--
MW6	03/31/10	99.94	17.54	82.40	<100	<95.2	<95.2	<1.00	<1.00	<1.00	<3.00	**54.9**	<5.00	--
MW6	06/02/10	99.94	17.12	82.82	<100	<100	<100	<1.00	<1.00	<1.00	<3.00	**99.5**	<5.00	--
MW6	09/07/10	99.94	17.13	82.81	--	--	--	--	--	--	--	--	--	--
MW6	12/20/10	99.94	18.03	81.91	<100	<95.2	<95.2	<1.00	<1.00	<1.00	<3.00	8.80	<5.00	--
MW6	03/10/11	99.94	15.09	84.85	<100	<100	<100	<1.00	<1.00	<1.00	<3.00	9.50	<5.00	--
MW6	06/16/11 d	204.01	14.71	189.30	<100	<99.0	<248	<1.00	<1.00	<1.00	<3.00	**34.7**	<5.00	--
MW6	06/17/11	204.01	NM	--	--	--	--	--	--	--	--	--	--	--
MW6	09/25/11	204.01	NM	--	--	--	--	--	--	--	--	--	--	--
MW6	12/30/11	204.01	NM	--	--	--	--	--	--	--	--	--	--	--
MW6	06/25/12	204.01	NM	--	--	--	--	--	--	--	--	--	--	--
MW6	12/03/12	204.01	18.21	185.80	--	--	--	--	--	--	--	--	--	--
MW6	12/04/12	204.01	18.21	185.80	<100	<96.2	<96.2	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	--
MW6	03/26/13	204.01	NM	--	--	--	--	--	--	--	--	--	--	--
MW6	04/02/13	204.01	16.15	187.86	<100	<95.2	<95.2	<1.00	<1.00	<1.00	<3.00	5.50	<5.00	--
MW6	04/29/13	204.01	NM	--	--	--	--	--	--	--	--	--	--	--
MW6	06/26/13	204.01	NM	--	--	--	--	--	--	--	--	--	--	--
MW6	12/30/13	204.01	NM	--	--	--	--	--	--	--	--	--	--	--
Screened Interval 10-30 ft bgs \ Total Depth 30 ft bgs														
MW7	12/18/02	99.84	20.56	79.28	<100	<100	<100	<1.0	1.6	<1.0	2.0	**42.0**	--	--
MW7	10/28/04	99.84	NM	--	--	--	--	--	--	--	--	--	--	--
MW7	12/13/05	99.84	21.85	77.99	<100	134	<105	<1.00	<1.00	<1.00	<3.00	**21.8**	<5.00	<100
MW7	12/19/06	99.84	16.35	83.49	<100	<111	<111	<1.00	<1.00	<1.00	<3.00	--	--	--
MW7	03/27/07	99.84	13.11	86.73	<100	<125	<125	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	--
MW7	06/18/07	99.84	14.71	85.13	<100	<98.0	<98.0	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	--
MW7	09/26/07	99.84	17.81	82.03	<250	--	--	<1.00	<1.00	<1.00	<3.00	5.64	<5.00	--
MW7	11/27/07	99.84	18.93	80.91	<250	<105	<105	<1.00	<1.00	<1.00	<3.00	13.0	<5.00	--
MW7	02/27/08	99.84	14.53	85.31	<100	<100	<100	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	--
MW7	06/04/08	99.84	16.63	83.21	<100	<95.2	<95.2	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	--
MW7	09/15/08	99.84	18.74	81.10	<100	<100	<100	<1.00	<1.00	<1.00	<3.00	**19.3**	<5.00	--
MW7	11/12/08	99.84	19.67	80.17	<100	<97.1	<97.1	<1.00	<1.00	<1.00	<3.00	**35.3**	<5.00	--
MTCA Method A Cleanup Levels					800/1,000[a]	500	500	5	1,000	700	1,000	15	15	N/A

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

Well ID	Sampling Date	Wellhead Elev (feet)	DTW (feet)	GW Elev (feet)	TPHg (µg/L)	TPHd (µg/L)	TPHmo (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	Total Pb (µg/L)	Diss Pb (µg/L)	Ethanol (µg/L)
MW7	03/31/09	99.84	19.74	80.10	**<100**	<118	<118	<1.00	<1.00	<1.00	<3.00	**30.9**	<5.00	--
MW7	06/30/09	99.84	17.24	82.60	**<100**	<94.3	<94.3	<1.00	<1.00	<1.00	<3.00	**135**	<5.00	--
MW7	09/30/09	99.84	NM	--	--	--	--	--	--	--	--	--	--	--
MW7	12/18/09	99.84	18.94	80.90	**<100**	<94.3	<94.3	<1.00	<1.00	<1.00	<3.00	**94.0**	<5.00	--
MW7	03/31/10	99.84	16.02	83.82	**<100**	<95.2	<95.2	<1.00	<1.00	<1.00	<3.00	**56.1**	<5.00	--
MW7	06/02/10	99.84	15.49	84.35	**<100**	<100	<100	<1.00	<1.00	<1.00	<3.00	**33.9**	<5.00	--
MW7	09/07/10	99.84	16.32	83.52	--	--	--	--	--	--	--	--	--	--
MW7	12/20/10	99.84	16.38	83.46	**<100**	<95.2	<95.2	<1.00	<1.00	<1.00	<3.00	**26.9**	<5.00	--
MW7	03/10/11	99.84	13.66	86.18	**<100**	<99.0	<99.0	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	--
MW7	06/16/11 d	202.63	13.32	189.31	**<100**	<99.0	<248	<1.00	<1.00	<1.00	<3.00	**39.1**	<5.00	--
MW7	06/17/11	202.63	NM	--	--	--	--	--	--	--	--	--	--	--
MW7	09/25/11	202.63	NM	--	--	--	--	--	--	--	--	--	--	--
MW7	12/30/11	202.63	NM	--	--	--	--	--	--	--	--	--	--	--
MW7	06/25/12	202.63	NM	--	--	--	--	--	--	--	--	--	--	--
MW7	12/03/12	202.63	17.96	184.67	--	--	--	--	--	--	--	--	--	--
MW7	12/04/12	202.63	17.96	184.67	**<100**	<100	<100	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	--
MW7	03/26/13	202.63	NM	--	--	--	--	--	--	--	--	--	--	--
MW7	04/02/13	202.63	NM	--	--	--	--	--	--	--	--	--	--	--
MW7	04/29/13	202.63	NM	--	--	--	--	--	--	--	--	--	--	--
MW7	06/26/13	202.63	NM	--	--	--	--	--	--	--	--	--	--	--
MW7	12/30/13	202.63	NM	--	--	--	--	--	--	--	--	--	--	--
Screened Interval 7-22 ft bgs \ Total Depth 22 ft bgs														
MW8	09/26/07	99.36	17.09	82.27	--	--	--	--	--	--	--	--	--	--
MW8	11/27/07	99.36	18.18	81.18	**<250**	<111	<111	<1.00	<1.00	<1.00	<3.00	--	--	<100
MW8	02/27/08	99.36	14.55	84.81	**840**	229	<100	<1.00	4.72	29.0	172	<5.00	<5.00	--
MW8	06/04/08	99.36	15.52	83.84	**1,170**	391	<95.2	<1.00	1.03	54.2	222	8.50	<5.00	<100
MW8	09/15/08	99.36	18.52	80.84	**1,810**	453	<98.0	<1.00	16.9	97.6	401	<5.00	<5.00	--
MW8	11/12/08	99.36	19.14	80.22	**29,900**	**4,480**	<541	**6.31**	873	**1,840**	**9,570**	**32.8**	<5.00	--
MW8	03/31/09	99.36	19.03	80.33	**288**	<95.2	<95.2	<1.00	1.76	7.97	38.5	10.4	<5.00	--
MW8	06/30/09	99.36	17.22	82.14	**235**	<95.2	<95.2	<1.00	1.81	9.39	41.6	9.00	<5.00	--
MW8	09/30/09	99.36	19.55	79.81	**8,080**	**1,190**	<100	1.43	170	479	**2,210**	<5.00	<5.00	--
MW8	12/18/09	99.36	18.43	80.93	**38,900**	**5,170**	<100	**5.76**	951	**2,410**	**9,320**	**80.7**	<5.00	--
MW8	03/31/10	99.36	18.02	81.34	**<100**	<111	<111	<1.00	<1.00	<1.00	<3.00	9.40	<5.00	--
MW8	06/02/10	99.36	15.60	83.76	**<100**	<97.1	<97.1	<1.00	<1.00	<1.00	<3.00	5.60	<5.00	--
MW8	09/07/10	99.36	17.67	81.69	**<100**	<103	<103	<1.00	1.56	11.5	26.9	14.5	<5.00	--
MW8	12/20/10	99.36	16.53	82.83	**3,880**	**573**	<96.2	1.86	129	**753**	**1,650**	<5.00	<5.00	--
MW8	03/10/11	99.36	13.47	85.89	**<100**	<98.0	<98.0	<1.00	<1.00	2.73	8.13	7.00	<5.00	--
MTCA Method A Cleanup Levels					800/1,000[a]	500	500	5	1,000	700	1,000	15	15	N/A

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

Well ID	Sampling Date	Wellhead Elev (feet)	DTW (feet)	GW Elev (feet)	TPHg (µg/L)	TPHd (µg/L)	TPHmo (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	Total Pb (µg/L)	Diss Pb (µg/L)	Ethanol (µg/L)
MW8	06/16/11 d	202.72	13.12	189.60	--	--	--	--	--	--	--	--	--	--
MW8	06/17/11	202.72	13.12	189.60	<100	<98.0	<245	<1.00	<1.00	<1.00	<3.00	**27.3**	<5.00	--
MW8	09/25/11	202.72	16.33	186.39	<100	<94.3	<236	<1.00	<1.00	2.46	<3.00	<5.00	<5.00	--
MW8	12/30/11	202.72	16.90	185.82	193	<94.8	<237	<1.00	12.0	79.9	127	<5.00	<5.00	--
MW8	06/25/12	202.72	14.79	187.93	<100	<95.2	<95.2	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	--
MW8	12/03/12	202.72	16.98	185.74	899	153	<100	<1.00	7.28	71.7	168	**28.5**	<5.00	--
MW8	12/04/12	202.72	NM	--	--	--	--	--	--	--	--	--	--	--
MW8	03/26/13	202.72	NM	--	--	--	--	--	--	--	--	--	--	--
MW8	04/02/13	202.72	14.85	187.87	<100	<95.2	<95.2	<1.00	<1.00	<1.00	<3.00	11.7	<5.00	--
MW8	04/29/13	202.72	NM	--	--	--	--	--	--	--	--	--	--	--
MW8	06/26/13	202.72	15.46	187.26	<100	<95.2	<95.2	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	--
MW8	12/30/13	202.72	18.35	184.37	<100	<94.3	<94.3	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	--
Screened Interval 9-19 ft bgs \ Total Depth 19 ft bgs														
MW9	09/26/07	99.85	10.62	89.23	**4,860**	--	--	1.15	102	189	**1,250**	--	--	--
MW9	11/27/07	99.85	18.72	81.13	**3,280**	**885**	<95.2	<1.00	71.9	139	886	12.1	<5.00	<100
MW9	02/27/08	99.85	14.06	85.79	<100	<100	<100	<1.00	<1.00	<1.00	<3.00	5.70	<5.00	--
MW9	06/04/08	99.85	14.94	84.91	<100	<95.2	<95.2	<1.00	<1.00	<1.00	<3.00	**17.7**	<5.00	--
MW9	09/15/08	99.85	18.07	81.78	<100	<100	<100	<1.00	<1.00	<1.00	<3.00	**66.8**	<5.00	--
MW9	11/12/08	99.86	16.01	83.85	<100	<94.3	<94.3	<1.00	<1.00	<1.00	<3.00	**16.2**	<5.00	--
MW9	03/31/09	99.86	15.94	83.92	<100	<118	<118	<1.00	<1.00	<1.00	<3.00	**35.1**	<5.00	--
MW9	06/30/09	99.86	15.23	84.63	<100	<94.3	<94.3	<1.00	<1.00	<1.00	<3.00	**112**	<5.00	--
MW9	09/30/09	99.86	DRY	--	--	--	--	--	--	--	--	--	--	--
MW9	12/18/09	99.86	15.63	84.23	<100	<111	<111	<1.00	<1.00	<1.00	<3.00	**102**	<5.00	--
MW9	03/31/10	99.86	17.79	82.07	<100	<99.0	<99.0	<1.00	<1.00	<1.00	<3.00	**65.0**	<5.00	--
MW9	06/02/10	99.86	17.23	82.63	<100	<103	<103	<1.00	<1.00	<1.00	<3.00	**88.6**	<5.00	--
MW9	09/07/10	99.86	17.14	82.72	<100	<109	<109	<1.00	<1.00	<1.00	<3.00	**51.2**	<5.00	--
MW9	12/20/10	99.86	15.76	84.10	<100	<105	<105	<1.00	<1.00	<1.00	<3.00	6.40	<5.00	--
MW9	03/10/11	99.86	12.29	87.57	<100	<99.0	<99.0	<1.00	<1.00	<1.00	<3.00	5.20	<5.00	--
MW9	06/16/11 d	202.20	12.08	190.12	<100	<97.1	<243	<1.00	<1.00	<1.00	<3.00	**24.7**	<5.00	--
MW9	06/17/11	202.20	NM	--	--	--	--	--	--	--	--	--	--	--
MW9	09/25/11	202.20	15.86	186.34	<100	<94.3	<236	<1.00	<1.00	<1.00	<3.00	**51.5**	<5.00	--
MW9	12/30/11	202.20	15.61	186.59	--	--	--	--	--	--	--	--	--	--
MW9	06/25/12	202.20	13.85	188.35	<100	<95.2	<95.2	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	--
MW9	12/03/12	202.20	15.74	186.46	<100	<94.3	<94.3	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	--
MW9	12/04/12	202.20	NM	--	--	--	--	--	--	--	--	--	--	--
MW9	03/26/13	202.20	NM	--	--	--	--	--	--	--	--	--	--	--
MW9	04/02/13	202.20	14.35	187.85	<100	<95.2	<95.2	<1.00	<1.00	<1.00	<3.00	14.3	<5.00	--
MTCA Method A Cleanup Levels					800/1,000[a]	500	500	5	1,000	700	1,000	15	15	N/A

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

Well ID	Sampling Date	Wellhead Elev (feet)	DTW (feet)	GW Elev (feet)	TPHg (µg/L)	TPHd (µg/L)	TPHmo (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	Total Pb (µg/L)	Diss Pb (µg/L)	Ethanol (µg/L)
MW9	04/29/13	202.20	NM	--	--	--	--	--	--	--	--	--	--	--
MW9	06/26/13	202.20	DRY	--	--	--	--	--	--	--	--	--	--	--
MW9	12/30/13	202.20	18.81	183.39	--	--	--	--	--	--	--	--	--	--
Screened Interval 10-23 ft bgs \ Total Depth 23 ft bgs														
MW10	09/26/07	98.47	16.26	82.21	--	--	--	--	--	--	--	--	--	--
MW10	11/27/07	98.47	17.40	81.07	**3,650**	**1,780**	125	**12.3**	10.2	131	653	<5.00	<5.00	<100
MW10	02/27/08	98.47	13.21	85.26	**2,310**	**1,140**	154	**50.4**	19.8	155	397	5.50	<5.00	--
MW10	06/04/08	98.47	14.20	84.27	596	460	<100	4.65	1.19	45.6	59.2	5.40	<5.00	--
MW10	09/15/08	98.47	17.17	81.30	**5,220**	**2,090**	193	**18.7**	12.7	191	752	7.21	<5.00	--
MW10	11/12/08	98.47	17.58	80.89	**9,000**	**1,230**	121	**18.4**	50.0	510	**2,360**	**100**	<5.00	<100
MW10	03/31/09	98.47	17.87	80.60	**1,070**	**4,180**	<189	**26.1**	<1.00	91.5	<3.00	5.12	<5.00	<100
MW10	06/30/09	98.47	15.87	82.60	223	**1,160**	<95.2	**15.6**	<1.00	8.15	<3.00	<5.00	<5.00	<100
MW10	09/30/09	98.47	18.12	80.35	**8,270**	**2,120**	<211	**48.4**	46.2	521	**2,130**	<5.00	<5.00	--
MW10	12/18/09	98.47	17.64	80.83	**19,200**	**4,250**	<105	**95.9**	73.3	652	**2,880**	**49.1**	<5.00	<100
MW10	03/31/10	98.47	15.08	83.39	**1,930**	**1,520**	<96.2	**165**	3.51	20.7	90.2	6.80	<5.00	<100
MW10	06/02/10	98.47	14.27	84.20	**<100**	<100	<100	<1.00	<1.00	<1.00	<3.00	11.8	<5.00	<100
MW10	09/07/10	98.47	16.31	82.16	**1,010**	**738**	<101	**7.01**	2.93	36.0	117	**17.2**	<5.00	<100
MW10	12/20/10	98.47	15.31	83.16	**924**	**633**	<100	**17.2**	6.05	51.7	156	<5.00	<5.00	<100
MW10	03/10/11	98.47	12.43	86.04	**<100**	<97.1	<97.1	<1.00	<1.00	<1.00	<3.00	6.70	<5.00	<100
MW10	06/16/11 d	201.33	12.22	189.11	--	--	--	--	--	--	--	--	--	--
MW10	06/17/11	201.33	12.22	189.11	**<100**	<100	<250	<1.00	<1.00	<1.00	<3.00	**25.4**	<5.00	<100
MW10	09/25/11	201.33	15.02	186.31	728	**515**	<272	**5.59**	2.72	40.2	72.4	<5.00	<5.00	<100
MW10	12/30/11	201.33	15.87	185.46	356	188	<240	1.65	<1.00	16.7	34.3	<5.00	<5.00	--
MW10	06/25/12	201.33	13.11	188.22	**<100**	<99.0	<99.0	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	--
MW10	12/03/12	201.33	15.87	185.46	239	215	<94.3	<1.00	<1.00	8.16	17.2	<5.00	<5.00	--
MW10	12/04/12	201.33	NM	--	--	--	--	--	--	--	--	--	--	--
MW10	03/26/13	201.33	NM	--	--	--	--	--	--	--	--	--	--	--
MW10	04/02/13 e	201.33	13.51	187.82	**<100**	**698**	<95.2	<1.00	<1.00	4.05	6.01	**15.2**	<5.00	--
MW10	04/29/13	201.33	13.24	188.09	**<100**	<97.1	<97.1	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	--
MW10	06/26/13	201.33	14.16	187.17	**<100**	<95.2	<95.2	<1.00	<1.00	<1.00	<300	<5.00	<5.00	--
MW10	12/30/13	201.33	16.98	184.35	**<100**	141	<97.1	<1.00	<1.00	3.38	5.02	<5.00	<5.00	--
Screened Interval 12-27 ft bgs \ Total Depth 27 ft bgs														
MW11	09/26/07	98.54	16.37	82.17	--	--	--	--	--	--	--	--	--	--
MW11	11/27/07	98.54	17.50	81.04	**1,090**	402	<105	2.65	32.3	4.26	139	**50.2**	<5.00	<100
MW11	02/27/08	98.54	13.32	85.22	152	279	136	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	<100
MW11	06/04/08	98.54	14.34	84.20	153	<97.1	<97.1	<1.00	<1.00	3.66	23.2	**21.9**	<5.00	--
MTCA Method A Cleanup Levels					800/1,000[a]	500	500	5	1,000	700	1,000	15	15	N/A

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

Well ID	Sampling Date	Wellhead Elev (feet)	DTW (feet)	GW Elev (feet)	TPHg (µg/L)	TPHd (µg/L)	TPHmo (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	Total Pb (µg/L)	Diss Pb (µg/L)	Ethanol (µg/L)
MW11	09/15/08	98.54	17.31	81.23	**2,470**	**614**	130	**8.92**	25.2	202	949	**21.7**	<5.00	--
MW11	11/12/08	98.54	18.40	80.14	**6,770**	**1,380**	<103	**22.8**	64.5	406	**1,840**	**73.4**	<5.00	<100
MW11	03/31/09	98.54	18.25	80.29	**<100**	<105	<105	<1.00	<1.00	<1.00	<3.00	**17.8**	<5.00	<100
MW11	06/30/09	98.54	15.96	82.58	**<100**	<94.3	<94.3	<1.00	<1.00	5.04	22.0	**20.3**	<5.00	<100
MW11	09/30/09	98.54	18.31	80.23	**1,680**	<100	<100	1.83	9.16	73.8	253	<5.00	<5.00	--
MW11	12/18/09	98.54	17.69	80.85	**5,490**	**823**	<118	4.60	24.7	284	**1,070**	**76.2**	<5.00	<100
MW11	03/31/10	98.54	14.87	83.67	**<100**	<95.2	<95.2	<1.00	<1.00	<1.00	<3.00	11.8	<5.00	<100
MW11	06/02/10	98.54	14.34	84.20	**<100**	<95.2	<95.2	<1.00	<1.00	<1.00	<3.00	8.90	<5.00	<100
MW11	09/07/10	98.54	16.42	82.12	**2,120**	127	<94.3	<1.00	10.3	120	471	**27.8**	<5.00	<100
MW11	12/20/10	98.54	15.21	83.33	**2,680**	124	<94.3	2.09	9.77	291	823	7.00	<5.00	<100
MW11	03/10/11	98.54	12.58	85.96	**4,210**	419	<99.0	<1.00	12.3	181	868	<5.00	<5.00	<100
MW11	06/16/11 d	201.39	12.25	189.14	--	--	--	--	--	--	--	--	--	--
MW11	06/17/11	201.39	12.25	189.14	**<100**	<102	<255	<1.00	<1.00	<1.00	<3.00	9.70	<5.00	<100
MW11	09/25/11	201.39	15.11	186.28	**1,780**	<102	<255	<1.00	6.84	83.8	234	<5.00	<5.00	<100
MW11	12/30/11	201.39	15.89	185.50	**312**	<118	<294	<1.00	2.47	9.39	99.9	<5.00	<5.00	--
MW11	06/25/12	201.39	13.35	188.04	**<100**	<100	<100	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	<100
MW11	12/03/12	201.39	15.75	185.64	--	--	--	--	--	--	--	--	--	--
MW11	12/04/12	201.39	NM	--	**<100**	<100	<100	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	<100
MW11	03/26/13	201.39	NM	--	--	--	--	--	--	--	--	--	--	--
MW11	04/02/13	201.39	13.63	187.76	**<100**	<95.2	<95.2	<1.00	<1.00	11.0	27.5	14.3	<5.00	<100
MW11	04/29/13	201.39	NM	--	--	--	--	--	--	--	--	--	--	--
MW11	06/26/13	201.39	14.25	187.14	**<100**	<96.2	<96.2	<1.00	<1.00	<1.00	15.4	<5.00	<5.00	<100
MW11	12/30/13	201.39	17.05	184.34	**<100**	<97.1	<97.1	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	--
Screened Interval 10-25 ft bgs \ Total Depth 25 ft bgs														
MW12	06/04/08	98.82	NM	--	--	--	--	--	--	--	--	--	--	--
MW12	09/05/08	98.82	NM	--	--	--	--	--	--	--	--	--	--	--
MW12	11/12/08	98.82	NM	--	--	--	--	--	--	--	--	--	--	--
MW12	03/31/09	98.82	16.33	82.49	**<100**	<94.3	<94.3	<1.00	<1.00	<1.00	<3.00	**35.0**	<5.00	--
MW12	06/30/09	98.82	15.97	82.85	**<100**	<98.0	<98.0	<1.00	<1.00	<1.00	<3.00	**126**	<5.00	--
MW12	09/30/09	98.82	18.65	80.17	**<100**	<97.1	<97.1	<1.00	<1.00	<1.00	<3.00	**56.1**	<5.00	--
MW12	12/18/09	98.82	18.03	80.79	**<100**	<94.3	<94.3	<1.00	<1.00	<1.00	<3.00	**83.1**	<5.00	--
MW12	03/31/10	98.82	17.04	81.78	**<100**	<102	<102	<1.00	<1.00	<1.00	<3.00	**65.7**	<5.00	--
MW12	06/02/10	98.82	16.64	82.18	**<100**	<102	<102	<1.00	<1.00	<1.00	<3.00	**85.5**	<5.00	--
MW12	09/07/10	98.82	16.76	82.06	**<100**	<95.2	<95.2	<1.00	<1.00	<1.00	<3.00	**49.1**	<5.00	--
MW12	12/20/10	98.82	15.35	83.47	**<100**	<97.1	<97.1	<1.00	<1.00	<1.00	<3.00	6.30	<5.00	--
MW12	03/10/11	98.82	12.72	86.10	**<100**	<99.0	<99.0	<1.00	<1.00	<1.00	<3.00	7.60	<5.00	--
MW12	06/16/11 d	201.66	12.31	189.35	**<100**	<94.3	<236	<1.00	<1.00	<1.00	<3.00	**36.8**	<5.00	--
MTCA Method A Cleanup Levels					800/1,000[a]	500	500	5	1,000	700	1,000	15	15	N/A

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

Well ID	Sampling Date	Wellhead Elev (feet)	DTW (feet)	GW Elev (feet)	TPHg (µg/L)	TPHd (µg/L)	TPHmo (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	Total Pb (µg/L)	Diss Pb (µg/L)	Ethanol (µg/L)
MW12	06/17/11	201.66	NM	--	--	--	--	--	--	--	--	--	--	--
MW12	09/25/11	201.66	15.48	186.18	<100	<110	<275	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	--
MW12	12/30/11	201.66	NM	--	--	--	--	--	--	--	--	--	--	--
MW12	06/25/12	201.66	NM	--	--	--	--	--	--	--	--	--	--	--
MW12	12/03/12	201.66	15.84	185.82	--	--	--	--	--	--	--	--	--	--
MW12	12/04/12	201.66	15.84	185.82	<100	<95.2	<95.2	<1.00	<1.00	<1.00	<3.00	8.50	<5.00	--
MW12	03/26/13	201.66	NM	--	--	--	--	--	--	--	--	--	--	--
MW12	04/02/13	201.66	13.90	187.76	<100	<95.2	<95.2	<1.00	<1.00	<1.00	<3.00	7.40	<5.00	--
MW12	04/29/13	201.66	NM	--	--	--	--	--	--	--	--	--	--	--
MW12	06/26/13	201.66	14.54	187.12	<100	<99.0	<99.0	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	--
MW12	12/30/13	201.66	17.33	184.33	<100	<94.3	<94.3	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	--
Screened Interval 10-25 ft bgs \ Total Depth 25 ft bgs														
MW13	06/04/08	100.00	NM	--	--	--	--	--	--	--	--	--	--	--
MW13	09/05/08	100.00	NM	--	--	--	--	--	--	--	--	--	--	--
MW13	11/12/08	100.00	19.61	80.39	<100	<100	<100	<1.00	<1.00	<1.00	<3.00	**134**	<5.00	--
MW13	03/31/09	100.00	19.47	80.53	<100	<94.3	125	<1.00	<1.00	<1.00	<3.00	**94.5**	<5.00	--
MW13	06/30/09	100.00	17.62	82.38	<100	<97.1	<97.1	<1.00	<1.00	<1.00	<3.00	**110**	<5.00	--
MW13	09/30/09	100.00	19.79	80.21	<100	<96.2	<96.2	<1.00	<1.00	<1.00	<3.00	**43.2**	<5.00	--
MW13	12/18/09	100.00	18.94	81.06	<100	<95.2	<95.2	<1.00	<1.00	<1.00	<3.00	**85.2**	<5.00	--
MW13	03/31/10	100.00	16.11	83.89	<100	<97.1	<97.1	<1.00	<1.00	<1.00	<3.00	**62.1**	<5.00	--
MW13	06/02/10	100.00	15.68	84.32	<100	<96.2	<96.2	<1.00	<1.00	<1.00	<3.00	**65.3**	<5.00	--
MW13	09/07/10	100.00	17.85	82.15	<100	<114	<114	<1.00	<1.00	<1.00	<3.00	**64.8**	<5.00	--
MW13	12/20/10	100.00	16.27	83.73	<100	<100	<100	<1.00	<1.00	<1.00	<3.00	8.00	<5.00	--
MW13	03/10/11	100.00	13.89	86.11	<100	<95.2	<95.2	<1.00	<1.00	<1.00	<3.00	5.50	<5.00	--
MW13	06/16/11 d	202.84	13.56	189.28	--	--	--	--	--	--	--	--	--	--
MW13	06/17/11	202.84	13.56	189.28	<100	<99.0	<248	<1.00	<1.00	<1.00	<3.00	**42.5**	<5.00	--
MW13	09/25/11	202.84	16.57	186.27	<100	<95.2	<238	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	--
MW13	12/30/11	202.84	17.18	185.66	--	--	--	--	--	--	--	--	--	--
MW13	06/25/12	202.84	NM	--	--	--	--	--	--	--	--	--	--	--
MW13	12/03/12	202.84	NM	--	--	--	--	--	--	--	--	--	--	--
MW13	12/04/12	202.84	NM	--	--	--	--	--	--	--	--	--	--	--
MW13	03/26/13	202.84	NM	--	--	--	--	--	--	--	--	--	--	--
MW13	04/02/13	202.84	14.98	187.86	<100	<95.2	<95.2	<1.00	<1.00	<1.00	<3.00	12.2	<5.00	--
MW13	04/29/13	202.84	NM	--	--	--	--	--	--	--	--	--	--	--
MW13	06/26/13	202.84	15.65	187.19	<100	<95.2	<95.2	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	--
MW13	12/30/13	202.84	18.48	184.36	<100	<96.2	<96.2	<1.00	<1.00	<1.00	<3.00	<5.00	<5.00	--
MTCA Method A Cleanup Levels					800/1,000[a]	500	500	5	1,000	700	1,000	15	15	N/A

EXPLANATION:

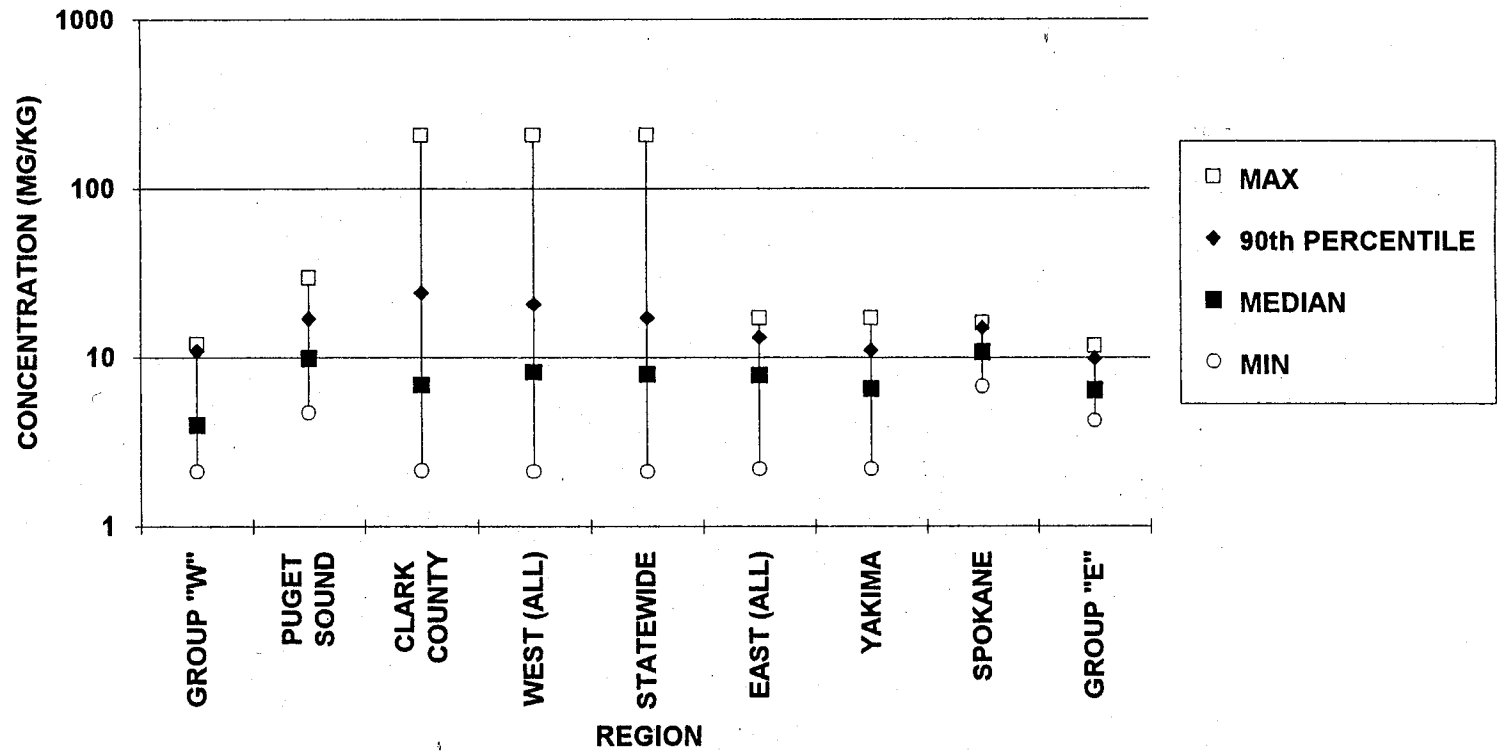
Wellhead Elev = Wellhead elevation
µg/L = Micrograms per Liter
ft bgs = Feet below ground surface
DTW = Depth to water in feet below top of casing
GW Elev = Groundwater elevation relative to top of casing elevations
TPHg = Total Petroleum Hydrocarbons as Gasoline in accordance with Ecology Method NWTPH-Gx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

APPENDIX A

SELECT SHEETS FROM ECOLOGY'S *NATURAL BACKGROUND SOIL METALS CONCENTRATIONS IN WASHINGTON STATE*

Cardno
Shaping the Future

FIGURE 18: LEAD REGIONAL ANALYSIS



ALL VALUES = MG/KG	GROUP "W"	PUGET SOUND	CLARK COUNTY	WEST (ALL)	STATEWIDE	EAST (ALL)	YAKIMA	SPOKANE	GROUP "E"
MAX	12	29.6	207.5	207.5	207.5	17.1	17.1	16	11.7
90th PERCENTILE	10.87	16.83	24.02	20.42	17.09	13.1	11	14.91	9.85
MEDIAN	4	9.8	6.86	8.2	7.9	7.82	6.525	10.8	6.4
MIN	2.1	4.65	2.125	2.1	2.1	2.17	2.17	6.75	4.2

NOTE: GROUP "W" = WHATCOM, SKAGIT, GRAYS HARBOR, LEWIS, AND PACIFIC COUNTIES
GROUP "E" = BENTON, SPOKANE, LINCOLN, ADAMS, OKANOGAN, AND WHITMAN COUNTIES

Figure 38: Lead Concentrations