



Michael Irrigation Site Cashmere, Washington

Draft Second Quarter Supplemental Groundwater Data Report

May 24, 2019

AO No. DE 15694
FSID No. 3154383
TRC Project No. 318140

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LIST OF ACRONYMS AND ABBREVIATIONS

amsl	above mean seal level
AO	Agreed Order
AOC	area of concern
bgs	below ground surface
BNSF	BNSF Railway Company
BTEX	benzene, toluene, ethylbenzene, and xylenes
cPAH	carcinogenic polycyclic aromatic hydrocarbon
CUL	cleanup level
DRO	diesel-range organics
DO	dissolved oxygen
DOT	U.S. Department of Transportation
Ecology	Washington State Department of Ecology
FSID	Facility Site Identification
GRO	gasoline-range organics
GW	ground water
µg/L	micrograms per liter
mg/kg	milligrams per kilogram
MW	monitoring well
MTCA	Model Toxics Control Act
NTU	nephelometric turbidity units
ORP	oxidation reduction potential
PAH	polycyclic aromatic hydrocarbon
Site	John Michael Lease Site
SOP	standard operating procedure
SOW	scope of work
SGC	silica gel cleanup
TOC	total organic carbon

1.0 INTRODUCTION

This *Draft Second Quarter Supplemental Groundwater Data Report* has been prepared on behalf of BNSF Railway Company (BNSF) to document well development and groundwater sampling activities conducted at the John Michael Lease property (FSID 3154383) located adjacent to 5640 Sunset Highway in Cashmere, Washington (the Site, Figure 1) pursuant to the State of Washington, Department of Ecology (Ecology) Agreed Order No. DE 15694 Scope of Work (SOW) and Schedule and in accordance with the *Final Supplemental Groundwater Data Collection Work Plan* dated September 11, 2018. The monitoring well development activities were completed on March 21st, 2019. The groundwater sampling activities were completed March 26th, 2019.

Monitoring was performed to determine the nature and extent of site-related contaminants in groundwater downgradient of known areas of soil contamination on the northeast side of the tracks. Site-related contaminants in groundwater have previously been identified as Diesel Range Organics (DRO), Oil Range Organics (ORO), benzene, and carcinogenic Polycyclic Aromatic Hydrocarbons (cPAHs).

2.0 BACKGROUND

The site consists of portions of the BNSF right-of-way on either side of active mainline railroad tracks (rail line) proximal to the real property at 5640 Sunset Highway at the northeast corner of the intersection of Hagman Road and Sunset Highway in Cashmere, Washington (Figure 1). A portion of the BNSF right-of-way is leased by the adjacent Sunset Tires, a commercial business at 5640 Sunset Highway in Cashmere, Washington.

The 0.34-acre leased property is identified as Parcel No. 231905120070 by the Chelan County Assessor (2010). The Wenatchee River, east of the site, flows southeast, parallel to the BNSF rail line (Figure 2).

Limited historical site information exists for this property. A tanker derailment and subsequent spill of crude oil reportedly occurred sometime in the 1930s (EMR, 2005). This event was verbally confirmed by local residents during field activities (Farallon, 2008); however, no formal record of the derailment or spill has been located.

2.1 Geology and Hydrogeology

The site is located within the Wenatchee River Valley, approximately 9 miles upstream of the confluence of the Wenatchee and Columbia Rivers. The eastern portion of the site is composed of fill material underlain by Pleistocene alluvial sediments deposited by the Wenatchee River; the western portion of the Site is composed of Pleistocene deposits of till, outwash, and glaciolacustrine material (Washington State Geological Survey, as cited in Farallon, 2016).

Soils previously encountered at the site consisted of sand and gravel with some silt, cobbles, debris, and organic material overlying granitic bedrock (Farallon, 2016). Debris

previously observed on the eastern portion of the site is representative of fill material, but debris was not encountered during the 2018 well installation.

Water levels were measured in monitoring wells during each sampling event (Table 3). Groundwater elevations were generally consistent from August 2008 to March 2019, with little variation in depth to water between events. Groundwater flow at the site is generally to the east, toward the Wenatchee River.

3.0 MONITORING WELL DEVELOPMENT

3.1 Pre-Field Activities

A site- and job-specific health and safety plan was developed that promoted personnel safety and preparedness during the planned activities. Prior to commencement of the field activities, a tailgate meeting was conducted with all exclusion zone workers to discuss the health and safety issues and concerns related to the specific work.

3.2 Monitoring Well Development Activities

During the November 2018 sampling event, MW-1 had an extremely low recharge rate and a very high turbidity reading. The high DRO and ORO groundwater sampling result from MW-1 was anomalous and not representative of groundwater conditions (TRC, 2019). Redevelopment of the well was determined to be the best solution to obtain a representative groundwater sample from MW-1.

Additionally, during the November 2018 well gaging activities, an obstruction was encountered in well MW-3 at a depth of approximately 7.7 ft below ground surface (bgs). A large root ball approximately 3 inches in length was removed from the casing of MW-3 using a decontaminated plumber's snake. Redevelopment of MW-3 was deemed necessary due to the obstruction.

Redevelopment of wells MW-1 and MW-3 was completed on March 21, 2019, a week prior to the March 2019 sampling event. Each well was developed by surging and purging water using a variable speed impeller pump to remove fine-grained material from the wells. Purge water was monitored for field parameters including pH, electrical conductivity (EC), oxidation-reduction potential (ORP), temperature, and turbidity. Turbidity was monitored at 3-minute intervals or when there was a visual change in turbidity. MW-1 was surged then pumped dry. After recharging, it was surged again and pumped at the lowest possible rate with the available equipment (400 mL/min) until turbidity stabilized at 10 NTU and other field parameters also stabilized. MW-3 was redeveloped by pumping approximately 15 gal (>14 well volumes), then pumping an additional 15 gal until turbidity was less than 5 NTU and other field parameters stabilized.

4.0 GROUNDWATER MONITORING AND SAMPLING ACTIVITIES

4.1 Monitoring Well Gauging and Sampling

On March 26, 2019 depth to groundwater was gauged in the seven (7) site monitoring wells (MW-1 through MW-7) and groundwater samples were collected from wells MW-1, MW-5, MW-6, and MW-7. Because results have been below Model Toxics Control Act (MTCA) Cleanup Levels (CULs) since 2012, wells MW-2, MW-3, and MW-4 were not sampled upon written approval from Frank Winslow (Ecology, 2019). The locations of the monitoring wells are shown in Figure 2.

Groundwater samples from monitoring wells were collected by peristaltic pump using new dedicated polyethylene and silicon tubing following low-flow purging and sampling procedures in accordance with the approved work plan.

Geochemical parameters were recorded in the field and include dissolved oxygen (DO), pH, temperature, conductivity, turbidity, and ORP. Following parameter stabilization, the discharge tubing was disconnected from the flow-through cell and the samples were collected in laboratory-provided bottles and immediately placed on ice.

All groundwater samples were submitted to Pace National of Mt. Juliet, Tennessee, under chain-of-custody protocols, for analysis of the following compounds:

- DRO and ORO by Northwest Method NWTPH-Dx (with and without Silica Gell Cleanup [SGC] to determine the potential for interferences by naturally occurring non-petroleum organic matter during the extraction process);
- Gasoline-range organics (GRO) by Northwest Method NWTPH-Gx;
- Naphthalene and cPAHs by US EPA Method 8270D-SIM;
- Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX) by US EPA Method 8260; and
- Total Organic Carbon (TOC) by US EPA Method 9060A.

Copies of the laboratory analytical reports and chain-of-custody documentation are provided in Appendix A. All laboratory data were validated using TRC's Analytical Data Review Checklist.

5.0 GROUNDWATER MONITORING RESULTS

This section summarizes groundwater conditions at the site for the March 2019 monitoring event.

5.1 Groundwater Flow Direction

Groundwater elevations ranged from 788.82 ft above mean sea level (amsl) at monitoring well MW-6 to 792.30 ft amsl at MW-2 (Table 3).

The interpreted groundwater gradient direction is to the east towards the Wenatchee River (Figure 3) and is consistent with previous interpretations. The average groundwater gradient across the Site during this event was 0.01 ft/ft.

5.2 Groundwater Sample Results

Groundwater analytical chemistry results are summarized below:

- TOC ranged from 1,030 micrograms per liter ($\mu\text{g/L}$) (in the sample from MW-5) to 2,460 $\mu\text{g/L}$ (in the sample from MW-1).
- DRO was reported below the CUL (500 $\mu\text{g/L}$) in the sample from MW-1 without SGC (262 $\mu\text{g/L}$) and was not detected above the reporting limit in the same sample with SGC.
- All other sample results for DRO and ORO were not detected above the reporting limits (with and without SGC).
- There were no detections of GRO, BTEX, cPAHs, or naphthalene.

For ease of reference, previously collected soil analytical data for TPH and BTEX compounds are summarized in Table 1, and PAHs are summarized in Table 2. Groundwater analytical results are provided in Tables 4 and 5, and measured field parameters are provided in Table 6. Groundwater analytical results are shown on Figure 3.

6.0 INVESTIGATION DERIVED WASTE

Purged groundwater and decontamination fluids generated during the well redevelopment and groundwater sampling activities were placed in a properly labeled 55-gallon Department of Transportation (DOT)-rated steel drum and temporarily stored near the southern boundary of the Site between Sunset Highway and the BNSF railroad tracks. All drums were labeled with a non-hazardous waste label which includes the name of generator, site name, and contents of drum. Drums are stored on-site pending transport to a BNSF-approved waste facility by a Washington state approved waste handler.

7.0 CONCLUSIONS AND RECOMMENDATIONS

Site monitoring wells MW-1 through MW-4 have been below MTCA Method A CULs for all site-related contaminants for seven sampling events since 2012.¹

The concentrations of contaminants in all site groundwater samples have been below MTCA clean-up levels since 2012, except for the 2018 samples from MW-1 and MW-7.

Reported concentrations in the sample collected from MW-1 showed high turbidity and DRO and ORO exceedances in Q4 2018. Because the sample was uncharacteristically turbid compared to previous years and MW-1 had not been developed since at least 2015, the well was redeveloped prior to the March sampling event.

¹ Sampling was performed at the Site in August 2008, September and December 2012, March and June 2013, August 2015, November 2018, and March 2019. See Tables 3 through 6.

- Based on the results from the first quarter 2019 sampling event and the weight of evidence from previous monitoring events, the 2018 CUL exceedances for DRO and ORO from well MW-1 are anomalous due to high turbidity in the sample during the 4Q 2018 monitoring event, and are not representative of site groundwater (TRC, 2019). The MW-1 sample from Q1 2019 was more representative of site groundwater conditions, showing lower turbidity and concentrations below the MTCA CULs.
- Results for all analytes from MW-7 samples for the past two quarters were at or below reporting limits, except for the 2018 data for DRO and ORO samples without SGC (743 and 707 µg/L, respectively), which exceeded MTCA CULs (500 µg/L for both fractions). MW-7 is located in an area of soil impacted with DRO, ORO, cPAHs, and BTEX, however analytical results indicate that groundwater impacts are minimal.

Monitoring wells MW-5 and MW-6 are installed at locations on the east side of the rail line and hydraulically downgradient of the soil contamination present on the west side of the tracks. There have been no detections of site-related contaminants above laboratory reporting limits in groundwater since their installation in 2018. One soil sample collected from a silt layer with a faint hydrocarbon odor during installation of MW-5 had detected concentrations of chrysene and TPH below MTCA CULs, but there is no evidence of groundwater contamination.

The weight of evidence demonstrates that groundwater in contact with or downgradient of areas of known soil contamination is not impacted by site-related contaminants and is therefore not a threat to surface water or aquatic receptors in the Wenatchee River.

8.0 REFERENCES

Ecology, 2013. Model Toxics Control Act Regulation and Statute, MTCA Cleanup Regulation Chapter 173-340 WAC, Model Toxics Control Act Chapter 70.105D RCW, Uniform Environmental Covenants Act Chapter 64.70 RCW. Publication No. 94-06. Revised 2013.

Ecology, 2018. Agreed Order No. DE 15694: Exhibit B – Scope of Work (SOW) and Schedule. May 24.

Winslow, Frank (Ecology), 2019. “Re: FW: BNSF John Michael Lease Site - Groundwater Sampling Schedule” Message to: Shane DeGross and Keith Woodburne, e-mail received Monday, March 25.

Farallon Consulting (Farallon), 2016. Supplemental Soil and Groundwater Investigation Report, John Michael Lease Site, 5640 Sunset Highway, Cashmere, Washington. June 29.

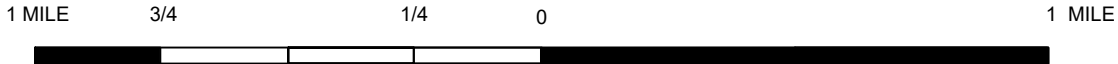
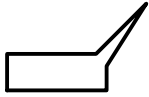
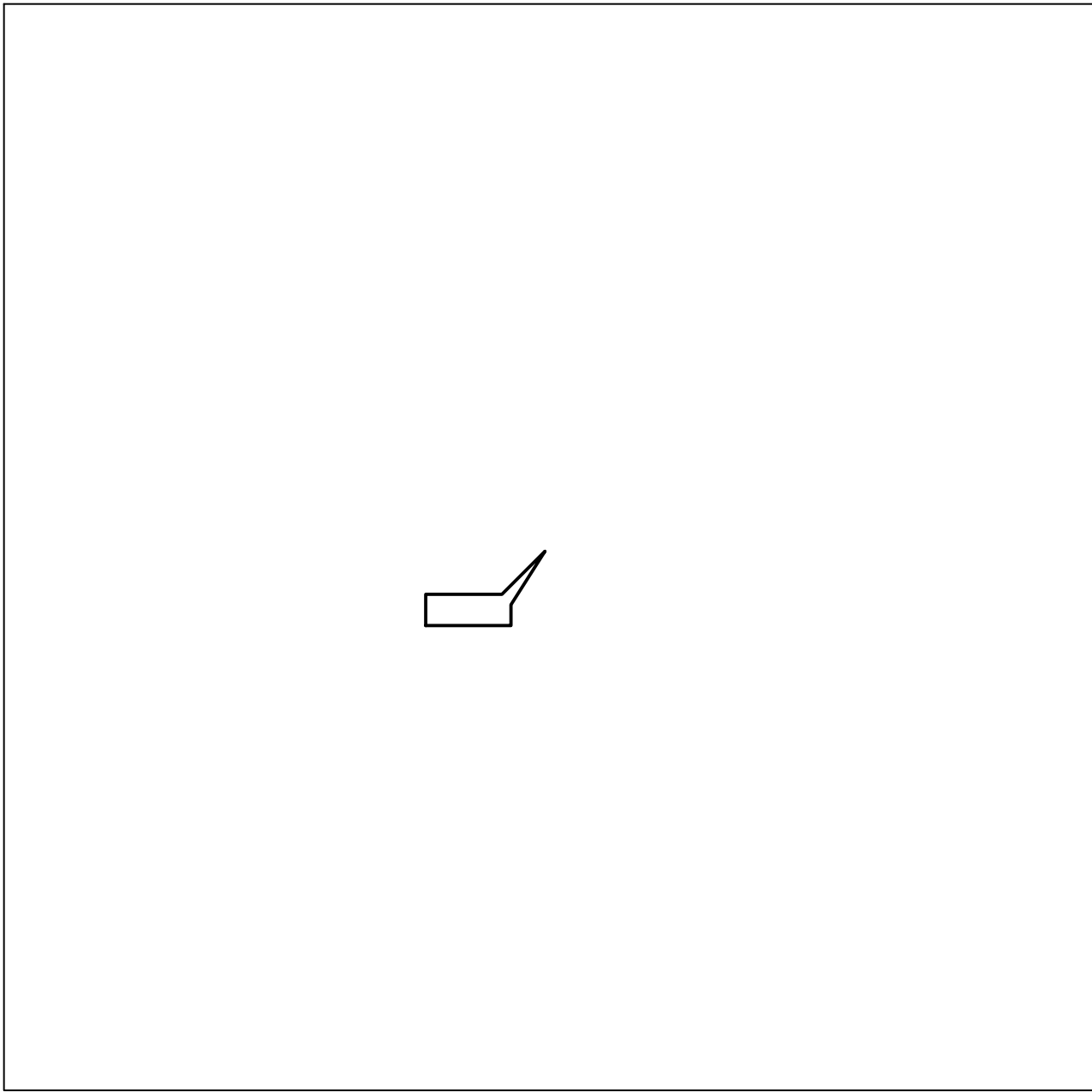
TRC, 2018. Final Supplemental Groundwater Data Collection Work Plan, BNSF John Michael Lease Site, Cashmere, Washington. September 11.

TRC, 2019. Draft First Quarter Supplemental Groundwater Data Report, BNSF John Michael Lease Site, Cashmere, Washington, January 22.

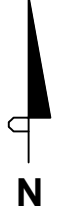
Washington State Geological Survey. 2016. Interactive Geological Map of the State of Washington. <https://fortress.wa.gov/dnr/protectiongis/geology/>.

FIGURES

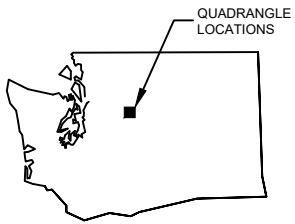
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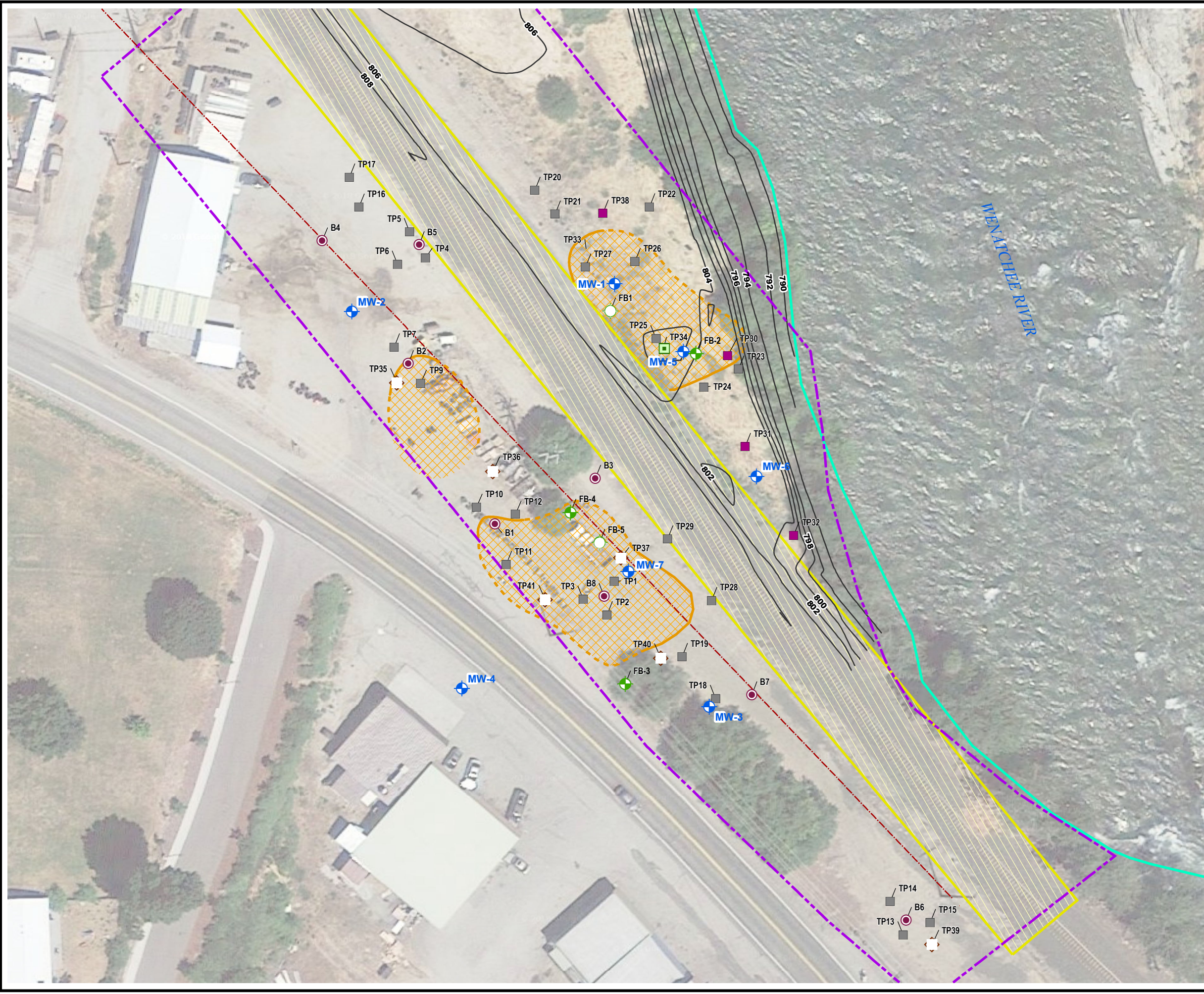
SCALE 1 : 24,000



SOURCE:
United States Geological Survey
7.5 Minute Topographic Maps:
Cashmere and Peshastin Quadrangles,
Washington



PROJECT:		JOHN MICHAEL LEASE SITE ADJACENT TO 5640 SUNSET HIGHWAY CASHMERE, WASHINGTON	
TITLE:		VICINITY MAP	
	R. Collins	PROJ NO	318140.0000.0000
	A. Meugniot	FIGURE 1	
	B. Helland		
DAT	May 2019	19874 141st Place N.E. Woo	
Fig1_Vicinity Map-5-1-2019.dwg			



LEGEND

- Monitoring Well
- Boring (EMR, 2004)
- Soil Boring (Farallon, 2015)
- Supplemental Investigation, Cultural Survey Test Pit (Farallon, 2012)
- Supplemental Investigation, Cultural Survey and Soil Sample Test Pit (Farallon, 2012)
- Supplemental Investigation, Soil Sample Test Pit (Farallon, 2012)
- Test Pit (Farallon, 2007, 2008, 2009)
- Ordinary High Water Mark
- Overhead Utility Line
- BNSF Right-of-Way
- Limited Work Area
- Soils with Diesel-range Organic (DRO)/ Oil-range Organic (ORO) Concentrations above Model Toxics Control Act Method A Cleanup Levels for Unrestricted Land Use; Dashed where Inferred

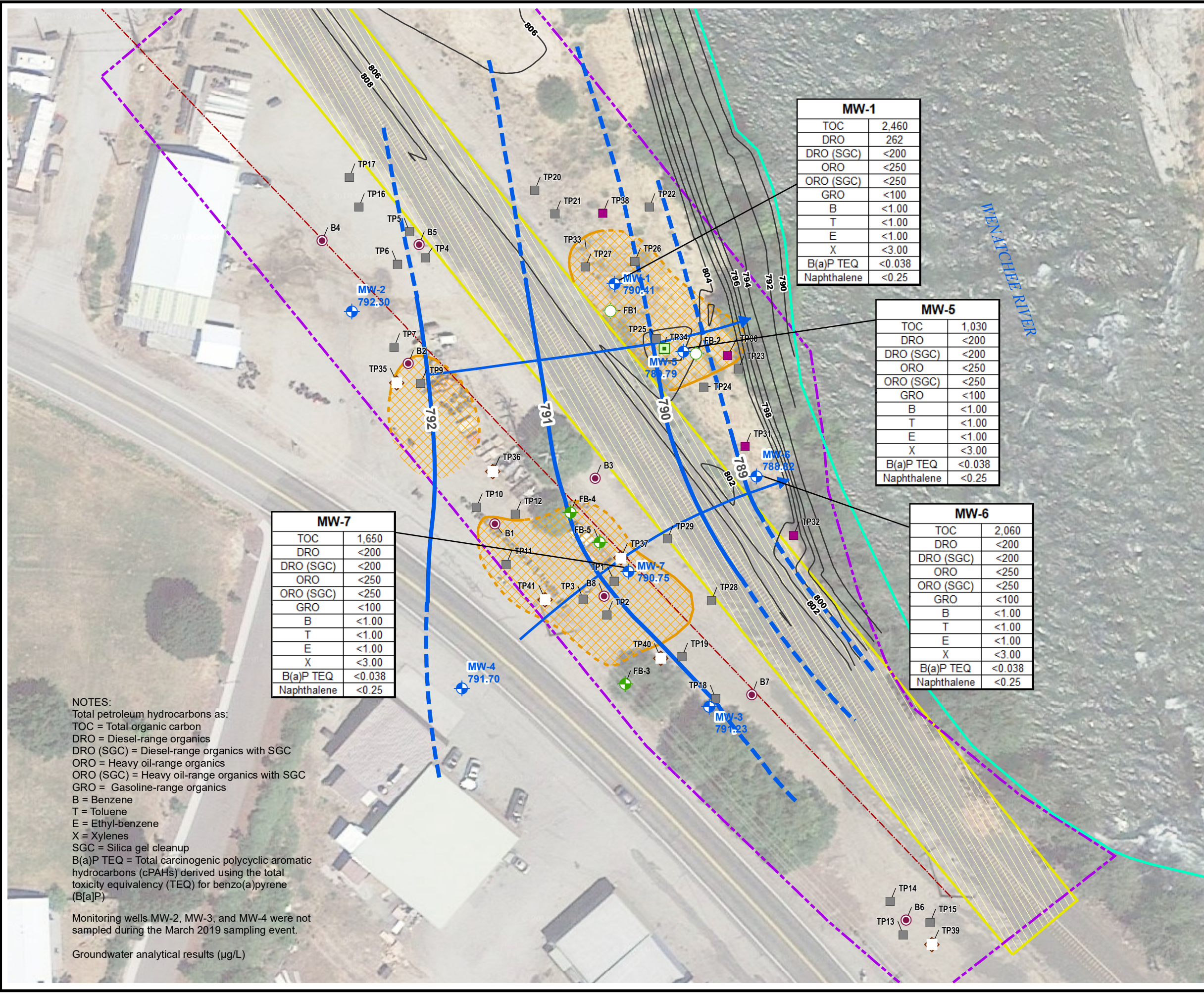
N

0 50 100
Feet

1" = 50'
1:600

PROJECT:		JOHN MICHAEL LEASE SITE ADJACENT TO 5640 SUNSET HIGHWAY CASHMERE, WASHINGTON	
TITLE:		SITE PLAN	
DRAWN BY:	R. COLLINS	PROJ. NO.:	318140.000.0000
CHECKED BY:	A. MEUGNIOT	FIGURE 2	
APPROVED BY:	-		
DATE:	MAY 2019		
		19874 141st Place N.E. Woodinville, WA 98072 Phone: 425.489.1938 www.trccompanies.com	
FILE NO.:		318140_2_SitePlan.mxd	

TRC - GIS
 Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet (Foot US)
 Plot Date: 5/22/2019 15:51:48 PM by: RCOLLINS - LAYOUT: ANSIBI(11'x17')
 Path: S11-PROJECTS\BINSF318140_JML\GW Data Work Plan_Mar2019\318140_FIG3_GW_Map\MapRotation:



MW-1	
TOC	2,460
DRO	262
DRO (SGC)	<200
ORO	<250
ORO (SGC)	<250
GRO	<100
B	<1.00
T	<1.00
E	<1.00
X	<3.00
B(a)P TEQ	<0.038
Naphthalene	<0.25

MW-5	
TOC	1,030
DRO	<200
DRO (SGC)	<200
ORO	<250
ORO (SGC)	<250
GRO	<100
B	<1.00
T	<1.00
E	<1.00
X	<3.00
B(a)P TEQ	<0.038
Naphthalene	<0.25

MW-6	
TOC	2,060
DRO	<200
DRO (SGC)	<200
ORO	<250
ORO (SGC)	<250
GRO	<100
B	<1.00
T	<1.00
E	<1.00
X	<3.00
B(a)P TEQ	<0.038
Naphthalene	<0.25

MW-7	
TOC	1,650
DRO	<200
DRO (SGC)	<200
ORO	<250
ORO (SGC)	<250
GRO	<100
B	<1.00
T	<1.00
E	<1.00
X	<3.00
B(a)P TEQ	<0.038
Naphthalene	<0.25

NOTES:
 Total petroleum hydrocarbons as:
 TOC = Total organic carbon
 DRO = Diesel-range organics
 DRO (SGC) = Diesel-range organics with SGC
 ORO = Heavy oil-range organics
 ORO (SGC) = Heavy oil-range organics with SGC
 GRO = Gasoline-range organics
 B = Benzene
 T = Toluene
 E = Ethyl-benzene
 X = Xylenes
 SGC = Silica gel cleanup
 B(a)P TEQ = Total carcinogenic polycyclic aromatic hydrocarbons (cPAHs) derived using the total toxicity equivalency (TEQ) for benzo(a)pyrene (B[a]P)

Monitoring wells MW-2, MW-3, and MW-4 were not sampled during the March 2019 sampling event.

Groundwater analytical results (µg/L)

LEGEND

- Monitoring Well
- Boring (EMR, 2004)
- Soil Boring (Farallon, 2015)
- Supplemental Investigation, Cultural Survey Test Pit (Farallon, 2012)
- Supplemental Investigation, Cultural Survey and Soil Sample Test Pit (Farallon, 2012)
- Supplemental Investigation, Soil Sample Test Pit (Farallon, 2012)
- Test Pit (Farallon, 2007, 2008, 2009)
- Ordinary High Water Mark
- Overhead Utility Line
- BNSF Right-of-Way
- Limited Work Area
- Soils with Diesel-range Organic (DRO)/ Oil-range Organic (ORO) Concentrations above Model Toxics Control Act Method A Cleanup Levels for Unrestricted Land Use; Dashed where Inferred
- 790.41 Groundwater Elevation (March 2019)
- 792 Interpreted Groundwater Elevation Contour Line (March 2019) Dashed where inferred
- Interpreted Gradient Direction (March 2019)

0 50 100 Feet
 1" = 50'
 1:600

PROJECT: **JOHN MICHAEL LEASE SITE
 ADJACENT TO 5640 SUNSET HIGHWAY
 CASHMERE, WASHINGTON**

TITLE: **GROUNDWATER ELEVATION
 CONTOUR AND ANALYTICAL RESULTS MAP
 MARCH 2019**

DRAWN BY: R. COLLINS PROJ. NO.: 318140.000.0000
 CHECKED BY: A. MEUGNIOT
 APPROVED BY: -
 DATE: MAY 2019

FIGURE 3

TRC
 19874 141st Place N.E.
 Woodinville, WA 98072
 Phone: 425.489.1938
 www.trccompanies.com

FILE NO.: 318140_FIG3_GW_Map.mxd

TABLES

Table 1
Summary of Soil Analytical Results
TPH and BTEX
John Michael Lease Site
Cashmere, Washington

Analytical Results in milligrams per kilogram (mg/kg)

Location ID	Sampled By	Sample Date	Sample Depth (ft bgs)	TOC	TPH					VOCs ^c			
					DRO ^a (w/ SGC)	DRO ^a (w/o SGC)	ORO ^a (w/ SGC)	ORO ^a (w/o SGC)	GRO ^b	Benzene	Toluene	Ethylbenzene	Xylenes
MTCA Method A Cleanup Levels for Soil^d				NE	2,000	2,000	2,000	2,000	100/30	0.03	7	6	9
Monitoring Well Borings													
MW-1	Farallon	07/29/08	10.0	--	38,700	--	58,100	--	1,250	<0.449	<0.748	3.08	8.14
MW-4	Farallon	07/29/08	5.0	--	11.0	--	80.4	--	<5.07	<0.0304	<0.0507	<0.0507	<0.101
MW-5	TRC	10/29/18	16.0	6,140	22.2	41.4	41.4	60.4	2.99 B	<0.00111	<0.00555	<0.00278	<0.00722
MW-6	TRC	10/29/18	10.5	2,350	<4.32	<4.32	<10.8	<10.8	<2.78	<0.00112	<0.00562	<0.00281	<0.00731
MW-6	TRC	10/29/18	12.5	2,530	<4.58	<4.58	<11.5	<11.5	<2.86	<0.00115	<0.00573	<0.00286	<0.00745
MW-7	TRC	10/30/18	10.0	5,570	2,220	4,480	2,930	4,890	8.89 B	<0.00102	<0.00511	0.00267	0.0118
MW-7	TRC	10/30/18	12.0	2,960	47.9	51.4	129	129	<2.66	<0.00106	<0.00531	<0.00266	<0.00691
Soil Borings													
B-1	EMR	12/01/04	4.0	--	446	--	7,610	--	<4.13	<0.0206	<0.0413	<0.0413	<0.0825
B-2	EMR	12/01/04	8.0	--	3,620	--	7,380	--	795	<2.11	<4.21	<4.21	<8.42
B-3	EMR	12/01/04	6.0	--	<24.8	--	<49.5	--	<4.26	<0.0213	<0.0426	<0.0426	<0.0853
B-4	EMR	12/01/04	6.0	--	46.5	--	286	--	<4.21	<0.0237	<0.0475	<0.0475	<0.0949
B-5	EMR	12/01/04	8.0	--	397	--	989	--	38.7	0.0294	<0.0421	<0.0421	<0.0841
B-6	EMR	12/01/04	5.0	--	35.9	--	320	--	<4.85	<0.0243	<0.0485	<0.0485	<0.097
B-7	EMR	12/01/04	3.0	--	<24.5	--	<48.9	--	<4.24	<0.0212	<0.0424	<0.0424	<0.0848
B-8	EMR	12/01/04	5.0	--	433	--	6,320	--	<4.42	<0.0221	<0.0442	<0.0442	<0.0883
FB-1	Farallon	9/15/2015	10.0	--	2,660	--	442	--	<100	--	--	--	--
FB-2	Farallon	9/15/2015	10.0	--	<100	--	<250	--	<100	--	--	--	--
FB-4	Farallon	8/25/2015	8.5	--	1,800	--	742	--	<100	<0.50	<5.0	<0.50	<1.50
Test Pits													
TP1	Farallon	09/20/07	0-2	--	<19.5	--	314	--	<5.12	<0.0256	<0.205	<0.205	<0.614
TP1	Farallon	09/20/07	6-8	--	10,500	--	20,900	--	17.3	<0.0240	<0.912	<0.192	<0.576
TP2	Farallon	09/20/07	2-4	--	21.1	--	169	--	<4.41	<0.0221	<0.177	<0.177	<0.530
TP2	Farallon	09/20/07	6-8	--	2,210	--	11,900	--	16.3	<0.0275	<0.220	<0.220	<0.660
TP3	Farallon	09/20/07	2-4	--	5.63	--	82.8	--	<4.39	<0.0219	<0.175	<0.175	<0.526
TP3	Farallon	09/20/07	4-6	--	8.80	--	79.1	--	<5.19	<0.0259	<0.207	<0.207	<0.622
TP4	Farallon	09/20/07	4-6	--	<3.88	--	85.3	--	<4.32	<0.0216	<0.173	<0.173	<0.518
TP4	Farallon	09/20/07	6-8	--	7.33	--	92.9	--	<4.19	<0.0210	<0.168	<0.168	<0.503
TP5	Farallon	09/20/07	2-4	--	<3.96	--	16.9	--	<4.81	<0.0241	<0.192	<0.192	<0.577
TP5	Farallon	09/20/07	6-8	--	5.29	--	24.0	--	<4.37	<0.0218	<0.175	<0.175	<0.524
TP6	Farallon	09/20/07	4-6	--	<19.9	--	387	--	<4.42	<0.0221	<0.177	<0.177	<0.530
TP6	Farallon	09/20/07	6-8	--	24.5	--	170	--	<4.74	<0.0237	<0.190	<0.190	<0.569
TP7	Farallon	09/20/07	2-4	--	22.1	--	125	--	<5.47	<0.0274	<0.219	<0.219	<0.656
TP7	Farallon	09/20/07	4-6	--	19.1	--	140	--	<4.59	<0.0229	<0.184	<0.184	<0.551
TP8	Farallon	09/20/07	2-4	--	17.4	--	248	--	<5.45	<0.0273	<0.218	<0.218	<0.654
TP8	Farallon	09/20/07	6-8	--	78.9	--	701	--	<5.97	<0.0299	<0.239	<0.239	<0.717
TP9	Farallon	09/20/07	2-4	--	<3.94	--	10.4	--	<4.39	<0.0220	<0.176	<0.176	<0.527
TP9	Farallon	09/20/07	6-8	--	<399	--	9,260	--	<5.79	<0.0289	<0.232	<0.232	<0.695
TP10	Farallon	09/20/07	2-4	--	24.4	--	174	--	<5.54	<0.0277	<0.221	<0.221	<0.664
TP10	Farallon	09/20/07	6-8	--	149	--	1,080	--	16.8	1.73	0.265	<0.242	1.26
TP11	Farallon	09/20/07	2-4	--	<3.99	--	29.2	--	<4.92	<0.0246	<0.197	<0.197	<0.590
TP11	Farallon	09/20/07	4-6	--	949	--	6,710	--	<5.43	<0.0271	<0.217	<0.217	<0.651

Table 1
Summary of Soil Analytical Results
TPH and BTEX
John Michael Lease Site
Cashmere, Washington

Analytical Results in milligrams per kilogram (mg/kg)

Location ID	Sampled By	Sample Date	Sample Depth (ft bgs)	TOC	TPH					VOCs ^c			
					DRO ^a (w/ SGC)	DRO ^a (w/o SGC)	ORO ^a (w/ SGC)	ORO ^a (w/o SGC)	GRO ^b	Benzene	Toluene	Ethyl-benzene	Xylenes
MTCA Method A Cleanup Levels for Soil^d				NE	2,000	2,000	2,000	2,000	100/30	0.03	7	6	9
Test Pits (continued)													
TP12	Farallon	09/21/07	4-6	--	<3.92	--	16.5	--	<4.80	0.202	<0.192	<0.192	<0.575
TP12	Farallon	09/21/07	6-8	--	23.2	--	183	--	23.4	1.17	<0.232	<0.232	<0.695
TP13	Farallon	09/21/07	0-2	--	<38.9	--	412	--	<5.84	<0.0292	<0.234	<0.234	<0.701
TP13	Farallon	09/21/07	6-8	--	<3.88	--	38.2	--	<5.42	<0.0271	<0.217	<0.217	<0.650
TP14	Farallon	09/21/07	4-6	--	<7.90	--	222	--	<4.46	<0.0223	<0.178	<0.178	<0.535
TP14	Farallon	09/21/07	6-8	--	<19.7	--	454	--	<5.49	<0.0275	<0.220	<0.220	<0.659
TP15	Farallon	09/21/07	0-2	--	58.7	--	812	--	<5.44	<0.0272	<0.218	<0.218	<0.653
TP15	Farallon	09/21/07	4-6	--	14.5	--	194	--	<5.73	<0.0286	<0.229	<0.229	<0.687
TP17	Farallon	05/06/08	8	--	<211	--	829	--	<10.6	<0.0634	<0.106	<0.106	<0.211
TP18	Farallon	05/08/08	8	--	193	--	1,470	--	<13.7	<0.0823	<0.137	<0.137	<0.274
TP21	Farallon	04/06/09	8	--	15.5	--	129	--	--	--	--	--	--
TP22	Farallon	04/06/09	15	--	<11.7	--	52.9	--	--	--	--	--	--
TP23	Farallon	04/06/09	14	--	20.4	--	119	--	--	--	--	--	--
TP24	Farallon	04/06/09	14	--	<10.6	--	<26.4	--	--	--	--	--	--
TP25	Farallon	04/06/09	8	--	318	--	1,880	--	--	--	--	--	--
TP25	Farallon	04/06/09	14	--	44,500	--	61,000	--	--	--	--	--	--
TP26	Farallon	04/07/09	10	--	<15.5	--	105	--	--	--	--	--	--
TP26	Farallon	04/07/09	16	--	8,080	--	12,900	--	--	--	--	--	--
TP27	Farallon	04/07/09	8	--	<11.8	--	49.3	--	--	--	--	--	--
TP27	Farallon	04/07/09	12	--	37,400	--	51,500	--	--	--	--	--	--
TP28	Farallon	04/07/09	10	--	47.5	--	301	--	--	--	--	--	--
TP29	Farallon	04/07/09	8	--	40.1	--	397	--	--	--	--	--	--
TP30	Farallon	06/25/12	14	--	110	--	19,000	--	<0.25	<0.00037	<0.00067	<0.00037	<0.0015
TP30	Farallon	06/25/12	16	--	2.4 J	--	7.8 J	--	<0.25	<0.00037	<0.00067	<0.00037	<0.0015
TP31	Farallon	06/25/12	12	--	<2.0	--	<5.0	--	0.28 J	<0.00037	<0.00067	<0.00037	<0.0015
TP31	Farallon	06/25/12	16	--	<2.0	--	<5.0	--	<0.25	<0.00037	<0.00067	<0.00037	<0.0015
TP32	Farallon	06/26/12	12	--	<2.0	--	<5.0	--	<0.25	<0.00037	<0.00067	<0.00037	<0.0015
TP32	Farallon	06/26/12	16	--	<2.0	--	<5.0	--	<0.25	<0.00037	<0.00067	<0.00037	<0.0015
TP33	Farallon	06/25/12	14	--	1,000	--	1,500	--	8.4	<0.00037	<0.00067	0.016	0.049
TP34	Farallon	06/25/12	14	--	120	--	19,000	--	72	0.0079	0.032	0.20	0.47
TP38	Farallon	06/26/12	4	--	<20	--	98 J	--	<0.25	<0.00037	<0.00067	<0.00037	<0.0015
TP38	Farallon	06/26/12	10	--	60	--	70	--	<0.25	0.0046	<0.00067	<0.00037	<0.0015
TP38	Farallon	06/26/12	12	--	6.0	--	31	--	<0.25	<0.00037	<0.00067	<0.00037	<0.0015
TP38	Farallon	06/26/12	16	--	<2.0	--	<5.0	--	<0.25	<0.00037	<0.00067	<0.00037	<0.0015
Test Trenches													
T1-NE	Farallon	05/06/08	8	--	<58.5	--	201	--	<11.3	<0.0679	0.117	<0.113	<0.226
T1-SW	Farallon	05/06/08	8	--	205	--	942	--	<12.6	<0.0755	<0.126	<0.126	<0.252
T2-SW	Farallon	05/06/08	8	--	854	--	3,840	--	<15.1	<0.0905	<0.151	<0.151	<0.302
T2-NE	Farallon	05/06/08	8	--	<1,410	--	3,960	--	<12.0	<0.0718	<0.120	<0.120	<0.239
T3-SW	Farallon	05/07/08	8	--	<223	--	973	--	<9.35	<0.0561	<0.0935	<0.0935	<0.187
T3-NE	Farallon	05/07/08	8	--	<53.3	--	137	--	17.6	<0.0656	<0.109	<0.109	<0.219

Table 1
Summary of Soil Analytical Results
TPH and BTEX
John Michael Lease Site
Cashmere, Washington

Analytical Results in milligrams per kilogram (mg/kg)

Location ID	Sampled By	Sample Date	Sample Depth (ft bgs)	TOC	TPH					VOCs ^c			
					DRO ^a (w/ SGC)	DRO ^a (w/o SGC)	ORO ^a (w/ SGC)	ORO ^a (w/o SGC)	GRO ^b	Benzene	Toluene	Ethyl-benzene	Xylenes
MTCA Method A Cleanup Levels for Soil^d				NE	2,000	2,000	2,000	2,000	100/30	0.03	7	6	9
Test Trenches (continued)													
T4-S	Farallon	05/07/08	8	--	2,020	--	3,580	--	303	<0.672	<1.12	<1.12	<2.24
T4-N	Farallon	05/07/08	8	--	6,890	--	13,000	--	297	<0.494	<0.823	<0.823	<1.65
T5-NE	Farallon	05/06/08	8	--	71.9	--	175.0	--	10.1	<0.0586	<0.0977	<0.0977	<0.195
T5-W	Farallon	05/06/08	8	--	82.9	--	341	--	<15.4	<0.0923	<0.154	<0.154	<0.308
T6-S	Farallon	05/07/08	8	--	12,100	--	16,300	--	719	<0.523	<0.872	1.44	2.92
T6-N	Farallon	05/07/08	10	--	18,100	--	24,300	--	271	<0.0593	<0.0988	0.135	0.862
T7-S	Farallon	05/08/08	8	--	37,600	--	51,600	--	1,020	<0.569	<0.949	<0.949	3.09
T7-N	Farallon	05/08/08	8	--	6,860	--	11,300	--	156	<0.0500	<0.0833	<0.0833	0.359
T8-SW	Farallon	05/08/08	6	--	<12.0	--	<30.0	--	<10.4	<0.0627	<0.104	<0.104	<0.209
T8-NE	Farallon	05/08/08	6	--	<11.6	--	<29.1	--	<10.5	<0.0629	<0.105	<0.105	<0.210

NOTES:

Results in **bold** denote concentrations detected at or above the applicable cleanup level.

< denotes analyte not detected at or above the given reporting limit.

-- sample was not analyzed for this constituent.

B denotes analyte was detected in the blank and the value presented here may be biased high.

ABBREVIATIONS:

- ft bgs = feet below ground surface
- TOC = total organic carbon
- TPH = total petroleum hydrocarbons
- VOC = volatile organic compounds
- DRO = diesel-range organics
- ORO = heavy oil-range organics
- GRO = gasoline-range organics
- NE = no cleanup level established
- EMR = EMR, Inc.
- Farallon = Farallon Consulting, LLC
- TRC = TRC Environmental

FOOTNOTES:

^aAnalyzed by Northwest Method NWTPH-Dx.

^bAnalyzed by Northwest Method NWTPH-Gx.

^cAnalyzed by U.S. Environmental Protection Agency Method 8021B. 2018 samples use EPA 8260C

^dWashington State Department of Ecology, Model Toxics Control Act (MTCA) Cleanup Level and Risk Calculations (CLARC) Tables Method A values for Soil, Chapter 173-340 WAC, MTCA Chapter 70.105D RCW, Uniform Environmental Covenants Act Chapter 64.70 TCW. Publication No. 94-06. Revised August 2015.

**Table 2
Summary of Soil Analytical Results
cPAHs and Naphthalene
John Michael Lease Site
Cashmere, Washington**

Analytical Results in milligrams per kilogram (mg/kg)

Location ID	Sampled By	Sample Date	Sample Depth (ft bgs)	Semi-Volatile Organic Compounds ^a								
				Benzo (a) anthracene	Chrysene	Benzo (b) fluoranthene	Benzo (k) fluoranthene	Benzo (a) pyrene	Indeno (1,2,3-cd) pyrene	Dibenz(a,h) anthracene	cPAHs ^c	Naphthalene
MTCA Method A Cleanup Levels for Soil^b				NE	NE	NE	NE	0.10	NE	NE	0.10	5
Monitoring Wells												
MW-5	TRC	10/29/18	16.0	<0.00666	0.00939	<0.00666	<0.00666	<0.00666	<0.00666	<0.00666	< 0.0101	<0.0222
MW-6	TRC	10/29/18	10.5	<0.00648	<0.00648	<0.00648	<0.00648	<0.00648	<0.00648	<0.00648	< 0.0098	<0.0216
MW-6	TRC	10/29/18	12.5	<0.00687	<0.00687	<0.00687	<0.00687	<0.00687	<0.00687	<0.00687	< 0.0104	<0.0229
MW-7	TRC	10/30/18	10.0	0.251	0.668	0.0967	0.0259	0.130	<0.00613	<0.00613	0.1753	0.0685
MW-7	TRC	10/30/18	12.0	0.00866	0.0199	<0.00638	<0.00638	<0.00638	<0.00638	<0.00638	< 0.0100	<0.0213
Soil Borings												
FB-1	Farallon	9/15/2015	10	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	< 0.076	--
FB-2	Farallon	9/15/2015	10	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	< 0.076	--
FB-4	Farallon	8/25/2015	8.5	0.00577 J	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	< 0.071	--
Test Pits												
TP1	Farallon	09/20/07	0-2	<0.00330	0.0076	<0.00330	<0.00330	<0.00330	<0.00330	<0.00330	0.0026	<0.00330
TP1	Farallon	09/20/07	6-8	<8.28	<8.28	<8.28	<8.28	<8.28	<8.28	<8.28	< 6.2514	<0.00330
TP2	Farallon	09/20/07	2-4	0.0313	0.0360	0.0642	0.0282	0.0282	0.0188	<0.0156	0.0436	<0.0156
TP2	Farallon	09/20/07	6-8	<8.22	<8.22	<8.22	<8.22	<8.22	<8.22	<8.22	< 6.2061	<0.0156
TP3	Farallon	09/20/07	2-4	<0.00326	0.00522	0.00424	0.00456	<0.00326	0.00326	<0.00326	0.0032	<0.00326
TP3	Farallon	09/20/07	4-6	<0.00327	<0.00327	<0.00327	<0.00327	<0.00327	<0.00327	<0.00327	< 0.0025	<0.00326
TP4	Farallon	09/20/07	4-6	<0.00316	0.00411	0.00411	0.00348	<0.00316	<0.00316	<0.00316	0.0029	<0.00316
TP4	Farallon	09/20/07	6-8	<0.00327	0.00327	0.00392	<0.00327	<0.00327	<0.00327	<0.00327	0.0027	<0.00316
TP5	Farallon	09/20/07	2-4	<0.00320	<0.00320	<0.00320	<0.00320	<0.00320	<0.00320	<0.00320	< 0.0024	<0.00320
TP5	Farallon	09/20/07	6-8	<0.00332	<0.00332	<0.00332	<0.00332	<0.00332	<0.00332	<0.00332	< 0.0025	<0.00320
TP6	Farallon	09/20/07	4-6	0.00426	0.00623	<0.00328	<0.00328	<0.00328	<0.00328	<0.00328	0.0028	<0.00328
TP6	Farallon	09/20/07	6-8	<0.00323	0.00355	<0.00323	<0.00323	<0.00323	<0.00323	<0.00323	0.0025	<0.00328
TP7	Farallon	09/20/07	2-4	<0.00333	<0.00333	0.00366	<0.00333	<0.00333	<0.00333	<0.00333	0.0027	<0.00333
TP7	Farallon	09/20/07	4-6	<0.0323	<0.0323	<0.0323	<0.0323	<0.0323	<0.0323	<0.0323	< 0.0024	<0.00333
TP8	Farallon	09/20/07	2-4	0.0155	0.0152	0.0107	0.00939	0.00615	0.00324	<0.00324	0.0103	0.01
TP8	Farallon	09/20/07	6-8	0.163	0.202	0.264	0.117	0.1300	0.0358	0.0391	0.1939	0.01
TP9	Farallon	09/20/07	2-4	<0.00332	<0.00332	<0.00332	<0.00332	<0.00332	<0.00332	<0.00332	< 0.0025	<0.00332
TP9	Farallon	09/20/07	6-8	<16.6	<16.6	<16.6	<16.6	<16.6	<16.6	<16.6	< 12.5330	<0.00332

**Table 2
Summary of Soil Analytical Results
cPAHs and Naphthalene
John Michael Lease Site
Cashmere, Washington**

Analytical Results in milligrams per kilogram (mg/kg)

Location ID	Sampled By	Sample Date	Sample Depth (ft bgs)	Semi-Volatile Organic Compounds ^a								
				Benzo (a) anthracene	Chrysene	Benzo (b) fluoranthene	Benzo (k) fluoranthene	Benzo (a) pyrene	Indeno (1,2,3-cd) pyrene	Dibenz(a,h) anthracene	cPAHs ^c	Naphthalene
MTCA Method A Cleanup Levels for Soil^b				NE	NE	NE	NE	0.10	NE	NE	0.10	5
Test Pits (continued)												
TP10	Farallon	09/20/07	2-4	<0.0330	<0.0330	<0.0330	<0.0330	<0.0330	<0.0330	<0.0330	< 0.0249	<0.0330
TP10	Farallon	09/20/07	6-8	<0.0162	0.0276	<0.0162	<0.0162	<0.0162	<0.0162	<0.0162	< 0.0124	<0.0330
TP11	Farallon	09/20/07	2-4	0.00364	0.00430	0.00530	0.00331	<0.00331	0.00331	<0.00331	0.0034	<0.00331
TP11	Farallon	09/20/07	4-6	<0.163	<0.163	<0.163	<0.163	<0.163	<0.163	<0.163	< 0.1231	<0.00331
TP12	Farallon	09/21/07	4-6	<0.00325	<0.00325	<0.00325	<0.00325	<0.00325	<0.00325	<0.00325	< 0.0025	<0.00325
TP12	Farallon	09/21/07	6-8	0.00657	0.0151	<0.00328	<0.00328	0.0102	0.00722	<0.00328	0.0122	<0.00325
TP13	Farallon	09/21/07	6-8	<0.00329	<0.00329	<0.00329	<0.00329	<0.00329	<0.00329	<0.00329	< 0.0025	<0.00329
TP14	Farallon	09/21/07	4-6	0.147	0.163	0.153	0.171	0.166	0.0570	0.0374	0.2242	<0.0163
TP14	Farallon	09/21/07	6-8	<0.164	<0.164	<0.164	<0.164	<0.164	<0.164	<0.164	< 0.1238	<0.0163
TP15	Farallon	09/21/07	0-2	<0.162	<0.162	<0.162	<0.162	<0.162	<0.162	<0.162	< 0.1223	<0.162
TP15	Farallon	09/21/07	4-6	0.168	0.183	0.208	0.159	0.165	0.0586	0.0322	0.2294	<0.162
TP17	Farallon	05/06/08	8	<0.107	<0.107	<0.107	<0.107	<0.107	<0.107	<0.107	< 1.4667	<0.107
TP18	Farallon	05/08/08	8	<0.133	<0.133	<0.133	<0.133	<0.133	<0.133	<0.133	< 0.0823	<0.133
TP30	Farallon	06/25/12	14	0.0064 J	0.0055 J	0.0083	<0.0013	0.012	0.0018 J	0.0057 J	0.0087	--
TP30	Farallon	06/25/12	16	<0.00062	0.0012 J	0.0011 J	<0.0013	<0.0011	<0.0011	<0.0012	0.0007	--
TP31	Farallon	06/25/12	12	0.0012 J	0.0018 J	0.0015 J	<0.0013	<0.0011	<0.0011	<0.0012	0.0017	--
TP31	Farallon	06/25/12	16	<0.00062	<0.00092	<0.00082	<0.0013	<0.0011	<0.0011	<0.0012	0.0006	--
TP32	Farallon	06/26/12	12	0.0031 J	0.0032 J	0.0046 J	<0.0013	0.0026 J	<0.0011	0.0021 J	0.0042	--
TP32	Farallon	06/26/12	16	<0.00062	<0.00092	<0.00082	<0.0013	<0.0011	<0.0011	<0.0012	0.0006	--
TP33	Farallon	06/25/12	14	0.14 J	0.22 J	0.14 J	<0.067	0.63	<0.056	<0.058	0.19	--
TP34	Farallon	06/25/12	14	0.27 J	1.0	0.24 J	<0.067	<0.055	<0.056	<0.058	0.40	--
TP38	Farallon	06/26/12	4	0.039 J	0.045 J	0.059 J	<0.027	0.026 J	<0.022	0.035 J	0.056	--
TP38	Farallon	06/26/12	10	0.034 J	0.097	0.082 J	<0.013	0.11	<0.011	<0.012	0.055	--
TP38	Farallon	06/26/12	12	0.0031 J	<0.00092	0.0022 J	<0.0013	0.0029 J	0.0029 J	0.0024 J	0.0040	--
TP38	Farallon	06/26/12	16	<0.00062	<0.00092	<0.00082	<0.0013	<0.0011	<0.0011	<0.0012	0.0006	--

**Table 2
Summary of Soil Analytical Results
cPAHs and Naphthalene
John Michael Lease Site
Cashmere, Washington**

Analytical Results in milligrams per kilogram (mg/kg)

Location ID	Sampled By	Sample Date	Sample Depth (ft bgs)	Semi-Volatile Organic Compounds ^a								
				Benzo (a) anthracene	Chrysene	Benzo (b) fluoranthene	Benzo (k) fluoranthene	Benzo (a) pyrene	Indeno (1,2,3-cd) pyrene	Dibenz(a,h) anthracene	cPAHs ^c	Naphthalene
MTCA Method A Cleanup Levels for Soil^b				NE	NE	NE	NE	0.10	NE	NE	0.10	5
Test Trenches												
T1-NE	Farallon	05/06/08	8	<0.0117	0.0155	<0.0117	<0.0117	<0.0117	<0.0117	<0.0117	< 0.0089	<0.0117
T1-SW	Farallon	05/06/08	8	0.0255	0.0502	0.0366	0.0204	0.0230	0.0153	<0.0128	0.0339	0.02
T2-NE	Farallon	05/06/08	8	<0.282	<0.282	<0.282	<0.282	<0.282	<0.282	<0.282	< 0.2129	<0.282
T2-SW	Farallon	05/06/08	8	<0.327	<0.327	<0.327	<0.327	0.4150	<0.327	<0.327	0.4984	<0.327
T3-NE	Farallon	05/07/08	8	<0.530	0.635	<0.530	<0.530	<0.530	<0.530	<0.530	0.0289	<0.530
T3-SW	Farallon	05/07/08	8	<0.109	<0.109	<0.109	<0.109	<0.109	<0.109	<0.109	< 0.0091	<0.109
T4-N	Farallon	05/07/08	8	<1.59	3.39	<1.59	<1.59	<1.59	<1.59	<1.59	0.1004	<1.59
T4-S	Farallon	05/07/08	8	0.68	1.56	<0.600	<0.600	<0.600	<0.600	<0.600	0.0808	<0.600
T5-NE	Farallon	05/06/08	8	<0.0118	<0.0118	<0.0118	<0.0118	<0.0118	<0.0118	<0.0118	< 0.0109	<0.0118
T5-W	Farallon	05/06/08	8	0.0177	0.0237	<0.0127	<0.0127	<0.0127	<0.0127	<0.0127	1.3165	0.05
T6-N	Farallon	05/07/08	10	2.68	7.17	<1.61	<1.61	<1.61	<1.61	<1.61	1.1704	87.30
T6-S	Farallon	05/07/08	8	1.86	4.55	<1.55	<1.55	<1.55	<1.55	<1.55	3.5970	33.10
T7-N	Farallon	05/08/08	8	<1.52	3.04	<1.52	<1.52	<1.52	<1.52	<1.52	0.0089	6.98
T7-S	Farallon	05/08/08	8	5.54	13.8	<4.15	<4.15	<4.15	<4.15	<4.15	1.2264	189.80
T8-NE	Farallon	05/08/08	6	0.0212	0.0236	0.0228	0.0188	0.0204	0.0141	<0.0118	0.5036	<0.0118
T8-SW	Farallon	05/08/08	6	<0.0120	<0.0120	<0.0120	<0.0120	<0.0120	<0.0120	<0.0120	< 0.4039	<0.0120

NOTES:

Results in **bold** denote concentrations reported at or above the applicable cleanup level (including non-detected results where the reporting limit is above the CUL).

< denotes analyte not detected at or above the given reporting limit.

-- sample was not analyzed for this constituent.

J denotes analyte was detected in the sample at an estimated concentration between the method detection limit and the reporting limit.

ABBREVIATIONS:

ft bgs = feet below ground surface

B(a)P = benzo(a)pyrene

TEQ = total toxicity equivalency

NE = no cleanup level established

EMR = EMR, Inc.

Farallon = Farallon Consulting, LLC

TRC = TRC Environmental

FOOTNOTES:

^aAnalyzed by U.S. Environmental Protection Agency Method 8270D-SIM.

^bWashington State Department of Ecology, Model Toxics Control Act (MTCA) Cleanup Level and Risk Calculations (CLARC) Tables Method A values for Soil, Chapter 173-340 WAC, MTCA Chapter 70.105D RCW, Uniform Environmental Covenants Act Chapter 64.70 TCW. Publication No. 94-06. Revised August 2015.

^cTotal carcinogenic polycyclic aromatic hydrocarbons (cPAHs) derived using the total toxicity equivalency for benzo(a)pyrene method in Section 708(8) of Chapter 173-340 of the Washington Administrative Code. For concentrations reported at less than the laboratory reporting limit, half the reporting limit was used to calculate the TEQ.

Table 3
Summary of Groundwater Elevation Data
John Michael Lease Site
Cashmere, Washington

Well ID	Date Measured	TOC Elevation (ft amsl)	Depth to Water (ft btoc)	Groundwater Elevation (ft amsl)
MW-1	8/6/2008	804.01	13.94	790.07
	4/7/2009		13.96	790.05
	9/25/2012		13.98	790.03
	12/11/2012		13.66	790.35
	3/20/2013		13.40	790.61
	6/19/2013		11.86	792.15
	8/11/2015		14.32	789.69
	11/7/2018		13.41	790.60
	3/26/2019		13.60	790.41
MW-2	8/6/2008	801.22	9.00	792.22
	4/7/2009		9.12	792.10
	9/25/2012		9.30	791.92
	12/11/2012		8.88	792.34
	3/20/2013		8.70	792.52
	6/19/2013		7.54	793.68
	8/11/2015		9.76	791.46
	11/7/2018		6.26	794.96
	3/26/2019		8.92	792.30
MW-3	8/6/2008	798.88	7.83	791.05
	4/7/2009		7.79	791.09
	9/25/2012		7.70	791.18
	12/11/2012		7.62	791.26
	3/20/2013		7.54	791.34
	6/19/2013		6.64	792.24
	8/11/2015		8.14	790.74
	11/7/2018		7.59	791.29
	3/26/2019		7.65	791.23

Table 3
Summary of Groundwater Elevation Data
John Michael Lease Site
Cashmere, Washington

Well ID	Date Measured	TOC Elevation (ft amsl)	Depth to Water (ft btoc)	Groundwater Elevation (ft amsl)
MW-4	8/6/2008	797.99	6.39	791.60
	4/7/2009		6.45	791.54
	9/25/2012		6.33	791.66
	12/11/2012		6.30	791.69
	3/20/2013		6.22	791.77
	6/19/2013		5.18	792.81
	8/11/2015		6.99	791.00
	11/7/2018		6.26	791.73
	3/26/2019		6.29	791.70
MW-5	11/7/2018	802.97	13.09	789.88
	3/26/2019		13.18	789.79
MW-6	11/7/2018	799.49	10.59	788.90
	3/26/2019		10.67	788.82
MW-7	11/7/2018	798.92	8.11	790.81
	3/26/2019		8.17	790.75

NOTES:

TOC elevations surveyed to NAVD88 by Erlandsen Surveying, November 2018

ABBREVIATIONS:

TOC = top of casing

ft amsl = feet above mean sea level

ft btoc = feet below top of casing

Table 4
Summary of Groundwater Analytical Results
TPH and BTEX
John Michael Lease Site
Cashmere, Washington

Analytical Results in micrograms per liter (µg/L)

Well ID	Sampled By	Sample Date	TOC	TPH					VOCs ^c			
				DRO ^a w/SGC	DRO ^a w/oSGC	ORO ^a w/SGC	ORO ^a w/o SGC	GRO ^b	Benzene	Toluene	Ethyl- benzene	Xylenes
MTCA Method A Cleanup Levels for Groundwater^d			NE	500	500	500	500	1,000/800	5	1,000	700	1,000
Monitoring Well Samples												
MW-1	Farallon	8/6/2008	--	1,110	--	<472	--	145 J	1.09 J	0.7 J	0.893 J	2.84 J
MW-1	Farallon	9/25/2012	--	<100	--	<250	--	<100	<0.50	<5.0	<0.50	<1.5
MW-1	Farallon	12/11/2012	--	200	--	150 J	--	<100	<0.50	<5.0	<0.50	<1.5
MW-1	Farallon	3/20/2013	--	100	--	<250	--	<100	<0.50	0.23 J	<0.50	0.82 J
MW-1	Farallon	6/19/2013	--	110	--	<250	--	<100	<0.50	<5.0	<0.50	<1.5
MW-1	Farallon	8/11/2015	--	210	--	267	--	<100	<0.50	<5.0	<0.50	<1.5
MW-1	TRC	11/9/2018	2,680	703	1,760	1,220	2,760	<100	<1.00	<1.00	<1.00	<3.00
MW-1	TRC	3/26/2019	2,460	<200	262	<250	<250	<100	<1.00	<1.00	<1.00	<3.00
MW-2	Farallon	8/6/2008	--	<236	--	<472	--	<50	<0.500	<0.500	<0.500	<1.00
MW-2	Farallon	9/25/2012	--	<100	--	<250	--	<100	<0.50	<5.0	<0.50	<1.5
MW-2	Farallon	12/11/2012	--	<100	--	<250	--	<100	<0.50	<5.0	<0.50	<1.5
MW-2	Farallon	3/20/2013	--	<100	--	<250	--	<100	<0.50	<5.0	<0.50	<1.5
MW-2	Farallon	6/19/2013	--	<100	--	<250	--	<100	<0.50	<5.0	<0.50	<1.5
MW-2	Farallon	8/11/2015	--	<100	--	<250	--	<100	<0.50	<5.0	<0.50	<1.5
MW-2	TRC	11/9/2018	1,470	<200	<200	<250	<250	100	<1.00	<1.00	<1.00	<3.00
MW-2	TRC	3/26/2019	--	--	--	--	--	--	--	--	--	--
MW-3	Farallon	8/6/2008	--	<236	--	499	--	<50	<0.500	<0.500	<0.500	<1.00
MW-3	Farallon	9/25/2012	--	<100	--	<250	--	<100	<0.50	<5.0	<0.50	<1.5
MW-3	Farallon	12/11/2012	--	90 J	--	<250	--	<100	<0.50	<5.0	<0.50	<1.5
MW-3	Farallon	3/20/2013	--	<100	--	<250	--	<100	<0.50	0.26 J	<0.50	<1.5
MW-3	Farallon	6/19/2013	--	57 J	--	<250	--	59 J	<0.50	<5.0	<0.50	<1.5
MW-3	Farallon	8/11/2015	--	<100	--	<250	--	<100	<0.50	<5.0	<0.50	<1.5
MW-3	TRC	11/9/2018	2,400	<200	<200	<250	<250	<100	<1.00	<1.00	<1.00	<3.00
MW-3	TRC	3/26/2019	--	--	--	--	--	--	--	--	--	--
MW-4	Farallon	8/6/2008	--	<236	--	<472	--	<50	<0.500	<0.500	<0.500	<1.00
MW-4	Farallon	9/25/2012	--	<100	--	<250	--	<100	<0.50	<5.0	<0.50	<1.5
MW-4	Farallon	12/11/2012	--	78 J	--	170 J	--	<100	<0.50	<5.0	<0.50	<1.5
MW-4	Farallon	3/20/2013	--	<100	--	<250	--	<100	<0.50	<5.0	<0.50	<1.5
MW-4	Farallon	6/19/2013	--	<100	--	<250	--	<50	<0.50	<5.0	<0.50	<1.5
MW-4	Farallon	8/11/2015	--	<100	--	<250	--	<100	<0.50	<5.0	<0.50	<1.5
MW-4	TRC	11/7/2018	1,790	<200	<200	<250	<250	<100	<1.00	<1.00	<1.00	<3.00
MW-4	TRC	3/26/2019	--	--	--	--	--	--	--	--	--	--

Table 4
Summary of Groundwater Analytical Results
TPH and BTEX
John Michael Lease Site
Cashmere, Washington

Analytical Results in micrograms per liter (µg/L)

Well ID	Sampled By	Sample Date	TOC	TPH					VOCs ^c			
				DRO ^a w/SGC	DRO ^a w/oSGC	ORO ^a w/SGC	ORO ^a w/o SGC	GRO ^b	Benzene	Toluene	Ethyl- benzene	Xylenes
MTCA Method A Cleanup Levels for Groundwater^d			NE	500	500	500	500	1,000/800	5	1,000	700	1,000
Monitoring Well Samples												
MW-5	TRC	11/8/2018	1,560	<200	<200	<250	<250	<100	<1.00	<1.00	<1.00	<3.00
MW-5	TRC	3/26/2019	1,030	<200	<200	<250	<250	<100	<1.00	<1.00	<1.00	<3.00
MW-6	TRC	11/8/2018	2,140	<200	<200	<250	<250	<100	<1.00	<1.00	<1.00	<3.00
MW-6	TRC	3/26/2019	2,060	<200	<200	<250	<250	<100	<1.00	<1.00	<1.00	<3.00
MW-7	TRC	11/8/2018	2,010	200	743	<250 J	707	<100	<1.00	<1.00	<1.00	<3.00
MW-7	TRC	3/26/2019	1,650	<200	<200	<250	<250	<100	<1.00	<1.00	<1.00	<3.00
Temporary Well Samples												
B-5	EMR	12/1/2004	--	1,290	--	2,160	--	<100	26.1	<1.0	<1.0	<2.0
B-6	EMR	12/1/2004	--	<254	--	<507	--	<100	<0.5	<1.0	<1.0	<2.0
B-8	EMR	12/1/2004	--	<252	--	<505	--	<100	<0.5	<1.0	<1.0	<2.0

NOTES:

Results in **bold** denote concentrations detected at or above the applicable cleanup level.

< denotes analyte not detected at or above the given reporting limit.

-- sample was not analyzed for this constituent.

J denotes analyte was detected in the sample at an estimated concentration between the method detection limit and the reporting limit.

ABBREVIATIONS:

- ft bgs = feet below ground surface
- TOC = total organic carbon
- TPH = total petroleum hydrocarbons
- VOC = volatile organic compounds
- DRO = diesel-range organics
- ORO = heavy oil-range organics
- GRO = gasoline-range organics
- NE = no cleanup level established
- EMR = EMR, Inc.
- Farallon = Farallon Consulting, LLC
- TRC = TRC Environmental

FOOTNOTES:

^aAnalyzed by Northwest Method NWTPH-Dx.

^bAnalyzed by Northwest Method NWTPH-Gx.

^cAnalyzed by USEPA Method 8260C. Prior to 2018, analyzed by USEPA Method 8021B.

^dWashington State Department of Ecology, Model Toxics Control Act (MTCA) Cleanup Level and Risk Calculations (CLARC) Tables Method A values for Groundwater, Chapter 173-340 WAC, MTCA Chapter 70.105D RCW, Uniform Environmental Covenants Act Chapter 64.70 TCW. Publication No. 94-06. Revised August 2015.



Table 5
Summary of Groundwater Analytical Results
cPAHs and Naphthalene
John Michael Lease Site
Cashmere, Washington

Analytical Results in micrograms per liter (µg/L)

Well ID	Sampled By	Sample Date	Semi-Volatile Organic Compounds ^a								cPAHs ^c	Naphthalene
			Benzo (a) anthracene	Chrysene	Benzo (b) fluoranthene	Benzo (k) fluoranthene	Benzo (a) pyrene	Indeno (1,2,3-cd) pyrene	Dibenz(a,h) anthracene			
MTCA Method A Cleanup Levels for Groundwater^b			NE	NE	NE	NE	0.10	NE	NE	0.10	160	
Monitoring Well Samples												
MW-1	Farallon	8/6/2008	<0.0943	<0.0943	0.2890	<0.0943	0.2550	<0.0943	<0.0943	0.3032	0.975	
MW-1	Farallon	9/25/2012	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	< 0.038	<0.079	
MW-1	Farallon	12/11/2012	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	< 0.038	<0.11	
MW-1	Farallon	3/20/2013	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	< 0.038	<0.11	
MW-1	Farallon	6/19/2013	0.015 J	0.012 J	<0.050	<0.050	<0.050	<0.050	<0.050	< 0.037	<0.11	
MW-1	Farallon	8/11/2015	0.0172 J	0.0245 J	<0.050	<0.050	<0.050	<0.050	<0.050	< 0.037	<0.038	
MW-1	TRC	11/9/2018	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	< 0.038	<0.25	
MW-1	TRC	3/26/2019	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	< 0.050	<0.25	
MW-2	Farallon	8/6/2008	<0.0943	<0.0943	<0.0943	<0.0943	<0.0943	<0.0943	<0.0943	< 0.0712	<0.0943	
MW-2	Farallon	9/25/2012	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	< 0.038	<0.5	
MW-2	Farallon	12/11/2012	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	< 0.038	<0.5	
MW-2	Farallon	3/20/2013	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	< 0.038	<0.033	
MW-2	Farallon	6/19/2013	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	< 0.038	<0.041	
MW-2	Farallon	8/11/2015	0.00657 J	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	< 0.036	<0.0335	
MW-2	TRC	11/9/2018	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	< 0.038	<0.25	
MW-2	TRC	3/26/2019	--	--	--	--	--	--	--	--	--	
MW-3	Farallon	8/6/2008	<0.0943	<0.0943	<0.0943	<0.0943	<0.0943	<0.0943	<0.0943	< 0.0712	<0.0943	
MW-3	Farallon	9/25/2012	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	< 0.038	<0.5	
MW-3	Farallon	12/11/2012	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	< 0.038	<0.5	
MW-3	Farallon	3/20/2013	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	< 0.038	<0.08	
MW-3	Farallon	6/19/2013	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	< 0.038	<0.038	
MW-3	Farallon	8/11/2015	0.00570 J	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	< 0.036	<0.03	
MW-3	TRC	11/9/2018	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	< 0.038	<0.25	
MW-3	TRC	3/26/2019	--	--	--	--	--	--	--	--	--	
MW-4	Farallon	8/6/2008	<0.0943	<0.0943	<0.0943	<0.0943	<0.0943	<0.0943	<0.0943	< 0.0712	<0.0943	
MW-4	Farallon	9/25/2012	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	< 0.038	<0.08	
MW-4	Farallon	12/11/2012	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	< 0.038	<0.08	
MW-4	Farallon	3/20/2013	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	< 0.038	<0.031	
MW-4	Farallon	6/19/2013	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	< 0.038	<0.04	
MW-4	Farallon	8/11/2015	0.00636 J	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	< 0.036	<0.0435	
MW-4	TRC	11/7/2018	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	< 0.038	<0.25	
MW-4	TRC	3/26/2019	--	--	--	--	--	--	--	--	--	

Table 5
Summary of Groundwater Analytical Results
cPAHs and Naphthalene
John Michael Lease Site
Cashmere, Washington

Analytical Results in micrograms per liter (µg/L)

Well ID	Sampled By	Sample Date	Semi-Volatile Organic Compounds ^a									
			Benzo (a) anthracene	Chrysene	Benzo (b) fluoranthene	Benzo (k) fluoranthene	Benzo (a) pyrene	Indeno (1,2,3-cd) pyrene	Dibenz(a,h) anthracene	cPAHs ^c	Naphthalene	
MTCA Method A Cleanup Levels for Groundwater^b			NE	NE	NE	NE	0.10	NE	NE	0.10	160	
Monitoring Well Samples												
MW-5	TRC	11/8/2018	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	< 0.038	<0.25
MW-5	TRC	3/26/2019	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	< 0.038	<0.25
MW-6	TRC	11/8/2018	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	< 0.038	<0.25
MW-6	TRC	3/26/2019	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	< 0.038	<0.25
MW-7	TRC	11/8/2018	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	< 0.038	<0.25
MW-7	TRC	3/26/2019	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	< 0.038	<0.25
Temporary Monitoring Well Samples												
B-5	EMR	12/1/2004	--	--	--	--	--	--	--	--	--	0.64
B-6	EMR	12/1/2004	--	--	--	--	--	--	--	--	--	1.8
B-8	EMR	12/1/2004	--	--	--	--	--	--	--	--	--	1.1

NOTES:

Results in **bold** denote concentrations detected at or above the applicable cleanup level.

< denotes analyte not detected at or above the given reporting limit.

-- sample was not analyzed for this constituent.

J denotes analyte was detected in the sample at an estimated concentration between the method detection limit and the reporting limit.

ABBREVIATIONS:

ft bgs = feet below ground surface

B(a)P = benzo(a)pyrene

TEQ = total toxicity equivalency

NE = no cleanup level established

EMR = EMR, Inc.

Farallon = Farallon Consulting, LLC

TRC = TRC Environmental

FOOTNOTES:

^aAnalyzed by U.S. Environmental Protection Agency Method 8270D-SIM.

^bWashington State Department of Ecology, Model Toxics Control Act (MTCA) Cleanup Level and Risk Calculations(CLARC) Tables Method A values for Groundwater, Chapter 173-340 WAC, MTCA Chapter 70.105D RCW, Uniform Environmental Covenants Act Chapter 64.70 TCW. Publication No. 94-06. Revised August 2015.

^cTotal carcinogenic polycyclic aromatic hydrocarbons (cPAHs) derived using the total toxicity equivalency for benzo(a)pyrene method in Section 708(8) of Chapter 173-340 of the Washington Administrative Code.

For concentrations reported at less than the laboratory reporting limit, half the reporting limit was used to calculate the TEQ.

**Table 6
Summary of Groundwater Field Parameters
John Michael Lease Site
Cashmere, Washington**

Well ID	Sampled By	Sample Date	Temperature (°C)	pH	Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)
MW-1	Farallon	8/6/2008	14.78	7.12	0.634	2.02	194.8	--
	Farallon	9/25/2012	13.29	6.42	0.546	0.99	110.2	--
	Farallon	12/11/2012	11.13	6.57	0.481	1.19	67.8	--
	Farallon	3/20/2013	10.15	6.83	0.595	3.22	114.9	--
	Farallon	6/19/2013	12.79	6.64	0.517	2.13	70.0	--
	Farallon	8/11/2015	18.47	6.72	0.567	2.04	93.0	--
	TRC	11/9/2018	12.29	6.49	0.435	1.12	283.7	515.0
MW-2	TRC	3/26/2019	10.81	7.27	0.490	5.40	180.0	3.25
	Farallon	8/6/2008	17.00	6.72	0.550	3.69	403.5	--
	Farallon	9/25/2012	14.83	6.63	0.530	4.31	145.7	--
	Farallon	12/11/2012	11.53	6.38	0.466	4.35	276.1	--
	Farallon	3/20/2013	9.68	6.89	0.502	5.29	146.6	--
	Farallon	6/19/2013	14.25	7.26	0.521	5.72	316.0	--
	Farallon	8/11/2015	20.39	6.91	0.542	3.66	96.0	--
MW-3	TRC	11/9/2018	13.28	6.75	0.402	6.21	270.8	73.3
	Farallon	8/6/2008	17.07	6.23	0.548	2.64	432.7	--
	Farallon	9/25/2012	16.43	6.38	0.534	0.81	137.6	--
	Farallon	12/11/2012	12.44	6.89	0.517	2.11	145.1	--
	Farallon	3/20/2013	9.06	6.79	0.560	4.05	128.3	--
	Farallon	6/19/2013	14.55	7.10	0.560	3.08	297.0	--
	Farallon	8/11/2015	20.53	6.89	0.595	1.25	80.0	--
MW-4	TRC	11/9/2018	13.62	6.64	0.422	1.33	235.2	83.3
	Farallon	8/6/2008	16.86	6.35	0.504	5.37	439.1	--
	Farallon	9/25/2012	14.30	6.46	0.532	4.14	157.0	--
	Farallon	12/11/2012	11.95	6.99	0.486	4.59	235.0	--
	Farallon	3/20/2013	10.29	6.82	0.580	6.18	159.6	--
	Farallon	6/19/2013	13.18	6.78	0.559	6.50	66.5	--
	Farallon	8/11/2015	19.76	7.00	0.595	3.75	95.0	--
MW-5	TRC	11/7/2018	13.72	6.78	0.414	6.35	221.0	154
	TRC	11/8/2018	12.30	6.83	0.392	5.51	149.8	44.2
MW-6	TRC	3/26/2019	11.30	7.34	0.378	6.86	214.4	0.48
	TRC	11/8/2018	14.71	6.73	0.425	2.98	39.6	299
MW-7	TRC	3/26/2019	9.87	7.23	0.402	12.82	218.3	8.82
	TRC	11/8/2018	13.71	6.81	0.411	3.37	120.8	49.7
	TRC	3/26/2019	10.27	7.25	0.400	5.45	149.4	5.60

ABBREVIATIONS:

°C = degrees Celsius
mS/cm = milliSiemens per centimeter
mg/L = milligrams per liter
mV = milliVolts
NTU = Nephelometric turbidity units
Farallon = Farallon Consulting, LLC
TRC = TRC Environmental

APPENDIX A
Certified Analytical Laboratory Reports and
Chain-of-Custody Documentation



April 04, 2019

TRC - BNSF Region 1

Sample Delivery Group: L1083182
Samples Received: 03/28/2019
Project Number: 318140/OOTAO2
Description: BNSF - John Michael Lease Cashmere, WA

Report To: Keith Woodburne
19874 141st Place NE
Woodinville, WA 98072

Entire Report Reviewed By:



Olivia Studebaker
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace National is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



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SAMPLE SUMMARY



MW1-0319 L1083182-01 GW

Collected by
E. Stata
Collected date/time
03/26/19 18:05
Received date/time
03/28/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9060A	WG1257548	1	03/29/19 12:10	03/29/19 12:10	EEM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1258973	1	04/01/19 23:44	04/01/19 23:44	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1258297	1	03/30/19 15:46	03/30/19 15:46	JCP	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1257392	1	03/31/19 21:27	04/01/19 09:20	SHG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	WG1257156	1	03/31/19 21:24	04/03/19 05:36	SHG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1257166	1	03/28/19 16:52	03/29/19 05:41	DMG	Mt. Juliet, TN

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

MW5-0319 L1083182-02 GW

Collected by
E. Stata
Collected date/time
03/26/19 14:15
Received date/time
03/28/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9060A	WG1257548	1	03/29/19 12:30	03/29/19 12:30	EEM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1258973	1	04/02/19 00:05	04/02/19 00:05	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1258297	1	03/30/19 16:05	03/30/19 16:05	JCP	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1257392	1	03/31/19 21:27	04/01/19 09:39	SHG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	WG1257156	1	03/31/19 21:24	04/03/19 05:55	SHG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1257166	1	03/28/19 16:52	03/29/19 06:03	DMG	Mt. Juliet, TN

MW6-0319 L1083182-03 GW

Collected by
E. Stata
Collected date/time
03/26/19 13:05
Received date/time
03/28/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9060A	WG1257548	1	03/29/19 12:51	03/29/19 12:51	EEM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1258973	1	04/02/19 00:25	04/02/19 00:25	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1258297	1	03/30/19 16:25	03/30/19 16:25	JCP	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1257392	1	03/31/19 21:27	04/01/19 09:58	SHG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	WG1257156	1	03/31/19 21:24	04/03/19 06:15	SHG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1257166	1	03/28/19 16:52	03/29/19 06:24	DMG	Mt. Juliet, TN

MW7-0319 L1083182-04 GW

Collected by
E. Stata
Collected date/time
03/26/19 16:45
Received date/time
03/28/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9060A	WG1257548	1	03/29/19 13:05	03/29/19 13:05	EEM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1258973	1	04/02/19 00:45	04/02/19 00:45	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1258297	1	03/30/19 16:45	03/30/19 16:45	JCP	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1257392	1	03/31/19 21:27	04/01/19 11:15	SHG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	WG1257156	1	03/31/19 21:24	04/03/19 06:34	SHG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1257166	1	03/28/19 16:52	03/29/19 06:46	DMG	Mt. Juliet, TN

TRIP BLANK L1083182-05 GW

Collected by
E. Stata
Collected date/time
03/26/19 00:00
Received date/time
03/28/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1258297	1	03/30/19 15:26	03/30/19 15:26	JCP	Mt. Juliet, TN



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Olivia Studebaker
Project Manager

- ¹ Cp
- ² Tc
- ³ Ss
- ⁴ Cn
- ⁵ Sr
- ⁶ Qc
- ⁷ Gl
- ⁸ Al
- ⁹ Sc



Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	2460	B	1000	1	03/29/2019 12:10	WG1257548

1 Cp

2 Tc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	ND		100	1	04/01/2019 23:44	WG1258973
(S) a,a,a-Trifluorotoluene(FID)	104		78.0-120		04/01/2019 23:44	WG1258973

3 Ss

4 Cn

5 Sr

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	03/30/2019 15:46	WG1258297
Toluene	ND		1.00	1	03/30/2019 15:46	WG1258297
Ethylbenzene	ND		1.00	1	03/30/2019 15:46	WG1258297
Total Xylenes	ND		3.00	1	03/30/2019 15:46	WG1258297
(S) Toluene-d8	107		80.0-120		03/30/2019 15:46	WG1258297
(S) a,a,a-Trifluorotoluene	108		80.0-120		03/30/2019 15:46	WG1258297
(S) 4-Bromofluorobenzene	107		77.0-126		03/30/2019 15:46	WG1258297
(S) 1,2-Dichloroethane-d4	96.8		70.0-130		03/30/2019 15:46	WG1258297

6 Qc

7 Gl

8 Al

9 Sc

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	262		200	1	04/01/2019 09:20	WG1257392
Residual Range Organics (RRO)	ND		250	1	04/01/2019 09:20	WG1257392
(S) o-Terphenyl	73.2		52.0-156		04/01/2019 09:20	WG1257392

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	ND		200	1	04/03/2019 05:36	WG1257156
Residual Range Organics (RRO)	ND		250	1	04/03/2019 05:36	WG1257156
(S) o-Terphenyl	64.2		52.0-156		04/03/2019 05:36	WG1257156

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Anthracene	0.106		0.0500	1	03/29/2019 05:41	WG1257166
Acenaphthene	0.0922		0.0500	1	03/29/2019 05:41	WG1257166
Acenaphthylene	ND		0.0500	1	03/29/2019 05:41	WG1257166
Benzo(a)anthracene	ND		0.0500	1	03/29/2019 05:41	WG1257166
Benzo(a)pyrene	ND		0.0500	1	03/29/2019 05:41	WG1257166
Benzo(b)fluoranthene	ND		0.0500	1	03/29/2019 05:41	WG1257166
Benzo(g,h,i)perylene	ND		0.0500	1	03/29/2019 05:41	WG1257166
Benzo(k)fluoranthene	ND		0.0500	1	03/29/2019 05:41	WG1257166
Chrysene	ND		0.0500	1	03/29/2019 05:41	WG1257166
Dibenz(a,h)anthracene	ND		0.0500	1	03/29/2019 05:41	WG1257166
Fluoranthene	ND		0.0500	1	03/29/2019 05:41	WG1257166
Fluorene	0.124		0.0500	1	03/29/2019 05:41	WG1257166
Indeno(1,2,3-cd)pyrene	ND		0.0500	1	03/29/2019 05:41	WG1257166
Naphthalene	ND		0.250	1	03/29/2019 05:41	WG1257166
Phenanthrene	ND		0.0500	1	03/29/2019 05:41	WG1257166
Pyrene	0.147		0.0500	1	03/29/2019 05:41	WG1257166



Collected date/time: 03/26/19 18:05

L1083182

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
1-Methylnaphthalene	ND		0.250	1	03/29/2019 05:41	WG1257166
2-Methylnaphthalene	ND		0.250	1	03/29/2019 05:41	WG1257166
2-Chloronaphthalene	ND		0.250	1	03/29/2019 05:41	WG1257166
(S) Nitrobenzene-d5	118		31.0-160		03/29/2019 05:41	WG1257166
(S) 2-Fluorobiphenyl	106		48.0-148		03/29/2019 05:41	WG1257166
(S) p-Terphenyl-d14	103		37.0-146		03/29/2019 05:41	WG1257166

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
TOC (Total Organic Carbon)	1030	B	1000	1	03/29/2019 12:30	WG1257548

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Gasoline Range Organics-NWTPH	ND		100	1	04/02/2019 00:05	WG1258973
(S) a,a,a-Trifluorotoluene(FID)	105		78.0-120		04/02/2019 00:05	WG1258973

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	03/30/2019 16:05	WG1258297
Toluene	ND		1.00	1	03/30/2019 16:05	WG1258297
Ethylbenzene	ND		1.00	1	03/30/2019 16:05	WG1258297
Total Xylenes	ND		3.00	1	03/30/2019 16:05	WG1258297
(S) Toluene-d8	104		80.0-120		03/30/2019 16:05	WG1258297
(S) a,a,a-Trifluorotoluene	113		80.0-120		03/30/2019 16:05	WG1258297
(S) 4-Bromofluorobenzene	108		77.0-126		03/30/2019 16:05	WG1258297
(S) 1,2-Dichloroethane-d4	102		70.0-130		03/30/2019 16:05	WG1258297

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Diesel Range Organics (DRO)	ND		200	1	04/01/2019 09:39	WG1257392
Residual Range Organics (RRO)	ND		250	1	04/01/2019 09:39	WG1257392
(S) o-Terphenyl	73.7		52.0-156		04/01/2019 09:39	WG1257392

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Diesel Range Organics (DRO)	ND		200	1	04/03/2019 05:55	WG1257156
Residual Range Organics (RRO)	ND		250	1	04/03/2019 05:55	WG1257156
(S) o-Terphenyl	63.7		52.0-156		04/03/2019 05:55	WG1257156

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Anthracene	ND		0.0500	1	03/29/2019 06:03	WG1257166
Acenaphthene	ND		0.0500	1	03/29/2019 06:03	WG1257166
Acenaphthylene	ND		0.0500	1	03/29/2019 06:03	WG1257166
Benzo(a)anthracene	ND		0.0500	1	03/29/2019 06:03	WG1257166
Benzo(a)pyrene	ND		0.0500	1	03/29/2019 06:03	WG1257166
Benzo(b)fluoranthene	ND		0.0500	1	03/29/2019 06:03	WG1257166
Benzo(g,h,i)perylene	ND		0.0500	1	03/29/2019 06:03	WG1257166
Benzo(k)fluoranthene	ND		0.0500	1	03/29/2019 06:03	WG1257166
Chrysene	ND		0.0500	1	03/29/2019 06:03	WG1257166
Dibenz(a,h)anthracene	ND		0.0500	1	03/29/2019 06:03	WG1257166
Fluoranthene	ND		0.0500	1	03/29/2019 06:03	WG1257166
Fluorene	ND		0.0500	1	03/29/2019 06:03	WG1257166
Indeno(1,2,3-cd)pyrene	ND		0.0500	1	03/29/2019 06:03	WG1257166
Naphthalene	ND		0.250	1	03/29/2019 06:03	WG1257166
Phenanthrene	ND		0.0500	1	03/29/2019 06:03	WG1257166
Pyrene	ND		0.0500	1	03/29/2019 06:03	WG1257166



Collected date/time: 03/26/19 14:15

L1083182

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
1-Methylnaphthalene	ND		0.250	1	03/29/2019 06:03	WG1257166
2-Methylnaphthalene	ND		0.250	1	03/29/2019 06:03	WG1257166
2-Chloronaphthalene	ND		0.250	1	03/29/2019 06:03	WG1257166
(S) Nitrobenzene-d5	116		31.0-160		03/29/2019 06:03	WG1257166
(S) 2-Fluorobiphenyl	107		48.0-148		03/29/2019 06:03	WG1257166
(S) p-Terphenyl-d14	98.9		37.0-146		03/29/2019 06:03	WG1257166

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	2060	B	1000	1	03/29/2019 12:51	WG1257548

1 Cp

2 Tc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	ND		100	1	04/02/2019 00:25	WG1258973
(S) a,a,a-Trifluorotoluene(FID)	104		78.0-120		04/02/2019 00:25	WG1258973

3 Ss

4 Cn

5 Sr

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	03/30/2019 16:25	WG1258297
Toluene	ND		1.00	1	03/30/2019 16:25	WG1258297
Ethylbenzene	ND		1.00	1	03/30/2019 16:25	WG1258297
Total Xylenes	ND		3.00	1	03/30/2019 16:25	WG1258297
(S) Toluene-d8	107		80.0-120		03/30/2019 16:25	WG1258297
(S) a,a,a-Trifluorotoluene	114		80.0-120		03/30/2019 16:25	WG1258297
(S) 4-Bromofluorobenzene	107		77.0-126		03/30/2019 16:25	WG1258297
(S) 1,2-Dichloroethane-d4	102		70.0-130		03/30/2019 16:25	WG1258297

6 Qc

7 Gl

8 Al

9 Sc

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	ND		200	1	04/01/2019 09:58	WG1257392
Residual Range Organics (RRO)	ND		250	1	04/01/2019 09:58	WG1257392
(S) o-Terphenyl	69.5		52.0-156		04/01/2019 09:58	WG1257392

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	ND		200	1	04/03/2019 06:15	WG1257156
Residual Range Organics (RRO)	ND		250	1	04/03/2019 06:15	WG1257156
(S) o-Terphenyl	57.9		52.0-156		04/03/2019 06:15	WG1257156

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Anthracene	ND		0.0500	1	03/29/2019 06:24	WG1257166
Acenaphthene	ND		0.0500	1	03/29/2019 06:24	WG1257166
Acenaphthylene	ND		0.0500	1	03/29/2019 06:24	WG1257166
Benzo(a)anthracene	ND		0.0500	1	03/29/2019 06:24	WG1257166
Benzo(a)pyrene	ND		0.0500	1	03/29/2019 06:24	WG1257166
Benzo(b)fluoranthene	ND		0.0500	1	03/29/2019 06:24	WG1257166
Benzo(g,h,i)perylene	ND		0.0500	1	03/29/2019 06:24	WG1257166
Benzo(k)fluoranthene	ND		0.0500	1	03/29/2019 06:24	WG1257166
Chrysene	ND		0.0500	1	03/29/2019 06:24	WG1257166
Dibenz(a,h)anthracene	ND		0.0500	1	03/29/2019 06:24	WG1257166
Fluoranthene	ND		0.0500	1	03/29/2019 06:24	WG1257166
Fluorene	ND		0.0500	1	03/29/2019 06:24	WG1257166
Indeno(1,2,3-cd)pyrene	ND		0.0500	1	03/29/2019 06:24	WG1257166
Naphthalene	ND		0.250	1	03/29/2019 06:24	WG1257166
Phenanthrene	ND		0.0500	1	03/29/2019 06:24	WG1257166
Pyrene	ND		0.0500	1	03/29/2019 06:24	WG1257166



Collected date/time: 03/26/19 13:05

L1083182

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
1-Methylnaphthalene	ND		0.250	1	03/29/2019 06:24	WG1257166
2-Methylnaphthalene	ND		0.250	1	03/29/2019 06:24	WG1257166
2-Chloronaphthalene	ND		0.250	1	03/29/2019 06:24	WG1257166
(S) Nitrobenzene-d5	109		31.0-160		03/29/2019 06:24	WG1257166
(S) 2-Fluorobiphenyl	105		48.0-148		03/29/2019 06:24	WG1257166
(S) p-Terphenyl-d14	96.8		37.0-146		03/29/2019 06:24	WG1257166

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	1650	B	1000	1	03/29/2019 13:05	WG1257548

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	ND		100	1	04/02/2019 00:45	WG1258973
(S) a,a,a-Trifluorotoluene(FID)	104		78.0-120		04/02/2019 00:45	WG1258973

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	03/30/2019 16:45	WG1258297
Toluene	ND		1.00	1	03/30/2019 16:45	WG1258297
Ethylbenzene	ND		1.00	1	03/30/2019 16:45	WG1258297
Total Xylenes	ND		3.00	1	03/30/2019 16:45	WG1258297
(S) Toluene-d8	106		80.0-120		03/30/2019 16:45	WG1258297
(S) a,a,a-Trifluorotoluene	113		80.0-120		03/30/2019 16:45	WG1258297
(S) 4-Bromofluorobenzene	100		77.0-126		03/30/2019 16:45	WG1258297
(S) 1,2-Dichloroethane-d4	97.2		70.0-130		03/30/2019 16:45	WG1258297

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	ND		200	1	04/01/2019 11:15	WG1257392
Residual Range Organics (RRO)	ND		250	1	04/01/2019 11:15	WG1257392
(S) o-Terphenyl	77.9		52.0-156		04/01/2019 11:15	WG1257392

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	ND		200	1	04/03/2019 06:34	WG1257156
Residual Range Organics (RRO)	ND		250	1	04/03/2019 06:34	WG1257156
(S) o-Terphenyl	55.8		52.0-156		04/03/2019 06:34	WG1257156

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Anthracene	ND		0.0500	1	03/29/2019 06:46	WG1257166
Acenaphthene	ND		0.0500	1	03/29/2019 06:46	WG1257166
Acenaphthylene	ND		0.0500	1	03/29/2019 06:46	WG1257166
Benzo(a)anthracene	ND		0.0500	1	03/29/2019 06:46	WG1257166
Benzo(a)pyrene	ND		0.0500	1	03/29/2019 06:46	WG1257166
Benzo(b)fluoranthene	ND		0.0500	1	03/29/2019 06:46	WG1257166
Benzo(g,h,i)perylene	ND		0.0500	1	03/29/2019 06:46	WG1257166
Benzo(k)fluoranthene	ND		0.0500	1	03/29/2019 06:46	WG1257166
Chrysene	ND		0.0500	1	03/29/2019 06:46	WG1257166
Dibenz(a,h)anthracene	ND		0.0500	1	03/29/2019 06:46	WG1257166
Fluoranthene	ND		0.0500	1	03/29/2019 06:46	WG1257166
Fluorene	ND		0.0500	1	03/29/2019 06:46	WG1257166
Indeno(1,2,3-cd)pyrene	ND		0.0500	1	03/29/2019 06:46	WG1257166
Naphthalene	ND		0.250	1	03/29/2019 06:46	WG1257166
Phenanthrene	ND		0.0500	1	03/29/2019 06:46	WG1257166
Pyrene	ND		0.0500	1	03/29/2019 06:46	WG1257166

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Collected date/time: 03/26/19 16:45

L1083182

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
1-Methylnaphthalene	ND		0.250	1	03/29/2019 06:46	WG1257166
2-Methylnaphthalene	ND		0.250	1	03/29/2019 06:46	WG1257166
2-Chloronaphthalene	ND		0.250	1	03/29/2019 06:46	WG1257166
(S) Nitrobenzene-d5	109		31.0-160		03/29/2019 06:46	WG1257166
(S) 2-Fluorobiphenyl	105		48.0-148		03/29/2019 06:46	WG1257166
(S) p-Terphenyl-d14	97.9		37.0-146		03/29/2019 06:46	WG1257166

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	03/30/2019 15:26	WG1258297
Toluene	ND		1.00	1	03/30/2019 15:26	WG1258297
Ethylbenzene	ND		1.00	1	03/30/2019 15:26	WG1258297
Total Xylenes	ND		3.00	1	03/30/2019 15:26	WG1258297
<i>(S) Toluene-d8</i>	103		80.0-120		03/30/2019 15:26	WG1258297
<i>(S) a,a,a-Trifluorotoluene</i>	112		80.0-120		03/30/2019 15:26	WG1258297
<i>(S) 4-Bromofluorobenzene</i>	109		77.0-126		03/30/2019 15:26	WG1258297
<i>(S) 1,2-Dichloroethane-d4</i>	104		70.0-130		03/30/2019 15:26	WG1258297

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Method Blank (MB)

(MB) R3397049-1 03/29/19 10:53

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
TOC (Total Organic Carbon)	374	↓	102	1000

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1083182-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1083182-04 03/29/19 13:05 • (DUP) R3397049-3 03/29/19 13:24

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC (Total Organic Carbon)	1650	1680	1	1.50		20

L1083401-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1083401-02 03/29/19 22:40 • (DUP) R3397049-8 03/29/19 23:02

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC (Total Organic Carbon)	36600	37000	1	0.951		20

Laboratory Control Sample (LCS)

(LCS) R3397049-2 03/29/19 11:40

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
TOC (Total Organic Carbon)	75000	72900	97.1	85.0-115	

L1083335-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1083335-04 03/29/19 16:23 • (MS) R3397049-4 03/29/19 16:49 • (MSD) R3397049-5 03/29/19 17:13

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
TOC (Total Organic Carbon)	50000	1830	51400	51900	99.2	100	1	80.0-120			0.794	20

L1083335-11 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1083335-11 03/29/19 20:47 • (MS) R3397049-6 03/29/19 21:13 • (MSD) R3397049-7 03/29/19 21:35

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
TOC (Total Organic Carbon)	50000	1480	52000	52400	101	102	1	80.0-120			0.805	20



Method Blank (MB)

(MB) R3397974-5 04/01/19 23:24

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	41.6	J	31.6	100
(S) a,a,a-Trifluorotoluene(FID)	105			78.0-120

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3397974-3 04/01/19 22:23 • (LCSD) R3397974-4 04/01/19 22:43

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Gasoline Range Organics-NWTPH	5500	5180	5060	94.3	92.0	70.0-124			2.48	20
(S) a,a,a-Trifluorotoluene(FID)				92.5	91.4	78.0-120				

6 Qc

7 Gl

L1083252-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1083252-03 04/02/19 05:10 • (MS) R3397974-8 04/02/19 07:12 • (MSD) R3397974-9 04/02/19 07:33

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Gasoline Range Organics-NWTPH	5500	7040	9320	9610	41.4	46.8	1	10.0-155			3.10	21
(S) a,a,a-Trifluorotoluene(FID)					82.2	82.1		78.0-120				

8 Al

9 Sc



Method Blank (MB)

(MB) R3398035-3 03/30/19 13:22

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Benzene	U		0.331	1.00
Ethylbenzene	U		0.384	1.00
Toluene	U		0.412	1.00
Xylenes, Total	U		1.06	3.00
(S) a,a,a-Trifluorotoluene	111			80.0-120
(S) Toluene-d8	106			80.0-120
(S) 4-Bromofluorobenzene	110			77.0-126
(S) 1,2-Dichloroethane-d4	101			70.0-130

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3398035-1 03/30/19 12:23 • (LCSD) R3398035-2 03/30/19 12:42

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Benzene	25.0	23.2	23.1	92.6	92.5	70.0-123			0.0715	20
Ethylbenzene	25.0	24.3	24.4	97.3	97.8	79.0-123			0.516	20
Toluene	25.0	23.2	23.1	93.0	92.5	79.0-120			0.526	20
Xylenes, Total	75.0	76.1	76.0	101	101	79.0-123			0.131	20
(S) a,a,a-Trifluorotoluene				110	110	80.0-120				
(S) Toluene-d8				103	103	80.0-120				
(S) 4-Bromofluorobenzene				109	111	77.0-126				
(S) 1,2-Dichloroethane-d4				105	107	70.0-130				

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3397168-1 04/01/19 03:55

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Diesel Range Organics (DRO)	U		66.7	200
Residual Range Organics (RRO)	U		83.3	250
<i>(S) o-Terphenyl</i>	65.5			52.0-156

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3397168-2 04/01/19 04:14 • (LCSD) R3397168-3 04/01/19 04:34

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Diesel Range Organics (DRO)	750	811	770	108	103	50.0-150			5.19	20
Residual Range Organics (RRO)	750	603	560	80.4	74.7	50.0-150			7.39	20
<i>(S) o-Terphenyl</i>				77.5	82.0	52.0-156				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3397891-1 04/03/19 04:37

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Diesel Range Organics (DRO)	U		66.7	200
Residual Range Organics (RRO)	U		83.3	250
<i>(S) o-Terphenyl</i>	56.0			52.0-156

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3397891-2 04/03/19 04:57 • (LCSD) R3397891-3 04/03/19 05:16

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Diesel Range Organics (DRO)	750	645	676	86.0	90.1	50.0-150			4.69	20
Residual Range Organics (RRO)	750	502	561	66.9	74.8	50.0-150			11.1	20
<i>(S) o-Terphenyl</i>				60.5	75.0	52.0-156				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3396320-3 03/29/19 00:57

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Anthracene	U		0.0140	0.0500
Acenaphthene	U		0.0100	0.0500
Acenaphthylene	U		0.0120	0.0500
Benzo(a)anthracene	U		0.00410	0.0500
Benzo(a)pyrene	U		0.0116	0.0500
Benzo(b)fluoranthene	0.00638	U	0.00212	0.0500
Benzo(g,h,i)perylene	0.00667	U	0.00227	0.0500
Benzo(k)fluoranthene	U		0.0136	0.0500
Chrysene	U		0.0108	0.0500
Dibenz(a,h)anthracene	0.00464	U	0.00396	0.0500
Fluoranthene	U		0.0157	0.0500
Fluorene	U		0.00850	0.0500
Indeno(1,2,3-cd)pyrene	U		0.0148	0.0500
Naphthalene	0.0230	U	0.0198	0.250
Phenanthrene	U		0.00820	0.0500
Pyrene	U		0.0117	0.0500
1-Methylnaphthalene	U		0.00821	0.250
2-Methylnaphthalene	U		0.00902	0.250
2-Chloronaphthalene	U		0.00647	0.250
(S) Nitrobenzene-d5	108			31.0-160
(S) 2-Fluorobiphenyl	96.0			48.0-148
(S) p-Terphenyl-d14	96.5			37.0-146

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3396320-1 03/29/19 00:13 • (LCSD) R3396320-2 03/29/19 00:35

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Anthracene	2.00	2.12	2.16	106	108	67.0-150			1.87	20
Acenaphthene	2.00	2.05	2.08	102	104	65.0-138			1.45	20
Acenaphthylene	2.00	2.09	2.11	105	105	66.0-140			0.952	20
Benzo(a)anthracene	2.00	2.00	2.01	100	100	61.0-140			0.499	20
Benzo(a)pyrene	2.00	2.04	2.09	102	105	60.0-143			2.42	20
Benzo(b)fluoranthene	2.00	2.01	2.07	100	103	58.0-141			2.94	20
Benzo(g,h,i)perylene	2.00	2.03	2.08	102	104	52.0-153			2.43	20
Benzo(k)fluoranthene	2.00	1.99	2.00	99.5	100	58.0-148			0.501	20
Chrysene	2.00	2.02	2.03	101	102	64.0-144			0.494	20
Dibenz(a,h)anthracene	2.00	1.98	2.00	99.0	100	52.0-155			1.01	20
Fluoranthene	2.00	2.13	2.16	106	108	69.0-153			1.40	20



Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3396320-1 03/29/19 00:13 • (LCSD) R3396320-2 03/29/19 00:35

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
Fluorene	2.00	2.04	2.07	102	103	64.0-136			1.46	20
Indeno(1,2,3-cd)pyrene	2.00	2.00	2.04	100	102	54.0-153			1.98	20
Naphthalene	2.00	1.88	1.88	94.0	94.0	61.0-137			0.000	20
Phenanthrene	2.00	2.04	2.05	102	102	62.0-137			0.489	20
Pyrene	2.00	2.07	2.11	103	105	60.0-142			1.91	20
1-Methylnaphthalene	2.00	2.06	2.09	103	105	66.0-142			1.45	20
2-Methylnaphthalene	2.00	2.02	2.04	101	102	62.0-136			0.985	20
2-Chloronaphthalene	2.00	1.95	1.96	97.5	98.0	64.0-140			0.512	20
<i>(S) Nitrobenzene-d5</i>				110	111	31.0-160				
<i>(S) 2-Fluorobiphenyl</i>				99.0	96.0	48.0-148				
<i>(S) p-Terphenyl-d14</i>				95.5	96.5	37.0-146				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Qualifier	Description
B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
 * Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

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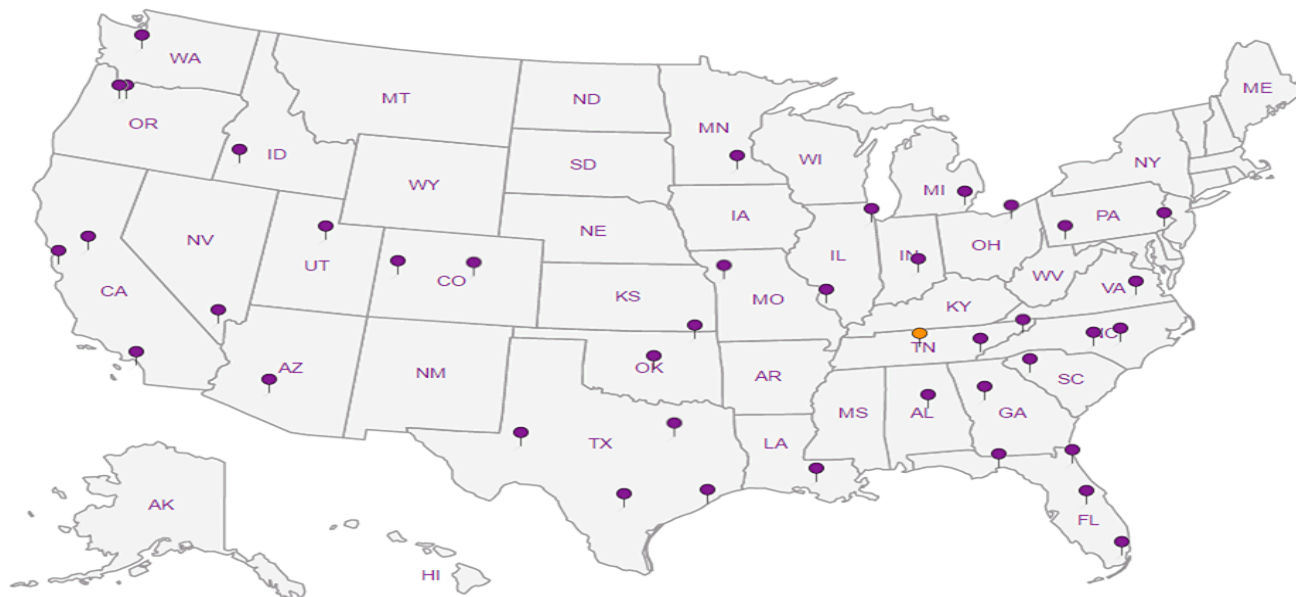
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



TRC - BNSF Region 1
 19874 141st Place NE
 Woodinville, WA 98072

Billing Information:
Accounts Payable
 19874 141st Place NE
 Woodinville, WA 98072

Pres Chk

Analysis / Container / Preservative

Chain of Custody Page 1 of 1



Report to:
Keith Woodburne

Email To: kwoodburne@trcsolutions.com, estata@trcsolutions.com,

Project Description: **BNSF - John Michael Lease Cashmere, WA**

City/State Collected:

Phone: **425-489-1938**
 Fax:

Client Project #
318140/00TA02

Lab Project #
BNSF1TRC-JML

Collected by (print):
E. STATA

Site/Facility ID #

P.O. #

Collected by (signature):
E. STATA
 Immediately
 Packed on Ice N Y X

Rush? (Lab MUST Be Notified)
 ___ Same Day ___ Five Day
 ___ Next Day ___ 5 Day (Rad Only)
 ___ Two Day ___ 10 Day (Rad Only)
 ___ Three Day

Quote #
 Date Results Needed

NWTPHDXLVI w/ SGT 40mIAmb-HCl-BT	NWTPHDXLVI w/o SGT 40mIAmb-HCl-BT	NWTPHGX 40mIAmb HCl	PAHSIMLVID 40mIAmb-NoPres-WT	TOC 250mIAmb-HCl	V8260BTEXC 40mIAmb-HCl						
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L # **1083182**
 A097
 Acctnum: **BNSF1TRC**
 Template: **T142511**
 Prelogin: **P696096**
 TSR: **134 - Mark W. Beasley**
 PB:
 Shipped Via:
 Remarks Sample # (lab only)

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cn.rs	NWTPHDXLVI w/ SGT 40mIAmb-HCl-BT	NWTPHDXLVI w/o SGT 40mIAmb-HCl-BT	NWTPHGX 40mIAmb HCl	PAHSIMLVID 40mIAmb-NoPres-WT	TOC 250mIAmb-HCl	V8260BTEXC 40mIAmb-HCl						
MW1-0319	---	GW	16.25	3/26/19	1805	13	X	X	X	X	X	X						-01
MW5-1415		GW	16	3/26/19	1415	13												
MW6-		GW																
MW5-0319	---	GW	16	3/26/19	1415	13	X	X	X	X	X	X						-02
MW6-0319	---	GW	14	3/26/19	1305	13	X	X	X	X	X	X						-03
MW7-0319	---	GW	12	3/26/19	1645	13	X	X	X	X	X	X						-04
		GW																
		GW																
TRIP BLANK	---	GW		3/26/19	1805							X						-05

* Matrix:
 SS - Soil AIR - Air F - Filter
 GW - Groundwater B - Bioassay
 WW - WasteWater
 DW - Drinking Water
 OT - Other

Remarks:
 Samples returned via:
 ___ UPS ___ FedEx ___ Courier

Tracking # **468664753008**

Sample Receipt Checklist
 COC Seal Present/Intact: Y N
 COC Signed/Accurate: Y N
 Bottles arrive intact: Y N
 Correct bottles used: Y N
 Sufficient volume sent: Y N
 If Applicable
 VOA Zero Headspace: Y N
 Preservation Correct/Checked: Y N
RAD SCREEN: <0.5 mR/hr

Relinquished by: (Signature)
EMIL STATA

Date: **3/27/19**
 Time: **11:15 am**

Received by: (Signature)

Trip Blank Received: Yes No
 HCL MeOH
 TBR

Relinquished by: (Signature)

Date:

Received by: (Signature)

Temp: **0.270 = 0.273** °C
 Bottles Received: **52**

If preservation required by Login: Date/Time

Relinquished by: (Signature)

Date:

Received for lab by: (Signature)
B. Maxwell

Date: **3/28/19**
 Time: **0845**

Hold:
 Condition: **NCF / OK**