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July 5, 2016

Ms. Jennifer Lind, Cleanup Project Manager
Washington Department of Ecology
Toxics Cleanup Program – Central Region
1250 West Alder Street
Union Gap, Washington 98903-0009

RE: **Submittal of Supplemental Soil and Groundwater Investigation Report**
BNSF Railway Company - John Michael Lease Site
5640 Sunset Highway, Cashmere, Washington
Ecology Facility/Site No. 3154383
Cleanup Site No.: 2149; VCP Project No.: CE0278

Dear Ms. Lind:

On behalf of the BNSF Railway Company (BNSF) TRC is pleased to provide the attached Supplemental Soil and Groundwater Investigation Report for the BNSF John Michael Lease Site, prepared by Farallon Consulting, L.L.C.. The Supplemental Investigation was conducted to address comments by the Washington State Department of Ecology (Ecology) following an August 2014 meeting between BNSF and Ecology. Ecology requested BNSF evaluate the leachability of soils containing contaminants at concentrations exceeding MTCA Method A cleanup levels, particularly in the area proximate to the shoreline of the Wenatchee River. Additionally, Ecology requested that BNSF perform additional soil sampling to evaluate the presence of polychlorinated biphenyls (PCBs) in soil at the Site. The attached submittal addresses both of these items and includes a request for no further action with an environmental covenant.

Following Ecology's review of the information provided in the attached submittal, BNSF and TRC would request a meeting with Ecology to discuss the administrative path forward with regards to the recommendations outlined in this submittal.

Sincerely,

Keith Woodburne, LG
Senior Project Manager

cc: Shane C. DeGross, BNSF

Attachment: *Supplemental Soil and Groundwater Investigation Report* dated June 29, 2016 (prepared by Farallon Consulting, L.L.C.)

FARALLON CONSULTING

Washington
Issaquah | Bellingham | Seattle
Oregon
Portland | Bend | Baker City
California
Oakland | Sacramento | Irvine

SUPPLEMENTAL SOIL AND GROUNDWATER INVESTIGATION REPORT

JOHN MICHAEL LEASE SITE
5640 SUNSET HIGHWAY
CASHMERE, WASHINGTON

Submitted by:

Farallon Consulting, L.L.C.
975 5th Avenue Northwest
Issaquah, Washington 98027

TRC Environmental Corporation
19874 141st Place Northeast
Woodinville, Washington 98072

Farallon PN: 283-006

For:

BNSF RAILWAY

2454 Occidental Avenue South, Suite 1A
Seattle, Washington

June 29, 2016

Prepared by:

Jennifer L. Moore
Associate Scientist

Reviewed by:

State of Washington 2955 Licensed Geologist
Keith L. Woodburne

Amy Essig Desai
Principal Scientist
Farallon Consulting, L.L.C.

Keith Woodburne, L.G.
Senior Project Manager
TRC Environmental Corporation

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APPENDICES

EXECUTIVE SUMMARY

Farallon Consulting, L.L.C. (Farallon) has prepared this Supplemental Soil and Groundwater Investigation Report to provide a summary of the supplemental soil and groundwater investigation (Supplemental Investigation) conducted in August and September 2015 on behalf of BNSF Railway Company (BNSF) for the John Michael Lease Site located adjacent to the property at 5640 Sunset Highway in Cashmere, Washington (herein referred to as the Site). The Supplemental Investigation was conducted in accordance with the *Supplemental Soil and Groundwater Investigation Work Plan, John Michael Lease Site, 5640 Sunset Highway, Cashmere, Washington* dated March 23, 2015 prepared by Farallon.

The Supplemental Investigation was conducted to address comments by the Washington State Department of Ecology (Ecology) following an August 2014 meeting between BNSF and Ecology. Although a Revised Cleanup Action Work Plan had been prepared for the Site by Farallon and TRC in December 2013, and approved by Ecology on April 3, 2014, the limited excavation proposed in the Revised Cleanup Action Work Plan was later determined by BNSF to be unnecessary based on the absence of associated groundwater impacts, and impracticable to implement without potential mobilization of residual contaminants of concern (COCs) in soil into Site groundwater. COCs for the Site specifically include total petroleum hydrocarbons as diesel-range organics (DRO), as oil-range organics (ORO), and as gasoline-range organics (GRO); and/or the associated compounds carcinogenic polycyclic aromatic hydrocarbons (cPAHs), benzene, and naphthalene.

To support BNSF's recommendation to eliminate the requirement for excavation and pursue a conditional No Further Action determination for the Site, Ecology requested that BNSF perform leachability testing of soil containing COCs at concentrations exceeding the Washington State Model Toxics Control Act Cleanup Regulation (MTCA) Method A cleanup levels, particularly in the area proximate to the shoreline of the Wenatchee River. Additionally, Ecology requested that BNSF perform additional soil sampling to evaluate the presence of polychlorinated biphenyls (PCBs) in soil at the Site. Results from soil samples collected from test trenches during a prior investigation that were analyzed for PCBs had practical quantitation limits (PQLs) for PCBs that exceeded the MTCA Method A cleanup level due to matrix interferences and multiple dilutions. These results presented a data gap with regards to the presence or absence of PCBs in soil at the Site.

PCBs were not reported at concentrations exceeding the laboratory PQLs in the soil samples analyzed during the Supplemental Investigation and the laboratory PQLs were less than the MTCA Method A cleanup level. Additionally, there is no known current or historical source of PCBs at the Site. Based on the analytical results from the Supplemental Investigation and the lack of a current or historical source for PCBs on the Site, PCBs are not considered a COC at the Site.

Potential leachability of COCs to groundwater was assessed using the Synthetic Precipitation Leaching Procedure (SPLP) method to extract a simulated leachate from soil samples collected from borings where previous investigations indicated the highest concentrations of COCs were present in soil. GRO, benzene, toluene, ethylbenzene, xylenes, and cPAHs were not reported at

concentrations exceeding the laboratory PQL in the simulated leachate. DRO and ORO were reported in the simulated leachate at concentrations exceeding the MTCA Method A cleanup levels for groundwater. However, MTCA provides no basis for comparison of simulated leachate results to established groundwater cleanup levels for non-metallic substances. The SPLP data are not corroborated by the empirical groundwater data, specifically from a well in the immediate vicinity of the samples collected for the leachability evaluation, which confirm that COCs have not been reported in Site groundwater at concentrations exceeding the MTCA Method A cleanup levels in the last 3 years. Therefore, the results of the SPLP method are overly conservative, not directly comparable to MTCA Method A groundwater cleanup levels, and considered not representative of Site conditions.

Based on the weight of evidence compiled through soil and groundwater monitoring investigations completed to date, BNSF requests that a No Further Action determination be issued by Ecology for the Site. BNSF intends to file an environmental covenant on the deed for the Site. The environmental covenant may include health advisories and specific requirements for handling soil if encountered during future maintenance or redevelopment work. The environmental covenant will be implemented in accordance with Ecology guidance.

1.0 INTRODUCTION

Farallon Consulting, L.L.C. (Farallon) and TRC Environmental Corporation have prepared this Supplemental Soil and Groundwater Investigation Report to provide a summary of the Supplemental Soil and Groundwater Investigation (Supplemental Investigation) conducted in August and September 2015 on behalf of BNSF Railway Company (BNSF) for the John Michael Lease Site located adjacent to the property at 5640 Sunset Highway in Cashmere, Washington (herein referred to as the Site) (Figure 1). The Supplemental Investigation was conducted in accordance with the *Supplemental Soil and Groundwater Investigation Work Plan, John Michael Lease Site, 5640 Sunset Highway, Cashmere, Washington* dated March 23, 2015 prepared by Farallon (Supplemental Work Plan). The purpose of the Supplemental Investigation was to assess potential leachability of contaminants of concern (COCs) in soil on the Site at concentrations exceeding Washington State Model Toxics Control Act Cleanup Regulation (MTCA) Method A cleanup levels as established in Chapter 173-340 of the Washington Administrative Code (WAC 173-340) and to assess whether polychlorinated biphenyls (PCBs) are present in soil at the Site at concentrations exceeding the MTCA Method A cleanup level. The list of COCs previously defined for the Site includes: total petroleum hydrocarbons as diesel-range organics (DRO), as oil-range organics (ORO), and as gasoline-range organics (GRO); and/or the associated compounds carcinogenic polycyclic aromatic hydrocarbons (cPAHs), benzene, and naphthalene.

This report includes a summary of the relevant background of the Site, the geology and hydrogeology of the Site, the scope of work and field procedures for the Supplemental Investigation, a summary of the results of the Supplemental Investigation, conclusions, and a request for a No Further Action determination.

2.0 BACKGROUND

The potential source of COCs at the Site is a release of petroleum hydrocarbons that reportedly occurred sometime in the 1930s that may have been a result of a tank car derailment; however, no record of the derailment or suspected release has been located (Farallon 2008). COCs were reported at concentrations exceeding applicable MTCA cleanup levels in soil at the Site during previous investigations (EMR, Inc. 2005; Farallon 2009). Only one groundwater reconnaissance sample collected by EMR, Inc. (2005) and the initial groundwater sample from monitoring well MW-1 (Farallon 2009) had COC concentrations that exceeded applicable MTCA cleanup levels. Based on subsequent groundwater monitoring and sampling performed using the monitoring well network, COCs present in soil at the Site are not leaching to groundwater or becoming mobilized during seasonal groundwater fluctuations.

BNSF and the Washington State Department of Ecology (Ecology) met in August 2014 to discuss the status of a proposed removal action to be conducted at the Site. The proposed removal action is described in the *Revised Cleanup Action Work Plan, John Michael Lease Site, 5640 Sunset Highway, Cashmere, Washington* dated December 31, 2013, prepared by Farallon and TRC Environmental Corporation (Revised Work Plan) and approved by Ecology in April 2014. The removal action included limited excavation of soil containing COCs exceeding the applicable MTCA cleanup levels. During the August 2014 meeting with Ecology, BNSF stated that since submitting the Revised Work Plan, BNSF had reevaluated Site conditions and limited excavation west of the rail line was not supported because COCs in soil at the Site are not leaching to groundwater and they do not represent a threat to human health and the environment. Additionally, BNSF was concerned about the impracticability of conducting an excavation in such close proximity to an active rail line and that attempts to excavate contaminated soil might remobilize in situ contaminants.

Ecology requested during the August 2014 meeting that BNSF perform leachability testing of soil containing COCs at concentrations exceeding the MTCA Method A cleanup levels, particularly in the area proximate to the shoreline of the Wenatchee River (Figure 2); and additional soil sampling to assess whether PCBs are present at concentrations exceeding the MTCA Method A cleanup level in soil at the Site. Soil samples collected during prior investigations were analyzed for PCBs and PCBs were not reported to exceed the laboratory practical quantitation limit (PQL). However, the PQL for PCBs exceeded the MTCA Method A cleanup level due to matrix interferences and multiple dilutions. Farallon resampled the areas of these soil samples during the Supplemental Investigation to address this data gap.

3.0 GEOLOGY AND HYDROGEOLOGY

The Site lies 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 comprised of fill material underlain by Pleistocene alluvial sediments deposited by the Wenatchee River. The western portion of the Site is comprised of Pleistocene deposits of till, outwash, and glaciolacustrine material (Washington State Geological Survey 2016). Soil encountered at the Site consisted of sand and gravel with some silt, cobbles, debris, and organic material. Debris observed on the eastern portion of the Site is representative of fill material. The conditions encountered were not stratified in discernible zones within the depths investigated. Boring logs for borings FB-1 through FB-5 are provided in Attachment A.

Water levels were measured in monitoring wells at the Site on August 6, 2008; April 7, 2009; September 25 and December 11, 2012; March 20 and June 19, 2013; and August 11, 2015 (Table 1). Groundwater elevations were consistent from August 2008 to August 2015, with little variation in depth to water between events. The average calculated groundwater elevation for the monitoring well network during the August 11, 2015 monitoring event was 488.5 feet above mean sea level. According to calculated groundwater elevations, groundwater flow at the Site is generally to the east, toward the Wenatchee River, at an average hydraulic gradient of approximately 0.01 (Figure 3).

4.0 FIELD PROGRAM

The Supplemental Investigation was conducted in August and September 2015 in accordance with the Supplemental Work Plan. The sampling locations are showing on Figure 2. Modifications to the Supplemental Work Plan, field procedures, and the handling of investigation-derived waste are discussed in the following sections.

4.1 SCOPE OF WORK

The Supplemental Investigation activities conducted in August and September 2015 included:

- Advancing five borings at the Site using a hollow-stem auger drill rig to the groundwater interface at approximate depths of 8 to 12 feet bgs;
- Collection and laboratory analysis of soil samples for PCBs;
- Collection and laboratory analysis of soil samples to assess leachability of COCs in soil using the Synthetic Precipitation Leaching Procedure (SPLP); and
- Performing one groundwater monitoring and sampling event, including collection and laboratory analysis of groundwater samples from the existing monitoring wells.

The leachability testing of soils at the Site was focused on areas in which the highest concentrations of COCs were reported in soil during previous subsurface investigations, and in the area proximate to the shoreline of the Wenatchee River (Figure 2). Soil samples from borings FB-1, FB-2, and FB-4 were used to assess the potential leachability of COCs from soil to groundwater.

Farallon used soil samples from borings FB-3, FB-4, and FB-5, advanced in areas proximate to former soil sample locations T4-N, T6-N, and T7-S, to assess whether PCBs are present at concentrations exceeding the MTCA Method A cleanup level in soil at the Site. Boring locations are shown on Figure 2.

4.2 FIELD PROCEDURES

Farallon conducted a groundwater monitoring event at the Site on August 11, 2015, which included measurement of water levels and total well depths, and collection of groundwater samples from existing monitoring wells MW-1 through MW-4. Drilling and soil sampling was conducted on August 25 and September 19, 2015.

Soil and groundwater samples collected from the borings and monitoring wells were placed on ice in a cooler and delivered under standard chain-of-custody protocols to ESC Lab Sciences of Mt. Juliet, Tennessee for laboratory analysis.

4.2.1 Soil Sampling

Soil samples were collected continuously during the advancement of boring FB-4 performed by Holt Services using a hollow-stem auger drill rig equipped with an 18-inch split spoon sampler on August 25, 2015. Soil samples were collected continuously during the advancement of borings FB-1, FB-2, FB-3, and FB-5 performed by Holt Services of Edgewood, Washington using a sonic drilling rig equipped with polyethylene bag sample liners. The drilling method was modified following completion of boring FB-4 to provide improved soil recovery in the remaining borings.

A Farallon Scientist observed subsurface conditions and retained soil samples from approximate 2-foot intervals for laboratory analysis. The information recorded on the boring logs included soil types encountered, visual and olfactory evidence of potential contamination, and volatile organic vapor concentrations as measured using a photoionization detector. The completed boring logs are provided in Attachment A. The soil samples were collected and transferred directly into laboratory-prepared glass sample containers.

Select soil samples from borings FB-1, FB-2, and FB-4 were collected for assessment of potential leachability and prepared in accordance with U.S. Environmental Protection Agency (EPA) Method 1312 for the SPLP. In WAC 173-340-747(7)(d), MTCA suggests the use of leaching tests such as SPLP for evaluation of in-situ non-metallic hazardous substances, including petroleum hydrocarbons, "provided sufficient information is available to demonstrate that the leaching test can accurately predict groundwater impacts." The samples were extracted through the SPLP Method and analyzed for DRO and ORO by Northwest Method NWTPH-Dx; for GRO by Northwest Method NWTPH-Gx; for cPAHs by EPA Method 8270C-SIM; and for benzene, toluene, ethylbenzene, and total xylenes (BTEX) by EPA Method 8021B. Select soil samples collected from borings FB-3, FB-4, and FB-5 were analyzed for PCBs by EPA Method 8082.

4.2.2 Groundwater Sampling

Prior to sampling, the depth to water and depth to bottom of each monitoring well were gauged. Monitoring wells were purged prior to sample collection in accordance with EPA low-flow sampling protocols. The well purging and sampling was performed using a peristaltic pump with dedicated 0.25-inch-diameter polyethylene tubing at flow rates ranging from 100 to 300 milliliters per minute. The tubing intake was placed approximately 1 foot below the top of the water column in each monitoring well prior to purging. Water quality parameters were monitored during purging using a Horiba multi-parameter probe equipped with a flow-through cell. The water quality parameters monitored and recorded included dissolved oxygen, pH, temperature, specific conductance, and oxidation-reduction potential. The well was purged until water quality parameters stabilized, indicating the presence of groundwater from the surrounding formation. Following purging, a groundwater sample was collected directly from the pump outlet tubing upstream of the flow-through cell, and was placed into laboratory-prepared sample containers. Groundwater samples were analyzed for DRO and ORO by Northwest Method NWTPH-Dx; for GRO by Northwest Method NWTPH-Gx; for cPAHs and PAHs by EPA Method 8270C-SIM; and for BTEX by EPA Method 8021B.

4.3 INVESTIGATION-DERIVED WASTE

Soil cuttings, decontamination water, purge water, and other wastewater generated during the Supplemental Investigation were temporarily stored on the Site in labeled drums. The analytical results for the soil and groundwater samples will be used to develop a waste profile to prepare for disposal of the waste off the Site to an Ecology- and BNSF-approved disposal facility.

5.0 RESULTS

A summary of laboratory analytical results for soil samples collected from the Site during the Supplemental Investigation is provided in Tables 2 through 4. A summary of water quality parameters is provided in Table 5. A summary of the laboratory analytical results for groundwater samples collected from the Site is provided in Tables 6 through 8. The laboratory analytical reports for the soil and groundwater samples collected during the Supplemental Investigation conducted in August and September 2015 are provided in Attachment B.

5.1 SOIL

PCBs were not reported at concentrations exceeding the laboratory PQL in the soil samples collected from borings FB-3 at 2 and 8 feet below ground surface (bgs), FB-4 at 2.5 and 8.5 feet bgs, and FB-5 at 2 and 10 feet bgs (Table 2; Figure 4).

SPLP DRO was reported at concentrations of 2,660 micrograms per liter (µg/l) and 1,800 µg/l in the soil samples analyzed from borings FB-1 at a depth of 10 feet bgs and FB-4 at a depth of 8.5 feet bgs, respectively. SPLP ORO was reported at concentrations of 442 and 742 µg/l in the soil samples analyzed from borings FB-1 at a depth of 10 feet bgs and FB-4 at a depth of 8.5 feet bgs, respectively. SPLP DRO and SPLP ORO were not reported at concentrations exceeding the laboratory PQL in the soil sample analyzed from boring FB-2 at a depth of 10 feet bgs. SPLP GRO was not reported at concentrations exceeding the laboratory PQL in the soil samples analyzed from borings FB-1, FB-2, and FB-4 at depths of 10, 10, and 8.5 feet bgs, respectively. SPLP BTEX was not reported at concentrations exceeding the laboratory PQL in the soil sample analyzed from boring FB-4 at a depth of 8.5 feet bgs (Table 3).

SPLP benzo(a)anthracene was reported at a concentration of 0.00577 µg/l in the soil sample analyzed from boring FB-4 at a depth of 8.5 feet bgs, which is less than the laboratory PQL. No other SPLP cPAHs were reported in the soil samples analyzed from borings FB-1, FB-2, and FB-4.

5.2 GROUNDWATER

Groundwater elevation contours for the Site were interpreted using depth-to-water measurements obtained from the Site monitoring well network on August 11, 2015. According to groundwater contours estimated using groundwater levels measured on August 11, 2015, groundwater flow direction is to the east, toward the Wenatchee River, at an estimated horizontal hydraulic gradient of approximately 0.01 foot per foot, which is consistent with the previous groundwater monitoring events conducted at the Site (Table 1; Figure 3).

DRO and ORO were reported at concentrations of 210 µg/l and 267 µg/l, respectively, in the groundwater sample collected from monitoring well MW-1, which is less than the MTCA Method A cleanup levels. GRO and BTEX were not reported at concentrations exceeding laboratory PQLs in the groundwater sample collected from monitoring well MW-1. DRO, ORO, GRO, and BTEX

were not reported at concentrations exceeding the laboratory PQLs in the groundwater samples collected from monitoring wells MW-2 through MW-4 (Table 6; Figure 3).

Total cPAH toxic equivalent concentrations were calculated for the groundwater samples collected from monitoring wells MW-1 through MW-4. The calculated toxic equivalent concentrations are less than the MTCA Method A cleanup level for groundwater of 0.1 µg/l (Table 7; Figure 3).

Naphthalene was reported at estimated concentrations of 0.0238 µg/l, 0.0335 µg/l, 0.032 µg/l, and 0.0435 µg/l in the groundwater samples collected from monitoring wells MW-1 through MW-4, respectively, which are less than the laboratory PQLs and the MTCA Method B cleanup level of 160 µg/l. Anthracene, 1-methylnaphthalene, phenanthrene, and pyrene were reported at estimated concentrations of 0.0458 µg/l, 0.0087 µg/l, 0.0182 µg/l, and 0.0921 µg/l, respectively, in the groundwater sample collected from monitoring well MW-1, which are less than the laboratory PQLs and the MTCA Method B cleanup levels (Table 8).

6.0 CONCLUSIONS

Farallon collected soil samples from borings FB-3 through FB-5 to resample the former locations and approximate depths of historical soil samples T4-N, T6-N, and T7-S to determine whether PCBs are a COC for the Site. PCBs were not reported at concentrations exceeding the laboratory PQLs in historical soil samples T4-N, T6-N, and T7-S; however, the laboratory PQLs exceeded the MTCA Method A cleanup level for total PCBs. PCBs were not reported at concentrations exceeding the laboratory PQLs in soil samples collected from depths of 2 to 2.5 feet bgs and 8 to 10.5 feet bgs in borings FB-3, FB-4, and FB-5, and the laboratory PQLs were less than the MTCA Method A cleanup level. Additionally, there are no known sources of PCBs at the Site. Based on the PCB analytical results from the Supplemental Investigation and the lack of a historical source for PCBs on the Site, PCBs are not considered a COC at the Site.

Potential leachability of COCs to groundwater was assessed using the SPLP method to extract a simulated leachate from soil samples collected from borings FB-1, FB-2, and FB-4. The boring locations were selected based on previous investigations where the highest concentrations of COCs were reported in soil. GRO, BTEX, and cPAHs were not reported at concentrations exceeding the laboratory PQL in the simulated leachate generated using the SPLP method. While DRO and ORO concentrations were reported in the simulated leachate, the results are not considered representative of the leachability of COCs to groundwater under natural Site conditions. Furthermore, there is no basis for comparison of SPLP results to MTCA Method A groundwater cleanup levels for non-metallic substances.

Based on historical water quality measurements from the Site monitoring well network, the average pH of groundwater at the Site is 6.7. The SPLP method agitates the soil sample for 18 hours in an acidic solution with a pH of 5.0, which is approximately 17 times more acidic than the average pH of groundwater at the Site. In addition, the use of SPLP data to model leaching to groundwater is not corroborated by the empirical groundwater data, which confirm that COCs have not been reported in groundwater at concentrations exceeding the MTCA Method A cleanup levels in the last 3 years. Petroleum hydrocarbons that may be present in soil at the Site are adhered to the surface of soil particles and/or trapped in pores between soil particles and are immobile. Only a single exceedance of the MTCA Method A cleanup level for DRO occurred in groundwater in monitoring well MW-1 during the initial sampling event after installation of the monitoring well in 2008. Monitoring well MW-1 was installed in the portion of the Site with the highest concentrations of petroleum hydrocarbons in soil. Therefore, if concentrations of COCs in soil at the Site were to result in an exceedance in groundwater, that exceedance would be expected in monitoring well MW-1. There have been no exceedances of MTCA Method A cleanup levels in groundwater at any of the monitoring wells during the past 3 years of monitoring. Therefore, using SPLP as a predictor for leaching to groundwater is not applicable at the Site.

Non-aqueous phase liquid has not been observed in the monitoring wells at the Site throughout the investigation history and reported concentrations of petroleum hydrocarbons in groundwater are less than the applicable MTCA cleanup levels. It has been demonstrated based on the weight of evidence, as outlined in WAC 173-340-747(9), that residual contaminants in Site soil will not

result in an exceedance of applicable groundwater cleanup levels established under WAC 173-340-720.

Based on the weight of evidence compiled through soil and groundwater monitoring investigations completed to date, BNSF requests that a No Further Action determination be issued by Ecology for the Site. BNSF intends to file an environmental covenant on the deed for the Site. The environmental covenant may include health advisories and specific requirements for handling soil if encountered during future maintenance or redevelopment work. The environmental covenant will be implemented in accordance with Ecology guidance.

7.0 REFERENCES

EMR, Inc. 2005. Letter Report Regarding Phase II Assessment Report – Leased Property No.: 40,250,477, John Michael, Cashmere, Chelan County, Washington. From Andrea Schiller and Jeremy Raye. To BNSF Railway Company. January 12.

Farallon Consulting, L.L.C. (Farallon). 2008. Interview Regarding Historical Events at the John Michael Lease Site between Javan Ruark and John Michael, Property Owner. May 7.

———. 2009. *Subsurface Investigation Report, John Michal Lease Site, 5640 Sunset Highway, Cashmere, Washington*. Prepared for BNSF Railway Company. March 3.

_____. 2013. *Revised Cleanup Action Work Plan, John Michael Lease Site, 5640 Sunset Highway, Cashmere, Washington.*

_____. 2015. *Supplemental Soil and Groundwater Investigation Work Plan, John Michael Lease Site, 5640 Sunset Highway, Cashmere, Washington.* March 23.

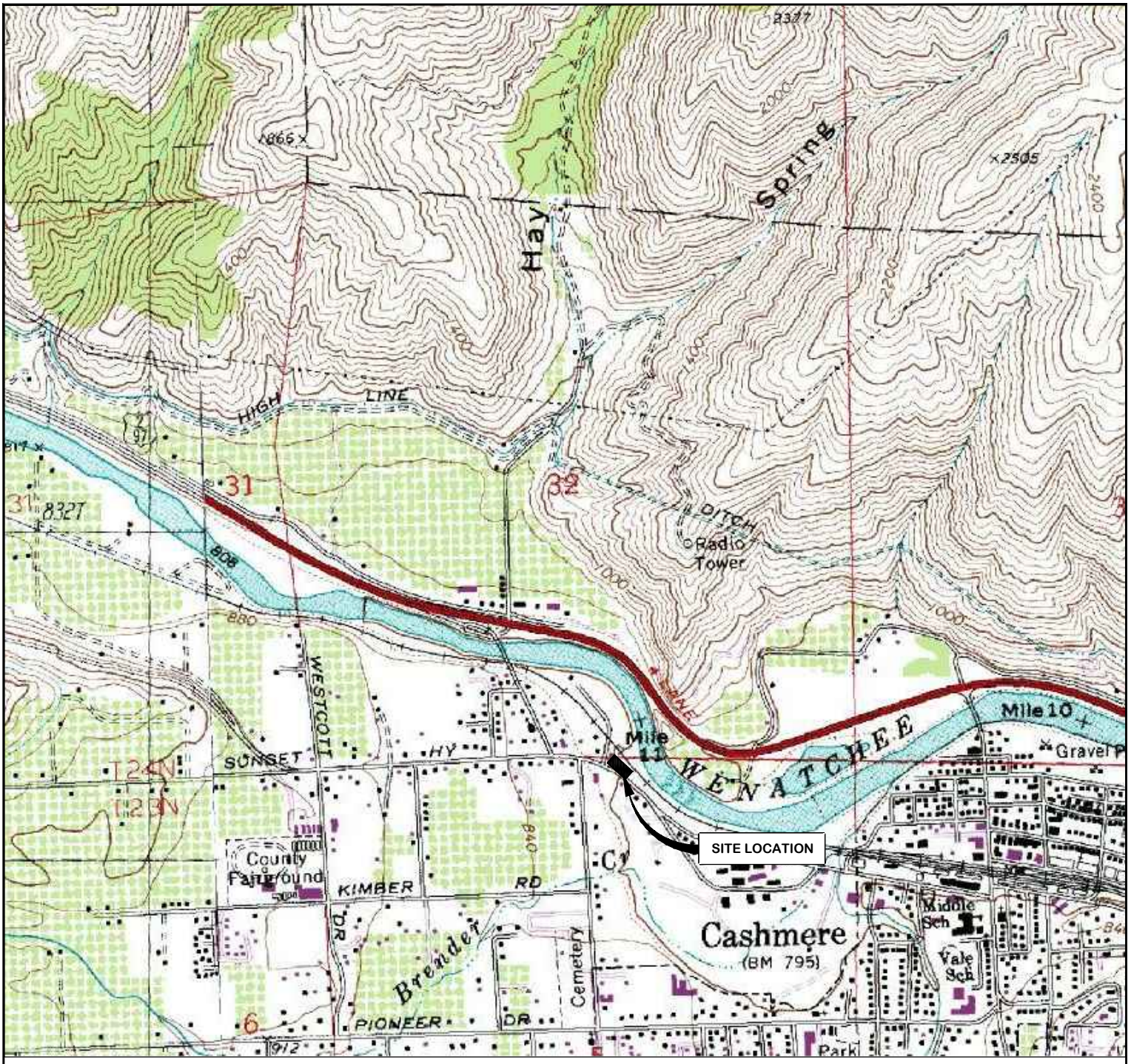
Washington State Department of Ecology. 2015. Environmental Covenant for MTCA Sites: Instructions for Use and Covenant Template. Publication No. 15-09-054. August 20.

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

FIGURES

SUPPLEMENTAL SOIL AND GROUNDWATER REPORT
John Michael Lease Site
5640 Sunset Highway
Cashmere, Washington

Farallon PN: 283-006



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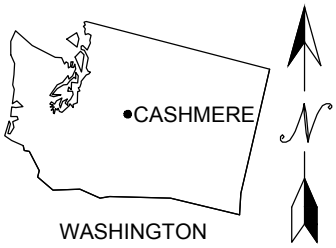


FARALLON CONSULTING

Washington
Issaquah | Bellingham | Seattle

Oregon
Portland | Bend | Baker City

California
Oakland | Sacramento | Irvine

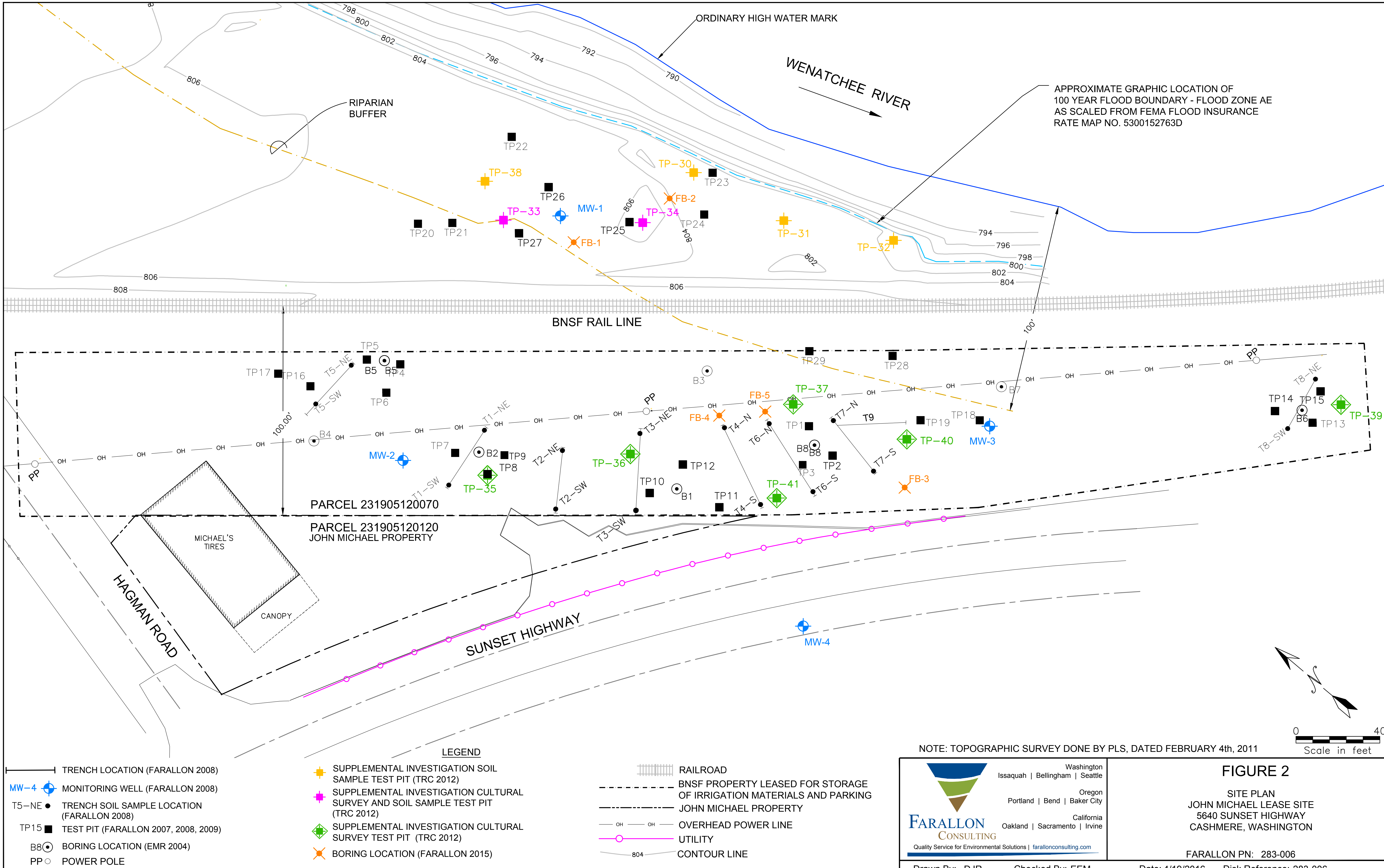
Quality Service for Environmental Solutions | farallonconsulting.com

FIGURE 1

SITE VICINITY MAP
JOHN MICHAEL LEASE SITE
5640 SUNSET HIGHWAY
CASHMERE, WASHINGTON

FARALLON PN: 283-006

Drawn By: GPF Checked By: EEM Date: 12/14/2015 Disk Reference: 283-006



ORDINARY HIGH WATER MARK
WENATCHEE RIVER
APPROXIMATE GRAPHIC LOCATION OF 100 YEAR FLOOD BOUNDARY - FLOOD ZONE AE AS SCALED FROM FEMA FLOOD INSURANCE RATE MAP NO. 5300152763D
RIPARIAN BUFFER
BNSF RAIL LINE
PARCEL 231905120070
PARCEL 231905120120
JOHN MICHAEL PROPERTY
MICHAEL'S TIRES
CANOPY
HAGMAN ROAD
SUNSET HIGHWAY
100.00'
100'
TP-30
TP-31
TP-32
TP-33
TP-34
TP-35
TP-36
TP-37
TP-38
TP-39
TP-40
TP-41
FB-1
FB-2
FB-3
FB-4
FB-5
MW-1
MW-2
MW-3
MW-4
NOTE: TOPOGRAPHIC SURVEY DONE BY PLS, DATED FEBRUARY 4th, 2011
0
40
Scale in feet
LEGEND
TRENCH LOCATION (FARALLON 2008)
MW-4 MONITORING WELL (FARALLON 2008)
T5-NE TRENCH SOIL SAMPLE LOCATION (FARALLON 2008)
TP15 TEST PIT (FARALLON 2007, 2008, 2009)
B8 BORING LOCATION (EMR 2004)
PP POWER POLE
SUPPLEMENTAL INVESTIGATION SOIL SAMPLE TEST PIT (TRC 2012)
SUPPLEMENTAL INVESTIGATION CULTURAL SURVEY AND SOIL SAMPLE TEST PIT (TRC 2012)
SUPPLEMENTAL INVESTIGATION CULTURAL SURVEY TEST PIT (TRC 2012)
BORING LOCATION (FARALLON 2015)
RAILROAD
BNSF PROPERTY LEASED FOR STORAGE OF IRRIGATION MATERIALS AND PARKING
JOHN MICHAEL PROPERTY
OVERHEAD POWER LINE
UTILITY
CONTOUR LINE
Washington
Issaquah | Bellingham | Seattle
Oregon
Portland | Bend | Baker City
California
Oakland | Sacramento | Irvine
FARALLON CONSULTING
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FIGURE 2
SITE PLAN
JOHN MICHAEL LEASE SITE
5640 SUNSET HIGHWAY
CASHMERE, WASHINGTON
FARALLON PN: 283-006
Drawn By: DJR
Checked By: EEM
Date: 4/19/2016
Disk Reference: 283-006

ORDINARY HIGH WATER MARK

WENATCHEE RIVER

APPROXIMATE GRAPHIC LOCATION OF
100 YEAR FLOOD BOUNDARY - FLOOD ZONE AE
AS SCALED FROM FEMA FLOOD INSURANCE
RATE MAP NO. 5300152763D

RIPARIAN
BUFFER

DRO	ORO	GRO	B	T	E	X	TEC
210	267	<100	<0.50	<5.0	<0.50	<1.5	0.037

MW-1
(487.62)

FB-1

FB-2

488.00

BNSF RAIL LINE

100'

DRO	ORO	GRO	B	T	E	X	TEC
<100	<250	<100	<0.50	<5.0	<0.50	<1.5	0.036

MW-3
(487.95)

489.00

FB-4

FB-5

100.00'

MW-2
(489.38)

DRO	ORO	GRO	B	T	E	X	TEC
<100	<250	<100	<0.50	<5.0	<0.50	<1.5	0.036

PARCEL 231905120070

PARCEL 231905120120
JOHN MICHAEL PROPERTY

MICHAEL'S
TIRES

CANOPY

HAGMAN ROAD

FB-3

488.00

SUNSET HIGHWAY

MW-4
(488.86)

DRO	ORO	GRO	B	T	E	X	TEC
<100	<250	<100	<0.50	<5.0	<0.50	<1.5	0.036

489.00

N

0 40
Scale in feet

NOTE: TOPOGRAPHIC SURVEY DONE BY PLS, DATED FEBRUARY 4th, 2011

LEGEND

MW-4 MONITORING WELL (FARALLON 2008)

FB-1 BORING LOCATION (FARALLON 2015)

RAILROAD

PP POWER POLE

804 CONTOUR LINE

UTILITY

OH OVERHEAD POWER LINE

JOHN MICHAEL PROPERTY

BNSF PROPERTY LEASED FOR STORAGE OF IRRIGATION MATERIALS AND PARKING

GROUNDWATER RESULTS IN MICROGRAMS PER LITER

DRO = TOTAL PETROLEUM HYDROCARBONS (TPH) AS DIESEL-RANGE ORGANICS

ORO = TPH AS OIL-RANGE ORGANICS

GRO = TPH AS GASOLINE-RANGE ORGANICS

B = BENZENE

T = TOLUENE

E = ETHYLBENZENE

X = TOTAL XYLENES

TEC = TOXIC EQUIVALENT CONCENTRATION

ALL LOCATIONS ARE APPROXIMATE

< = INDICATES CONCENTRATIONS NOT DETECTED ABOVE THE STATED LABORATORY PRACTICAL QUANTITATION LIMIT

11.50 GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)

APPROXIMATE DIRECTION OF GROUNDWATER FLOW

(489.38) GROUNDWATER ELEVATION

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Washington
Issaquah | Bellingham | Seattle

Oregon
Portland | Bend | Baker City

California
Oakland | Sacramento | Irvine

FIGURE 3

GROUNDWATER CONTOUR MAP AND ANALYTICAL RESULTS
AUGUST 11, 2015
JOHN MICHAEL LEASE SITE
5640 SUNSET HIGHWAY
CASHMERE, WASHINGTON

FARALLON PN: 283-006

Drawn By: DJR Checked By: EEM Date: 4/19/2016 Disk Reference: 283-006

ORDINARY HIGH WATER MARK

WENATCHEE RIVER

APPROXIMATE GRAPHIC LOCATION OF
100 YEAR FLOOD BOUNDARY - FLOOD ZONE AE
AS SCALED FROM FEMA FLOOD INSURANCE
RATE MAP NO. 5300152763D

RIPARIAN
BUFFER

BNSF RAIL LINE

100'

100.00'

DEPTH	PCB's
2.5'	<0.0177
8.5'	<0.0178

DEPTH	PCB's
2.0'	<0.0185
10.0'	<0.0177

DEPTH	PCB's
2.0'	<0.0190
8.0'	<0.0215

DEPTH	PCB's
8.0'	**<1.08**

DEPTH	PCB's
8.0'	**<5.57**

DEPTH	PCB's
10.0'	**<1.69**

PARCEL 231905120070

PARCEL 231905120120
JOHN MICHAEL PROPERTY

MICHAEL'S
TIRES

CANOPY

HAGMAN ROAD

SUNSET HIGHWAY

MW-1 MW-2 MW-3 MW-4

FB-1 FB-2 FB-3 FB-4 FB-5

T4-N T6-N T7-S

PP

OH

0 40
Scale in feet

NOTE: TOPOGRAPHIC SURVEY DONE BY PLS, DATED FEBRUARY 4th, 2011

LEGEND

- MW-4 MONITORING WELL (FARALLON 2008)
- FB-1 BORING LOCATION (FARALLON 2015)
- T5–NE TRENCH SOIL SAMPLE LOCATION (FARALLON 2008)
- RAILROAD
- PP POWER POLE
- UTILITY
- OH OVERHEAD POWER LINE
- JOHN MICHAEL PROPERTY
- BNSF PROPERTY LEASED FOR STORAGE OF IRRIGATION MATERIALS AND PARKING
- 804 CONTOUR LINE

SOIL ANALYTICAL RESULTS IN MILLIGRAMS PER KILOGRAM

PCB's = TOTAL POLYCHLORINATED BIPHENYLS

DEPTH IN FEET BELOW GROUND SURFACE

BOLD = LABORATORY PRACTICAL QUANTITATION LIMITS EXCEED MTCA METHOD A CLEANUP LEVEL

ALL LOCATIONS ARE APPROXIMATE

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Washington
Issaquah | Bellingham | Seattle

Oregon
Portland | Bend | Baker City

California
Oakland | Sacramento | Irvine

FIGURE 4

BORING LOCATIONS AND SOIL PCB ANALYTICAL RESULTS
JOHN MICHAEL LEASE SITE
5640 SUNSET HIGHWAY
CASHMERE, WASHINGTON

FARALLON PN: 283-006

Drawn By: DJR Checked By: EEM Date: 4/19/2016 Disk Reference: 283-006

TABLES

SUPPLEMENTAL SOIL AND GROUNDWATER REPORT
John Michael Lease Site
5640 Sunset Highway
Cashmere, Washington

Farallon PN: 283-006

Table 1
Summary of Groundwater Elevation Data
John Michael Lease Site
Cashmere, Washington
Farallon PN: 283-006

Monitoring Well	Date Measured	Sampled By	Well Head Elevation (feet)[1]	Depth to Water (feet)[2]	Groundwater Elevation (feet)[1]
MW-1	08/06/08	Farallon	501.94	13.94	488.00
	04/07/09			13.96	487.98
	09/25/12			13.98	487.96
	12/11/12			13.66	488.28
	03/20/13			13.40	488.54
	06/19/13			11.86	490.08
	08/11/15			14.32	487.62
MW-2	08/06/08	Farallon	499.14	9.00	490.14
	04/07/09			9.12	490.02
	09/25/12			9.30	489.84
	12/11/12			8.88	490.26
	03/20/13			8.70	490.44
	06/19/13			7.54	491.60
	08/11/15			9.76	489.38
MW-3	08/06/08	Farallon	496.09	7.83	488.26
	04/07/09			7.79	488.30
	09/25/12			7.70	488.39
	12/11/12			7.62	488.47
	03/20/13			7.54	488.55
	06/19/13			6.64	489.45
	08/11/15			8.14	487.95
MW-4	08/06/08	Farallon	495.85	6.39	489.46
	04/07/09			6.45	489.40
	09/25/12			6.33	489.52
	12/11/12			6.30	489.55
	03/20/13			6.22	489.63
	06/19/13			5.18	490.67
	08/11/15			6.99	488.86

NOTES:

[1] Elevations based on an arbitrary 100-foot datum established at the Site.
[2] In feet below top of well casing.

Farallon = Farallon Consulting, L.L.C.

Table 2
Summary of Soil Analytical Results - Polychlorinated Biphenyls
John Michael Lease Site
Cashmere, Washington

Trench/ Boring Location	Sample Identification	Sampled By	Sample Date	Sample Depth (feet) [1]	Analytical Results (milligrams per kilogram)[2]									
					Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	Aroclor 1262	Aroclor 1268	Total PCBs
Test Trenches														
T1-SW	T1-050608-8-SW	Farallon	05/06/08	8	<0.321	<0.642	<0.321	<0.321	<0.321	<0.321	<0.321	<0.321	<0.321	<0.642
T2-NE	T2-050608-8-NE	Farallon	05/06/08	8	<0.281	<0.561	<0.281	<0.281	<0.281	<0.281	<0.281	<0.281	<0.281	<0.561
T3-SW	T3-050708-8-SW	Farallon	05/07/08	8	<0.277	<0.554	<0.277	<0.277	<0.277	<0.277	<0.277	<0.277	<0.277	<0.554
T4-N	T4-050708-8-N	Farallon	05/07/08	8	<0.540	<1.08	<0.540	<0.540	<0.540	<0.540	<0.540	<0.540	<0.540	**<1.08**
T5-SW	T5-050608-8-SW	Farallon	05/06/08	8	<0.290	<0.581	<0.290	<0.290	<0.290	<0.290	<0.290	<0.290	<0.290	<0.581
T6-N	T6-050708-10-N	Farallon	05/07/08	10	<0.843	<1.69	<0.843	<0.843	<0.843	<0.843	<0.843	<0.843	<0.843	**<1.69**
T7-S	T7-050808-8-S	Farallon	05/08/08	8	<2.79	<5.57	<2.79	<2.79	<2.79	<2.79	<2.79	<2.79	<2.79	**<5.57**
T8-NE	T8-050808-6-NE	Farallon	05/08/08	6	<0.295	<0.591	<0.295	<0.295	<0.295	<0.295	<0.295	<0.295	<0.295	<0.591
Borings														
FB-3	FB-3-2.0	Farallon	09/15/15	2	<0.0190	<0.0190	<0.0190	<0.0190	<0.0190	<0.0190	<0.0190	<0.0190	<0.0190	<0.0190
FB-3	FB-3-8.0	Farallon	09/15/15	8	<0.0215	<0.0215	<0.0215	<0.0215	<0.0215	<0.0215	<0.0215	<0.0215	<0.0215	<0.0215
FB-4	FB-4-2.5	Farallon	08/25/15	2.5	<0.0177	<0.0177	<0.0177	<0.0177	<0.0177	<0.0177	<0.0177	<0.0177	<0.0177	<0.0177
FB-4	FB-4-8.5	Farallon	08/25/15	8.5	<0.0178	<0.0178	<0.0178	<0.0178	<0.0178	<0.0178	<0.0178	<0.0178	<0.0178	<0.0178
FB-5	FB-5-2.0	Farallon	09/15/15	2	<0.0185	<0.0185	<0.0185	<0.0185	<0.0185	<0.0185	<0.0185	<0.0185	<0.0185	<0.0185
FB-5	FB-5-10.0	Farallon	09/15/15	10	<0.0177	<0.0177	<0.0177	<0.0177	<0.0177	<0.0177	<0.0177	<0.0177	<0.0177	<0.0177
MTCA Method A Cleanup Levels for Soil [3]														**1**

NOTES:

Results in **bold** denote concentrations exceeding applicable cleanup levels.

< denotes analyte not detected at or exceeding the reporting limit listed.

-- denotes sample was not analyzed.

Farallon = Farallon Consulting, L.L.C.

PCBs = polychlorinated biphenyls

[1]Depth in feet below ground surface.

[2]Analyzed by U.S. Environmental Protection Agency Method 8082.

[3]Washington State Model Toxics Control Act Cleanup Regulation (MTCA) Method A Soil Cleanup Levels for Unrestricted Land Uses, Table 740-1 of Section 900 of Chapter 173-340 of the Washington Administrative Code, as amended 2013.

Table 3
Summary of Soil Analytical Results - SPLP Total Petroleum Hydrocarbons
John Michael Lease Site
Cashmere, Washington
Farallon PN: 283-006

Boring Location	Sample Identification	Sampled By	Sample Date	Sample Depth (feet)[1]	Analytical Results (micrograms per liter)						
					DRO[2]	ORO[2]	GRO[3]	Benzene[4]	Toluene[4]	Ethyl-benzene[4]	Xylenes[4]
FB-1	FB-1-10.0	Farallon	09/15/15	10	2,660	442	<100	--	--	--	--
FB-2	FB-2-10.0	Farallon	09/15/15	10	<100	<250	<100	--	--	--	--
FB-4	FB-4-8.5	Farallon	08/25/15	8.5	1,800	742	<100	<0.50	<5.0	<0.50	<1.50

NOTES:

< denotes analyte not detected at or exceeding the reporting limit listed.

[1] Depth in feet below ground surface.

[2] Sample extracted using U.S. Environmental Protection Agency (EPA) Method 1311 and analyzed using Northwest Method NWTPH-Dx.

[3] Sample extracted using EPA Method 1311 and analyzed using Northwest Method NWTPH-Gx.

[4] Sample extracted using EPA Method 1311 and analyzed using EPA Method 8021B.

DRO = total petroleum hydrocarbons (TPH) as diesel-range organics

Farallon = Farallon Consulting, L.L.C.

GRO = TPH as gasoline-range organics

ORO = TPH as oil-range organics

SPLP = Synthetic Precipitation Leaching Procedure

Table 4
Summary of Soil Analytical Results - SPLP Carcinogenic Polycyclic Aromatic Hydrocarbons
John Michael Lease Site
Cashmere, Washington
Farallon PN: 283-006

Boring Location	Sample Identification	Sampled By	Sample Date	Sample Depth (feet)[1]	Analytical Results (micrograms per liter)[2]						
					Benzo (a) anthracene	Chrysene	Benzo (b) fluoranthene	Benzo (k) fluoranthene	Benzo (a) pyrene	Indeno (1,2,3-cd) pyrene	Dibenz(a,h) anthracene
FB-1	FB-1-10.0	Farallon	09/15/15	10	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
FB-2	FB-2-10.0	Farallon	09/15/15	10	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
FB-4	FB-4-8.5	Farallon	08/25/15	8.5	0.00577 J	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050

NOTES:

[1] Depth in feet below ground surface.

[2] Sample extracted using U.S. Environmental Protection Agency (EPA) Method 1311 and analyzed using EPA Method 8270C/SIM.

Farallon = Farallon Consulting, L.L.C.

J = Parameter detected at a concentration less than the practical quantitation limit.

SPLP = Synthetic Precipitation Leaching Procedure

Table 5
Summary of Natural Attenuation and Water Quality Parameter Results
John Michael Lease Site
Cashmere, Washington
Farallon PN: 283-006

Monitoring Well	Sample Identification	Sampled By	Sample Date	Nitrate[1] (mg/l)	Sulfate[1] (mg/l)	Free Carbon Dioxide[2] (mg/l)	Ferrous Iron[3] (mg/l)	Sulfide[4] (mg/l)	Iron[5] (mg/l)	Iron, Dissolved[5] (mg/l)	Dissolved Oxygen[6] (mg/l)	pH[6] (standard units)	Temperature[6] (Celsius)	Conductivity[6] (mS/cm)	ORP[6] (mV)
MW-1	MW1-080608	Farallon	8/6/2008	—	—	—	—	—	—	—	2.02	7.12	14.78	0.634	194.8
	MW1-092512		9/25/2012	2	16	29 T	<0.050 T	<0.050	0.240	<0.100	0.99	6.42	13.29	0.546	110.2
	MW1-121112		12/11/2012	3	16	< 20 T	0.037 J T	0.030 J	0.210	<0.100	1.19	6.57	11.13	0.481	67.8
	MW1-032013		3/20/2013	3.3	23	< 20 T	0.035 J T	<0.050	<0.100	<0.100	3.22	6.83	10.15	0.595	114.9
	MW1-061913		6/19/2013	3.1	15	64 T	0.053 T	< 0.050	0.079 J	0.130	2.13	6.64	12.79	0.517	70.0
	MW1-081115		8/11/2015	—	—	—	—	—	—	—	2.04	6.72	18.47	0.567	93
MW-2	MW2-080608	Farallon	8/6/2008	—	—	—	—	—	—	—	3.69	6.72	17.00	0.550	403.5
	MW2-092512		9/25/2012	3.8	16	22 T	<0.050 T	<0.050	0.170	<0.100	4.31	6.63	14.83	0.530	145.7
	MW2-121112		12/11/2012	3.7	16	< 20 T	0.033 J T	< 0.050	0.050 J	<0.100	4.35	6.38	11.53	0.466	276.1
	MW2-032013		3/20/2013	3.6	15	< 20 T	0.530 T	< 0.050	0.210	<0.100	5.29	6.89	9.68	0.502	146.6
	MW2-061913		6/19/2013	3.8	15	42 T	0.033 J T	< 0.050	0.045 J	0.056 J	5.72	7.26	14.25	0.521	316
	MW2-081115		8/11/2015	—	—	—	—	—	—	—	3.66	6.91	20.39	0.542	96
MW-3	MW3-080608	Farallon	8/6/2008	—	—	—	—	—	—	—	2.64	6.23	17.07	0.548	432.7
	MW3-092512		9/25/2012	1.4	9.9	39 T	<0.050 T	<0.050	0.046 J	<0.100	0.81	6.38	16.43	0.534	137.6
	MW3-121112		12/11/2012	4.7	17	< 20 T	0.029 J T	0.028 J	0.041 J	<0.100	2.11	6.89	12.44	0.517	145.1
	MW3-032013		3/20/2013	5.1	16	< 20 T	0.031 J T	<0.050	0.017 J	<0.100	4.05	6.79	9.06	0.560	128.3
	MW3-061913		6/19/2013	2.2	14	62 T	0.031 J T	<0.050	0.062 J	0.039 J	3.08	7.10	14.55	0.560	297
	MW3-081115		8/11/2015	—	—	—	—	—	—	—	1.25	6.89	20.53	0.595	80
MW-4	MW4-080608	Farallon	8/6/2008	—	—	—	—	—	—	—	5.37	6.35	16.86	0.504	439.1
	MW4-092512		9/25/2012	4	14	22 T	<0.050 T	<0.050	0.057 J	<0.100	4.14	6.46	14.30	0.532	157.0
	MW4-121112		12/11/2012	4.6	16	< 20 T	<0.050 T	0.026 J	0.028 J	<0.100	4.59	6.99	11.95	0.486	235.0
	MW4-032013		3/20/2013	5.4	16	< 20 T	0.029 J T	<0.050	0.058 J	<0.100	6.18	6.82	10.29	0.580	159.6
	MW4-061913		6/19/2013	6.2	14	45 T	0.036 J T	<0.050	0.051 J	0.040 J	6.50	6.78	13.18	0.559	66.5
	MW4-081115		8/11/2015	—	—	—	—	—	—	—	3.75	7.00	19.76	0.595	95

NOTES:

— denotes sample not analyzed.

[1]Analyzed by U.S. Environmental Protection Agency (EPA) Method 9056.

[2]Analyzed by Standard Method (SM) 4500CO2.

[3]Analyzed by Conventional Chemistry Parameters by EPA Method/American Public Health Association (APHA) Methods, SM 3500-Fe.

[4]Analyzed by SM 4500-S2.

[5]Analyzed by EPA Method 6010B.

[6]Measured using a YSI multimeter and flow-through cell after stabilization.

Average pH = 6.7

Farallon = Farallon Consulting, L.L.C.

J = estimated value below lowest calibration point

mg/l = milligrams per liter; equivalent to parts per million

mS/cm = microSiemens per centimeter

mV = millivolts

ORP = oxidation-reduction potential

T = sample received past/too close to holding time expiration

Table 6
Summary of Reconnaissance Groundwater and Groundwater Analytical Results - Total Petroleum Hydrocarbons and BTEX
John Michael Lease Site
Cashmere, Washington
Farallon PN: 283-006

Boring/ Monitoring Well	Sample Identification	Sampled By	Sample Date	Analytical Results (micrograms per liter)						
				DRO[1]	ORO/RRO[1]	GRO[2]	Benzene[2]	Toluene[2]	Ethyl-benzene[2]	Xylenes[2]
Reconnaissance Groundwater Samples										
B-5	B-5	EMR	12/01/04	**1,290**	**2,160**	<100	**26.1**	<1.0	<1.0	<2.0
B-6	B-6	EMR	12/01/04	<254	<507	<100	<0.5	<1.0	<1.0	<2.0
B-8	B-8	EMR	12/01/04	<252	<505	<100	<0.5	<1.0	<1.0	<2.0
Groundwater Samples										
MW-1	MW1-080608	Farallon	08/06/08	**1,110**	<472	145	1.09	0.700	0.893	2.84
	MW1-092512		09/25/12	<100	<250	<100	<0.50	<5.0	<0.50	<1.5
	MW1-121112		12/11/12	200	150 J	<100	<0.50	<5.0	<0.50	<1.5
	MW1-032013		03/20/13	100	<250	<100	<0.50	0.23 J	<0.50	0.82 J
	MW1-061913		06/19/13	110	<250	<100	<0.50	<5.0	<0.50	<1.5
	MW1-081115		08/11/15	210	267	<100	<0.50	<5.0	<0.50	<1.5
MW-2	MW2-080608	Farallon	08/06/08	<236	<472	<50	<0.500	<0.500	<0.500	<1.00
	MW2-092512		09/25/12	<100	<250	<100	<0.50	<5.0	<0.50	<1.5
	MW2-121112		12/11/12	<100	<250	<100	<0.50	<5.0	<0.50	<1.5
	MW2-032013		03/20/13	<100	<250	<100	<0.50	<5.0	<0.50	<1.5
	MW2-061913		06/19/13	<100	<250	<100	<0.50	<5.0	<0.50	<1.5
	MW2-081115		08/11/15	<100	<250	<100	<0.50	<5.0	<0.50	<1.5
MW-3	MW3-080608	Farallon	08/06/08	<236	499	<50	<0.500	<0.500	<0.500	<1.00
	MW3-092512		09/25/12	<100	<250	<100	<0.50	<5.0	<0.50	<1.5
	MW3-121112		12/11/12	90 J	<250	<100	<0.50	<5.0	<0.50	<1.5
	MW3-032013		03/20/13	<100	<250	<100	<0.50	0.26 J	<0.50	<1.5
	MW3-061913		06/19/13	57. J	<250	59. J	<0.50	<5.0	<0.50	<1.5
	MW3-081115		08/11/15	<100	<250	<100	<0.50	<5.0	<0.50	<1.5

Table 6
Summary of Reconnaissance Groundwater and Groundwater Analytical Results - Total Petroleum Hydrocarbons and BTEX
John Michael Lease Site
Cashmere, Washington
Farallon PN: 283-006

Boring/ Monitoring Well	Sample Identification	Sampled By	Sample Date	Analytical Results (micrograms per liter)						
				DRO[1]	ORO/RRO[1]	GRO[2]	Benzene[2]	Toluene[2]	Ethyl-benzene[2]	Xylenes[2]
MW-4	MW4-080608	Farallon	08/06/08	<236	<472	<50	<0.500	<0.500	<0.500	<1.00
	MW4-092512		09/25/12	<100	<250	<100	<0.50	<5.0	<0.50	<1.5
	MW4-121112		12/11/12	78 J	170 J	<100	<0.50	<5.0	<0.50	<1.5
	MW4-032013		03/20/13	<100	<250	<100	<0.50	<5.0	<0.50	<1.5
	MW4-061913		06/19/13	<100	<250	50. J	<0.50	<5.0	<0.50	<1.5
	MW4-081115		08/11/15	<100	<250	<100	<0.50	<5.0	<0.50	<1.5
MTCA Method A Cleanup Levels for Groundwater[3]				**500**	**500/500**	**800[4]/1,000[5]**	**5**	**1,000**	**700**	**1,000**

NOTES:

Results in **bold** denote concentrations exceed applicable cleanup levels.

< denotes analyte not detected at or exceeding the reporting limit listed.

[1] Analyzed by Northwest Method NWTPH-Dx.

[2] Analyzed by Northwest Method NWTPH-Gx, NWTPH-G, or EPA Method 5030/8021B.

[3] Washington State Model Toxics Control Act Cleanup Regulation Method A Cleanup Levels for Groundwater, Table 720-1 of Section 900 of Chapter 173-340 of the Washington Administrative Code, revised 2013.

[4] Benzene present in groundwater

[5] No detectable benzene in groundwater

BTEX = benzene, toluene, ethylbenzene, and xylenes

DRO = total petroleum hydrocarbons (TPH) as diesel-range organics

EMR = EMR, Inc.

EPA = U.S. Environmental Protection Agency

Farallon = Farallon Consulting, L.L.C.

GRO = TPH as gasoline-range organics

J = Parameter detected at a concentration less than the practical quantitation limit.

ORO = TPH as oil-range organics

RRO = TPH as residual-range organics

Table 7
Summary of Groundwater Analytical Results - Carcinogenic Polycyclic Aromatic Hydrocarbons
John Michael Lease Site
Cashmere, Washington
Farallon PN: 283-006

Monitoring Well	Sample Identification	Sampled By	Sample Date	Analytical Results (micrograms per liter) [1]							
				Benzo (a) anthracene	Chrysene	Benzo (b) fluoranthene	Benzo (k) fluoranthene	Benzo (a) pyrene	Indeno (1,2,3-cd) pyrene	Dibenz(a,h) anthracene	Total cPAHs TEC [2,3]
MW-1	MW1-080608	Farallon	08/06/08	<0.0943	<0.0943	0.2890	<0.0943	**0.2550**	<0.0943	<0.0943	**0.3032**
	MW1-092512		09/25/12	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.038
	MW1-121112		12/11/12	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.038
	MW1-032013		03/20/13	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.038
	MW1-061913		06/19/13	0.015 J	0.012 J	<0.050	<0.050	<0.050	<0.050	<0.050	0.037
	MW1-081115		08/11/15	0.0172 J	0.0245 J	<0.050	<0.050	<0.050	<0.050	<0.050	0.037
MW-2	MW2-080608	Farallon	08/06/08	<0.0943	<0.0943	<0.0943	<0.0943	<0.0943	<0.0943	<0.0943	0.0712
	MW2-092512		09/25/12	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.038
	MW2-121112		12/11/12	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.038
	MW2-032013		03/20/13	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.038
	MW2-061913		06/19/13	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.038
	MW2-081115		08/11/15	0.00657 J	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.036
MW-3	MW3-080608	Farallon	08/06/08	<0.0943	<0.0943	<0.0943	<0.0943	<0.0943	<0.0943	<0.0943	0.0712
	MW3-092512		09/25/12	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.038
	MW3-121112		12/11/12	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.038
	MW3-032013		03/20/13	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.038
	MW3-061913		06/19/13	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.038
	MW3-081115		08/11/15	0.00570 J	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.036

Table 7
Summary of Groundwater Analytical Results - Carcinogenic Polycyclic Aromatic Hydrocarbons
John Michael Lease Site
Cashmere, Washington
Farallon PN: 283-006

Monitoring Well	Sample Identification	Sampled By	Sample Date	Analytical Results (micrograms per liter) [1]							
				Benzo (a) anthracene	Chrysene	Benzo (b) fluoranthene	Benzo (k) fluoranthene	Benzo (a) pyrene	Indeno (1,2,3-cd) pyrene	Dibenz(a,h) anthracene	Total cPAHs TEC [2,3]
MW-4	MW4-080608	Farallon	08/06/08	<0.0943	<0.0943	<0.0943	<0.0943	<0.0943	<0.0943	<0.0943	0.0712
	MW4-092512		09/25/12	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.038
	MW4-121112		12/11/12	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.038
	MW4-032013		03/20/13	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.038
	MW4-061913		06/19/13	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.038
	MW4-081115		08/11/15	0.00636 J	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.036
MTCA Method A Cleanup Levels for Groundwater[4]											**0.1**

NOTES:

< denotes analyte not detected at or exceeding the reporting limit listed.

[1]Analyzed by U.S. Environmental Protection Agency Method 8270C-SIM.

[2]Total carcinogenic polycyclic aromatic hydrocarbons derived using the total toxicity equivalency method in Section 708(8) of Chapter 173-340 of the Washington Administrative Code.

[3] For concentrations reported at less than the laboratory reporting limit, half the reporting limit was used to calculate the TEC.

[4]Washington State Model Toxics Control Act Cleanup Regulation Method A Cleanup Levels for Groundwater, Table 720-1 of Section 900 of Chapter 173-340 of the Washington Administrative Code, as revised 2013.

cPAHs = carcinogenic polycyclic aromatic hydrocarbons

Farallon = Farallon Consulting, L.L.C.

J = Parameter detected at a concentration less than the practical quantitation limit.

TEC = toxic equivalent concentration

Table 8
Summary of Reconnaissance Groundwater and Groundwater Analytical Results - Non-Carcinogenic Polycyclic Aromatic Hydrocarbons
John Michael Lease Site
Cashmere, Washington
Farallon PN: 283-006

Boring/ Monitoring Well	Sample Identification	Sampled By	Sample Date	Analytical Results (micrograms per liter)[1]								
				Acenaphthene	Anthracene	Fluorene	Naphthalene	1-Methyl naphthalene	2-Methyl naphthalene	2-Chloro naphthalene	Phenanthrene	Pyrene
Reconnaissance Groundwater Samples												
B-5	B-5	EMR	12/01/04	—	—	—	2.64 [2]	—	—	—	—	—
B-6	B-6	EMR	12/01/04	—	—	—	1.28 [2]	—	—	—	—	—
B-8	B-8	EMR	12/01/04	—	—	—	1.12 [2]	—	—	—	—	—
Groundwater Samples												
MW-1	MW1-080608	Farallon	08/06/08	0.866	<0.0943	1.08	0.975	**4.17**	0.608	NR	<0.0943	0.266
	MW1-092512		09/25/12	0.022 J	0.027 J	0.011 J	0.079 J	0.15 J	0.024J	<0.25	0.0091 J	0.040 J
	MW1-121112		12/11/12	0.026 J	0.016 J	0.014 J	0.11 J	0.31	0.031 J	<0.25	<0.050	0.028 J
	MW1-032013		03/20/13	0.025 J	0.025 J	0.013 J	0.11 J	0.21 J	0.027 J	<0.25	<0.050	0.031 J
	MW1-061913		06/19/13	0.016 J	<0.050	0.013 J	0.11 J	0.14 J	0.018 J	<0.25	0.019 J	0.056
	MW1-081115		08/11/15	<0.050	0.0458 J	<0.050	0.0238 J	0.0087 J	<0.250	<0.250	0.0182 J	0.0921
MW-2	MW2-080608	Farallon	08/06/08	<0.0943	<0.0943	<0.0943	<0.0943	<0.0943	<0.0943	NR	<0.0943	<0.0943
	MW2-092512		09/25/12	<0.050	<0.050	<0.050	<0.25	0.0085 J	0.012 J	<0.25	<0.050	<0.050
	MW2-121112		12/11/12	<0.050	<0.050	<0.050	<0.25	<0.25	<0.25	<0.25	<0.050	<0.050
	MW2-032013		03/20/13	<0.050	<0.050	<0.050	0.033 J	0.0086 J	0.012 J	<0.25	<0.050	<0.050
	MW2-061913		06/19/13	<0.050	<0.050	<0.050	0.041 J	<0.25	0.010 J	<0.25	<0.050	<0.050
	MW2-081115		08/11/15	<0.050	<0.050	<0.050	0.0335 J	<0.25	<0.25	<0.25	<0.050	<0.050
MW-3	MW3-080608	Farallon	08/06/08	<0.0943	<0.0943	<0.0943	<0.0943	<0.0943	<0.0943	NR	<0.0943	<0.0943
	MW3-092512		09/25/12	<0.050	<0.050	<0.050	<0.25	0.0086 J	0.011 J	<0.25	<0.050	<0.050
	MW3-121112		12/11/12	<0.050	<0.050	<0.050	<0.25	<0.25	<0.25	<0.25	<0.050	<0.050
	MW3-032013		03/20/13	<0.050	<0.050	<0.050	0.028 J	<0.25	<0.25	<0.25	<0.050	<0.050
	MW3-061913		06/19/13	<0.050	<0.050	<0.050	0.038 J	0.012 J	0.0092 J	<0.25	<0.050	<0.050
	MW3-081115		08/11/15	<0.050	<0.050	<0.050	0.032 J	<0.25	<0.25	<0.25	<0.050	<0.050
MW-4	MW4-080608	Farallon	08/06/08	<0.0943	<0.0943	<0.0943	<0.0943	<0.0943	<0.0943	NR	<0.0943	<0.0943
	MW4-092512		09/25/12	<0.050	<0.050	<0.050	0.028 J	<0.25	0.011 J	<0.25	<0.050	<0.050
	MW4-121112		12/11/12	<0.050	<0.050	<0.050	0.028 J	<0.25	<0.25	<0.25	<0.050	<0.050
	MW4-032013		03/20/13	<0.050	<0.050	<0.050	0.031 J	<0.25	<0.25	<0.25	<0.050	<0.050
	MW4-061913		06/19/13	<0.050	<0.050	<0.050	0.040 J	<0.25	<0.25	<0.25	<0.050	<0.050
	MW4-081115		08/11/15	<0.050	<0.050	<0.050	0.0435 J	<0.25	<0.25	<0.25	<0.050	<0.050
MTCA Method B Cleanup Level for Groundwater [3]				**960**	**4,800**	**640**	**160**	**1.51**	**32**	**640**	**NE**	**480**

NOTES:

— denotes sample not analyzed.

< denotes analyte not detected at or exceeding the reporting limit listed.

[1] Analyzed by U.S. Environmental Protection Agency (EPA) Method 8270C-S.

[2] Analyzed by EPA Method 5030/8021B.

[3]Washington State Model Toxics Control Act Cleanup Regulation (MTCA) Cleanup Levels and Risk Calculations, Standard Method B Values for Groundwater, https://fortress.wa.gov/ecy/clarc/Reporting/ChemicalQuery.aspx

EMR = EMR, Inc.

Farallon = Farallon Consulting, L.L.C.

J = Parameter detected at a concentration less than the practical quantitation limit.

NE = Not established

NR = Not reported

APPENDIX A
BORING LOGS

SUPPLEMENTAL SOIL AND GROUNDWATER REPORT
John Michael Lease Site
5640 Sunset Highway
Cashmere, Washington

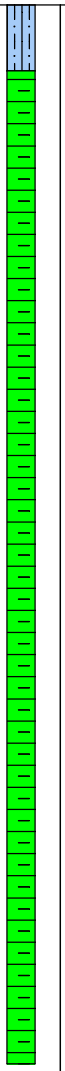
Farallon PN: 283-006

Log of Boring: FB-1

Client: TRC Solutions/ BNSF
Project: John Michael Lease Project
Location: Cashmere, Washington
Farallon PN: 283-006
Logged By: Ken Scott

Date/Time Started:	9/15/15 @ 1400	**Sampler Type:**	~2.5-foot polyethylene sacs
Date/Time Completed:	9/15/15 @ 1520	**Drive Hammer (lbs.):**	Auto
Equipment:	Terra Sonic	**Depth of Water ATD (ft bgs):**	15.0'
Drilling Company:	Holt Drilling	**Total Boring Depth (ft bgs):**	16.0'
Drilling Foreman:	David Dickenson	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Sonic		

Depth (feet bgs.)	Sample Interval	Lithologic Description	USCS	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Sample Analyzed
0		0.0-2.0': Sandy SILT (FILL) (60% silt, 35% sand, 5% gravel), fine to medium sand, fine gravel, tan, moist, no odor, no sheen.	ML	100	NA			
		2.0-5.5': Silty SAND with gravel fill (60% sand, 25% silt, 15% gravel), fine to coarse sand, fine to coarse gravel, dark brown, moist, no odor, no sheen, wood debris, green glass, white plastic, and metal nails at 5-feet bgs.	SM			0.0	FB1-2.0	
				100	NA	0.0	FB1-4.0	
5		5.5-7.5': Silty SAND with gravel (60% sand, 25% silt, 15% gravel), fine to coarse sand, fine to coarse gravel, dark brown, moist, no odor, no sheen.	SM	100	NA	0.0	FB1-6.0	
		7.5-10.0': Sandy SILT (65% silt, 30% sand, 5% gravel), fine to coarse sand, fine to coarse gravel, brown from 7.5 to 8.5-feet, black from 8.5 to 9.5-feet, and dark brown from 9.5 to 10-feet bgs, moist, no odor to 8.5-feet, petroleum-like odor from 8.5 to 10-feet bgs, no sheen to 9-feet, and sheen from 9 to 10-feet bgs, staining from 8.5 to 9.5-feet bgs, subrounded grey, and black gravel, subrounded 4-inch black cobbles.	ML	100	NA	1.3	FB1-8.0	
10		10.0-13.5': Well-graded SAND with gravel (70% sand, 25% gravel, 5% silt), fine to coarse sand, fine to coarse gravel, black from 10 to 12.5-feet, and dark brown from 12.5 to 13.5-feet bgs, moist, petroleum-like odor, sheen, staining from 10 to 12.5-feet bgs, subrounded to subangular grey to black gravel, subrounded 2 to 4-inch black cobbles.	SW			34.2	FB1-10.0	X
				100	NA	14.2	FB1-12.0	
15		13.5-15.5': Well-graded GRAVEL (90% gravel, 5% sand, 5% silt), fine to coarse gravel, fine to coarse sand, greenish grey, moist to wet at 15-feet bgs, no odor, no sheen, subrounded green, grey, and black gravel, subrounded 4-inch black cobbles.	GW	100	NA	3.5	FB1-14.0	
		15.5-16.0': Bedrock (100% rock), grey, wet to dry, no odor, no sheen.	RK	100	NA	1.2	FB1-16.0	



Well Construction Information

Monument Type:	NA	**Filter Pack:**	NA	**Ground Surface Elevation (ft):**	NA
Casing Diameter (inches):	NA	**Surface Seal:**	Native	**Top of Casing Elevation (ft):**	NA
Screen Slot Size (inches):	NA	**Annular Seal:**	NA	**Surveyed Location:**	**X:** 191447.17
Screened Interval (ft bgs):	NA	**Boring Abandonment:**	Bentonite		**Y:** 172665.5

Log of Boring: FB-2

Client: TRC Solutions/ BNSF
Project: John Michael Lease Project
Location: Cashmere, Washington
Farallon PN: 283-006
Logged By: Ken Scott

Date/Time Started:	9/15/15 @ 1530	**Sampler Type:**	~2.5-foot polyethylene sacs
Date/Time Completed:	9/15/15 @ 1650	**Drive Hammer (lbs.):**	Auto
Equipment:	Terra Sonic	**Depth of Water ATD (ft bgs):**	15.0'
Drilling Company:	Holt Drilling	**Total Boring Depth (ft bgs):**	20.0'
Drilling Foreman:	David Dickenson	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Sonic		

Depth (feet bgs.)	Lithologic Description	USCS	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Sample Analyzed	Boring/Well Construction Details
0	0.0-2.0': Sandy SILT (FILL) (60% silt, 35% sand, 5% gravel), fine to medium sand, fine gravel, tan, moist, no odor, no sheen.	ML	100	NA				Native
	2.0-4.0': SILT with gravel (FILL) (80% silt, 15% gravel, 5% sand), fine to coarse gravel, fine sand, black, moist, no odor, no sheen, black charcoal-like streak (soil appears blackened, and burnt by fire).	ML	100	NA	0.0	FB2-2.0		
5	4.0-6.0': SILT with gravel (FILL) (85% silt, 15% gravel), fine to coarse gravel, black, moist, no odor, no sheen. Observe black charcoal-like streak (soil appears blackened, and burnt by fire), metal wire, and wood debris from 5 to 6-feet bgs.	ML	100	NA	0.0	FB2-4.0		Bentonite
	6.0-8.5': SILT with gravel (85% silt, 15% gravel), fine to coarse gravel, black to dark brown from 7.5 to 8.5-feet bgs, moist, no odor, no sheen, black charcoal-like streak (soil appears blackened, and burnt by fire from 6 to 7.5-feet bgs).	ML	100	NA	0.0	FB2-6.0		
					0.0	FB2-8.0		
10	8.5-12.0': Well-graded GRAVEL with sand (75% gravel, 20% sand, 5% silt), fine to coarse gravel, fine to coarse sand, greenish grey, moist, no odor, no sheen, subrounded green, grey, and black gravel, subrounded 3 to 4-inch grey cobbles.	GW	100	NA	0.0	FB2-10.0	X	
			100	NA				
	12.0-14.5': Silty SAND with gravel (60% sand, 25% silt, 15% gravel), fine to coarse sand, fine to coarse gravel, brown, moist, no odor, no sheen.	SM	100	NA	0.0	FB2-12.0		
					0.0	FB2-14.0		
15	14.5-15.5': Silty SAND with gravel (50% sand, 35% silt, 15% gravel), fine to medium sand, fine to coarse gravel, light brown, moist to wet at 15-feet bgs, no odor, no sheen.	SM						▽ Water Level
		ML			0.0	FB2-16.0		
	15.5-16.2': SILT (100% silt), greenish grey, wet, no odor, no sheen.	RK	100	NA				
	16.0.2-20.0': Bedrock (100% rock), grey, dry, no odor, no sheen.				0.0	FB2-18.0		
			100	NA				
20								

Well Construction Information

Monument Type:	NA	**Filter Pack:**	NA	**Ground Surface Elevation (ft):**	NA
Casing Diameter (inches):	NA	**Surface Seal:**	Native	**Top of Casing Elevation (ft):**	NA
Screen Slot Size (inches):	NA	**Annular Seal:**	NA	**Surveyed Location:**	**X:** 191429.25
Screened Interval (ft bgs):	NA	**Boring Abandonment:**	Bentonite		**Y:** 1726694.84

Log of Boring: FB-3

Client: TRC Solutions/ BNSF
Project: John Michael Lease Project
Location: Cashmere, Washington
Farallon PN: 283-006
Logged By: Ken Scott

Date/Time Started:	9/15/15 @ 1215	**Sampler Type:**	~2.5-foot polyethylene sacs
Date/Time Completed:	9/15/15 @ 1315	**Drive Hammer (lbs.):**	Auto
Equipment:	Terra Sonic	**Depth of Water ATD (ft bgs):**	9.0'
Drilling Company:	Holt Drilling	**Total Boring Depth (ft bgs):**	10.0'
Drilling Foreman:	David Dickenson	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Sonic		

Depth (feet bgs.)	Sample Interval	Lithologic Description	USCS	USGS Graphic	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Sample Analyzed	Boring/Well Construction Details
0		0.0-1.5': Sandy SILT with gravel (50% silt, 35% sand, 15% gravel), fine to coarse sand, fine to coarse gravel, brown, moist, no odor, no sheen.	ML		100	NA				Native
		1.5-9.0': Silty SAND with gravel (60% sand, 20% silt, 20% gravel), fine to coarse sand, fine to coarse gravel, dark brown to black from 8-feet, to 9-feet bgs, moist, no odor to 7.5-feet bgs, and petroleum-like odor to 9-feet bgs, no sheen to 7.5-feet bgs, and sheen to 9-feet bgs, staining between 8 to 9-feet bgs, subrounded grey gravel, and 3 to 4-inch subrounded grey cobbles from 1.5 to 7.5-feet bgs, subrounded 2 to 3-inch grey cobbles from 7.5 to 9-feet bgs.	SM		100	NA	0.0	FB3-2.0	X	
					100	NA	0.0	FB3-4.0		
5										Bentonite
					100	NA	0.0	FB3-6.0		
							2.7	FB3-8.0	X	
					100	NA				Water Level
		9.0-10.0': Well-graded SAND with gravel (75% sand, 20% gravel, 5% silt), fine to coarse sand, fine to coarse gravel, dark brown, black at 9.2-feet bgs, wet, petroleum-like odor, sheen, staining to 9.2-feet bgs, subrounded 3-inch, flat, black rocks.	SW							
10							7.7	FB3-10.0		

Well Construction Information

Monument Type: NA
Casing Diameter (inches): NA
Screen Slot Size (inches): NA
Screened Interval (ft bgs): NA
Filter Pack: NA
Surface Seal: Native
Annular Seal: NA
Boring Abandonment: Bentonite
Ground Surface Elevation (ft): NA
Top of Casing Elevation (ft): NA
Surveyed Location: X: 191250.87, Y: 172666.3

Log of Boring: FB-4

Client: TRC Solutions/ BNSF
Project: John Michael Lease Project
Location: Cashmere, Washington
Farallon PN: 283-006
Logged By: Ryan Ostrom

Date/Time Started:	8/25/15 @ 1054	**Sampler Type:**	18-inch SPT
Date/Time Completed:	8/25/15 @ 1245	**Drive Hammer (lbs.):**	140
Equipment:	CME 85	**Depth of Water ATD (ft bgs):**	9.8'
Drilling Company:	Holt Drilling	**Total Boring Depth (ft bgs):**	10.5'
Drilling Foreman:	John Bennet	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Hollow Stem		

Depth (feet bgs.)	Lithologic Description	USCS	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Sample Analyzed	Boring/Well Construction Details
0	0.0-1.2': Sandy SILT (50% silt, 40% sand, 10% gravel), fine to medium sand, fine to medium gravel, light brown, hard, dry, no odor.	ML	80	8/24/23				Native
	1.2-1.5': No recovery.				0.6	FB-4-1.2		
	1.5-2.5': Sandy SILT (50% silt, 40% sand, 10% gravel), fine to medium sand, fine gravel, brown, very stiff, dry, no odor.	ML	66	5/7/10				
	2.5-3.0': No recovery.				1.3	FB-4-2.5	X	
	3.0-3.5': Sandy SILT (50% silt, 40% sand, 10% gravel), fine to medium sand, fine gravel, brown, very stiff, dry, no odor.	ML						
	3.5-4.5': No recovery.		33	8/10/13	0.9	FB-4-3.5		
	4.5-4.9': Sandy SILT (50% silt, 40% sand, 10% gravel), fine to medium sand, fine gravel, brown, hard, dry, no odor.	ML						
5	4.9-5.3': Silty SAND (60% sand, 30% silt, 10% gravel), fine to medium sand, fine to coarse gravel, black, very dense, moist, strong petroleum-like odor.	SM	53	9/22/47	2.2	FB-4-5.3		Bentonite
	5.3-6.0': No recovery.							

Well Construction Information

Monument Type:	NA	**Filter Pack:**	NA	**Ground Surface Elevation (ft):**	NA
Casing Diameter (inches):	NA	**Surface Seal:**	Native	**Top of Casing Elevation (ft):**	NA
Screen Slot Size (inches):	NA	**Annular Seal:**	NA	**Surveyed Location:**	**X:** NA
Screened Interval (ft bgs):	NA	**Boring Abandonment:**	Bentonite		**Y:** NA

Log of Boring: FB-4

Client: TRC Solutions/ BNSF
Project: John Michael Lease Project
Location: Cashmere, Washington
Farallon PN: 283-006
Logged By: Ryan Ostrom

Date/Time Started:	8/25/15 @ 1054	**Sampler Type:**	18-inch SPT
Date/Time Completed:	8/25/15 @ 1245	**Drive Hammer (lbs.):**	140
Equipment:	CME 85	**Depth of Water ATD (ft bgs):**	9.8'
Drilling Company:	Holt Drilling	**Total Boring Depth (ft bgs):**	10.5'
Drilling Foreman:	John Bennet	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Hollow Stem		

Depth (feet bgs.)	Sample Interval	Lithologic Description	USCS	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Sample Analyzed
		6.0-6.4': Silty SAND (60% sand, 30% silt, 10% gravel), fine to medium sand, fine to coarse gravel, brown, dense, moist, strong petroleum-like odor.	SM					
		6.4-6.9': Silty SAND (60% sand, 30% silt, 10% gravel), fine to medium sand, fine to coarse gravel, black, dense, moist, strong petroleum-like odor.	SM	60	4/22/20	27.2	FB-4-6.9	
		6.9-7.5': No recovery.						
		7.5-8.5': Well-graded SAND with silt and gravel (50% sand, 40% gravel, 10% silt), fine to coarse sand, fine to coarse gravel, black, dense, moist, strong petroleum-like odor, staining.	SW-SM	66	13/17/31			
		8.5-9.0': No recovery.				114.2	FB-4-8.5	X
		9.0-9.8': Silty SAND (50% sand, 40% silt, 10% gravel), fine to coarse sand, fine to coarse gravel, black, very dense, moist, strong petroleum-like odor, staining.	SM					
10		9.8-9.9': Well-graded SAND with silt and gravel (50% sand, 40% gravel, 10% silt), fine to coarse sand, fine to coarse gravel, very dense, wet, petroleum-like odor.	SW-SM	60	8/22/30	82.5	FB-4-9.9	
		9.9-10.5': No recovery.						

Boring/Well Construction Details: Water Level

Well Construction Information

Monument Type:	NA	**Filter Pack:**	NA	**Ground Surface Elevation (ft):**	NA
Casing Diameter (inches):	NA	**Surface Seal:**	Native	**Top of Casing Elevation (ft):**	NA
Screen Slot Size (inches):	NA	**Annular Seal:**	NA	**Surveyed Location:**	**X:** NA
Screened Interval (ft bgs):	NA	**Boring Abandonment:**	Bentonite		**Y:** NA

Log of Boring: FB-5

Client: TRC Solutions/ BNSF
Project: John Michael Lease Project
Location: Cashmere, Washington
Farallon PN: 283-006
Logged By: Ken Scott

Date/Time Started:	9/15/15 @ 1110	**Sampler Type:**	~2.5-foot polyethylene sacs
Date/Time Completed:	9/15/15 @ 1210	**Drive Hammer (lbs.):**	Auto
Equipment:	Terra Sonic	**Depth of Water ATD (ft bgs):**	11.0'
Drilling Company:	Holt Drilling	**Total Boring Depth (ft bgs):**	13.0'
Drilling Foreman:	David Dickenson	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Sonic		

Depth (feet bgs.)	Sample Interval	Lithologic Description	USCS	USGS Graphic	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Sample Analyzed	Boring/Well Construction Details
0		0.0-3.5': Well-graded GRAVEL with sand (50% gravel, 45% sand, 5% silt), fine to coarse gravel, fine to coarse sand, tan to grey, moist, no odor, no sheen.	GW		100	NA	0.0	FB5-2.0	X	Native
5		3.5-11.0': Silty SAND with gravel (60% sand, 20% silt, 20% gravel), fine to coarse sand, fine to coarse gravel, tan from 3.5 to 4-feet, black from 4 to 10.5-feet, and light black from 10.5 to 11-feet bgs, moist, petroleum-like odor, sheen, staining between 4 to 10.5-feet bgs,subrounded grey gravel, 3 to 4-inch subrounded grey cobbles from 4 to 11-feet bgs.	SM		100	NA	1.5	FB5-4.0		
					100	NA	13.6	FB5-6.0		Bentonite
					100	NA	14.2	FB5-8.0		
10							20.8	FB5-10.0	X	
		11.0-13.0': Well-graded SAND with gravel (75% sand, 20% gravel, 5% silt), fine to coarse sand, fine to coarse gravel, brown, wet, petroleum-like odor, sheen.	SW		100	NA	4.1	FB5-12.0		Water Level
					100	NA	0.0			

Well Construction Information

Monument Type:	NA	**Filter Pack:**	NA	**Ground Surface Elevation (ft):**	NA
Casing Diameter (inches):	NA	**Surface Seal:**	Native	**Top of Casing Elevation (ft):**	NA
Screen Slot Size (inches):	NA	**Annular Seal:**	NA	**Surveyed Location:**	**X:** 191304.72
Screened Interval (ft bgs):	NA	**Boring Abandonment:**	Bentonite		**Y:** 1726639.40

APPENDIX B
LABORATORY ANALYTICAL RESULTS

SUPPLEMENTAL SOIL AND GROUNDWATER REPORT
John Michael Lease Site
5640 Sunset Highway
Cashmere, Washington

Farallon PN: 283-006

ESC LAB SCIENCES
YOUR LAB OF CHOICE

ANALYTICAL REPORT

February 25, 2016

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REAL TIME DATA ACCESS

Farallon Consulting - BNSF Region 1

Sample Delivery Group:	L785743
Samples Received:	08/28/2015
Project Number:	283-006
Description:	BNSF - JML - Cashmere, WA

Report To: Jennifer Moore
975 5th Avenue Northwest
Issaquah, WA 98027

Entire Report Reviewed By:

Mark W. Beasley
Technical Service Representative

TABLE OF CONTENTS

FB-4-2.5 L785743-01 Solid

Collected by: Ryan Ostrom
Collected date/time: 08/25/15 10:58
Received date/time: 08/28/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Polychlorinated Biphenyls (GC) by Method 8082	WG812344	1	08/30/15 05:44	09/01/15 00:28	BEJ
Total Solids by Method 2540 G-2011	WG812645	1	09/01/15 09:40	09/02/15 08:46	MEL

FB-4-8.5 L785743-02 GW

Collected by: Ryan Ostrom
Collected date/time: 08/25/15 11:38
Received date/time: 08/28/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Preparation by Method 1312	WG813004	1	09/02/15 15:25	09/02/15 15:38	BG
Preparation by Method 1312	WG813005	1	09/03/15 08:29	09/03/15 09:24	BG
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG813360	1	09/03/15 18:23	09/04/15 01:54	FMB
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX	WG813606	1	09/06/15 17:27	09/08/15 15:36	BJF
Volatile Organic Compounds (GC) by Method 8021B	WG813453	1	09/08/15 14:29	09/08/15 14:29	BMB
Volatile Organic Compounds (GC) by Method NWTPHGX	WG813453	1	09/07/15 17:43	09/07/15 17:43	GLN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. 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.

Mark W. Beasley
Technical Service Representative

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	95.8		1	09/02/2015 08:46	WG812645

Polychlorinated Biphenyls (GC) by Method 8082

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
PCB 1016	ND		0.0177	1	09/01/2015 00:28	WG812344
PCB 1221	ND		0.0177	1	09/01/2015 00:28	WG812344
PCB 1232	ND		0.0177	1	09/01/2015 00:28	WG812344
PCB 1242	ND		0.0177	1	09/01/2015 00:28	WG812344
PCB 1248	ND		0.0177	1	09/01/2015 00:28	WG812344
PCB 1254	ND		0.0177	1	09/01/2015 00:28	WG812344
PCB 1260	ND	J5	0.0177	1	09/01/2015 00:28	WG812344
PCB 1262	ND		0.0177	1	09/01/2015 00:28	WG812344
PCB 1268	ND		0.0177	1	09/01/2015 00:28	WG812344
(S) Decachlorobiphenyl	*56.6*		*10.0-143*		*09/01/2015 00:28*	WG812344
(S) Tetrachloro-m-xylene	*67.9*		*29.2-144*		*09/01/2015 00:28*	WG812344

Preparation by Method 1312

Analyte	Result	Qualifier	Prep date / time	Batch
SPLP Extraction	-		9/2/2015 3:25:54 PM	WG813004
SPLP ZHE Extraction	-		9/3/2015 8:29:29 AM	WG813005

Volatile Organic Compounds (GC) by Method 8021B/NWTPHGX

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	ND		0.100	1	09/07/2015 17:43	WG813453
Benzene	ND		0.000500	1	09/08/2015 14:29	WG813453
Toluene	ND		0.00500	1	09/08/2015 14:29	WG813453
Ethylbenzene	ND		0.000500	1	09/08/2015 14:29	WG813453
Total Xylene	ND		0.00150	1	09/08/2015 14:29	WG813453
(S) a,a,a-Trifluorotoluene(PID)	*99.7*		*55.0-122*		*09/08/2015 14:29*	WG813453
(S) a,a,a-Trifluorotoluene(FID)	*91.7*		*62.0-128*		*09/07/2015 17:43*	WG813453

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	1.80		0.100	1	09/08/2015 15:36	WG813606
Residual Range Organics (RRO)	0.742		0.250	1	09/08/2015 15:36	WG813606
(S) o-Terphenyl	*111*		*50.0-150*		*09/08/2015 15:36*	WG813606

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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Anthracene	ND		0.0000500	1	09/04/2015 01:54	WG813360
Acenaphthene	ND		0.0000500	1	09/04/2015 01:54	WG813360
Acenaphthylene	ND		0.0000500	1	09/04/2015 01:54	WG813360
Benzo(a)anthracene	ND		0.0000500	1	09/04/2015 01:54	WG813360
Benzo(a)pyrene	ND		0.0000500	1	09/04/2015 01:54	WG813360
Benzo(b)fluoranthene	ND		0.0000500	1	09/04/2015 01:54	WG813360
Benzo(g,h,i)perylene	ND		0.0000500	1	09/04/2015 01:54	WG813360
Benzo(k)fluoranthene	ND		0.0000500	1	09/04/2015 01:54	WG813360
Chrysene	ND		0.0000500	1	09/04/2015 01:54	WG813360
Dibenz(a,h)anthracene	ND		0.0000500	1	09/04/2015 01:54	WG813360
Fluoranthene	ND		0.0000500	1	09/04/2015 01:54	WG813360
Fluorene	ND		0.0000500	1	09/04/2015 01:54	WG813360
Indeno(1,2,3-cd)pyrene	ND		0.0000500	1	09/04/2015 01:54	WG813360
Naphthalene	ND		0.000250	1	09/04/2015 01:54	WG813360
Phenanthrene	ND		0.0000500	1	09/04/2015 01:54	WG813360
Pyrene	ND		0.0000500	1	09/04/2015 01:54	WG813360
1-Methylnaphthalene	ND		0.000250	1	09/04/2015 01:54	WG813360
2-Methylnaphthalene	ND		0.000250	1	09/04/2015 01:54	WG813360
2-Chloronaphthalene	ND		0.000250	1	09/04/2015 01:54	WG813360
(S) Nitrobenzene-d5	*115*		*33.8-179*		*09/04/2015 01:54*	WG813360
(S) 2-Fluorobiphenyl	*93.4*		*55.5-150*		*09/04/2015 01:54*	WG813360
(S) p-Terphenyl-d14	*78.5*		*46.2-163*		*09/04/2015 01:54*	WG813360

Method Blank (MB)

(MB) 09/02/15 08:46

Analyte	MB Result	MB Qualifier	MB RDL
	%		%
Total Solids	0.00130		

L785747-01 Original Sample (OS) • Duplicate (DUP)

(OS) 09/02/15 08:46 • (DUP) 09/02/15 08:46

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	%	%		%		%
Total Solids	78.8	79.4	1	0.700		5

Laboratory Control Sample (LCS)

(LCS) 09/02/15 08:46

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	%	%	%	%	
Total Solids	50.0	50.0	100	85.0-115	

Method Blank (MB)

(MB) 09/07/15 17:21

Analyte	MB Result mg/l	MB Qualifier	MB RDL mg/l
Gasoline Range Organics-NWTPH	ND		0.100
(S) a,a,a-Trifluorotoluene(FID)	*92.0*		*62.0-128*

Method Blank (MB)

(MB) 09/08/15 14:52

Analyte	MB Result mg/l	MB Qualifier	MB RDL mg/l
Benzene	ND		0.000500
Toluene	ND		0.00500
Ethylbenzene	ND		0.000500
Total Xylene	ND		0.00150
(S) a,a,a-Trifluorotoluene(PID)	*99.8*		*55.0-122*

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

(LCS) 09/06/15 21:04 • (LCSD) 09/06/15 21:26

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.0500	0.0436	0.0422	87.1	84.5	70.0-130			3.11	20
Toluene	0.0500	0.0440	0.0424	88.0	84.7	70.0-130			3.87	20
Ethylbenzene	0.0500	0.0454	0.0441	90.8	88.2	70.0-130			2.99	20
Total Xylene	0.150	0.136	0.133	91.0	88.5	70.0-130			2.83	20
(S) a,a,a-Trifluorotoluene(PID)				*101*	*101*	*55.0-122*				
(S) a,a,a-Trifluorotoluene(FID)				*91.1*	*91.1*	*62.0-128*				

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

(LCS) 09/06/15 21:48 • (LCSD) 09/06/15 22:10

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Gasoline Range Organics-NWTPH	5.50	4.98	5.47	90.5	99.4	66.0-123			9.42	20
(S) a,a,a-Trifluorotoluene(PID)				*113*	*113*	*55.0-122*				
(S) a,a,a-Trifluorotoluene(FID)				*99.4*	*99.2*	*62.0-128*				

L785743-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 09/07/15 17:43 • (MS) 09/06/15 22:32 • (MSD) 09/06/15 22:54

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.0500	0.000287	0.0433	0.0444	85.9	88.2	1	35.0-147			2.56	20
Toluene	0.0500	0.000452	0.0450	0.0448	89.1	88.6	1	35.0-148			0.490	20
Ethylbenzene	0.0500	0.000246	0.0455	0.0463	90.5	92.1	1	39.0-141			1.73	20
Total Xylene	0.150	0.00210	0.139	0.140	91.0	92.2	1	33.0-151			1.38	20
(S) a,a,a-Trifluorotoluene(PID)					*102*	*102*		*55.0-122*				
(S) a,a,a-Trifluorotoluene(FID)					*91.4*	*91.4*		*62.0-128*				

L785743-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 09/07/15 17:43 • (MS) 09/06/15 23:16 • (MSD) 09/06/15 23:38

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Gasoline Range Organics-NWTPH	5.50	ND	4.99	4.93	90.7	89.6	1	58.0-122			1.16	20
(S) a,a,a-Trifluorotoluene(PID)					*113*	*113*		*55.0-122*				
(S) a,a,a-Trifluorotoluene(FID)					*99.3*	*99.3*		*62.0-128*				

Method Blank (MB)

(MB) 09/08/15 13:13

Analyte	MB Result mg/l	MB Qualifier	MB RDL mg/l
Diesel Range Organics (DRO)	ND		0.100
Residual Range Organics (RRO)	ND		0.250
(S) o-Terphenyl	*116*		*50.0-150*

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

(LCS) 09/08/15 13:31 • (LCSD) 09/08/15 13:49

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Diesel Range Organics (DRO)	0.750	0.867	0.839	116	112	50.0-150			3.38	20
Residual Range Organics (RRO)	0.750	0.805	0.775	107	103	50.0-150			3.79	20
(S) o-Terphenyl				*115*	*118*	*50.0-150*				

Method Blank (MB)

(MB) 08/31/15 19:37

Analyte	MB Result mg/kg	MB Qualifier	MB RDL mg/kg
PCB 1016	ND		0.0170
PCB 1221	ND		0.0170
PCB 1232	ND		0.0170
PCB 1242	ND		0.0170
PCB 1248	ND		0.0170
PCB 1254	ND		0.0170
PCB 1260	ND		0.0170
PCB 1262	ND		0.0170
PCB 1268	ND		0.0170
(S) Decachlorobiphenyl	*83.3*		*10.0-143*
(S) Tetrachloro-m-xylene	*83.4*		*29.2-144*

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

(LCS) 08/31/15 19:51 • (LCSD) 08/31/15 20:05

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
PCB 1260	0.1667	0.126	0.124	75.4	74.2	46.5-120			1.60	27
PCB 1016	0.1667	0.119	0.117	71.6	70.1	46.3-117			2.08	27.5
(S) Decachlorobiphenyl				*86.1*	*79.9*	*10.0-143*				
(S) Tetrachloro-m-xylene				*84.5*	*77.1*	*29.2-144*				

L785743-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 09/01/15 00:28 • (MS) 09/01/15 00:42 • (MSD) 09/01/15 00:55

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
PCB 1260	0.1667	ND	0.125	0.129	75.0	77.1	1	24.6-127			7.28	20
PCB 1016	0.1667	ND	0.0929	0.104	55.7	62.3	1	23.9-147			11.1	25.8
(S) Decachlorobiphenyl					*55.9*	*58.0*		*10.0-143*				
(S) Tetrachloro-m-xylene					*72.1*	*77.2*		*29.2-144*				

Method Blank (MB)

(MB) 09/04/15 01:20

Analyte	MB Result mg/l	MB Qualifier	MB RDL mg/l
Anthracene	ND		0.0000500
Acenaphthene	ND		0.0000500
Acenaphthylene	ND		0.0000500
Benzo(a)anthracene	ND		0.0000500
Benzo(a)pyrene	ND		0.0000500
Benzo(b)fluoranthene	ND		0.0000500
Benzo(g,h,i)perylene	ND		0.0000500
Benzo(k)fluoranthene	ND		0.0000500
Chrysene	ND		0.0000500
Dibenz(a,h)anthracene	ND		0.0000500
Fluoranthene	ND		0.0000500
Fluorene	ND		0.0000500
Indeno(1,2,3-cd)pyrene	ND		0.0000500
Naphthalene	ND		0.000250
Phenanthrene	ND		0.0000500
Pyrene	ND		0.0000500
1-Methylnaphthalene	ND		0.000250
2-Methylnaphthalene	ND		0.000250
2-Chloronaphthalene	ND		0.000250
(S) Nitrobenzene-d5	*112*		*33.8-179*
(S) 2-Fluorobiphenyl	*88.9*		*55.5-150*
(S) p-Terphenyl-d14	*75.8*		*46.2-163*

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

(LCS) 09/04/15 00:37 • (LCSD) 09/04/15 00:58

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Anthracene	0.00200	0.00189	0.00193	94.4	96.4	68.9-153			2.14	20
Acenaphthene	0.00200	0.00169	0.00172	84.5	86.0	67.7-153			1.78	20
Acenaphthylene	0.00200	0.00181	0.00183	90.5	91.5	66.9-141			1.07	20
Benzo(a)anthracene	0.00200	0.00168	0.00170	83.8	84.9	63.1-147			1.31	20
Benzo(a)pyrene	0.00200	0.00165	0.00167	82.5	83.5	62.2-150			1.21	20
Benzo(b)fluoranthene	0.00200	0.00170	0.00166	85.0	83.0	58.4-148			2.40	20
Benzo(g,h,i)perylene	0.00200	0.00182	0.00187	91.0	93.4	57.4-152			2.68	20
Benzo(k)fluoranthene	0.00200	0.00159	0.00166	79.3	82.8	60.5-154			4.31	20

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

(LCS) 09/04/15 00:37 • (LCSD) 09/04/15 00:58

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Chrysene	0.00200	0.00177	0.00179	88.3	89.6	64.8-155			1.46	20
Dibenz(a,h)anthracene	0.00200	0.00170	0.00176	84.9	87.9	53.5-153			3.44	20
Fluoranthene	0.00200	0.00202	0.00208	101	104	68.6-153			2.87	20
Fluorene	0.00200	0.00183	0.00186	91.6	93.1	67.3-141			1.69	20
Indeno(1,2,3-cd)pyrene	0.00200	0.00169	0.00175	84.5	87.5	57.0-155			3.45	20
Naphthalene	0.00200	0.00165	0.00166	82.6	83.2	66.7-135			0.740	20
Phenanthrene	0.00200	0.00170	0.00174	84.8	87.0	64.3-143			2.58	20
Pyrene	0.00200	0.00161	0.00166	80.3	83.2	60.2-154			3.56	20
1-Methylnaphthalene	0.00200	0.00174	0.00175	87.0	87.6	68.3-144			0.610	20
2-Methylnaphthalene	0.00200	0.00175	0.00177	87.7	88.5	67.6-143			0.980	20
2-Chloronaphthalene	0.00200	0.00177	0.00180	88.5	89.8	69.7-140			1.53	20
(S) Nitrobenzene-d5				*117*	*119*	*33.8-179*				
(S) 2-Fluorobiphenyl				*89.8*	*92.6*	*55.5-150*				
(S) p-Terphenyl-d14				*71.9*	*74.2*	*46.2-163*				

Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND,U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
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.
(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.
Rec.	Recovery.
SDL	Sample Detection Limit.
MQL	Method Quantitation Limit.
Unadj. MQL	Unadjusted Method Quantitation Limit.

Qualifier	Description
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.

ESC Lab Sciences 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.

State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Conneticut	PH-0197	North Carolina [1]	DW21704
Florida	E87487	North Carolina [2]	41
Georgia	NELAP	North Dakota	R-140
Georgia [1]	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky [1]	90010	South Dakota	n/a
Kentucky [2]	16	Tennessee [1 4]	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

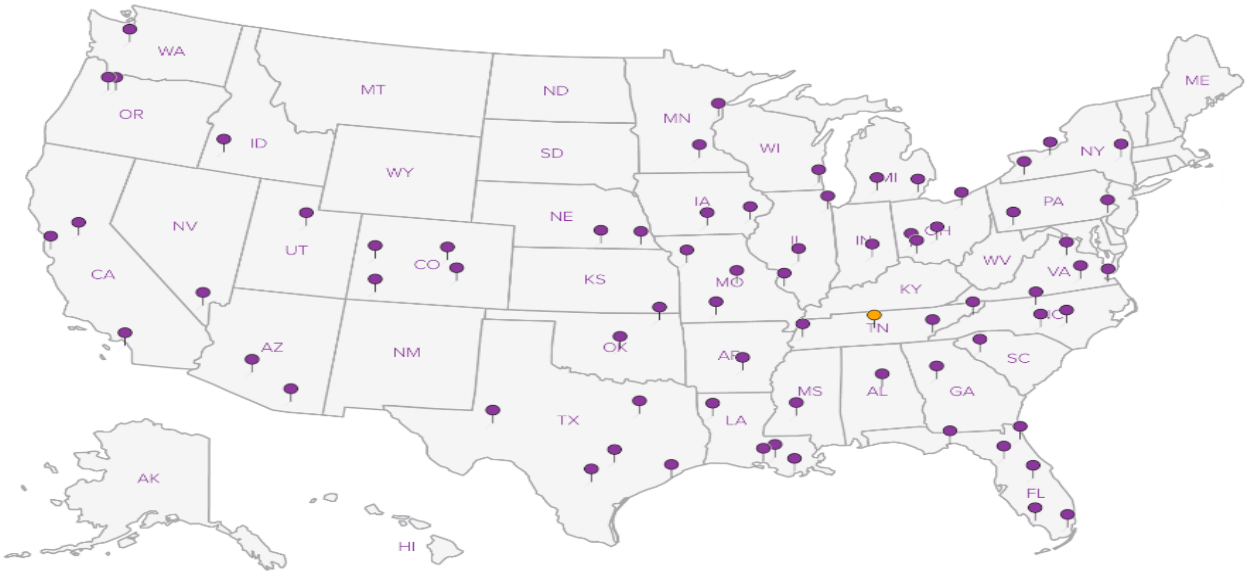
Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA–Crypto	TN00003		

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

Our Locations

ESC Lab Sciences 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. **ESC Lab Sciences performs all testing at our central laboratory.**



Farallon Consulting - BNSF Region 1

975 5th Avenue Northwest
Issaquah, WA 98027

Billing Information:
Bruce Sheppard
2454 Occidental Ave S, Ste 1A
Seattle, WA 98134-1451

Report to: Jennifer Moore

Email To: jmoore@farallonconsulting.com, kwoodburne@trcsolutions.com

Project Description: BNSF - JML - Cashmere, WA

City/State Collected: Cashmere, WA

Phone: 425-698-3752
Fax:

Client Project # 283-006

Lab Project # BNSF1FAR-CASHMERE

Collected by (print): Ryan Ostrom

Site/Facility ID #

P.O. #

Collected by (signature): Ryan Ostrom

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day 200%
___ Next Day 100%
___ Two Day 50%
___ Three Day 25%

Date Results Needed: Standard

Email? ___No X Yes
FAX? ___No ___Yes

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	SPLP Dx, Gx, PAHs 8ozClr-NoPres	SV8082, TS 4ozClr-NoPres
FB-4-1.2		SS	1.2	8/25/15	1058	1		
FB-4-2.5		SS	2.5		1105	1		X
FB-4-5.3		SS	5.3		1118	1		
FB-4-6.9		SS	6.9		1124	1		
FB-4-8.5		SS	8.5		1138	1	X	
FB-4-9.9		SS	9.9	↓	1150	1		
		SS				1		
RO		SS				1		
		SS				1		
		SS				1		

* Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other ___

Remarks: SPLP = NWTPHDXLVI, NWTPHGXBTEX, & PAHSIMLVI Please minimize dilutions for the PCB samples to keep the reporting limit as low as possible. Also dispose of all FB-5 Samples.

643671338874

pH ___ Temp ___

Flow ___ Other ___

Analysis / Container / Preservative

Chain of Custody Page ___ of ___

ESC LABORATORY SCIENCES
YOUR LAB OF CHOICE
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L # L785743

B023

Acctnum: BNSF1FAR
Template: T104635
Prelogin: P519995
TSR: 134 - Mark W. Beasley
PB:
Shipped Via:

Rem./Contaminant	Sample # (lab only)
	-01
	-02

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Ryan Ostrom	8/26/15	1400	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)

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

Temp: 4.3 °C Bottles Received: 6-8oz

Date: 8/27/15 Time: 900

Hold #

Condition: (lab use only)

COC Seal Intact: ___ Y ___ N ___ NA

pH Checked: NCF: X

Troy Dunlap

ESC Lab Sciences
Non-Conformance Form

Login #: L785743	Client: BNSF1FAR	Date: 8/27/15	Evaluated by: Ryan Jones

Non-Conformance (check applicable items)

	Sample Integrity		Chain of Custody Clarification		
	Parameter(s) past holding time		Login Clarification Needed		**If Broken Container:**
	Improper temperature		Chain of custody is incomplete		Insufficient packing material around container
	Improper container type		Please specify Metals requested.		Insufficient packing material inside cooler
	Improper preservation		Please specify TCLP requested.		Improper handling by carrier (FedEx / UPS / Courie
	Insufficient sample volume.		Received additional samples not listed on coc.		Sample was frozen
	Sample is biphasic.		Sample ids on containers do not match ids on coc		Container lid not intact
	Vials received with headspace.		Trip Blank not received.		**If no Chain of Custody:**
	Broken container	X	Client did not "X" analysis.		Received by:
	Broken container:		Chain of Custody is missing		Date/Time:
	Sufficient sample remains				Temp./Cont. Rec./pH:
					Carrier:
					Tracking#

Login Comments: No analysis marked for FB-4-1.2, FB-4-5.3, FB-4-6.9 and FB-4-9.9.

Client informed by:		Call		Email		Voice Mail		Date: 8/28/15	Time: 1055
TSR Initials: MB	Client Contact: Jennifer Moore								

Login Instructions:

Place samples on hold

ESC LAB SCIENCES
YOUR LAB OF CHOICE

ANALYTICAL REPORT

February 25, 2016

myESC
REAL TIME DATA ACCESS

Farallon Consulting - BNSF Region 1

Sample Delivery Group:	L789569
Samples Received:	08/27/2015
Project Number:	283-006
Description:	BNSF - JML - Cashmere, WA

Report To: Jennifer Moore
975 5th Avenue Northwest
Issaquah, WA 98027

Entire Report Reviewed By:

Mark W. Beasley
Technical Service Representative

TABLE OF CONTENTS

FB-4-8.5 L789569-01 Solid

Collected by: Ryan Ostrom
Collected date/time: 08/25/15 11:38
Received date/time: 08/27/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Polychlorinated Biphenyls (GC) by Method 8082	WG815927	1	09/22/15 09:21	09/22/15 22:08	BEJ
Total Solids by Method 2540 G-2011	WG816726	1	09/22/15 13:10	09/23/15 07:16	MEL

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.

Mark W. Beasley
Technical Service Representative

Sample Handling and Receiving

The following samples were prepared and/or analyzed past recommended holding time. Concentrations should be considered minimum values.

ESC Sample ID	Project Sample ID	Method
L789569-01	FB-4-8.5	2540 G-2011

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	95.4		1	09/23/2015 07:16	WG816726

Polychlorinated Biphenyls (GC) by Method 8082

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
PCB 1016	ND		0.0178	1	09/22/2015 22:08	WG815927
PCB 1221	ND		0.0178	1	09/22/2015 22:08	WG815927
PCB 1232	ND		0.0178	1	09/22/2015 22:08	WG815927
PCB 1242	ND		0.0178	1	09/22/2015 22:08	WG815927
PCB 1248	ND		0.0178	1	09/22/2015 22:08	WG815927
PCB 1254	ND		0.0178	1	09/22/2015 22:08	WG815927
PCB 1260	ND		0.0178	1	09/22/2015 22:08	WG815927
PCB 1262	ND		0.0178	1	09/22/2015 22:08	WG815927
PCB 1268	ND		0.0178	1	09/22/2015 22:08	WG815927
(S) Decachlorobiphenyl	*60.5*		*10.0-143*		*09/22/2015 22:08*	WG815927
(S) Tetrachloro-m-xylene	*70.9*		*29.2-144*		*09/22/2015 22:08*	WG815927

Method Blank (MB)

(MB) 09/23/15 07:14

Analyte	MB Result %	MB Qualifier	MB RDL %
Total Solids	0.000100		

L789559-03 Original Sample (OS) • Duplicate (DUP)

(OS) 09/23/15 07:15 • (DUP) 09/23/15 07:16

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	86.5	86.6	1	0.101		5

Laboratory Control Sample (LCS)

(LCS) 09/23/15 07:14

Analyte	Spike Amount %	LCS Result %	LCS Rec. %	Rec. Limits %	LCS Qualifier
Total Solids	50.0	50.0	100	85.0-115	

Method Blank (MB)

(MB) 09/22/15 16:19

Analyte	MB Result mg/kg	MB Qualifier	MB RDL mg/kg
PCB 1016	ND		0.0170
PCB 1221	ND		0.0170
PCB 1232	ND		0.0170
PCB 1242	ND		0.0170
PCB 1248	ND		0.0170
PCB 1254	ND		0.0170
PCB 1260	ND		0.0170
PCB 1262	ND		0.0170
PCB 1268	ND		0.0170
(S) Decachlorobiphenyl	*71.9*		*10.0-143*
(S) Tetrachloro-m-xylene	*74.9*		*29.2-144*

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

(LCS) 09/22/15 16:34 • (LCSD) 09/22/15 16:49

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
PCB 1260	0.1667	0.120	0.122	72.0	72.9	46.5-120			1.32	27
PCB 1016	0.1667	0.118	0.118	70.6	71.0	46.3-117			0.670	27.5
(S) Decachlorobiphenyl				*73.2*	*74.6*	*10.0-143*				
(S) Tetrachloro-m-xylene				*76.8*	*77.1*	*29.2-144*				

L789518-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 09/23/15 08:56 • (MS) 09/23/15 09:11 • (MSD) 09/23/15 09:26

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
PCB 1260	0.1667	ND	0.0901	0.0964	54.0	57.8	1	24.6-127			6.82	20
PCB 1016	0.1667	ND	0.111	0.113	66.7	67.7	1	23.9-147			1.50	25.8
(S) Decachlorobiphenyl					*77.0*	*76.1*		*10.0-143*				
(S) Tetrachloro-m-xylene					*87.2*	*84.1*		*29.2-144*				

Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND,U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
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.
(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.
Rec.	Recovery.
SDL	Sample Detection Limit.
MQL	Method Quantitation Limit.
Unadj. MQL	Unadjusted Method Quantitation Limit.

Qualifier	Description
	The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

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Georgia	NELAP
Georgia [1]	923
Idaho	TN00003
Illinois	200008
Indiana	C-TN-01
Iowa	364
Kansas	E-10277
Kentucky [1]	90010
Kentucky [2]	16
Louisiana	AI30792
Maine	TN0002
Maryland	324
Massachusetts	M-TN003
Michigan	9958
Minnesota	047-999-395
Mississippi	TN00003
Missouri	340
Montana	CERT0086
Nebraska	NE-OS-15-05
Nevada	TN-03-2002-34
New Hampshire	2975
New Jersey–NELAP	TN002
New Mexico	TN00003
New York	11742
North Carolina	Env375
North Carolina [1]	DW21704
North Carolina [2]	41
North Dakota	R-140
Ohio–VAP	CL0069
Oklahoma	9915
Oregon	TN200002
Pennsylvania	68-02979
Rhode Island	221
South Carolina	84004
South Dakota	n/a
Tennessee [1 4]	2006
Texas	T 104704245-07-TX
Texas [5]	LAB0152
Utah	6157585858
Vermont	VT2006
Virginia	109
Washington	C1915
West Virginia	233
Wisconsin	9980939910
Wyoming	A2LA

Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA–Crypto	TN00003		

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

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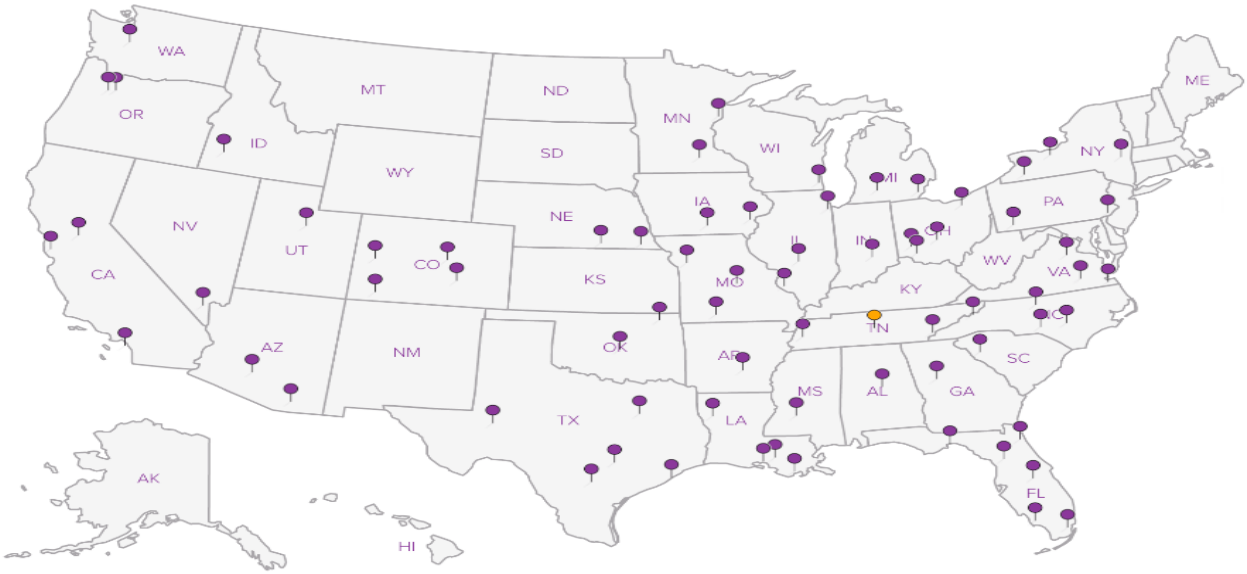

Farallon Consulting - BNSF Region 1

975 5th Avenue Northwest
Issaquah, WA 98027

Billing Information:
Bruce Sheppard
2454 Occidental Ave S, Ste 1A
Seattle, WA 98134-1451

Report to: Jennifer Moore

Email To: jmoore@farallonconsulting.com, kwoodburne@trcsolutions.com

Project Description: BNSF - JML - Cashmere, WA

City/State Collected: Cashmere, WA

Phone: 425-698-3752
Fax:

Client Project #: 283-006

Lab Project #: BNSF1FAR-CASHMERE

Collected by (print): Ryan Ostrom

Site/Facility ID #:

P.O. #:

Collected by (signature): Ryan Ostrom

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day 200%
___ Next Day 100%
___ Two Day 50%
___ Three Day 25%

Date Results Needed: Standard

Email? ___No X Yes
FAX? ___No ___Yes

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	SPLP Dx, Gx, PAHs 8ozClr-NoPres	SV8082, TS 4ozClr-NoPres
FB-4-1.2		SS	1.2	8/25/15	1058	1		
FB-4-2.5		SS	2.5		1105	1		X
FB-4-5.3		SS	5.3		1118	1		
FB-4-6.9		SS	6.9		1124	1		
FB-4-8.5		SS	8.5		1138	1	X	
FB-4-9.9		SS	9.9	↓	1150	1		
		SS				1		
RO		SS				1		
		SS				1		
		SS				1		

* Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other ___

Remarks: SPLP = NWTPHDXLVI, NWTPHGXBTEX, & PAHSIMLVI Please minimize dilutions for the PCB samples to keep the reporting limit as low as possible. Also dispose of all FB-5 Samples.

643671338879

pH ___ Temp ___

Flow ___ Other ___

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)
Ryan Ostrom	8/26/15	1400	
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)

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

Temp: 4.3 °C Bottles Received: 6-8oz

Date: 8/27/15 Time: 900

Hold #

Condition: OK (lab use only)

COC Seal Intact: ___Y ___N ___NA

pH Checked: NCF: X

Chain of Custody Page ___ of ___

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12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L # ~~L785943~~
B023

Acctnum: BNSF1FAR
Template: T104635
Prelogin: P519995
TSR: 134 - Mark W. Beasley
PB: L789569
Shipped Via:

Rem./Contaminant	Sample # (lab only)
	-01 ~~-02~~

L785743

Troy Dunlap

From: Mark Beasley
Sent: Friday, September 18, 2015 5:23 PM
To: Login; Sample Storage
Subject: L785743 *BNSF1FAR* relog

Relog L785743-02 for SV8082 & TS. Log as R5 due 9/25.

Thanks
Mark

From: Jennifer Moore [mailto:jmoore@farallonconsulting.com]
Sent: Friday, September 18, 2015 4:41 PM
To: Mark Beasley
Subject: FW: Message from KM_C224e

I found a COC for FB-4. I've added the additional sample we would like to analyze for PCBs. I will fill out a copy of the other chain as soon as I get it.

Jennifer L. Moore, Associate Scientist
Farallon Consulting, L.L.C.
Direct: (425) 394-4148 Cell: (425) 420-0014

From: scanner
Sent: Saturday, September 19, 2015 6:44 AM
To: Jennifer Moore
Subject: Message from KM_C224e

ESC LAB SCIENCES
YOUR LAB OF CHOICE

ANALYTICAL REPORT

February 25, 2016

myESC
REAL TIME DATA ACCESS

Farallon Consulting - BNSF Region 1

Sample Delivery Group:	L789573
Samples Received:	09/18/2015
Project Number:	283-006
Description:	BNSF - JML - Cashmere, WA

Report To: Jennifer Moore
975 5th Avenue Northwest
Issaquah, WA 98027

Entire Report Reviewed By:

Mark W. Beasley
Technical Service Representative

TABLE OF CONTENTS

FB5-2.0 L789573-01 Solid

Collected by: Ken Scott | Collected date/time: 09/15/15 11:20 | Received date/time: 09/18/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Polychlorinated Biphenyls (GC) by Method 8082	WG816656	1	09/24/15 14:13	09/25/15 16:26	BEJ
Total Solids by Method 2540 G-2011	WG816726	1	09/22/15 13:10	09/23/15 07:16	MEL

FB5-10.0 L789573-02 Solid

Collected by: Ken Scott | Collected date/time: 09/15/15 11:55 | Received date/time: 09/18/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Polychlorinated Biphenyls (GC) by Method 8082	WG816656	1	09/24/15 14:13	09/25/15 16:40	BEJ
Total Solids by Method 2540 G-2011	WG816726	1	09/22/15 13:10	09/23/15 07:17	MEL

FB3-2.0 L789573-03 Solid

Collected by: Ken Scott | Collected date/time: 09/15/15 12:20 | Received date/time: 09/18/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Polychlorinated Biphenyls (GC) by Method 8082	WG816656	1	09/24/15 14:13	09/25/15 16:53	BEJ
Total Solids by Method 2540 G-2011	WG816727	1	09/22/15 14:34	09/23/15 09:07	KDW

FB3-8.0 L789573-04 Solid

Collected by: Ken Scott | Collected date/time: 09/15/15 12:50 | Received date/time: 09/18/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Polychlorinated Biphenyls (GC) by Method 8082	WG816656	1	09/24/15 14:13	09/25/15 17:07	BEJ
Total Solids by Method 2540 G-2011	WG816727	1	09/22/15 14:34	09/23/15 09:07	KDW

FB1-10.0 L789573-05 GW

Collected by: Ken Scott | Collected date/time: 09/15/15 14:50 | Received date/time: 09/18/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Preparation by Method 1312	WG816473	1	09/21/15 12:18	09/21/15 15:00	LJN
Preparation by Method 1312	WG816791	1	09/22/15 14:11	09/22/15 14:12	BG
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG817497	1	09/24/15 17:53	09/25/15 04:48	FMB
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX	WG816989	1	09/23/15 22:59	09/24/15 17:38	BJF
Volatile Organic Compounds (GC) by Method NWTPHGX	WG818365	1	09/29/15 13:16	09/29/15 13:16	ACG

FB2-10.0 L789573-06 GW

Collected by: Ken Scott | Collected date/time: 09/15/15 16:15 | Received date/time: 09/18/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Preparation by Method 1312	WG816473	1	09/21/15 12:18	09/21/15 15:00	LJN
Preparation by Method 1312	WG816791	1	09/22/15 14:11	09/22/15 14:12	BG
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG817247	1	09/23/15 22:58	09/24/15 06:17	CBB
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX	WG816989	1	09/23/15 22:59	09/24/15 17:56	BJF
Volatile Organic Compounds (GC) by Method NWTPHGX	WG818365	1	09/29/15 13:38	09/29/15 13:38	ACG

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. 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.

Mark W. Beasley
Technical Service Representative

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	91.8		1	09/23/2015 07:16	WG816726

Polychlorinated Biphenyls (GC) by Method 8082

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
PCB 1016	ND		0.0185	1	09/25/2015 16:26	WG816656
PCB 1221	ND		0.0185	1	09/25/2015 16:26	WG816656
PCB 1232	ND		0.0185	1	09/25/2015 16:26	WG816656
PCB 1242	ND		0.0185	1	09/25/2015 16:26	WG816656
PCB 1248	ND		0.0185	1	09/25/2015 16:26	WG816656
PCB 1254	ND		0.0185	1	09/25/2015 16:26	WG816656
PCB 1260	ND		0.0185	1	09/25/2015 16:26	WG816656
PCB 1262	ND		0.0185	1	09/25/2015 16:26	WG816656
PCB 1268	ND		0.0185	1	09/25/2015 16:26	WG816656
(S) Decachlorobiphenyl	*34.0*		*10.0-143*		*09/25/2015 16:26*	WG816656
(S) Tetrachloro-m-xylene	*40.1*		*29.2-144*		*09/25/2015 16:26*	WG816656

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	96.2		1	09/23/2015 07:17	WG816726

Polychlorinated Biphenyls (GC) by Method 8082

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
PCB 1016	ND		0.0177	1	09/25/2015 16:40	WG816656
PCB 1221	ND		0.0177	1	09/25/2015 16:40	WG816656
PCB 1232	ND		0.0177	1	09/25/2015 16:40	WG816656
PCB 1242	ND		0.0177	1	09/25/2015 16:40	WG816656
PCB 1248	ND		0.0177	1	09/25/2015 16:40	WG816656
PCB 1254	ND		0.0177	1	09/25/2015 16:40	WG816656
PCB 1260	ND		0.0177	1	09/25/2015 16:40	WG816656
PCB 1262	ND		0.0177	1	09/25/2015 16:40	WG816656
PCB 1268	ND		0.0177	1	09/25/2015 16:40	WG816656
(S) Decachlorobiphenyl	*41.0*		*10.0-143*		*09/25/2015 16:40*	WG816656
(S) Tetrachloro-m-xylene	*48.3*		*29.2-144*		*09/25/2015 16:40*	WG816656

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	89.6		1	09/23/2015 09:07	WG816727

Polychlorinated Biphenyls (GC) by Method 8082

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
PCB 1016	ND		0.0190	1	09/25/2015 16:53	WG816656
PCB 1221	ND		0.0190	1	09/25/2015 16:53	WG816656
PCB 1232	ND		0.0190	1	09/25/2015 16:53	WG816656
PCB 1242	ND		0.0190	1	09/25/2015 16:53	WG816656
PCB 1248	ND		0.0190	1	09/25/2015 16:53	WG816656
PCB 1254	ND		0.0190	1	09/25/2015 16:53	WG816656
PCB 1260	ND		0.0190	1	09/25/2015 16:53	WG816656
PCB 1262	ND		0.0190	1	09/25/2015 16:53	WG816656
PCB 1268	ND		0.0190	1	09/25/2015 16:53	WG816656
(S) Decachlorobiphenyl	*29.2*		*10.0-143*		*09/25/2015 16:53*	WG816656
(S) Tetrachloro-m-xylene	*39.9*		*29.2-144*		*09/25/2015 16:53*	WG816656

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	79.0		1	09/23/2015 09:07	WG816727

Polychlorinated Biphenyls (GC) by Method 8082

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
PCB 1016	ND		0.0215	1	09/25/2015 17:07	WG816656
PCB 1221	ND		0.0215	1	09/25/2015 17:07	WG816656
PCB 1232	ND		0.0215	1	09/25/2015 17:07	WG816656
PCB 1242	ND		0.0215	1	09/25/2015 17:07	WG816656
PCB 1248	ND		0.0215	1	09/25/2015 17:07	WG816656
PCB 1254	ND		0.0215	1	09/25/2015 17:07	WG816656
PCB 1260	ND		0.0215	1	09/25/2015 17:07	WG816656
PCB 1262	ND		0.0215	1	09/25/2015 17:07	WG816656
PCB 1268	ND		0.0215	1	09/25/2015 17:07	WG816656
(S) Decachlorobiphenyl	*32.3*		*10.0-143*		*09/25/2015 17:07*	WG816656
(S) Tetrachloro-m-xylene	*40.9*		*29.2-144*		*09/25/2015 17:07*	WG816656

Preparation by Method 1312

Analyte	Result	Qualifier	Prep date / time	Batch
SPLP Extraction	-		9/21/2015 12:18:34 PM	WG816473
SPLP ZHE Extraction	-		9/22/2015 2:11:13 PM	WG816791

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	ND		0.100	1	09/29/2015 13:16	WG818365
(S) a,a,a-Trifluorotoluene(FID)	*94.4*		*62.0-128*		*09/29/2015 13:16*	WG818365

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	2.66		0.100	1	09/24/2015 17:38	WG816989
Residual Range Organics (RRO)	0.442		0.250	1	09/24/2015 17:38	WG816989
(S) o-Terphenyl	*102*		*50.0-150*		*09/24/2015 17:38*	WG816989

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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Anthracene	0.000541		0.0000500	1	09/25/2015 04:48	WG817497
Acenaphthene	0.00192		0.0000500	1	09/25/2015 04:48	WG817497
Acenaphthylene	0.000206		0.0000500	1	09/25/2015 04:48	WG817497
Benzo(a)anthracene	ND		0.0000500	1	09/25/2015 04:48	WG817497
Benzo(a)pyrene	ND		0.0000500	1	09/25/2015 04:48	WG817497
Benzo(b)fluoranthene	ND		0.0000500	1	09/25/2015 04:48	WG817497
Benzo(g,h,i)perylene	ND		0.0000500	1	09/25/2015 04:48	WG817497
Benzo(k)fluoranthene	ND		0.0000500	1	09/25/2015 04:48	WG817497
Chrysene	ND		0.0000500	1	09/25/2015 04:48	WG817497
Dibenz(a,h)anthracene	ND		0.0000500	1	09/25/2015 04:48	WG817497
Fluoranthene	ND		0.0000500	1	09/25/2015 04:48	WG817497
Fluorene	0.00277		0.0000500	1	09/25/2015 04:48	WG817497
Indeno(1,2,3-cd)pyrene	ND		0.0000500	1	09/25/2015 04:48	WG817497
Naphthalene	0.0262		0.000250	1	09/25/2015 04:48	WG817497
Phenanthrene	0.00360		0.0000500	1	09/25/2015 04:48	WG817497
Pyrene	0.000339		0.0000500	1	09/25/2015 04:48	WG817497
1-Methylnaphthalene	0.0380		0.000250	1	09/25/2015 04:48	WG817497
2-Methylnaphthalene	0.0240		0.000250	1	09/25/2015 04:48	WG817497
2-Chloronaphthalene	ND		0.000250	1	09/25/2015 04:48	WG817497
(S) Nitrobenzene-d5	*98.9*		*33.8-179*		*09/25/2015 04:48*	WG817497
(S) 2-Fluorobiphenyl	*88.5*		*55.5-150*		*09/25/2015 04:48*	WG817497
(S) p-Terphenyl-d14	*89.8*		*46.2-163*		*09/25/2015 04:48*	WG817497

Preparation by Method 1312

Analyte	Result	Qualifier	Prep date / time	Batch
SPLP Extraction	-		9/21/2015 12:18:34 PM	WG816473
SPLP ZHE Extraction	-		9/22/2015 2:11:13 PM	WG816791

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	ND		0.100	1	09/29/2015 13:38	WG818365
(S) a,a,a-Trifluorotoluene(FID)	*94.3*		*62.0-128*		*09/29/2015 13:38*	WG818365

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	ND		0.100	1	09/24/2015 17:56	WG816989
Residual Range Organics (RRO)	ND		0.250	1	09/24/2015 17:56	WG816989
(S) o-Terphenyl	*105*		*50.0-150*		*09/24/2015 17:56*	WG816989

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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Anthracene	ND		0.0000500	1	09/24/2015 06:17	WG817247
Acenaphthene	ND		0.0000500	1	09/24/2015 06:17	WG817247
Acenaphthylene	ND		0.0000500	1	09/24/2015 06:17	WG817247
Benzo(a)anthracene	ND		0.0000500	1	09/24/2015 06:17	WG817247
Benzo(a)pyrene	ND		0.0000500	1	09/24/2015 06:17	WG817247
Benzo(b)fluoranthene	ND		0.0000500	1	09/24/2015 06:17	WG817247
Benzo(g,h,i)perylene	ND		0.0000500	1	09/24/2015 06:17	WG817247
Benzo(k)fluoranthene	ND		0.0000500	1	09/24/2015 06:17	WG817247
Chrysene	ND		0.0000500	1	09/24/2015 06:17	WG817247
Dibenz(a,h)anthracene	ND		0.0000500	1	09/24/2015 06:17	WG817247
Fluoranthene	ND		0.0000500	1	09/24/2015 06:17	WG817247
Fluorene	ND		0.0000500	1	09/24/2015 06:17	WG817247
Indeno(1,2,3-cd)pyrene	ND		0.0000500	1	09/24/2015 06:17	WG817247
Naphthalene	ND		0.000250	1	09/24/2015 06:17	WG817247
Phenanthrene	0.000104		0.0000500	1	09/24/2015 06:17	WG817247
Pyrene	ND		0.0000500	1	09/24/2015 06:17	WG817247
1-Methylnaphthalene	ND		0.000250	1	09/24/2015 06:17	WG817247
2-Methylnaphthalene	ND		0.000250	1	09/24/2015 06:17	WG817247
2-Chloronaphthalene	ND		0.000250	1	09/24/2015 06:17	WG817247
(S) Nitrobenzene-d5	*108*		*33.8-179*		*09/24/2015 06:17*	WG817247
(S) 2-Fluorobiphenyl	*103*		*55.5-150*		*09/24/2015 06:17*	WG817247
(S) p-Terphenyl-d14	*90.2*		*46.2-163*		*09/24/2015 06:17*	WG817247

Method Blank (MB)

(MB) 09/23/15 07:14

Analyte	MB Result %	MB Qualifier	MB RDL %
Total Solids	0.000100		

L789559-03 Original Sample (OS) • Duplicate (DUP)

(OS) 09/23/15 07:15 • (DUP) 09/23/15 07:16

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	86.5	86.6	1	0.101		5

Laboratory Control Sample (LCS)

(LCS) 09/23/15 07:14

Analyte	Spike Amount %	LCS Result %	LCS Rec. %	Rec. Limits %	LCS Qualifier
Total Solids	50.0	50.0	100	85.0-115	

Method Blank (MB)

(MB) 09/23/15 09:07

Analyte	MB Result %	MB Qualifier	MB RDL %
Total Solids	0.000100		

L789633-01 Original Sample (OS) • Duplicate (DUP)

(OS) 09/23/15 09:10 • (DUP) 09/23/15 09:10

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	86.7	86.7	1	0.0182		5

Laboratory Control Sample (LCS)

(LCS) 09/23/15 09:07

Analyte	Spike Amount %	LCS Result %	LCS Rec. %	Rec. Limits %	LCS Qualifier
Total Solids	50.0	50.0	100	85.0-115	

Method Blank (MB)

(MB) 09/29/15 12:09

Analyte	MB Result	MB Qualifier	MB RDL
	mg/l		mg/l
TPHG C6 - C12	ND		0.100
(S) a,a,a-Trifluorotoluene(FID)	*95.0*		*62.0-128*

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

(LCS) 09/29/15 09:58 • (LCSD) 09/29/15 10:20

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	%	%	%			%	%
TPHG C6 - C12	5.50	5.51	6.04	100	110	66.0-123			9.22	20
(S) a,a,a-Trifluorotoluene(FID)				*102*	*103*	*62.0-128*				

L789573-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 09/29/15 13:16 • (MS) 09/29/15 15:29 • (MSD) 09/29/15 15:52

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
TPHG C6 - C12	5.50	0.0612	5.57	5.10	100	91.7	1	47.5-136			8.67	20
(S) a,a,a-Trifluorotoluene(FID)					*104*	*103*		*62.0-128*				

Method Blank (MB)

(MB) 09/24/15 12:19

Analyte	MB Result mg/l	MB Qualifier	MB RDL mg/l
Diesel Range Organics (DRO)	ND		0.100
Residual Range Organics (RRO)	ND		0.250
(S) o-Terphenyl	*101*		*50.0-150*

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

(LCS) 09/24/15 12:37 • (LCSD) 09/24/15 12:54

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Diesel Range Organics (DRO)	0.750	0.850	0.858	113	114	50.0-150			0.930	20
Residual Range Organics (RRO)	0.750	0.765	0.787	102	105	50.0-150			2.81	20
(S) o-Terphenyl				*104*	*105*	*50.0-150*				

Method Blank (MB)

(MB) 09/25/15 13:34

Analyte	MB Result mg/kg	MB Qualifier	MB RDL mg/kg
PCB 1016	ND		0.0170
PCB 1221	ND		0.0170
PCB 1232	ND		0.0170
PCB 1242	ND		0.0170
PCB 1248	ND		0.0170
PCB 1254	ND		0.0170
PCB 1260	ND		0.0170
PCB 1262	ND		0.0170
PCB 1268	ND		0.0170
(S) Decachlorobiphenyl	*42.8*		*10.0-143*
(S) Tetrachloro-m-xylene	*62.5*		*29.2-144*

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

(LCS) 09/25/15 13:49 • (LCSD) 09/25/15 14:03

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
PCB 1260	0.1667	0.0833	0.0806	50.0	48.4	46.5-120			3.26	27
PCB 1016	0.1667	0.0878	0.0848	52.7	50.9	46.3-117			3.43	27.5
(S) Decachlorobiphenyl				*45.2*	*44.3*	*10.0-143*				
(S) Tetrachloro-m-xylene				*52.4*	*49.4*	*29.2-144*				

L790206-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 09/25/15 19:12 • (MS) 09/25/15 19:26 • (MSD) 09/25/15 19:39

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
PCB 1260	0.1667	ND	0.140	0.124	83.9	74.6	1	24.6-127			11.7	20
PCB 1016	0.1667	ND	0.639	0.558	383	335	1	23.9-147	J5	J5	13.6	25.8
(S) Decachlorobiphenyl					*40.3*	*32.5*		*10.0-143*				
(S) Tetrachloro-m-xylene					*41.6*	*34.0*		*29.2-144*				

Method Blank (MB)

(MB) 09/24/15 05:33

Analyte	MB Result mg/l	MB Qualifier	MB RDL mg/l
Anthracene	ND		0.0000500
Acenaphthene	ND		0.0000500
Acenaphthylene	ND		0.0000500
Benzo(a)anthracene	ND		0.0000500
Benzo(a)pyrene	ND		0.0000500
Benzo(b)fluoranthene	ND		0.0000500
Benzo(g,h,i)perylene	ND		0.0000500
Benzo(k)fluoranthene	ND		0.0000500
Chrysene	ND		0.0000500
Dibenz(a,h)anthracene	ND		0.0000500
Fluoranthene	ND		0.0000500
Fluorene	ND		0.0000500
Indeno(1,2,3-cd)pyrene	ND		0.0000500
Naphthalene	ND		0.000250
Phenanthrene	ND		0.0000500
Pyrene	ND		0.0000500
1-Methylnaphthalene	ND		0.000250
2-Methylnaphthalene	ND		0.000250
2-Chloronaphthalene	ND		0.000250
(S) Nitrobenzene-d5	*113*		*33.8-179*
(S) 2-Fluorobiphenyl	*102*		*55.5-150*
(S) p-Terphenyl-d14	*95.4*		*46.2-163*

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

(LCS) 09/24/15 04:28 • (LCSD) 09/24/15 04:50

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Anthracene	0.00200	0.00216	0.00227	108	113	68.9-153			4.65	20
Acenaphthene	0.00200	0.00206	0.00211	103	106	67.7-153			2.25	20
Acenaphthylene	0.00200	0.00208	0.00214	104	107	66.9-141			2.99	20
Benzo(a)anthracene	0.00200	0.00215	0.00215	107	107	63.1-147			0.120	20
Benzo(a)pyrene	0.00200	0.00207	0.00214	104	107	62.2-150			3.24	20
Benzo(b)fluoranthene	0.00200	0.00214	0.00209	107	105	58.4-148			2.53	20
Benzo(g,h,i)perylene	0.00200	0.00198	0.00210	99.2	105	57.4-152			5.78	20
Benzo(k)fluoranthene	0.00200	0.00189	0.00208	94.6	104	60.5-154			9.20	20

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

(LCS) 09/24/15 04:28 • (LCSD) 09/24/15 04:50

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Chrysene	0.00200	0.00213	0.00221	106	111	64.8-155			3.89	20
Dibenz(a,h)anthracene	0.00200	0.00197	0.00208	98.4	104	53.5-153			5.40	20
Fluoranthene	0.00200	0.00216	0.00222	108	111	68.6-153			2.88	20
Fluorene	0.00200	0.00205	0.00211	103	106	67.3-141			3.01	20
Indeno(1,2,3-cd)pyrene	0.00200	0.00201	0.00212	100	106	57.0-155			5.51	20
Naphthalene	0.00200	0.00207	0.00214	104	107	66.7-135			3.17	20
Phenanthrene	0.00200	0.00208	0.00212	104	106	64.3-143			2.05	20
Pyrene	0.00200	0.00208	0.00211	104	106	60.2-154			1.48	20
1-Methylnaphthalene	0.00200	0.00213	0.00221	107	110	68.3-144			3.32	20
2-Methylnaphthalene	0.00200	0.00215	0.00222	108	111	67.6-143			2.86	20
2-Chloronaphthalene	0.00200	0.00200	0.00206	99.9	103	69.7-140			3.13	20
(S) Nitrobenzene-d5				*115*	*119*	*33.8-179*				
(S) 2-Fluorobiphenyl				*104*	*106*	*55.5-150*				
(S) p-Terphenyl-d14				*94.1*	*97.8*	*46.2-163*				

Method Blank (MB)

(MB) 09/25/15 04:05

Analyte	MB Result mg/l	MB Qualifier	MB RDL mg/l
Anthracene	ND		0.0000500
Acenaphthene	ND		0.0000500
Acenaphthylene	ND		0.0000500
Benzo(a)anthracene	ND		0.0000500
Benzo(a)pyrene	ND		0.0000500
Benzo(b)fluoranthene	ND		0.0000500
Benzo(g,h,i)perylene	ND		0.0000500
Benzo(k)fluoranthene	ND		0.0000500
Chrysene	ND		0.0000500
Dibenz(a,h)anthracene	ND		0.0000500
Fluoranthene	ND		0.0000500
Fluorene	ND		0.0000500
Indeno(1,2,3-cd)pyrene	ND		0.0000500
Naphthalene	ND		0.000250
Phenanthrene	ND		0.0000500
Pyrene	ND		0.0000500
1-Methylnaphthalene	ND		0.000250
2-Methylnaphthalene	ND		0.000250
2-Chloronaphthalene	ND		0.000250
(S) Nitrobenzene-d5	*94.7*		*33.8-179*
(S) 2-Fluorobiphenyl	*95.4*		*55.5-150*
(S) p-Terphenyl-d14	*86.0*		*46.2-163*

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

(LCS) 09/25/15 03:00 • (LCSD) 09/25/15 03:22

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Anthracene	0.00200	0.00202	0.00207	101	103	68.9-153			2.28	20
Acenaphthene	0.00200	0.00192	0.00193	96.0	96.4	67.7-153			0.490	20
Acenaphthylene	0.00200	0.00189	0.00191	94.7	95.4	66.9-141			0.740	20
Benzo(a)anthracene	0.00200	0.00182	0.00185	91.2	92.5	63.1-147			1.44	20
Benzo(a)pyrene	0.00200	0.00178	0.00182	88.8	90.8	62.2-150			2.20	20
Benzo(b)fluoranthene	0.00200	0.00178	0.00186	88.9	93.2	58.4-148			4.67	20
Benzo(g,h,i)perylene	0.00200	0.00199	0.00205	99.3	103	57.4-152			3.25	20
Benzo(k)fluoranthene	0.00200	0.00177	0.00175	88.4	87.4	60.5-154			1.21	20

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

(LCS) 09/25/15 03:00 • (LCSD) 09/25/15 03:22

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Chrysene	0.00200	0.00192	0.00193	96.1	96.7	64.8-155			0.610	20
Dibenz(a,h)anthracene	0.00200	0.00195	0.00203	97.6	101	53.5-153			3.79	20
Fluoranthene	0.00200	0.00200	0.00202	100	101	68.6-153			1.00	20
Fluorene	0.00200	0.00187	0.00187	93.3	93.5	67.3-141			0.180	20
Indeno(1,2,3-cd)pyrene	0.00200	0.00195	0.00202	97.4	101	57.0-155			3.69	20
Naphthalene	0.00200	0.00199	0.00200	99.4	99.9	66.7-135			0.490	20
Phenanthrene	0.00200	0.00193	0.00196	96.7	98.2	64.3-143			1.51	20
Pyrene	0.00200	0.00185	0.00184	92.5	92.2	60.2-154			0.350	20
1-Methylnaphthalene	0.00200	0.00195	0.00199	97.6	99.6	68.3-144			2.08	20
2-Methylnaphthalene	0.00200	0.00197	0.00200	98.3	100	67.6-143			1.65	20
2-Chloronaphthalene	0.00200	0.00194	0.00194	96.8	97.1	69.7-140			0.290	20
(S) Nitrobenzene-d5				*97.6*	*97.2*	*33.8-179*				
(S) 2-Fluorobiphenyl				*96.9*	*96.7*	*55.5-150*				
(S) p-Terphenyl-d14				*85.5*	*85.8*	*46.2-163*				

Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND,U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
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.
(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.
Rec.	Recovery.
SDL	Sample Detection Limit.
MQL	Method Quantitation Limit.
Unadj. MQL	Unadjusted Method Quantitation Limit.

Qualifier	Description
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.

ESC Lab Sciences 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.

State Accreditations

Alabama	40660
Alaska	UST-080
Arizona	AZ0612
Arkansas	88-0469
California	01157CA
Colorado	TN00003
Conneticut	PH-0197
Florida	E87487
Georgia	NELAP
Georgia [1]	923
Idaho	TN00003
Illinois	200008
Indiana	C-TN-01
Iowa	364
Kansas	E-10277
Kentucky [1]	90010
Kentucky [2]	16
Louisiana	AI30792
Maine	TN0002
Maryland	324
Massachusetts	M-TN003
Michigan	9958
Minnesota	047-999-395
Mississippi	TN00003
Missouri	340
Montana	CERT0086
Nebraska	NE-OS-15-05
Nevada	TN-03-2002-34
New Hampshire	2975
New Jersey–NELAP	TN002
New Mexico	TN00003
New York	11742
North Carolina	Env375
North Carolina [1]	DW21704
North Carolina [2]	41
North Dakota	R-140
Ohio–VAP	CL0069
Oklahoma	9915
Oregon	TN200002
Pennsylvania	68-02979
Rhode Island	221
South Carolina	84004
South Dakota	n/a
Tennessee [1 4]	2006
Texas	T 104704245-07-TX
Texas [5]	LAB0152
Utah	6157585858
Vermont	VT2006
Virginia	109
Washington	C1915
West Virginia	233
Wisconsin	9980939910
Wyoming	A2LA

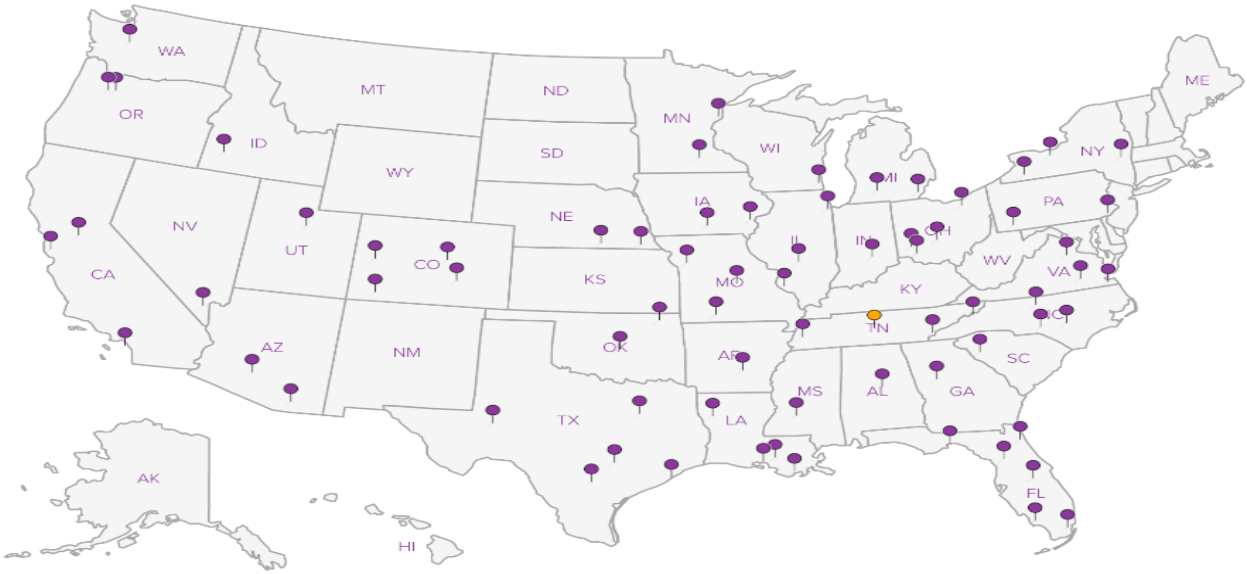
Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01
A2LA – ISO 17025 [5]	1461.02
Canada	1461.01
EPA–Crypto	TN00003
AIHA	100789
DOD	1461.01
USDA	S-67674

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

Our Locations

ESC Lab Sciences 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. **ESC Lab Sciences performs all testing at our central laboratory.**



Farallon Consulting - BNSF Region 1

975 5th Avenue Northwest
Issaquah, WA 98027

Billing Information:
Bruce Sheppard
2454 Occidental Ave S, Ste 1A
Seattle, WA 98134-1451

Report to: Jennifer Moore

Email To: jmoore@farallonconsulting.com, kwoodburne@trcsolutions.com

Project Description: BNSF - JML - Cashmere, WA

City/State Collected: Cashmere, WA

Phone: 425-698-3752
Fax:

Client Project # 283-006

Lab Project # BNSF1FAR-CASHMERE

Collected by (print): Ken Scott

Site/Facility ID #

P.O. #

Collected by (signature): Ken Scott

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day 200%
___ Next Day 100%
___ Two Day 50%
___ Three Day 25%

Date Results Needed

Email? ___No X_Yes
FAX? ___No ___Yes

Analysis / Container / Preservative

Chain of Custody Page 1 of 2

ESC LABORATORY SCIENCES
YOUR LAB OF CHOICE
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L # ~~L789573~~
Table # L789573

Acctnum: BNSF1FAR
Template: T104635
Prelogin: P519995
TSR: 134 - Mark W. Beasley
PB:
Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	SPLP Dx, Gx, PAHs 8ozClr-NoPres	SV8082, TS 4ozClr-NoPres	PCBs SV8082	Rem./Contaminant	Sample # (lab only)
FB5-2.0	G	SS	2.0	9/15/15		1			X		-01
FB5-4.0	G	SS	4.0		1120	1					
FB5-6.0	G	SS	6.0		1130	1					
FB5-8.0	G	SS	8.0		1140	1					
FB5-10.0	G	SS	10.0		1150	1			X		-02
FB5-12.0	G	SS	12.0		1155	1					
FB3-2.0	G	SS	2.0		1225 1220	1			X		-03
FB3-4.0	G	SS	4.0		1230	1					
FB3-6.0	G	SS	6.0		1240	1					
FB3-8.0	G	SS	8.0	✓	1250	1			X		-04

* Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other SS

Remarks: SPLP = NWTPHDXLVI, NWTPHGXBTEX, & PAHSIMLVI Will call with ANALYSIS ASAP, minimize dilutions for the PCB samples to keep the reporting limit as low as possible

pH _____ Temp _____
Flow _____ Other _____

Hold #

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Ken Scott	9/17/15	1600	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)

Samples returned via: ☐ UPS ☒ FedEx ☐ Courier ☐ _____

Temp: 0 2.1 °C Bottles Received: 28-802

Date: 9-18-15 Time: 090

Condition: (lab use only) OK

COC Seal Intact: ___Y ___N ✓NA

pH Checked: NCF:

Farallon Consulting - BNSF Region 1

975 5th Avenue Northwest
Issaquah, WA 98027

Billing Information:
Bruce Sheppard
2454 Occidental Ave S, Ste 1A
Seattle, WA 98134-1451

Report to: Jennifer Moore

Email To: jmoore@farallonconsulting.com, kwoodburne@trcsolutions.com

Project Description: BNSF - JML - Cashmere, WA

City/State Collected: Cashmere, WA

Phone: 425-698-3752
Fax:

Client Project # 283-006

Lab Project # WA BNSF1FAR-CASHMERE

Collected by (print): Ken Scott

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day 200%
___ Next Day 100%
___ Two Day 50%
___ Three Day 25%

Date Results Needed

Email? ___No X_Yes
FAX? ___No ___Yes

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	SPLP Dx, Gx, PAHs 8ozClr-NoPres	SV8082, TS 4ozClr-NoPres	PCBS	Rem./Contaminant	Sample # (lab only)
FB3-10.0	G	SS	10.0	9/15/15	1305	1					
FB1-2.0	G	SS	2.0		1410	1					
FB1-4.0	G	SS	4.0		1420	1					
FB1-6.0	G	SS	6.0		1430	1					
FB1-8.0	G	SS	8.0		1440	1					
FB1-10.0	G	SS	10.0		1450	1	X				-05
FB1-12.0	G	SS	12.0		1455	1					
FB1-14.0	G	SS	14.0		1505	1					
FB1-16.0	G	SS	16.0		1515	1					
FB2-2.0	G	SS	2.0		1535	1					

* Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other

Remarks: SPLP = NWTPHDXLVI, NWTPHGXBTEX, & PAHSIMLVI

See comments on page #1

pH ____ Temp ____
Flow ____ Other ____

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Ken Scott	9/17/15	1600	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)

Samples returned via: ☐ UPS ☑ FedEx ☐ Courier ☐ ____
Temp: 2.1°C Bottles Received: 28-8oz
Date: 9-18-15 Time: 0900

Analysis / Container / Preservative

Chain of Custody Page 2 of 3

ESC LABORATORIES
YOUR LAB OF CHOICE
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Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L# L789573

Table #

Acctnum: BNSF1FAR
Template: T104635
Prelogin: P519995
TSR: 134 - Mark W. Beasley
PB:

Shipped Via:

Hold #

Condition: (lab use only) OK

COC Seal Intact: ___Y ___N ___NA

pH Checked: NCF:

Farallon Consulting - BNSF Region 1

975 5th Avenue Northwest
Issaquah, WA 98027

Billing Information:

Bruce Sheppard
2454 Occidental Ave S, Ste 1A
Seattle, WA 98134-1451

Chain of Custody Page 3 of 3

ESC LAB SCIENCES
YOUR LAB OF CHOICE
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

Report to: Jennifer Moore

Email To: jmoore@farallonconsulting.com, kwoodburne@trcsolutions.com

Project Description: BNSF - JML - Cashmere, WA

City/State Collected: Cashmere, WA.

Phone: 425-698-3752
Fax:

Client Project #: 283-006

Lab Project #: BNSF1FAR-CASHMERE

L# L789573

Table #

Collected by (print): Ken Scott

Site/Facility ID #

P.O. #

Acctnum: BNSF1FAR
Template: T104635
Prelogin: P519995
TSR: 134 - Mark W. Beasley
PB:
Shipped Via:

Collected by (signature):

Immediately Packed on Ice N___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day 200%
___ Next Day 100%
___ Two Day 50%
___ Three Day 25%

Date Results Needed
Email? ___No X Yes
FAX? ___No ___Yes

Analysis / Container / Preservative: SPLP Dx, Gx, PAHs 8ozClr-NoPres; SV8082, TS 4ozClr-NoPres; PCBs

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	SPLP Dx, Gx, PAHs 8ozClr-NoPres	SV8082, TS 4ozClr-NoPres	PCBs								Rem./Contaminant	Sample # (lab only)
FB2-4.0	G	SS	4.0	9/15/15	1545	1												
FB2-6.0	G	SS	6.0	↓	1555	1												
FB2-8.0	G	SS	8.0		1605	1												
FB2-10.0	G	SS	10.0		1615	1	X											-06
FB2-12.0	G	SS	12.0		1620	1												
FB2-14.0	G	SS	14.0		1630	1												
FB2-16.0	G	SS	16.0		1640	1												
FB2-18.0	G	SS	18.0	↓	1645	1												
		SS				1												
		SS				1		KS										

* Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other KS

Remarks: SPLP = NWTPHDXLVI, NWTPHGXBTEX, & PAHSIMLVI

See comments on page #1.

pH ______ Temp ______

Flow ______ Other ______

Hold #

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: ☐ UPS ☑ FedEx ☐ Courier ☐ ____	Condition: (lab use only)
Ken Scott	9/17/15	1600			OK
Relinquished by: (Signature)	**Date:**	**Time:**	**Received by: (Signature)**	Temp: 2.1 °C Bottles Received: 28	COC Seal Intact: ___Y ___N ✓NA
Relinquished by: (Signature)	**Date:**	**Time:**	**Received for lab by: (Signature)**	Date: 9-18-15 Time: 0900	pH Checked: NCF:
			[signature]		

Farallon Consulting - BNSF Region 1

975 5th Avenue Northwest
Issaquah, WA 98027

Billing Information:
Bruce Sheppard
2454 Occidental Ave S, Ste 1A
Seattle, WA 98134-1451

Report to: Jennifer Moore

Email To: jmoore@farallonconsulting.com, kwoodburne@trcsolutions.com

Project Description: BNSF - JML - Cashmere, WA

City/State Collected: Cashmere, WA.

Phone: 425-698-3752
Fax:

Client Project # 283-006

Lab Project # BNSF1FAR-CASHMERE

Collected by (print): Ken Scott

Site/Facility ID #

P.O. #

Collected by (signature): Ken Scott

Immediately Packed on Ice N___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day 200%
___ Next Day 100%
___ Two Day 50%
___ Three Day 25%

Date Results Needed

Email? ___No X_Yes
FAX? ___No ___Yes

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	SPLP Dx, Gx, PAHs 8ozClr-NoPres	SV8082, TS 4ozClr-NoPres	PCBs
FB5-2.0	G	SS	2.0	9/15/15	1120	1			
FB5-4.0	G	SS	4.0		1130	1			
FB5-6.0	G	SS	6.0		1140	1			
FB5-8.0	G	SS	8.0		1150	1			
FB5-10.0	G	SS	10.0		1155	1			
FB5-12.0	G	SS	12.0		1205	1			
FB3-2.0	G	SS	2.0		1220	1			
FB3-4.0	G	SS	4.0		1230	1			
FB3-6.0	G	SS	6.0		1240	1			
FB3-8.0	G	SS	8.0	✓	1250	1			

Analysis / Container / Preservative

Chain of Custody Page 1 of 3

ESC LABORATORY SCIENCES
YOUR LAB OF CHOICE
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Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L # L789573
J066

Acctnum: BNSF1FAR
Template: T104635
Prelogin: P519995
TSR: 134 - Mark W. Beasley
PB:
Shipped Via:

Rem./Contaminant | Sample # (lab only)

* Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other SS

Remarks: SPLP = NWTPHDXLVI, NWTPHGXBTEX, & PAHSIMLVI Will call with ANALYSIS ASAP. Minimize dilutions for the PCB samples to keep the reporting limit as low as possible

pH ____ Temp ____
Flow ____ Other ____

64367133 0968

Hold #

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Ken Scott	9/17/15	1600	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)

Samples returned via: ☐ UPS ☒ FedEx ☐ Courier ☐ ____

Temp: 0 21c °C Bottles Received: 28-8oz

Date: 9-18-15 Time: 0900

Condition: (lab use only) TDT ✓

COC Seal Intact: ___Y ___N ___NA

pH Checked: NCF:

Farallon Consulting - BNSF Region 1

975 5th Avenue Northwest
Issaquah, WA 98027

Billing Information:
Bruce Sheppard
2454 Occidental Ave S, Ste 1A
Seattle, WA 98134-1451

Report to: Jennifer Moore

Email To: jmoore@farallonconsulting.com, kwoodburne@trcsolutions.com

Project Description: BNSF - JML - Cashmere, WA

City/State Collected: Cashmere, WA

Phone: 425-698-3752
Fax:

Client Project # 283-006

Lab Project # BNSF1FAR-CASHMERE

Collected by (print): Ken Scott

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day 200%
___ Next Day 100%
___ Two Day 50%
___ Three Day 25%

Date Results Needed

Email? ___No X_Yes
FAX? ___No ___Yes

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	SPLP Dx, Gx, PAHs 8ozClr-NoPres	SV8082, TS 4ozClr-NoPres	PCBs
FB3-10.0	G	SS	10.0	9/15/15	1300	1			
FB1-2.0	G	SS	2.0		1410	1			
FB1-4.0	G	SS	4.0		1420	1			
FB1-6.0	G	SS	6.0		1430	1			
FB1-8.0	G	SS	8.0		1440	1			
FB1-10.0	G	SS	10.0		1450	1			
FB1-12.0	G	SS	12.0		1455	1			
FB1-14.0	G	SS	14.0		1505	1			
FB1-16.0	G	SS	16.0		1515	1			
FB2-2.0	G	SS	2.0	↓	1535	1			

* Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other SS

Remarks:SPLP = NWTPHDXLVI, NWTPHGXBTEX, & PAHSIMLVI

See comments on page #1

pH ___ Temp ___

Flow ___ Other ___

Relinquished by : (Signature) Ken Scott — Date: 9/17/15 — Time: 1600 — Received by: (Signature)

Relinquished by : (Signature) — Date: — Time: — Received by: (Signature)

Relinquished by : (Signature) — Date: — Time: — Received for lab by: (Signature) — Date: 9-16-15 — Time: 0900

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

Temp: 2.6 °C Bottles Received: 26-802

Hold #

Condition: (lab use only) FOI

COC Seal Intact: ___Y ___N ___NA

pH Checked: NCF:

Chain of Custody Page 2 of 3

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Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L #

Table #

Acctnum: BNSF1FAR
Template: T104635
Prelogin: P519995
TSR: 134 - Mark W. Beasley
PB:

Shipped Via:

Rem./Contaminant | Sample # (lab only)

Farallon Consulting - BNSF Region 1

975 5th Avenue Northwest
Issaquah, WA 98027

Billing Information:
Bruce Sheppard
2454 Occidental Ave S, Ste 1A
Seattle, WA 98134-1451

Report to: Jennifer Moore

Email To: jmoore@farallonconsulting.com, kwoodburne@trcsolutions.com

Project Description: BNSF - JML - Cashmere, WA

City/State Collected: Cashmere, WA.

Phone: 425-698-3752
Fax:

Client Project # 283-006

Lab Project # BNSF1FAR-CASHMERE

Collected by (print): Ken Scott

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day 200%
___ Next Day 100%
___ Two Day 50%
___ Three Day 25%

Date Results Needed

Email? ___No X_Yes
FAX? ___No ___Yes

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	SPLP Dx, Gx, PAHs 8ozClr-NoPres	SV8082, TS 4ozClr-NoPres	PCBs
FB2-4.0	G	SS	4.0	9/15/15	1545	1			
FB2-6.0	G	SS	6.0		1555	1			
FB2-8.0	G	SS	8.0		1605	1			
FB2-10.0	G	SS	10.0		1615	1			
FB2-12.0	G	SS	12.0		1620	1			
FB2-14.0	G	SS	14.0		1630	1			
FB2-16.0	G	SS	16.0		1640	1			
FB2-18.0	G	SS	18.0	✓	1645	1			
		SS				1		(5)	
		SS				1			

Analysis / Container / Preservative

* Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other SS

Remarks:SPLP = NWTPHDXLVI, NWTPHGXBTEX, & PAHSIMLVI

See comments on page #1.

pH ___ Temp ___

Flow ___ Other ___

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Ken Scott	9/17/15	1600	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)

Samples returned via: ☐ UPS ☒ FedEx ☐ Courier ☐ ___

Temp 2.1 °C Bottles Received: 26-60z

Date: 9-18-15 Time: 0900

Hold #

Condition: (lab use only) TD1

COC Seal Intact: ___Y ___N ✓NA

pH Checked: NCF:

Chain of Custody Page 3 of 3

ESC LABS SCIENCES
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12065 Lebanon Rd
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Fax: 615-758-5859

L # L789573

Table #

Acctnum: BNSF1FAR

Template: T104635

Prelogin: P519995

TSR: 134 - Mark W. Beasley

PB:

Shipped Via:

Rem./Contaminant	Sample # (lab only)

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
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Tax I.D. 62-0814289

Est. 1970

Jennifer Moore
Farallon Consulting - BNSF Region 1
975 5th Avenue Northwest
Issaquah, WA 98027

Report Summary

Thursday August 20, 2015

Report Number: L782628
Samples Received: 08/13/15
Client Project: 283-006

Description: BNSF - JML - Cashmere, WA

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Mark W. Beasley , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364, EPA - TN002

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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REPORT OF ANALYSIS

Jennifer Moore
Farallon Consulting - BNSF Region 1
975 5th Avenue Northwest
Issaquah, WA 98027

August 20, 2015

ESC Sample # : L782628-01

Site ID :

Project # : 283-006

Date Received : August 13, 2015
Description : BNSF - JML - Cashmere, WA

Sample ID : MW1-081115

Collected By : Ryan Ostrom
Collection Date : 08/11/15 13:20

Parameter	Result	MDL	RDL	Units	Qual	Method	Date	Dil.
Gasoline Range Organics-NWTPH	U	50.0	100.	ug/l		NWTPHGX	08/14/15	1
Benzene	U	0.190	0.500	ug/l		8021B	08/14/15	1
Toluene	U	0.180	5.00	ug/l		8021B	08/14/15	1
Ethylbenzene	U	0.160	0.500	ug/l		8021B	08/14/15	1
Total Xylene	U	0.510	1.50	ug/l		8021B	08/14/15	1
Surrogate Recovery(%)								
a,a,a-Trifluorotoluene(PID)	100.			% Rec.		8021B	08/14/15	1
a,a,a-Trifluorotoluene(FID)	99.1			% Rec.		NWTPHGX	08/14/15	1
Diesel Range Organics (DRO)	210.	50.0	100.	ug/l		NWTPHDX	08/20/15	1
Residual Range Organics (RRO)	267.	125.	250.	ug/l		NWTPHDX	08/20/15	1
Surrogate Recovery								
o-Terphenyl	126.			% Rec.		NWTPHDX	08/20/15	1
Polynuclear Aromatic Hydrocarbons								
Anthracene	0.0458	0.0140	0.0500	ug/l	J	8270C-S	08/19/15	1
Acenaphthene	U	0.0100	0.0500	ug/l		8270C-S	08/19/15	1
Acenaphthylene	U	0.0120	0.0500	ug/l		8270C-S	08/19/15	1
Benzo(a)anthracene	0.0172	0.00410	0.0500	ug/l	J	8270C-S	08/19/15	1
Benzo(a)pyrene	U	0.0116	0.0500	ug/l		8270C-S	08/19/15	1
Benzo(b)fluoranthene	U	0.00212	0.0500	ug/l	J3	8270C-S	08/19/15	1
Benzo(g,h,i)perylene	0.00806	0.00227	0.0500	ug/l	J	8270C-S	08/19/15	1
Benzo(k)fluoranthene	U	0.0136	0.0500	ug/l		8270C-S	08/19/15	1
Chrysene	0.0245	0.0108	0.0500	ug/l	J	8270C-S	08/19/15	1
Dibenz(a,h)anthracene	U	0.00396	0.0500	ug/l		8270C-S	08/19/15	1
Fluoranthene	U	0.0157	0.0500	ug/l		8270C-S	08/19/15	1
Fluorene	U	0.00850	0.0500	ug/l		8270C-S	08/19/15	1
Indeno(1,2,3-cd)pyrene	U	0.0148	0.0500	ug/l		8270C-S	08/19/15	1
Naphthalene	0.0238	0.0198	0.250	ug/l	J	8270C-S	08/19/15	1
Phenanthrene	0.0182	0.00820	0.0500	ug/l	J	8270C-S	08/19/15	1
Pyrene	0.0921	0.0117	0.0500	ug/l		8270C-S	08/19/15	1
1-Methylnaphthalene	0.00870	0.00821	0.250	ug/l	J	8270C-S	08/19/15	1
2-Methylnaphthalene	U	0.00902	0.250	ug/l		8270C-S	08/19/15	1
2-Chloronaphthalene	U	0.00647	0.250	ug/l		8270C-S	08/19/15	1
Surrogate Recovery								
Nitrobenzene-d5	130.			% Rec.		8270C-S	08/19/15	1
2-Fluorobiphenyl	117.			% Rec.		8270C-S	08/19/15	1
p-Terphenyl-d14	98.9			% Rec.		8270C-S	08/19/15	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
Note:
The reported analytical results relate only to the sample submitted.

.
Reported: 08/20/15 15:39 Printed: 08/20/15 15:40

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REPORT OF ANALYSIS

Jennifer Moore
Farallon Consulting - BNSF Region 1
975 5th Avenue Northwest
Issaquah, WA 98027

August 20, 2015

ESC Sample # : L782628-02

Site ID :

Project # : 283-006

Date Received : August 13, 2015
Description : BNSF - JML - Cashmere, WA

Sample ID : MW2-081115

Collected By : Ryan Ostrom
Collection Date : 08/11/15 14:38

Parameter	Result	MDL	RDL	Units	Qual	Method	Date	Dil.
Gasoline Range Organics-NWTPH	U	50.0	100.	ug/l		NWTPHGX	08/14/15	1
Benzene	U	0.190	0.500	ug/l		8021B	08/14/15	1
Toluene	U	0.180	5.00	ug/l		8021B	08/14/15	1
Ethylbenzene	U	0.160	0.500	ug/l		8021B	08/14/15	1
Total Xylene	U	0.510	1.50	ug/l		8021B	08/14/15	1
Surrogate Recovery(%)								
a,a,a-Trifluorotoluene(PID)	99.8			% Rec.		8021B	08/14/15	1
a,a,a-Trifluorotoluene(FID)	98.6			% Rec.		NWTPHGX	08/14/15	1
Diesel Range Organics (DRO)	U	50.0	100.	ug/l		NWTPHDX	08/20/15	1
Residual Range Organics (RRO)	U	125.	250.	ug/l		NWTPHDX	08/20/15	1
Surrogate Recovery								
o-Terphenyl	122.			% Rec.		NWTPHDX	08/20/15	1
Polynuclear Aromatic Hydrocarbons								
Anthracene	U	0.0140	0.0500	ug/l		8270C-S	08/19/15	1
Acenaphthene	U	0.0100	0.0500	ug/l		8270C-S	08/19/15	1
Acenaphthylene	U	0.0120	0.0500	ug/l		8270C-S	08/19/15	1
Benzo(a)anthracene	0.00657	0.00410	0.0500	ug/l	J	8270C-S	08/19/15	1
Benzo(a)pyrene	U	0.0116	0.0500	ug/l		8270C-S	08/19/15	1
Benzo(b)fluoranthene	U	0.00212	0.0500	ug/l	J3	8270C-S	08/19/15	1
Benzo(g,h,i)perylene	U	0.00227	0.0500	ug/l		8270C-S	08/19/15	1
Benzo(k)fluoranthene	U	0.0136	0.0500	ug/l		8270C-S	08/19/15	1
Chrysene	U	0.0108	0.0500	ug/l		8270C-S	08/19/15	1
Dibenz(a,h)anthracene	U	0.00396	0.0500	ug/l		8270C-S	08/19/15	1
Fluoranthene	U	0.0157	0.0500	ug/l		8270C-S	08/19/15	1
Fluorene	U	0.00850	0.0500	ug/l		8270C-S	08/19/15	1
Indeno(1,2,3-cd)pyrene	U	0.0148	0.0500	ug/l		8270C-S	08/19/15	1
Naphthalene	0.0335	0.0198	0.250	ug/l	J	8270C-S	08/19/15	1
Phenanthrene	U	0.00820	0.0500	ug/l		8270C-S	08/19/15	1
Pyrene	U	0.0117	0.0500	ug/l		8270C-S	08/19/15	1
1-Methylnaphthalene	U	0.00821	0.250	ug/l		8270C-S	08/19/15	1
2-Methylnaphthalene	U	0.00902	0.250	ug/l		8270C-S	08/19/15	1
2-Chloronaphthalene	U	0.00647	0.250	ug/l		8270C-S	08/19/15	1
Surrogate Recovery								
Nitrobenzene-d5	115.			% Rec.		8270C-S	08/19/15	1
2-Fluorobiphenyl	108.			% Rec.		8270C-S	08/19/15	1
p-Terphenyl-d14	103.			% Rec.		8270C-S	08/19/15	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
Note:
The reported analytical results relate only to the sample submitted.

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Reported: 08/20/15 15:39 Printed: 08/20/15 15:40

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REPORT OF ANALYSIS

Jennifer Moore
Farallon Consulting - BNSF Region 1
975 5th Avenue Northwest
Issaquah, WA 98027

August 20, 2015

ESC Sample # : L782628-03

Site ID :

Project # : 283-006

Date Received : August 13, 2015
Description : BNSF - JML - Cashmere, WA

Sample ID : MW3-081115

Collected By : Ryan Ostrom
Collection Date : 08/11/15 15:51

Parameter	Result	MDL	RDL	Units	Qual	Method	Date	Dil.
Gasoline Range Organics-NWTPH	U	50.0	100.	ug/l		NWTPHGX	08/14/15	1
Benzene	U	0.190	0.500	ug/l		8021B	08/14/15	1
Toluene	U	0.180	5.00	ug/l		8021B	08/14/15	1
Ethylbenzene	U	0.160	0.500	ug/l		8021B	08/14/15	1
Total Xylene	U	0.510	1.50	ug/l		8021B	08/14/15	1
Surrogate Recovery(%)								
a,a,a-Trifluorotoluene(PID)	100.			% Rec.		8021B	08/14/15	1
a,a,a-Trifluorotoluene(FID)	99.3			% Rec.		NWTPHGX	08/14/15	1
Diesel Range Organics (DRO)	U	50.0	100.	ug/l		NWTPHDX	08/20/15	1
Residual Range Organics (RRO)	U	125.	250.	ug/l		NWTPHDX	08/20/15	1
Surrogate Recovery								
o-Terphenyl	128.			% Rec.		NWTPHDX	08/20/15	1
Polynuclear Aromatic Hydrocarbons								
Anthracene	U	0.0140	0.0500	ug/l		8270C-S	08/19/15	1
Acenaphthene	U	0.0100	0.0500	ug/l		8270C-S	08/19/15	1
Acenaphthylene	U	0.0120	0.0500	ug/l		8270C-S	08/19/15	1
Benzo(a)anthracene	0.00570	0.00410	0.0500	ug/l	J	8270C-S	08/19/15	1
Benzo(a)pyrene	U	0.0116	0.0500	ug/l		8270C-S	08/19/15	1
Benzo(b)fluoranthene	U	0.00212	0.0500	ug/l	J3	8270C-S	08/19/15	1
Benzo(g,h,i)perylene	U	0.00227	0.0500	ug/l		8270C-S	08/19/15	1
Benzo(k)fluoranthene	U	0.0136	0.0500	ug/l		8270C-S	08/19/15	1
Chrysene	U	0.0108	0.0500	ug/l		8270C-S	08/19/15	1
Dibenz(a,h)anthracene	U	0.00396	0.0500	ug/l		8270C-S	08/19/15	1
Fluoranthene	U	0.0157	0.0500	ug/l		8270C-S	08/19/15	1
Fluorene	U	0.00850	0.0500	ug/l		8270C-S	08/19/15	1
Indeno(1,2,3-cd)pyrene	U	0.0148	0.0500	ug/l		8270C-S	08/19/15	1
Naphthalene	0.0320	0.0198	0.250	ug/l	J	8270C-S	08/19/15	1
Phenanthrene	U	0.00820	0.0500	ug/l		8270C-S	08/19/15	1
Pyrene	U	0.0117	0.0500	ug/l		8270C-S	08/19/15	1
1-Methylnaphthalene	U	0.00821	0.250	ug/l		8270C-S	08/19/15	1
2-Methylnaphthalene	U	0.00902	0.250	ug/l		8270C-S	08/19/15	1
2-Chloronaphthalene	U	0.00647	0.250	ug/l		8270C-S	08/19/15	1
Surrogate Recovery								
Nitrobenzene-d5	126.			% Rec.		8270C-S	08/19/15	1
2-Fluorobiphenyl	118.			% Rec.		8270C-S	08/19/15	1
p-Terphenyl-d14	107.			% Rec.		8270C-S	08/19/15	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
Note:
The reported analytical results relate only to the sample submitted.

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Reported: 08/20/15 15:39 Printed: 08/20/15 15:40

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REPORT OF ANALYSIS

Jennifer Moore
Farallon Consulting - BNSF Region 1
975 5th Avenue Northwest
Issaquah, WA 98027

August 20, 2015

ESC Sample # : L782628-04

Site ID :

Project # : 283-006

Date Received : August 13, 2015
Description : BNSF - JML - Cashmere, WA

Sample ID : MW4-081115

Collected By : Ryan Ostrom
Collection Date : 08/11/15 16:49

Parameter	Result	MDL	RDL	Units	Qual	Method	Date	Dil.
Gasoline Range Organics-NWTPH	U	50.0	100.	ug/l		NWTPHGX	08/14/15	1
Benzene	U	0.190	0.500	ug/l		8021B	08/14/15	1
Toluene	U	0.180	5.00	ug/l		8021B	08/14/15	1
Ethylbenzene	U	0.160	0.500	ug/l		8021B	08/14/15	1
Total Xylene	U	0.510	1.50	ug/l		8021B	08/14/15	1
Surrogate Recovery(%)								
a,a,a-Trifluorotoluene(PID)	100.			% Rec.		8021B	08/14/15	1
a,a,a-Trifluorotoluene(FID)	99.0			% Rec.		NWTPHGX	08/14/15	1
Diesel Range Organics (DRO)	U	50.0	100.	ug/l		NWTPHDX	08/20/15	1
Residual Range Organics (RRO)	U	125.	250.	ug/l		NWTPHDX	08/20/15	1
Surrogate Recovery								
o-Terphenyl	128.			% Rec.		NWTPHDX	08/20/15	1
Polynuclear Aromatic Hydrocarbons								
Anthracene	U	0.0140	0.0500	ug/l		8270C-S	08/20/15	1
Acenaphthene	U	0.0100	0.0500	ug/l		8270C-S	08/20/15	1
Acenaphthylene	U	0.0120	0.0500	ug/l		8270C-S	08/20/15	1
Benzo(a)anthracene	0.00636	0.00410	0.0500	ug/l	J	8270C-S	08/20/15	1
Benzo(a)pyrene	U	0.0116	0.0500	ug/l		8270C-S	08/20/15	1
Benzo(b)fluoranthene	U	0.00212	0.0500	ug/l	J3	8270C-S	08/20/15	1
Benzo(g,h,i)perylene	U	0.00227	0.0500	ug/l		8270C-S	08/20/15	1
Benzo(k)fluoranthene	U	0.0136	0.0500	ug/l		8270C-S	08/20/15	1
Chrysene	U	0.0108	0.0500	ug/l		8270C-S	08/20/15	1
Dibenz(a,h)anthracene	U	0.00396	0.0500	ug/l		8270C-S	08/20/15	1
Fluoranthene	U	0.0157	0.0500	ug/l		8270C-S	08/20/15	1
Fluorene	U	0.00850	0.0500	ug/l		8270C-S	08/20/15	1
Indeno(1,2,3-cd)pyrene	U	0.0148	0.0500	ug/l		8270C-S	08/20/15	1
Naphthalene	0.0435	0.0198	0.250	ug/l	J	8270C-S	08/20/15	1
Phenanthrene	U	0.00820	0.0500	ug/l		8270C-S	08/20/15	1
Pyrene	U	0.0117	0.0500	ug/l		8270C-S	08/20/15	1
1-Methylnaphthalene	U	0.00821	0.250	ug/l		8270C-S	08/20/15	1
2-Methylnaphthalene	U	0.00902	0.250	ug/l		8270C-S	08/20/15	1
2-Chloronaphthalene	U	0.00647	0.250	ug/l		8270C-S	08/20/15	1
Surrogate Recovery								
Nitrobenzene-d5	89.2			% Rec.		8270C-S	08/20/15	1
2-Fluorobiphenyl	105.			% Rec.		8270C-S	08/20/15	1
p-Terphenyl-d14	106.			% Rec.		8270C-S	08/20/15	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
Note:
The reported analytical results relate only to the sample submitted.

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Reported: 08/20/15 15:39 Printed: 08/20/15 15:40

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L782628-01	WG809252	SAMP	Anthracene	R3064600	J
	WG809252	SAMP	Benzo(a)anthracene	R3064600	J
	WG809252	SAMP	Benzo(b)fluoranthene	R3064600	J3
	WG809252	SAMP	Benzo(g,h,i)perylene	R3064600	J
	WG809252	SAMP	Chrysene	R3064600	J
	WG809252	SAMP	Naphthalene	R3064600	J
	WG809252	SAMP	Phenanthrene	R3064600	J
	WG809252	SAMP	1-Methylnaphthalene	R3064600	J
L782628-02	WG809252	SAMP	Benzo(a)anthracene	R3064600	J
	WG809252	SAMP	Benzo(b)fluoranthene	R3064600	J3
	WG809252	SAMP	Naphthalene	R3064600	J
L782628-03	WG809252	SAMP	Benzo(a)anthracene	R3064600	J
	WG809252	SAMP	Benzo(b)fluoranthene	R3064600	J3
	WG809252	SAMP	Naphthalene	R3064600	J
L782628-04	WG809252	SAMP	Benzo(a)anthracene	R3065163	J
	WG809252	SAMP	Benzo(b)fluoranthene	R3065163	J3
	WG809252	SAMP	Naphthalene	R3065163	J

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.
J3	The associated batch QC was outside the established quality control range for precision.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Farallon Consulting - BNSF Region 1

975 5th Avenue Northwest
Issaquah, WA 98027

Billing Information:
Bruce Sheppard
2454 Occidental Ave S, Ste 1A
Seattle, WA 98134-1451

Report to: Jennifer Moore

Email To: jmoore@farallonconsulting.com, kwoodburne@trcsolutions.com

Project Description: BNSF - JML - Cashmere, WA

City/State Collected: Cashmere, WA

Phone: 425-698-3752
Fax:

Client Project # 283-006

Lab Project # BNSF1FAR-CASHMERE

Collected by (print): Ryan Ostrom

Site/Facility ID #

P.O. #

Collected by (signature): Ryan Ostrom
Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day 200%
___ Next Day 100%
___ Two Day 50%
___ Three Day 25%

Date Results Needed 8/19/2015

Email? ___No X_Yes
FAX? ___No ___Yes

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	NWTPHDXLVI 40mlAmb-HCl-BT	NWTPHGXBTEX 40mlAmb HCl	PAHSIMLVI 40mlAmb-NoPres-WT								Rem./Contaminant	Sample # (lab only)
MW1-081115		GW		8/11/15	1320	6	X	X	X									01
MW2-081115		GW		8/11/15	1438	6	X	X	X									02
MW3-081115		GW		8/11/15	1551	6	X	X	X									03
MW4-081115		GW		8/11/15	1649	6	X	X	X									04
		GW				6	X	X	X									
		GW				6	X	X	X									
RO																		

Analysis / Container / Preservative

* Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other_____

Remarks: 6436 7133 8857

pH _____ Temp _____
Flow _____ Other _____

Chain of Custody Page ___ of ___

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YOUR LAB OF CHOICE
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L# 782628
A082

Acctnum: BNSF1FAR
Template: T104633
Prelogin: P519993
TSR: 134 - Mark W. Beasley
PB:
Shipped Via:

Hold #

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Ryan Ostrom	8/12/15	0930	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)

Samples returned via: ☐ UPS ☐ FedEx ☐ Courier ☐ _____
Temp: 3 °C Bottles Received: 24+TB
Date: 8/13/15 Time: 0700

Condition: (lab use only) OK
COC Seal Intact: ____Y ____N ____NA
pH Checked: NCF: