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March 23, 2015

Ms. Jennifer Lind
Cleanup Project Manager – CRO/TCP
State of Washington – Department of Ecology
15 W. Yakima Avenue, Suite 200
Yakima, Washington 98902-3152

**RE: Supplemental Soil and Groundwater Investigation Work Plan
John Michael Lease Site**
Adjacent to 5640 Sunset Highway, Cashmere, Washington
BNSF File No: WACAS-05-001
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 this Supplemental Soil and Groundwater Investigation Work Plan (Work Plan) for the John Michael Lease Site located in Cashmere, Chelan County, Washington.

The scope of work for supplemental soil sampling and groundwater evaluation presented in this work plan addresses the concerns raised by Ecology during the August 27, 2014 meeting, as they relate to BNSF's desire to pursue a no excavation alternative for the Site.

Please give me a call if you have any questions regarding this submittal.

Sincerely,

Keith Woodburne, LG
Senior Project Manager

cc: Bruce Sheppard, BNSF
Amy Essig Desai, Farallon
Jennifer Moore, Farallon

T E C H N I C A L M E M O R A N D U M

TO: Jennifer Lind – Washington State Department of Ecology

cc: Mr. Bruce Sheppard – BNSF Railway Company
Mr. Keith Woodburne – TRC Solutions, Inc.

FROM: Jennifer L. Moore, Associate Scientist
Amy Essig Desai, Principal Scientist

DATE: March 23, 2015

RE: **SUPPLMENTAL SOIL AND GROUNDWATER INVESTIGATION
WORK PLAN
JOHN MICHAEL LEASE SITE
5640 SUNSET HIGHWAY, CASHMERE, WASHINGTON
FACILITY/SITE NO. 3154383
VCP NO. CE 0278
FARALLON PN: 283-006**

Farallon Consulting, L.L.C. (Farallon) has prepared this Work Plan for Supplemental Soil and Groundwater Investigation (Supplemental Work Plan) on behalf of BNSF Railway Company (BNSF) to present the scope of work for the collection of additional soil data and groundwater information at the John Michael Lease Site at 5640 Sunset Highway in Cashmere, Washington (herein referred to as the Site) (Figure 1). The Site consists of portions of the BNSF right-of-way on either side of an active railroad line (rail line) proximate to the real property at 5640 Sunset Highway, at the northeast corner of the intersection of Hagman Road and Sunset Highway in Cashmere, Washington (Figure 2).

The Supplemental Soil and Groundwater Investigation is being conducted to collect data to supplement existing soil and groundwater data. The Supplemental Soil and Groundwater Investigation will include leachability testing of soils previously determined to contain concentrations of petroleum hydrocarbons exceeding the 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 will assess whether polychlorinated biphenyls (PCBs) are present in soil at the Site at concentrations exceeding the MTCA Method A cleanup level. The results of the Supplemental Soil and Groundwater



Investigation will be used to determine the next steps for the Site and whether active remediation of soil and/or groundwater at the Site is necessary.

BACKGROUND

Total petroleum hydrocarbons (TPH) as diesel-range organics (DRO), as oil-range organics (ORO), and as gasoline-range organics (GRO), and/or associated compounds, including carcinogenic polycyclic aromatic hydrocarbons (cPAHs), benzene, and naphthalene, herein referred to collectively as constituents of concern (COCs), were detected at concentrations exceeding applicable MTCA cleanup levels in soil at the Site during previous investigations. Based on groundwater monitoring and sampling performed to date, 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 the proposed excavation work to be conducted at the Site. BNSF submitted a Revised Cleanup Action Work Plan to Ecology in December 2013, which included some limited excavation of soil containing COCs at concentrations exceeding the MTCA Method A cleanup levels from locations west of the rail line. BNSF advised Ecology that since submitting the Revised Cleanup Action Work Plan, it had reevaluated Site conditions and was no longer considering limited excavation west of the rail line, since COCs present in soil at the Site are not leaching to groundwater and COCs present in soil do not represent a threat to human health and the environment. Ecology requested that BNSF perform leachability testing of soils containing concentrations of COCs exceeding the MTCA Method A cleanup levels, particularly in the area proximate to the shoreline of the Wenatchee River (Figure 2), and perform additional soil sampling to assess whether PCBs are present in soil at the Site at concentrations exceeding the MTCA Method A cleanup level. Soil samples collected from T4-N, T6-N, and T7-S during prior investigations were analyzed for PCBs; however the practical quantitation limits for PCBs were greater than the MTCA Method A cleanup level due to matrix interferences and multiple dilutions. The scope of work proposed below will address this data gap.

SCOPE OF WORK

The scope of work for the Supplemental Soil and Groundwater Investigation will consist of the following:

- Advancing five borings at the Site;
- Collection and laboratory analysis of soil samples for PCBs and 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.



Proposed Boring Locations and Rationale

The rationale for the boring locations, drilling procedures, and sampling equipment and the procedures for soil and groundwater sampling are described below. The boring locations may be modified as necessary during field activities based on access considerations, the location of utilities and equipment, and/or additional information regarding historical and current operations at the Site.

The leachability testing of soils at the Site will focus on areas in which the highest concentrations of COCs were detected in soil during previous subsurface investigations, and in the area proximate to the shoreline of the Wenatchee River (Figure 2). Three borings (FB-1, FB-2, and FB-3) will be advanced to assess the leachability of COCs from soil to groundwater. The proposed boring locations are shown on Figure 2.

In addition, Farallon will advance three borings (FB-3, FB-4, and FB-5) in areas proximate to former soil sample locations T4-N, T6-N, and T7-S to assess whether PCBs are present in soil at the Site at concentrations exceeding the MTCA Method A cleanup level. Proposed boring locations are shown on Figure 2.

Drilling and Sampling Procedures, Sample Designation, and Laboratory Analysis

Prior to conducting subsurface investigation activities, Farallon will retain public and private utility locating services to clear the proposed boring locations and to provide additional information pertaining to the locations of subsurface utilities at the Site.

Drilling activities will be conducted using a hollow-stem auger drill rig. The scope of work for the Supplemental Soil and Groundwater Investigation will include advancement of five borings to the soil/groundwater interface estimated at approximately 8 feet below ground surface on the west side of the Site and 12 feet below ground surface on the east side of the Site. The total drilling depth of each boring will be determined in the field based on subsurface conditions encountered during drilling.

Subsurface information will be logged during drilling, and will include at a minimum sample depth, Unified Soil Classification System (USCS) description, soil moisture, occurrence of groundwater, physical indications of potential contamination (e.g., odor, staining), and field-screening results obtained using a photoionization detector.

Soil samples will be collected continuously during advancement of the borings. Discrete soil samples will be collected and retained from each two-foot interval of the soil core for potential laboratory analysis. Soil samples will be selected for initial laboratory analysis based on field evidence of contamination (i.e. strong petroleum-like odors, staining, sheen, or measurable volatile organic vapors using a photoionization detector) or from the soil/groundwater interface if there is no field evidence of contamination.



In accordance with WAC 173-340-747(7)(b), Farallon evaluated Site-specific pH data collected from monitoring wells MW-1 through MW-3, which are present on the Site proximate to contaminated soil, to assess the pH range of groundwater at the Site and to enable Farallon to choose an appropriate leachability testing method for the Supplemental Soil and Groundwater Investigation. The pH levels measured in groundwater from monitoring wells MW-1 through MW-3 ranged from 6.12 to 7.27. Per WAC 173-340-747(7)(b), this pH range corresponds to leachability analysis using Environmental Protection Agency (EPA) Method 1312, also known as the Synthetic Precipitation Leaching Procedure (SPLP) Method. The SPLP Method is appropriate for use in leachability testing for contaminated media that are to remain in situ at a cleanup site.

Soil samples collected for the assessment of leachability will be prepared in accordance with EPA Method 1312 for SPLP. The sample extracted through the SPLP Method then will be 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. Soil samples collected for assessment of PCBs will be analyzed by EPA Method 8082.

Groundwater Monitoring and Sampling

In addition, Farallon will complete a groundwater monitoring event at the Site, which will include measurement of water levels and total well depths, and collection of groundwater samples from the four existing monitoring wells, MW-1 through MW-4. Groundwater samples will be collected from the monitoring wells in accordance with standard EPA low-flow groundwater sampling procedures. Groundwater will be extracted through a section of dedicated 0.25-inch-diameter tubing inserted down the monitoring well using a peristaltic pump with a flow rate of less than 300 milliliters per minute until a steady flow is established. If very low yields (i.e., less than 100 milliliters/minute) are encountered during sampling, the sampling protocol may be modified to allow for sample collection using a disposable bailer.

Groundwater samples will be 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 BTEX by EPA Method 8021B.

Waste Management

Soil cuttings, decontamination water, purge water, and other wastewater generated during completion of this Supplemental Soil and Groundwater Investigation will be temporarily stored on the Site in labeled steel drums. The analytical results of the soil and groundwater samples will be used to develop a waste profile to determine waste disposal options.

DATA EVALUATION AND REPORTING

Farallon will evaluate the analytical results of the Supplemental Soil and Groundwater Investigation and prepare a Supplemental Soil and Groundwater Investigation Report to



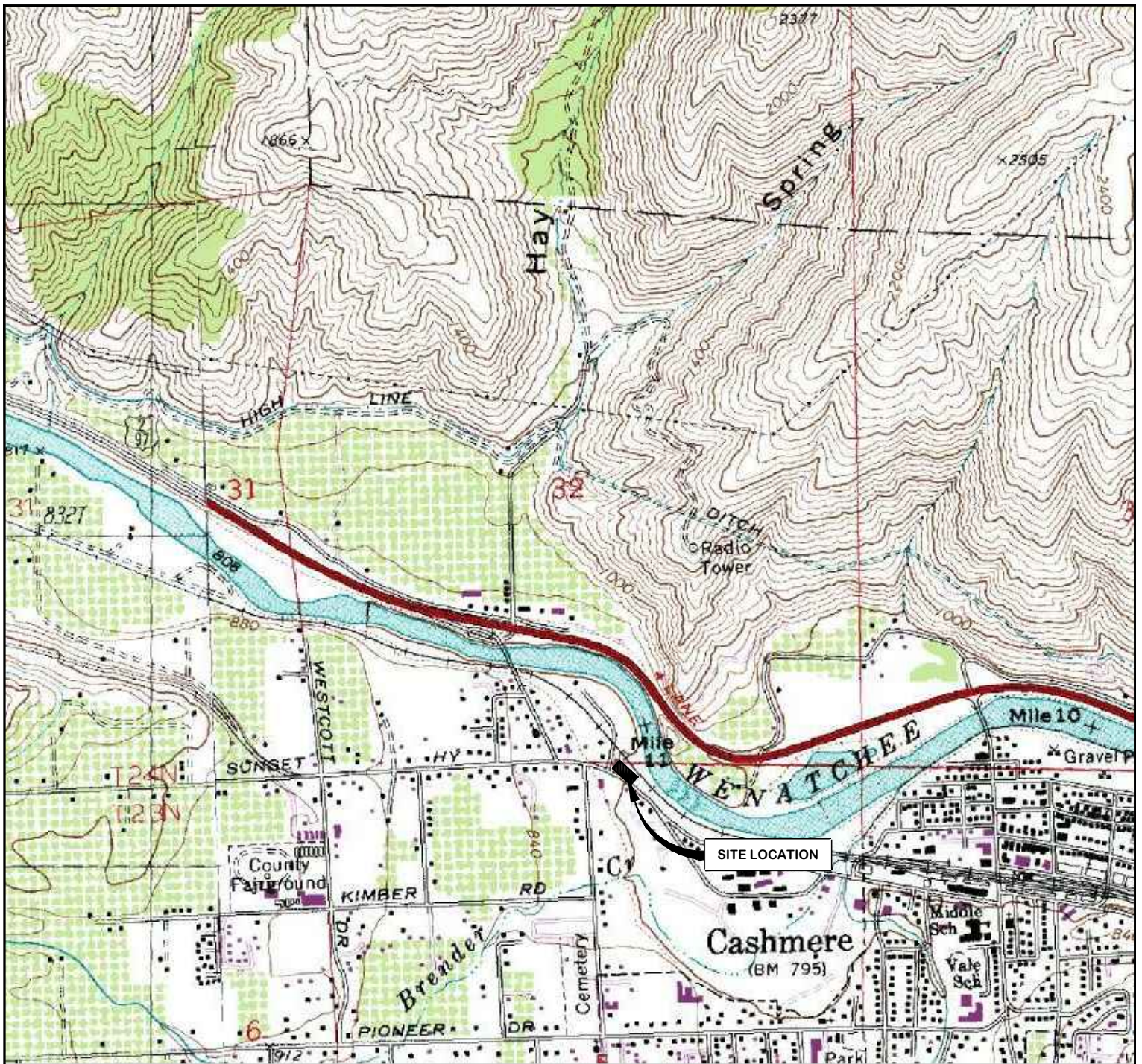
document the methods and results of the subsurface investigation and to provide a discussion of the data collected. The report will include:

- A discussion of the field methods for the Supplemental Soil and Groundwater Investigation;
- Scaled figures depicting the boring locations;
- Boring logs;
- Tables summarizing the soil and groundwater laboratory analytical results, with a comparison of detected concentrations of hazardous substances to the applicable MTCA cleanup levels for soil and groundwater;
- A summary of the subsurface conditions encountered during the Supplemental Soil and Groundwater Investigation activities;
- A discussion of the leachability of petroleum hydrocarbon contamination in soil and the adequacy of the existing and proposed monitoring wells to assess groundwater quality at the Site;
- A discussion of whether PCBs are present in soil at the Site at concentrations exceeding the MTCA Method A cleanup level; and
- A discussion of whether active remediation of soil and/or groundwater is necessary, and next steps.

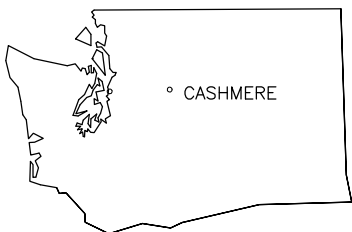
Attachments: Figure 1, *Site Vicinity Map*

Figure 2, *Site Plan with Proposed Boring Locations*

JLM/AED:bw



REFERENCE: 7.5 MINUTE USGS QUADRANGLE CASHMERE, WASHINGTON. DATED 1987



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FIGURE 1

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

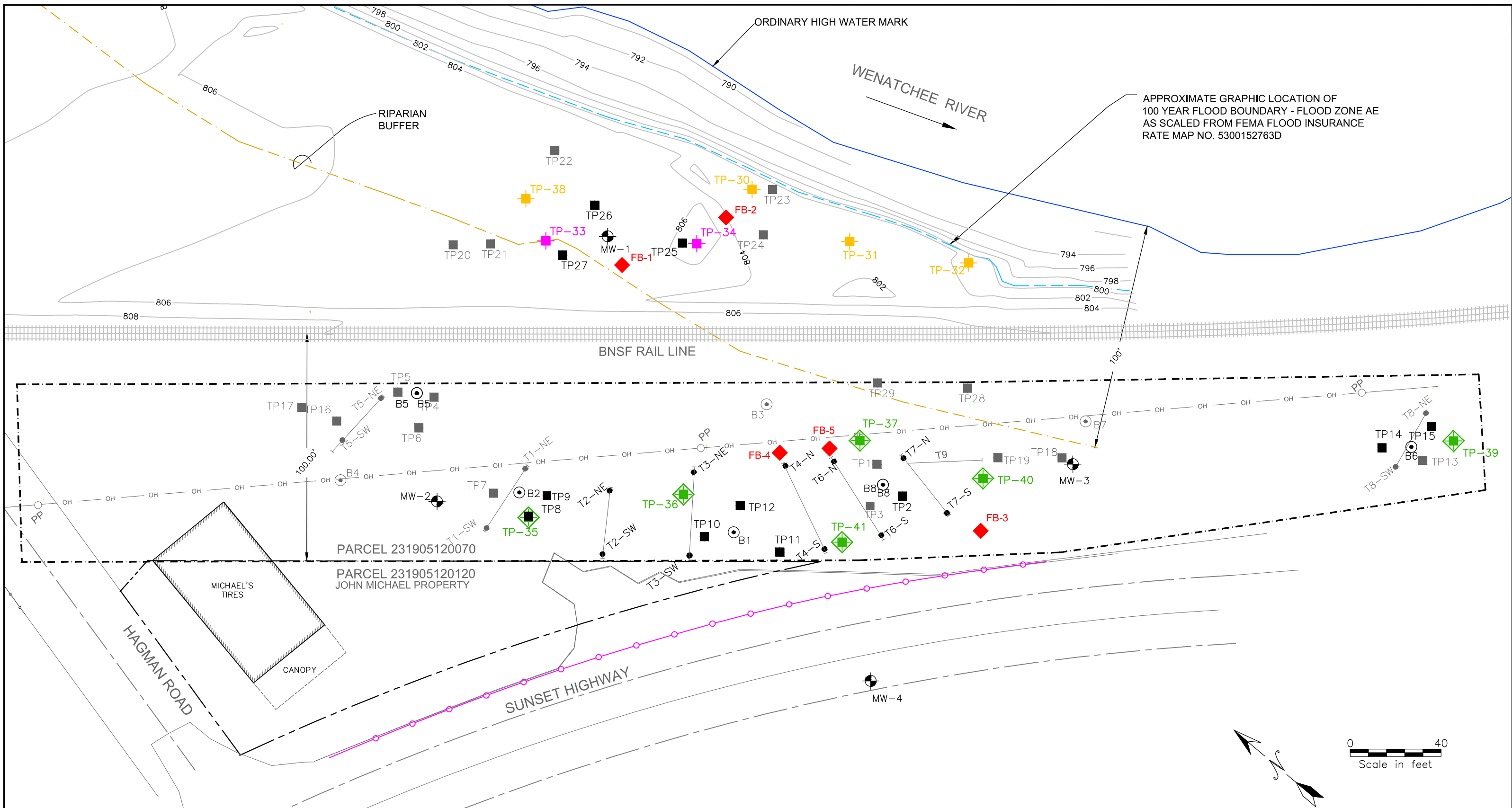
FARALLON PN: 283-006

Drawn By: DEW

Checked By: JM

Date: 3/10/2015

Disk Reference: 283006



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

- TRENCH LOCATION (FARALLON 2009)
- MW-4 ● MONITORING WELL (FARALLON 2009)
- T5-NE ● TRENCH SOIL SAMPLE LOCATION (FARALLON 2009)
- TP15 ■ TEST PIT (FARALLON 2009, FARALLON 2010)
- B8 ○ BORING LOCATION (EMR 2005)
- 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)
- ◆ PROPOSED BORING LOCATION

- LEGEND**
- ▤ RAILROAD
 - - - BNSF PROPERTY LEASED FOR STORAGE OF IRRIGATION MATERIALS AND PARKING
 - - - JOHN MICHAEL PROPERTY
 - OH — OVERHEAD POWER LINE
 - UTILITY
 - PP ○ POWER POLE
 - 804 CONTOUR LINE

FARALLON = FARALLON CONSULTING, L.L.C.

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FIGURE 2

SITE PLAN WITH PROPOSED BORING LOCATIONS
JOHN MICHAEL LEASE SITE
5640 SUNSET HIGHWAY
CASHMERE, WASHINGTON

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

Drawn By: DEW Checked By: JM Date: 3/10/2015 Disk Reference: 283-006