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ENVIRONMENTAL CONSULTANTS

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April 12, 2024

Tavi Wise
Toxics Cleanup Program
Department of Ecology – Central Regional Office
1250 W. Alder Street, Union Gap, WA 98903
tavi.wise@ecy.wa.gov

Re: **April 2024 PetroFix™ Injection Work Plan** for North Central Petroleum, Inc., Gasoline Spill, SR 17 Near MP 123, Bridgeport, WA, Facility Site# 25378742, Cleanup Site# 2088.

Dear Ms. Wise:

Enclosed for your review is the **April 2024 PetroFix™ Injection Work Plan** for North Central Petroleum, Inc., Gasoline Spill, Bridgeport, Washington. Please call or contact me via email me at mmorris@wcec.com, if you have any questions or concerns. Thank you for your time and consideration of this work plan.

Sincerely,

Myles Morris, PG
Senior Project Manager

Enclosure

ec: John Roach, Federated Insurance; pcclaims@fedins.com

April 2024

PetroFix™ Injection Work Plan

North Central Petroleum Spill

SR 17 Near MP 123

Bridgeport, WA 98813

Facility Site No.: 25378742, Cleanup Site No.: 2088

Prepared for:

Don Michelson

27 Hahn Rd.

Omak, WA 98841

Prepared by:

West Central Environmental Consultants, Inc.

1030 South Ave. W.

Missoula, MT 59801

April 12, 2024

WCEC Project No. 99-2946-90

TABLE OF CONTENTS

1.0 Introduction

This work plan outlines the proposed PetroFix™ injection and groundwater compliance monitoring for the North Central Petroleum (NCP) Spill located at mile post (MP) 122.6 of State Route (SR) Highway 17 near Bridgeport, WA. The Washington Department of Ecology (Ecology) requested additional investigation to define the extent of source area soil and groundwater impacts as a required condition of a No Further Action (NFA) determination for the site [Ecology, 2018]. Remedial investigation activities conducted in 2021 and 2023 documented residual impacts to soil and groundwater that exceeded Model Toxics Control Act (MTCA) Method A cleanup levels (CULs) at the spill source on the north side of SR 17 [WCEC, 2021], [WCEC, 2023]. The PetroFix injection is proposed as an in-situ treatment for the identified source area impacts with the goal of reducing groundwater concentrations to below Method A CULs at all compliance monitoring points.

1.1 Site Location

The site is located in a rural area of Douglas County, Washington where the primary land use is agricultural. The spill occurred adjacent to SR 17 approximately 14 miles east of Bridgeport, WA and 2.7 miles west of Leahy Junction at MP 122.6. The approximate geographic coordinates are 47.926169, -119.447942. The Public Land Survey System (PLSS) description for the site is the SW/4, NW/4, Section 16, and the SE/4, NE/4, Section 17, Township 28 North, Range 27 East. An intermittent stream (East Foster Creek) is located south of the spill site at a distance of approximately 300 feet. Depth to first shallow groundwater varies from approximately 1 to 7 feet below ground surface (bgs) depending on seasonal fluctuations [WCEC, 2015]. The groundwater flow direction is generally to the west-northwest. Subsurface soil primarily consists of silt and silty sand with minor amounts of clay and gravel.

1.2 Site History

Approximately 6,900 gallons of unleaded gasoline were released at the site as the result of a petroleum transport trailer vehicle accident that occurred on December 1, 1994. Excavation of contaminated soil was conducted by LMH Environmental (LMH) in December 1994 at locations north and south of the highway [LMH, 1995]. The excavations were restricted laterally by the highway embankment and vertically by the presence of shallow groundwater. Approximately 770 cubic yards of contaminated soil was removed from the excavations. Soil samples were collected from the pit bottom and sidewalls of the excavations at the completion of excavation activities. The analytical results from these excavation soil samples indicated that gasoline constituents remained underneath the highway right-of-way (ROW) and to the north of the highway at concentrations exceeding applicable Model Toxics Control Act (MTCA) Method A cleanup levels (CULs).

Two sumps (North Sump and South Sump) were installed in the excavations during backfilling to provide a means for future sampling of groundwater in the excavation backfill [Figure 2]. The sumps were constructed of slotted 4-foot diameter pre-cast concrete manholes bedded in oversized gravel [LMH, 1995]. On the north side of the highway, a layer of oversized gravel was also placed along the entire length of the excavation floor within the highway right-of-way to a depth of approximately 1 foot above the water table to facilitate total fluids recovery from the north excavation through the North Sump as a potential remedial method.

Four groundwater monitoring wells (MP1-MP4) were installed in September 1996 as part of a soil/groundwater investigation to assess constituent concentrations in source area and downgradient locations, primarily south of the highway [Summit, 1997]. Groundwater samples were obtained from 13 borehole locations during the September 1996 investigation, with maximum concentrations of benzene registered at nearly 5,000 µg/L and TPH-G over 50,000 µg/L. Groundwater monitoring of permanent wells MP1 through MP4 was conducted on at least an annual basis from 1997 to 2014. Groundwater concentrations in samples collected from all four monitoring wells were below the applicable Method A CULs for all constituents of concern (COCs) for four consecutive quarters in 2014/15 [WCEC, 2015].

In response to Ecology's request for further investigation in the source area north of the highway, WCEC supervised the installation of six soil boreholes (SB1-SB6) and three temporary wells (SB2, SB3, and SB5) on June 2, 2021 [WCEC, 2021]. Two soil samples were obtained from each of the soil boreholes based on the results of field screening for hydrocarbon impacts. Groundwater samples were collected from the three temporary wells and the North Sump. Samples were submitted for laboratory analysis of WTPH-Gas, BTEX, and MTBE. Exceedances of Method A CULs for soil and groundwater were recorded at SB2, SB3, SB5, and the North Sump [Tables 4 and 5].

Based on the results from the June 2021 soil boring investigation, four groundwater monitoring wells (MW1-MW4) were installed in the source area north of the highway on July 11, 2023 to delineate the extent and magnitude of source area groundwater impacts. An additional six soil boreholes (SB7-SB12) were advanced north of the highway ROW fence on Washington Department of Natural Resources (DNR) property to assess residual petroleum concentrations in this area [WCEC, 2023]. Soil samples were obtained from the soil boreholes and monitoring well borings depending on the results of field screening for hydrocarbon impacts. Soil and groundwater samples were submitted for laboratory analysis of WTPH-Gas, BTEX, and MTBE. According to the analytical results from boreholes SB7 through SB12, soil concentrations in the excavation area north of the ROW fence on the DNR property are below Method A CULs for all constituents of concern (COCs) [Table 4, Figure 4]. Method A CULs for groundwater were exceeded in samples from monitoring well MW3 [Table 2], coinciding with the location of soil borehole SB3 [Figure 3].

The 2021 and 2023 soil boring investigations and groundwater sampling events provided sufficient data to delineate the extent and magnitude of residual source area contamination in both soil and groundwater. Impacts are limited to the area north of the highway and south of the ROW fence, with the highest

concentrations found in the vicinity of MW3/SB3. The cumulative analytical dataset indicates that natural attenuation processes at the site have been effective in reducing downgradient dissolved constituent concentrations to levels below Method A CULs. However, natural attenuation alone has not sufficiently diminished COC concentrations in the source area north of the highway. An active remedial strategy is recommended for the source area to augment natural attenuation processes and further reduce COC concentrations to below CULs.

2.0 Proposed Remedial Actions

WCEC recommends completing a remedial injection in the source area using PetroFix™ colloidal activated carbon (CAC) manufactured by Regenesis. The proposed injection area is displayed on Figure 3. A Washington licensed resource protection well driller will be contracted to perform all injection boring activities. The injection borings will be advanced using a limited access Geoprobe 7822 direct push rig that is track mounted. WCEC will provide and maintain all of the remaining equipment required for the injection, including mixing tanks, pumps, hoses, and drill tooling.

Prior to initiating the injection event, WCEC will obtain the necessary permits from the Washington Department of Transportation (WSDOT) for working within the highway ROW. An underground utility locate will be completed for identification of potential subsurface utilities in the drilling area. Access to the injection area from the highway will be accomplished through a lane closure enabling vehicles and equipment to be staged on the westbound lane of SR 17. A traffic control plan (TCP) will be implemented with the appropriate signage and devices as required by WSDOT for a single lane closure on a two-lane highway.

At the completion of injection activities, all boreholes will be properly abandoned using chipped bentonite and resurfaced as appropriate to match the surrounding area. Any disturbances to the shoulder of the highway ROW will be mitigated according to the WSDOT permit. Borehole locations will be mapped relative to other site features using a survey grade GPS unit.

2.1 PetroFix™ Injection

Regenesis developed PetroFix™ as a dual function colloidal activated carbon (CAC) consisting of a water-based colloidal suspension of micron-scale activated carbon and electron acceptors intended for in-situ treatment of dissolved phase hydrocarbons. When mixed with water and injected into the subsurface at low pressures as designed, the PetroFix solution will enter the same conductive zones that are preferentially inhabited by the hydrocarbons targeted for treatment. Recommended horizontal spacing between injection borings is typically 4 to 6 feet, ensuring that all of the transmissive zones in the impacted area are covered. Any dissolved phase hydrocarbons migrating through these transport zones that encounter the PetroFix solution will be adsorbed onto the activated carbon particles. Subsequently, the electron acceptor amendment stimulates microbial activity resulting in biodegradation of the adsorbed hydrocarbon source mass and reactivation of the carbon particles for further hydrocarbon adsorption in the future.

PetroFix is delivered in 55-gallon poly drums containing approximately 41 gallons of concentrated CAC remediation fluid weighing approximately 400 pounds. Cage totes of PetroFix are also available as a delivery

option with an approximate weight of 2,000 pounds, equivalent to 5 drums (205 gallons). The concentrated PetroFix fluid is intended to be diluted with a calculated volume of water to achieve the ideal solution ratio based on design criteria relating to site-specific contaminant characteristics and hydrogeologic conditions. For each drum of PetroFix, there is a 20-pound pail of electron accepter blend that must be added to the water mixing tank along with the contents of the PetroFix drum prior to injection. Slight agitation of the mixing tank via pump recirculation or an impeller mixer is sufficient to keep the diluted PetroFix solution and electron acceptor blend in suspension while injection activities are progressing.

Appendix A contains the PetroFix Injection Grid Application Summary from the Regenesis online design assistant based on site-specific inputs for the NCP release. The boundary of the proposed injection area is provided in Figure 3. The injection area is intended to cover all locations with documented groundwater CUL exceedances in the source area, highlighted with yellow circles on Figure 3. Based on the design input criteria including maximum recorded groundwater COC concentrations and lithological characteristics (>75% silt/clay), an estimated total of 104 injection borings will be installed with application of 2,800 pounds of PetroFix remediation fluid and 140 pounds of electron acceptor blend. Horizontal spacing of the injection borings will be approximately 5 feet with a targeted vertical injection interval of 4 to 7 feet bgs. The injection solution will be prepared on site in a 275-gallon poly tote by mixing 22 gallons of PetroFix and 11 pounds of nitrate/sulfate electron acceptor blend with 252 gallons of water. Approximately 34 gallons of the PetroFix solution will be injected into each boring via a pressure activated injection tip attached to 1.5-inch probe rods. A Geoprobe DP800 pump will be used to inject the PetroFix solution into the targeted horizon using a "bottom-up" method. Injection pressures will be maintained within the recommended range for application of PetroFix solution at approximately 20 to 50 pounds per square inch (psi).

WCEC will perform process monitoring activities throughout the injection event as a quality control measure to confirm that the injection point installations are completed as designed. Total injection mass will be evaluated on a continual basis and injected solution volumes will be adjusted as needed. Delivery techniques and pumping rates will be refined as the injection event progresses to ensure that the entire target interval in each borehole receives an equivalent dose of solution. Top of borehole blowouts will be closely monitored and measures will be put in place to minimize leakage and maximize downhole delivery.

Field indicators of PetroFix influence in the subsurface will be recorded including visual confirmation of PetroFix distribution in soil cores retrieved with the direct push Geoprobe. Groundwater from monitoring well MW3 and the North Sump will also be inspected for the presence of PetroFix as signified by black coloration of the water. Semi-quantitative estimates of PetroFix concentrations in groundwater will be calculated using the CAC field test kit provided by Regenesis to further assess the degree of injectate distribution.

2.2 Groundwater Monitoring

One pre-injection and four post-injection groundwater monitoring events will be conducted to adequately evaluate groundwater concentrations before and after the PetroFix treatment. The pre-injection groundwater monitoring event is scheduled for June 2024 during high groundwater conditions. Data from the pre-injection sampling event will be utilized to adjust the injection design with updated analytical results, if applicable. The four post-injection groundwater monitoring events will be performed on a quarterly basis starting at 3 months post-injection (e.g., December 2024) to assess the effectiveness of the treatment in reducing groundwater concentrations and monitor for potential rebound. Groundwater samples will be obtained from monitoring wells MW1 through MW4 during each of the monitoring events.

Well sampling will be conducted according to WCEC standard sampling procedures using a low flow peristaltic pump for purging and sample collection. Depth to water measurements will be recorded from the wells to provide an accurate potentiometric surface plot, flow direction, and gradient. Groundwater quality parameter data (conductivity, pH, salinity, dissolved oxygen, temperature, ORP, and turbidity) will be acquired from the wells during purging using a multi-parameter water quality instrument equipped with a flow-through cell. Groundwater quality parameter, purge, and stabilization data for each well are recorded in the field using WCEC's Well Sampling Form. Groundwater sample collection from each well will be completed following stabilization of groundwater quality parameters.

Following purging, groundwater samples will be preserved with hydrochloric acid, placed on ice, and delivered under chain of custody to Pace Analytical Services (Pace) in Minneapolis, MN. Pace will be instructed to analyze the groundwater samples for WTPH-Gx, BTEX, and MTBE via EPA 8260B. The groundwater samples will also be analyzed for the biodegradation indicators sulfate (EPA 300.0) and nitrate (EPA 353.2) to assess microbial activity in the source area.

2.3 Reporting

Groundwater monitoring reports will be prepared and submitted to Ecology within 60 days of receipt of analytical results from each monitoring event. The June 2024 groundwater monitoring report will include updated design specifics for the PetroFix injection based on current analytical results, if measured COC concentrations appear to change substantially. The December 2024 groundwater monitoring report will include documentation of the September 2024 PetroFix injection field processes and performance monitoring. A thorough analysis of the cumulative data set for the site will be included in the last quarterly post-injection groundwater monitoring report (September 2025), along with an evaluation of potential remedial options to further accelerate source area attenuation or a request for an NFA determination, depending on analytical results. In addition to compiling the groundwater monitoring reports, WCEC will

enter all of the newly obtained data into the EIM system database in accordance with Ecology's requirements.

3.0 Terrestrial Ecological Evaluation (TEE)

WCEC conducted a Terrestrial Ecological Evaluation (TEE) as required in MTCA Washington Administrative Code (WAC) 173-340-7490(2) to protect land-based plants and animals from exposure to contaminated soil. The steps to perform a simplified TEE were followed as outlined in WAC 173-340-7492 for sites that are not likely to pose a significant threat to ecological receptors. The simplified TEE form is included in Appendix B. Further evaluation was not necessary based on the exposure and pathways analyses for soil contamination provided in WAC 173-340-7492(2)(a) and 173-340-7492(2)(b) as described in the following section.

3.1 Simplified TEE

The simplified TEE process incorporates three analyses to consider for areas with soil contamination, including exposure, pathways, and contaminants. According to WAC 173-340-7490(4)(a), a conditional point of compliance may be established corresponding to the assumed bottom of the biologically active soil zone at 6 feet bgs. Soil concentrations within this depth interval at the NCP site were compared to the indicator values listed in MTCA Table 794-2. Concentrations of WTPH-Gas in soil samples from SB3/MW3 exceed the 200 mg/kg indicator value for Gasoline Range Organics (GRO) in MTCA Table 794-2 [Table 4]. All other soil samples collected from the source area borings were below 200 mg/kg WTPH-Gas, and in most cases were below laboratory method reporting limits (MRLs). Based on this data, the extent and magnitude of the soil plume is limited to a small footprint in the immediate vicinity of SB3/MW3 [Figure 4].

Figure 4 displays 2D contours of WTPH-Gas concentrations in soil greater than 200 mg/kg using the maximum concentration recorded at each soil sampling location. The majority of the soil plume extends to the southwest underneath the highway embankment which slopes steeply at an angle of approximately 45 degrees up to the highway surface that is approximately 11 feet higher in elevation than the toe of the slope where SB3/MW3 is located [Photo 1]. The observed soil impacts at SB3/MW3 are overlain by approximately 4 feet of gravel backfill, indicating that the soil plume underneath the highway is present at a depth of up to 15 feet bgs, which eliminates the exposure pathway as described in WAC 173-340-7492(2)(b).

In order to portray a more accurate representation of the soil plume relative to actual depth below ground surface, a 3D model of the WTPH-Gas soil concentrations was generated using Earth Volumetric Studio software created by Ctech. Figure 5 displays a cross section of the 3D soil plume oriented perpendicular to the highway with the slope of the embankment visible. The 3D plume depiction in Figure 5 illustrates that approximately 70% of the soil contamination is located at a depth greater than 6 feet bgs, outside of the biologically active soil zone. The SR 17 roadway represents a man-made barrier that prevents potential ecological receptors from being exposed to the majority of the soil contamination. It is very likely that the highway will be maintained into the future to serve as an ongoing institutional control for contaminant

exposure. The surface area of the remaining soil plume not covered by the highway embankment is less than 350 square feet and therefore no further evaluation is necessary for the simplified TEE according to the exposure analysis in WAC 173-340-7492(2)(a).

4.0 Project Objectives and Timeline

WCEC recommends conducting the PetroFix injection during low groundwater conditions in September 2024, pending review by Ecology. The following sections summarize the overall project goals and proposed remediation schedule including anticipated reporting milestones.

4.1 Project Objectives

In the opinion letter issued on May 31, 2022, Ecology stated that the potential for residual soil contamination underneath the highway could be addressed either through additional site characterization or an environmental covenant with WSDOT [Ecology, 2022]. The goal of the PetroFix injection is to reduce groundwater concentrations in the source area to below Method A CULs. At that point, WCEC recommends pursuing an NFA determination for the site through an environmental covenant with WSDOT that acknowledges any remaining soil contamination in combination with the institutional control provided by the highway.

4.2 Planned Workflow

Pending review from Ecology, WCEC anticipates completing the scope of work outlined in this work plan during six individual field events with completion and reporting milestones as follows:

Event 1 – June 2024: Pre-injection groundwater monitoring and sampling event.

Groundwater Monitoring Report – August 2024: Report summarizing analytical results from pre-injection groundwater monitoring event, includes adjusted PetroFix design based on updated analytical results, if applicable.

Event 2 – September 2024: PetroFix injection during low groundwater conditions.

Event 3 – December 2024: Post-injection quarterly groundwater monitoring and sampling event.

Groundwater Monitoring Report – February 2025: Report summarizing analytical results from first quarterly post-injection groundwater monitoring event, includes documentation of the September 2024 PetroFix injection field processes and performance monitoring.

Event 4 – March 2025: Post-injection quarterly groundwater monitoring and sampling event.

Groundwater Monitoring Report – May 2025: Report summarizing analytical results from second quarterly post-injection groundwater monitoring event.

Event 5 – June 2025: Post-injection quarterly groundwater monitoring and sampling event.

Groundwater Monitoring Report – August 2025: Report summarizing analytical results from third quarterly post-injection groundwater monitoring event.

Event 6 – September 2025: Post-injection quarterly groundwater monitoring and sampling event.

Groundwater Monitoring Report – November 2025: Report summarizing analytical results from fourth quarterly post-injection groundwater monitoring event. NFA determination may be requested depending on cumulative analytical results from the post-injection monitoring events.

WCEC will implement the remedial actions proposed in this work plan pending a formal review and comments from Ecology.

5.0 References

LMH Environmental. (LMH, 1995). *Report of Gasoline Spill*. March 25, 1995.

Summit Envirosolutions. (Summit, 1996). *Proposal for Land Application of Remediated Soil*. October 31, 1996.

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Washington State Department of Ecology. (Ecology, 2013). *Model Toxics Control Act Cleanup Regulation, Chapter 173-340 WAC.* Revised 2013. Washington State Department of Ecology Toxics Cleanup Program, Publication No. 94-06.

Washington State Department of Ecology. (Ecology, 2018). *North Central Petroleum Spill VCP Opinion Letter.* April 11, 2018.

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West Central Environmental Consultants. (WCEC, 2015). *December through September 2015 Groundwater Monitoring Summary Report*. October 6, 2015.

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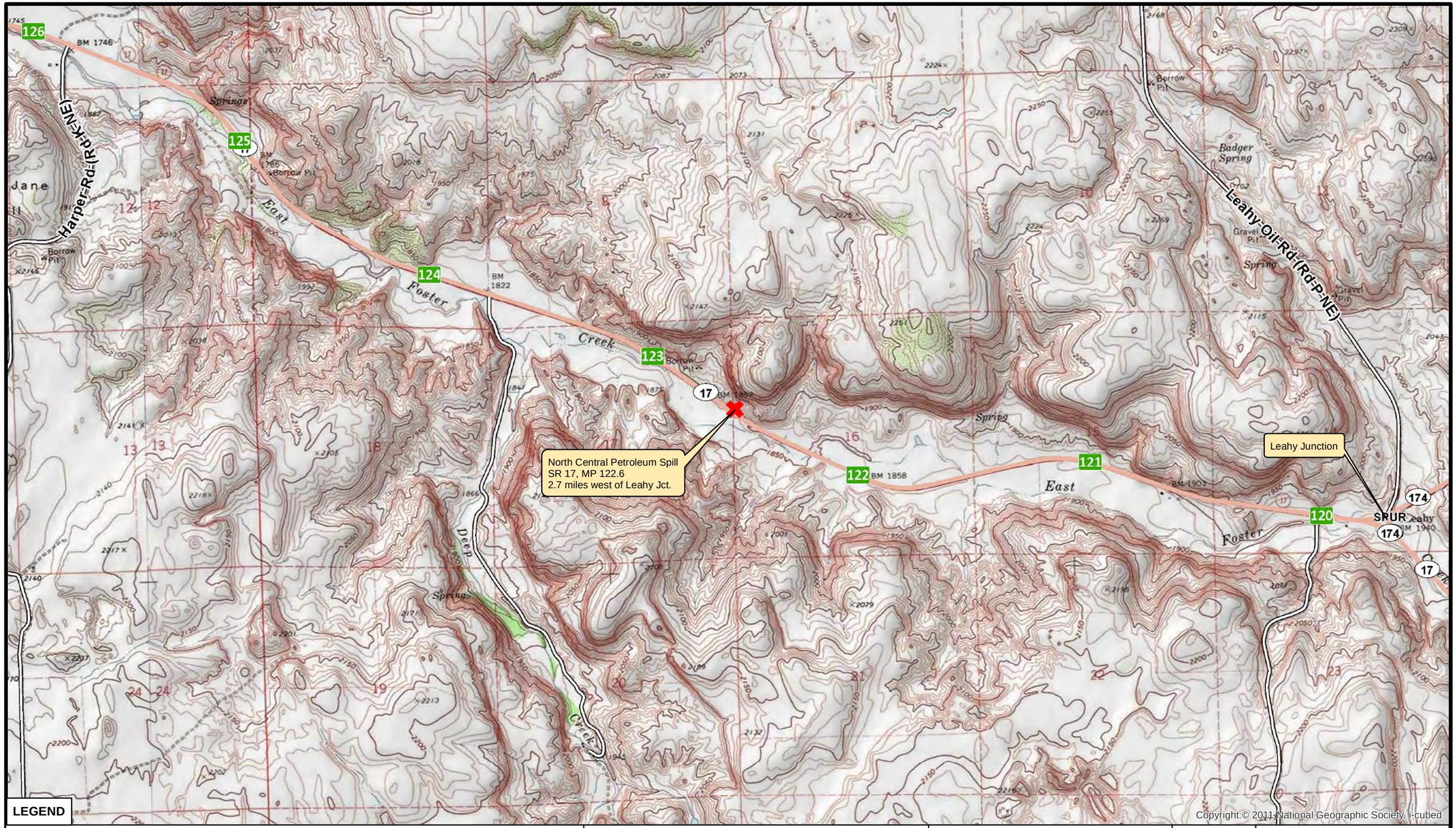
Figures



Site Location

North Central Petroleum Spill
SR 17 Near MP 123
Bridgeport, WA

DRAWN BY: MM
DATE: 01/06/20
SCALE: 1:24,000

PROJECT NUMBER: 99-2946-90
IMAGE SOURCE: ESRI BASEMAPS

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FIGURE 1

LEGEND

- Monitoring Well
- Sump
- Property Boundary (Approximate)
- North Excavation - 1994

Site Details

North Central Petroleum Spill
SR 17 Near MP 123
Bridgeport, WA

DRAWN BY: MM
DATE: 09/11/23
SCALE: 1:360

PROJECT NUMBER: 99-2946-90

IMAGE SOURCE: ESRI BASEMAPS

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FIGURE 2

LEGEND

- Monitoring Well
- Sump
- Property Boundary (Approximate)
- North Excavation - 1994
- Soil Borehole
- Groundwater Cleanup Level Exceedance
- Proposed Injection Area

Proposed Injection Area

North Central Petroleum Spill
SR 17 Near MP 123
Bridgeport, WA

DRAWN BY: MM
DATE: 03/27/24
SCALE: 1:240

PROJECT NUMBER: 99-2946-90
IMAGE SOURCE: ESRI BASEMAPS

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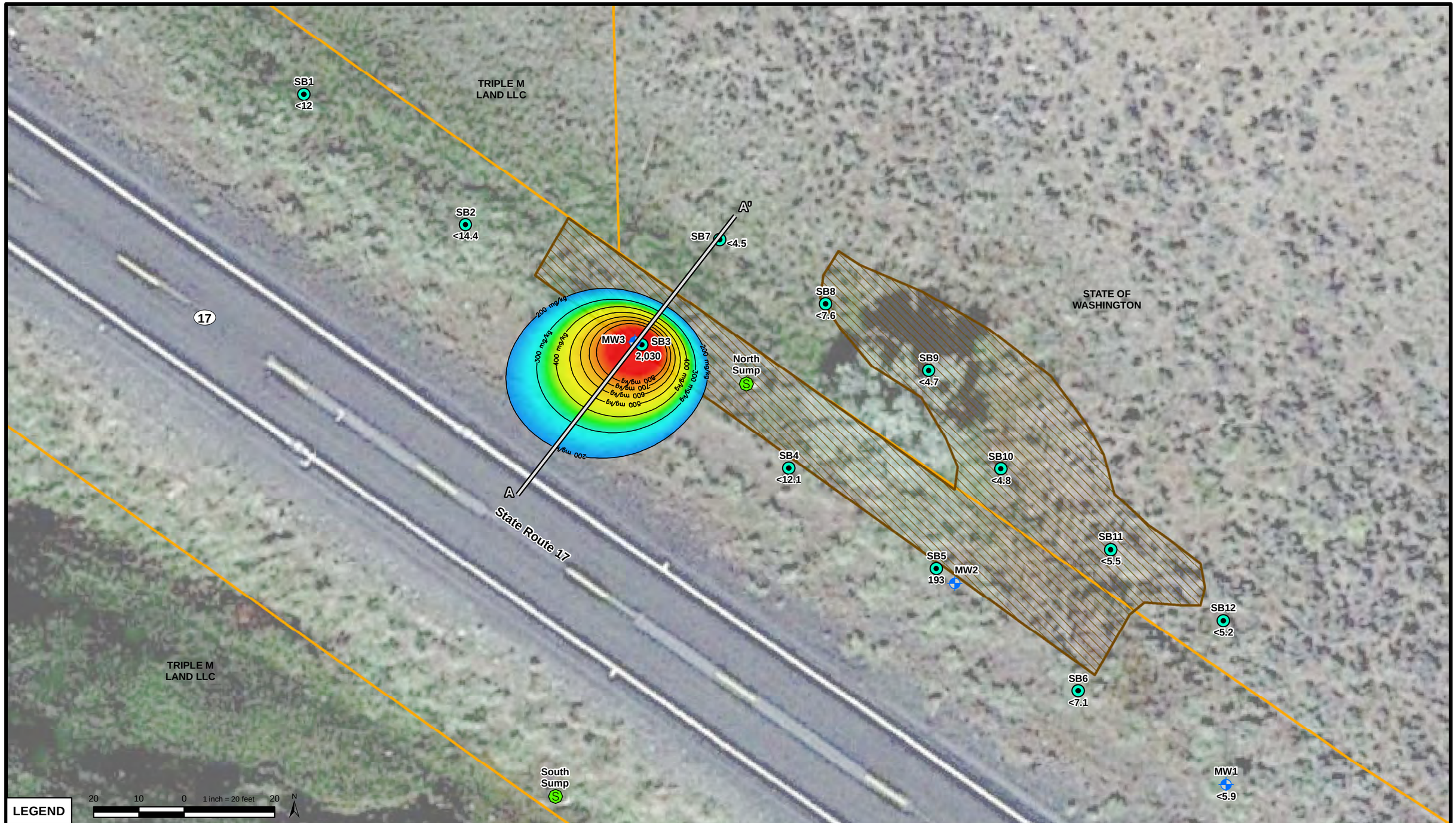
FIGURE 3



2D Contour Map
Soil WTPH-Gas >200 mg/kg

North Central Petroleum Spill
SR 17 Near MP 123
Bridgeport, WA

DRAWN BY: MM
DATE: 03/27/24
SCALE: 1:240

PROJECT NUMBER: 99-2946-90

IMAGE SOURCE: ESRI BASEMAPS

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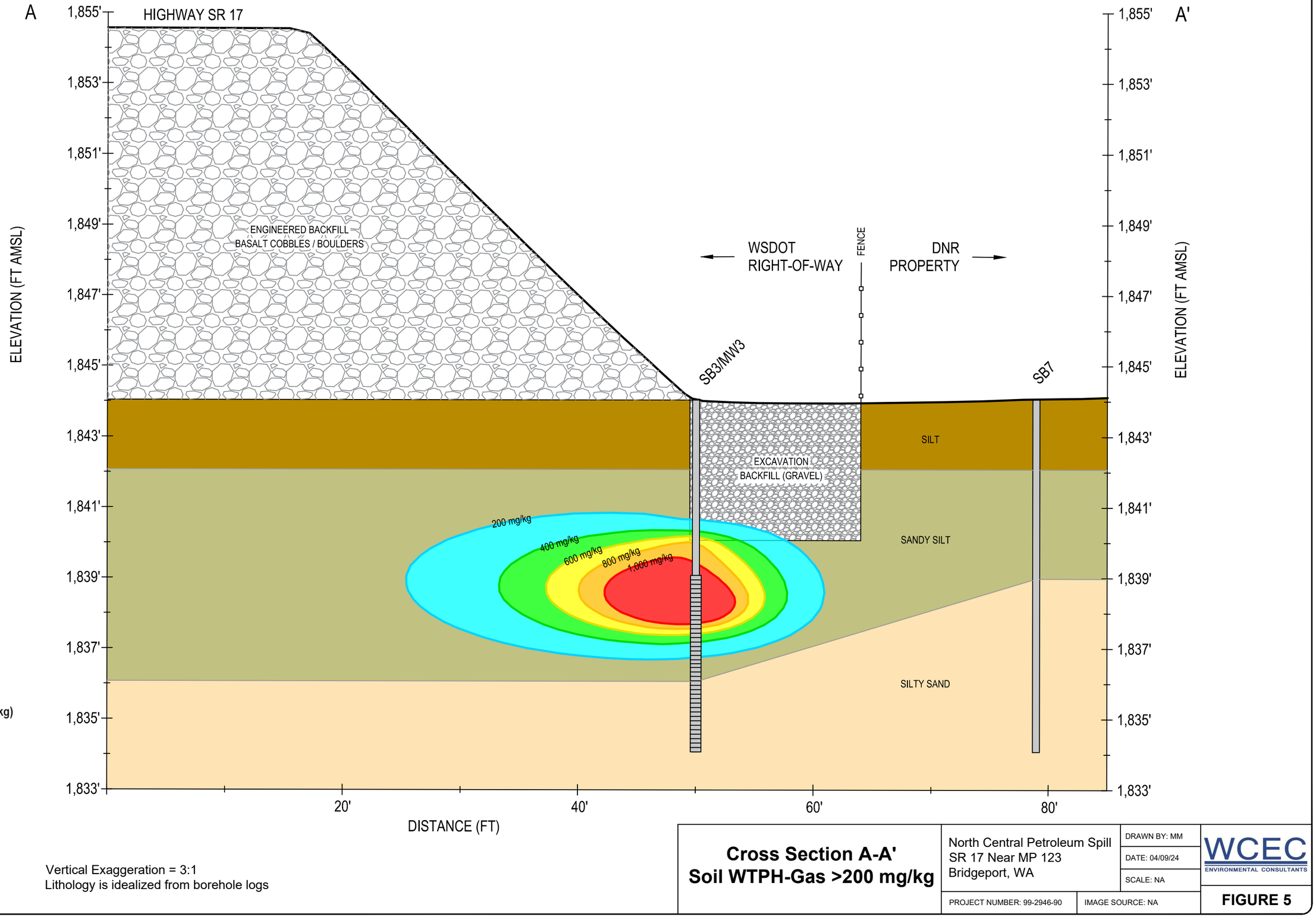
FIGURE 4



Vertical Exaggeration = 3:1
Lithology is idealized from borehole logs

Cross Section A-A'
Soil WTPH-Gas >200 mg/kg

North Central Petroleum Spill
SR 17 Near MP 123
Bridgeport, WA

DRAWN BY: MM
DATE: 04/09/24
SCALE: NA

PROJECT NUMBER: 99-2946-90
IMAGE SOURCE: NA

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FIGURE 5

Tables

TABLE 1
Groundwater Elevation Data
North Central Petroleum, Inc., Gasoline Spill, Bridgeport, WA

Monitor Point	Sample Date	Top of Casing Elevation	Depth to Groundwater	Groundwater Elevation
MW1				
	07/12/23	1849.11	8.10	1841.01
	09/26/23	1849.11	8.91	1840.20
MW2				
	07/12/23	1845.61	4.68	1840.93
	09/26/23	1845.61	5.70	1839.91
MW3				
	07/12/23	1843.49	2.64	1840.85
	09/26/23	1843.49	3.66	1839.83
MW4				
	07/12/23	1843.11	2.90	1840.21
	09/26/23	1843.11	3.68	1839.43

All measurements in feet (ft).

99-2946-90

TABLE 1 Continued (Page 2 of 5 Pages)

Groundwater Elevation Data

North Central Petroleum, Inc., Gasoline Spill, Bridgeport, WA

Monitor Point	Sample Date	Top of Casing Elevation	Depth to Groundwater	Groundwater Elevation
MP1				
	09/10/96	101.38	2.71	98.67
	09/17/97	101.38	2.33	99.05
	03/24/98	101.38	1.32	100.06
	10/11/98	101.38	1.31	100.07
	03/28/99	101.38	0.94	100.44
	09/28/99	101.38	2.53	98.85
	03/10/00	101.38	2.22	99.16
	09/20/00	101.38	2.41	98.97
	03/14/01	101.38	1.91	99.47
	03/21/02	101.38	2.20	99.18
	09/10/02	101.38	5.40	95.98
	09/03/03	101.38	4.41	96.97
	09/02/04	101.38	4.41	96.97
	09/06/05	101.38	5.20	96.18
	09/13/06	101.38	4.94	96.44
	09/24/07	101.38	5.13	96.25
	09/03/08	101.38	5.36	96.02
	09/02/09	101.38	5.64	95.74
	09/07/10	101.38	5.41	95.97
	09/28/11	101.38	4.74	96.64
	09/12/12	101.38	5.61	95.77
	09/10/13	101.38	5.62	95.76
	09/10/14	101.38	6.88	94.50
	12/15/14	101.38	5.30	96.08
	03/18/15	101.38	2.76	98.62
	06/10/15	101.38	4.68	96.70
	09/02/15	101.38	6.77	94.61

All measurements in feet (ft).

TABLE 1 Continued (Page 3 of 5 Pages)

Groundwater Elevation Data

North Central Petroleum, Inc., Gasoline Spill, Bridgeport, WA

Monitor Point	Sample Date	Top of Casing Elevation	Depth to Groundwater	Groundwater Elevation
MP2				
	09/10/96	101.25	2.87	98.38
	09/17/97	101.25	2.22	99.03
	03/24/98	101.25	1.36	99.89
	10/11/98	101.25	1.23	100.02
	03/28/99	101.25	0.90	100.35
	09/28/99	101.25	2.50	98.75
	03/10/00	101.25	2.24	99.01
	09/20/00	101.25	2.63	98.62
	03/14/01	101.25	2.19	99.06
	08/28/01	101.25	5.05	96.20
	03/21/02	101.25	2.34	98.91
	09/10/02	101.25	5.42	95.83
	09/03/03	101.25	5.42	95.83
	09/02/04	101.25	3.75	97.50
	09/06/05	101.25	5.39	95.86
	09/13/06	101.25	4.87	96.38
	09/24/07	101.25	5.13	96.12
	09/03/08	101.25	5.49	95.76
	09/02/09	101.25	5.78	95.47
	09/07/10	101.25	5.56	95.69
	09/28/11	101.25	5.07	96.18
	09/12/12	101.25	5.87	95.38
	09/10/13	101.25	5.91	95.34
	09/10/14	101.25	6.53	94.72
	12/15/14	101.25	6.01	95.24
	03/18/15	101.25	3.71	97.54
	06/10/15	101.25	5.17	96.08
	09/02/15	101.25	6.97	94.28

All measurements in feet (ft).

TABLE 1 Continued (Page 4 of 5 Pages)

Groundwater Elevation Data

North Central Petroleum, Inc., Gasoline Spill, Bridgeport, WA

Monitor Point	Sample Date	Top of Casing Elevation	Depth to Groundwater	Groundwater Elevation
MP3				
	09/10/96	99.20	1.95	97.25
	09/17/97	99.20	1.09	98.11
	03/24/98	99.20	0.90	98.30
	10/11/98	99.20	1.28	97.92
	03/28/99	99.20	0.38	98.82
	09/28/99	99.20	1.90	97.30
	03/10/00	99.20	1.80	97.40
	09/20/00	99.20	2.11	97.09
	03/14/01	99.20	1.93	97.27
	08/28/01	99.20	5.04	94.16
	09/10/02	99.20	5.41	93.79
	09/03/03	99.20	5.52	93.68
	09/02/04	99.20	3.40	95.80
	09/06/05	99.20	5.33	93.87
	09/13/06	99.20	4.70	94.50
	09/24/07	99.20	4.96	94.24
	09/03/08	99.20	5.57	93.63
	09/02/09	99.20	5.90	93.30
	09/07/10	99.20	5.55	93.65
	09/28/11	99.20	4.80	94.40
	09/12/12	99.20	5.94	93.26
	09/10/13	99.20	5.89	93.31
	09/10/14	99.20	-	-
	12/15/14	99.20	5.02	94.18
	03/18/15	99.20	2.91	96.29
	06/10/15	99.20	5.03	94.17
	09/02/15	99.20	7.27	91.93

All measurements in feet (ft). 99-2946-90

(-) Well was dry.

TABLE 1 Continued (Page 5 of 5 Pages)

Groundwater Elevation Data

North Central Petroleum, Inc., Gasoline Spill, Bridgeport, WA

Monitor Point	Sample Date	Top of Casing Elevation	Depth to Groundwater	Groundwater Elevation
MP4				
	09/10/96	98.10	1.79	96.31
	09/17/97	98.10	0.98	97.12
	03/24/98	98.10	0.77	97.33
	10/11/98	98.10	1.35	96.75
	03/28/99	98.10	0.65	97.45
	09/28/99	98.10	1.67	96.43
	03/10/00	98.10	1.86	96.24
	09/20/00	98.10	1.97	96.13
	03/14/01	98.10	1.92	96.18
	08/28/01	98.10	4.23	93.87
	03/21/02	98.10	1.50	96.60
	09/10/02	98.10	4.70	93.40
	09/03/03	98.10	4.95	93.15
	09/02/04	98.10	5.55	92.55
	09/06/05	98.10	4.98	93.12
	09/13/06	98.10	3.76	94.34
	09/24/07	98.10	5.04	93.06
	09/03/08	98.10	4.56	93.54
	09/02/09	98.10	5.29	92.81
	09/07/10	98.10	4.15	93.95
	09/28/11	98.10	3.08	95.02
	09/12/12	98.10	4.60	93.50
	09/10/13	98.10	4.79	93.31
	09/10/14	98.10	6.40	91.70
	12/15/14	98.10	2.64	95.46
	03/18/15	98.10	1.04	97.06
	06/10/15	98.10	3.43	94.67
	09/02/15	98.10	6.05	92.05

All measurements in feet (ft).

TABLE 2

Groundwater Analytical Results - WTPH-Gas, BTEX, MTBE
North Central Petroleum, Inc., Gasoline Spill, Bridgeport, WA

Monitor Point	Sample Date	WTPH-Gas (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)
MW1							
	07/12/23	<100	<1	3	<1	<3	<1
	09/26/23	<100	<1	<1	<1	<3	<1
MW2							
	07/12/23	<100	<1	6.4	<1	<3	<1
	09/26/23	<100	<1	<1	<1	<3	<1
MW3							
	07/12/23	**3,550**	**79.8**	10.4	128	263	<1
	09/26/23	**3,720**	**27.2**	1.3	216	1.3	<1
MW4							
	07/12/23	<100	<1	10.2	<1	<3	<1
	09/26/23	<100	<1	<1	<1	<3	<1
North Sump							
	12/10/94	**191,000**	**42,500**	**48,000**	**4,700**	**28,000**	-
	03/28/95	**98,000**	**16,000**	**21,000**	**1,300**	**8,300**	-
	08/14/95	**240,000**	**25,000**	**43,000**	**2,800**	**24,000**	-
	06/02/21	**2,470**	**198**	226	10.4	49.9	<2
Clean Up Level		800	5	1,000	700	1,000	20

Bold indicates that the constituent exceeds the MTCA Method A cleanup level. 99-2946-90

(-) Sample not analyzed for constituent.

TABLE 2 Continued (Page 2 of 5 Pages)

Groundwater Analytical Results - WTPH-Gas, BTEX, MTBE
North Central Petroleum, Inc., Gasoline Spill, Bridgeport, WA

Monitor Point	Sample Date	WTPH-Gas (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)
MP1							
	09/10/96	<50	<0.5	<0.5	<0.5	<1	-
	09/17/97	<50	<0.5	<0.5	<0.5	<1	-
	03/24/98	<50	<0.5	<0.5	<0.5	<1	-
	10/11/98	<50	<0.5	<0.5	<0.5	<1	-
	03/28/99	<50	<0.5	<0.5	<0.5	<1	-
	09/28/99	<50	<0.5	<0.5	<0.5	<1	-
	03/10/00	<50	<0.5	<0.5	<0.5	<1	-
	09/20/00	**4,470**	**3,390**	<100	146	418	-
	03/14/01	<50	0.613	<0.5	<0.5	<1	-
	03/21/02	<100	<0.5	<2	<1	<1.5	-
	09/10/02	<100	<0.5	<2	<1	<1.5	-
	09/03/03	<100	<0.5	<2	<1	<1.5	<5
	09/02/04	<100	<0.5	<2	<1	<1.5	<5
	09/06/05	<100	<0.5	<2	<1	<1.5	<5
	09/13/06	<100	<0.5	<2	<1	<1.5	<5
	09/24/07	<100	<0.5	<2	<1	<1.5	<5
	09/03/08	<100	<0.5	<2	<1	<1.5	<5
	09/02/09	<100	<0.2	<1	<1	<1	<1
	09/07/10	<100	<0.2	<1	<1	<3	<1
	09/28/11	159	<1	<1	<1	<3	<1
	09/12/12	<50	<1	<1	<1	<3	<1
	09/10/13	<100	<1	<1	<1	<3	<1
	09/10/14	<100	<1	<1	<1	<3	<1
	12/15/14	<100	<1	<1	<1	<3	<1
	03/18/15	<100	<1	<1	<1	<3	<1
	06/10/15	<100	<1	<1	<1	<3	<1
	09/02/15	<100	<1	<1	<1	<3	<1
Clean Up Level		800	5	1,000	700	1,000	20

Bold indicates that the constituent exceeds the MTCA Method A cleanup level. 99-2946-90

(-) Sample not analyzed for constituent.

TABLE 2 Continued (Page 3 of 5 Pages)

Groundwater Analytical Results - WTPH-Gas, BTEX, MTBE

North Central Petroleum, Inc., Gasoline Spill, Bridgeport, WA

Monitor Point	Sample Date	WTPH-Gas (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)
MP2							
	09/10/96	**1,800**	**8.52**	147	49.4	283	-
	09/17/97	**1,990**	**47**	106	33.7	332	-
	03/24/98	757	**5.24**	31.1	27.8	94.2	-
	10/11/98	**1,080**	**30.6**	43.3	29.2	115	-
	03/28/99	**4,270**	**38**	77.9	185	539	-
	09/28/99	**11,200**	**3,540**	78.2	397	**1,120**	-
	03/10/00	**7,890**	**<68**	65.8	299	900	-
	09/20/00	**9,120**	**3,780**	<53	178	520	-
	03/14/01	**6,760**	**<19.8**	8.18	188	539	-
	08/28/01	**5,450**	**1,620**	19.8	18	36.9	-
	03/21/02	**2,840**	**71.5**	<2	41	90.5	-
	09/10/02	**10,700**	**4,140**	58.1	289	763	-
	09/03/03	**7,160**	**3,060**	33.5	196	389	**67**
	09/02/04	**5,200**	**2,100**	20.3	227	94.2	**45.5**
	09/06/05	**1,670**	**354**	7.94	10.3	58	17.2
	09/13/06	**3,370**	**1,030**	<20	283	90.9	**61.7**
	09/24/07	**1,960**	**484**	8.99	348	11.6	**41.2**
	09/03/08	**<1,000**	**205**	<20	220	<15	<10
	09/02/09	597	**38.7**	<10	99.4	<10	<10
	09/07/10	<100	**11.4**	<1	5.95	<3	<1
	09/28/11	<50	**17.3**	<1	4.1	<3	<1
	09/12/12	54.2	**11.8**	<1	3.9	<3	<1
	09/10/13	<100	1.6	<1	<1	<3	<1
	09/10/14	*	*	*	*	*	*
	12/15/14	<100	<1	<1	<1	<3	<1
	03/18/15	<100	<1	<1	<1	<3	<1
	06/10/15	<100	<1	<1	<1	<3	<1
	09/02/15	*	*	*	*	*	*
Clean Up Level		800	5	1,000	700	1,000	20

Bold indicates that the constituent exceeds the MTCA Method A cleanup level. 99-2946-90

(*) Insufficient water for sample collection.

(-) Sample not analyzed for constituent.

TABLE 2 Continued (Page 4 of 5 Pages)

Groundwater Analytical Results - WTPH-Gas, BTEX, MTBE

North Central Petroleum, Inc., Gasoline Spill, Bridgeport, WA

Monitor Point	Sample Date	WTPH-Gas (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)
MP3							
	09/10/96	<50	**31.4**	0.586	<0.5	<1	-
	09/17/97	<50	<0.5	<0.5	<0.5	<1	-
	03/24/98	<50	<0.5	<0.5	<0.5	<1	-
	10/11/98	<50	<0.5	<0.5	<0.5	<1	-
	03/28/99	<50	<0.5	<0.5	<0.5	<1	-
	09/28/99	<50	<0.5	<0.5	<0.5	<1	-
	03/10/00	<50	<0.5	<0.5	<0.5	<1	-
	09/20/00	<50	<0.5	0.561	<0.5	1.17	-
	03/14/01	50.8	<0.5	<0.5	<0.5	<0.5	-
	08/28/01	<50	<0.5	<0.5	<0.5	<1	-
	09/10/02	<100	2.71	<2	<1	<1.5	-
	09/03/03	106	<0.5	<2	<1	<1.5	<5
	09/02/04	<100	<0.5	<2	<1	<1.5	<5
	09/06/05	<100	1.16	<2	<1	<1.5	<5
	09/13/06	<100	0.872	<2	<1	<1.5	<5
	09/24/07	<100	<0.5	<2	<1	<1.5	<5
	09/03/08	<100	<0.5	<2	<1	<1.5	<5
	09/02/09	<100	<0.2	<1	<1	<1	<1
	09/07/10	<100	<0.2	<1	<1	<3	<1
	09/28/11	<50	<1	<1	<1	<3	<1
	09/12/12	<50	<1	<1	<1	<3	<1
	09/10/13	<100	<1	<1	<1	<3	<1
	09/10/14	*	*	*	*	*	*
	12/15/14	<100	<1	<1	<1	<3	<1
	03/18/15	<100	<1	<1	<1	<3	<1
	06/10/15	<100	<1	<1	<1	<3	<1
	09/02/15	<100	<1	<1	<1	<3	<1
Clean Up Level		800	5	1,000	700	1,000	20

Bold indicates that the constituent exceeds the MTCA Method A cleanup level. 99-2946-90

(*) Insufficient water for sample collection.

(-) Sample not analyzed for constituent.

TABLE 2 Continued (Page 5 of 5 Pages)

Groundwater Analytical Results - WTPH-Gas, BTEX, MTBE

North Central Petroleum, Inc., Gasoline Spill, Bridgeport, WA

Monitor Point	Sample Date	WTPH-Gas (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)
MP4							
	09/10/96	<50	<0.5	<0.5	<0.5	<1	-
	09/17/97	<50	<0.5	<0.5	<0.5	<1	-
	03/24/98	<50	<0.5	<0.5	<0.5	<1	-
	10/11/98	<50	<0.5	<0.5	<0.5	<1	-
	03/28/99	<50	<0.5	<0.5	<0.5	<1	-
	09/28/99	<50	<0.5	<0.5	<0.5	<1	-
	03/10/00	<50	<0.5	<0.5	<0.5	<1	-
	09/20/00	<50	<0.5	<0.5	<0.5	<1	-
	03/14/01	<50	<0.5	<0.5	<0.5	<1	-
	08/28/01	<50	<0.5	<0.5	<0.5	<1	-
	03/21/02	<100	<0.5	<2	<1	<1.5	-
	09/10/02	<100	0.855	<2	<1	<1.5	-
	09/03/03	<100	<0.5	<2	<1	<1.5	<5
	09/02/04	<100	<0.5	<2	<1	<0.5	**29.7**
	09/06/05	<100	<0.5	<2	<1	<1.5	**39.4**
	09/13/06	<100	<0.5	<2	<1	<1.5	**36**
	09/24/07	<100	<0.5	<2	<1	<1.5	**24.6**
	09/03/08	<100	<0.5	<2	<1	<1.5	10.2
	09/02/09	<100	<0.2	<1	<1	<1	14.2
	09/07/10	<100	<0.2	<1	<1	<3	10.8
	09/28/11	<50	<1	<1	<1	<3	6.3
	09/12/12	<50	<1	<1	<1	<3	4.7
	09/10/13	<100	<1	<1	<1	<3	3.1
	09/10/14	<100	<1	<1	<1	<3	3.9
	12/15/14	<100	<1	<1	<1	<3	<1
	03/18/15	<100	<1	<1	<1	<3	<1
	06/10/15	<100	<1	<1	<1	<3	1.2
	09/02/15	<100	<1	<1	<1	<3	2.4
Clean Up Level		800	5	1,000	700	1,000	20

Bold indicates that the constituent exceeds the MTCA Method A cleanup level. 99-2946-90

(-) Sample not analyzed for constituent.

TABLE 3

Groundwater Analytical Results - Natural Attenuation Parameters
North Central Petroleum, Inc., Gasoline Spill, Bridgeport, WA

Monitor Point	Sample Date	Lab Analysis		Field Parameters	
		Sulfate (mg/L)	Nitrate/Nitrite (mg/L)	Dissolved Oxygen (mg/L)	ORP (mV)
MW1					
	07/12/23	104	0.35	4.46	51.4
	09/26/23	-	-	-	-
MW2					
	07/12/23	118	<0.1	2.94	-88.6
	09/26/23	84	<0.1	1.44	-124.3
MW3					
	07/12/23	135	<0.1	1.26	-102.3
	09/26/23	64.7	<0.1	1.03	-127.5
MW4					
	07/12/23	96.3	<0.1	3.12	-75.9
	09/26/23	101	<0.1	0.97	-111.3

(-) Sample not analyzed for constituent.

99-2946-90

TABLE 3 Continued (Page 2 of 5 Pages)

Groundwater Analytical Results - Natural Attenuation Parameters
North Central Petroleum, Inc., Gasoline Spill, Bridgeport, WA

Monitor Point	Sample Date	Lab Analysis		Field Parameters	
		Sulfate (mg/L)	Nitrate/Nitrite (mg/L)	Dissolved Oxygen (mg/L)	pH
MP1					
	09/17/97	-	<0.01	1.20	7.28
	03/24/98	-	<0.1	1.19	7.35
	10/11/98	-	0.283	9.55	7.84
	03/28/99	-	0.278	10.90	8.55
	09/28/99	-	0.246	11.80	8.68
	03/10/00	70.1	<0.01	0.76	7.10
	09/20/00	2.67	<0.01	0.26	7.22
	03/14/01	75.5	<0.01	4.11	6.98
	03/21/02	97.6	<0.01	0.57	7.55
	09/10/02	101	<0.02	0.25	7.68
	09/03/03	103	0.012	4.10	6.90
	09/02/04	112	4.47	1.82	7.76
	09/06/05	-	-	2.14	7.83
	09/13/06	-	-	0.95	7.52
	09/24/07	-	-	1.45	7.96
	09/03/08	-	-	3.10	7.78
	09/02/09	-	-	1.44	9.44
	09/07/10	-	-	3.50	7.81
	09/28/11	-	-	1.62	7.88
	09/12/12	-	-	-	-
	09/10/13	-	-	0.75	6.90
	09/10/14	-	-	1.63	7.31
	12/15/14	-	-	0.59	7.59
	03/18/15	-	-	1.18	6.90
	06/10/15	-	-	0.97	7.15
	09/02/15	-	-	0.40	7.44

(-) Sample not analyzed for constituent.

TABLE 3 Continued (Page 3 of 5 Pages)

Groundwater Analytical Results - Natural Attenuation Parameters
North Central Petroleum, Inc., Gasoline Spill, Bridgeport, WA

Monitor Point	Sample Date	Lab Analysis		Field Parameters	
		Sulfate (mg/L)	Nitrate/Nitrite (mg/L)	Dissolved Oxygen (mg/L)	pH
MP2					
	09/17/97	-	1.73	1.31	7.38
	03/24/98	-	<0.1	2.58	7.39
	10/11/98	-	0.342	5.15	7.51
	03/28/99	-	<0.01	1.45	7.50
	09/28/99	-	0.252	<1.00	7.46
	03/10/00	70.2	0.0439	0.60	6.98
	09/20/00	3.39	0.0108	0.16	6.51
	03/14/01	143	<0.01	4.03	6.93
	08/28/01	6.08	35.5	1.27	7.28
	03/21/02	71.5	<0.01	0.57	7.53
	09/10/02	31.1	<0.02	0.11	7.40
	09/03/03	7.07	0.193	9.95	6.97
	09/02/04	9.03	4.5	1.55	7.32
	09/06/05	-	-	1.33	7.91
	09/13/06	-	-	1.38	7.53
	09/24/07	-	-	0.54	8.12
	09/03/08	-	-	1.98	8.18
	09/02/09	-	-	0.61	9.52
	09/07/10	-	-	0.96	7.19
	09/28/11	-	-	1.38	7.75
	09/12/12	-	-	-	-
	09/10/13	-	-	0.37	3.60
	09/10/14	-	-	-	-
	12/15/14	-	-	2.06	8.07
	03/18/15	-	-	3.18	7.31
	06/10/15	-	-	0.80	7.02
	09/02/15	-	-	-	-

(-) Sample not analyzed for constituent.

99-2946-90

TABLE 3 Continued (Page 4 of 5 Pages)

Groundwater Analytical Results - Natural Attenuation Parameters
North Central Petroleum, Inc., Gasoline Spill, Bridgeport, WA

Monitor Point	Sample Date	Lab Analysis		Field Parameters	
		Sulfate (mg/L)	Nitrate/Nitrite (mg/L)	Dissolved Oxygen (mg/L)	pH
MP3					
	09/17/97	-	<0.01	1.85	7.39
	03/24/98	-	<0.1	3.99	7.76
	10/11/98	-	<0.1	5.10	7.63
	03/28/99	-	<0.01	1.40	7.46
	09/28/99	-	0.0546	<1.00	7.39
	03/10/00	69.7	0.0284	0.72	7.43
	09/20/00	80.1	<0.01	0.25	7.22
	03/14/01	61.8	13.1	4.65	7.09
	08/28/01	68.6	12.3	1.12	7.34
	09/10/02	70	<0.02	1.08	7.61
	09/03/03	49.1	0.0182	5.98	6.71
	09/02/04	86.5	4.43	1.24	7.89
	09/06/05	-	-	1.61	7.58
	09/13/06	-	-	2.96	7.39
	09/24/07	-	-	7.31	8.00
	09/03/08	-	-	3.64	7.47
	09/02/09	-	-	7.99	9.45
	09/07/10	-	-	6.93	7.18
	09/28/11	-	-	11.30	6.61
	09/12/12	-	-	-	-
	09/10/13	-	-	0.55	5.30
	09/10/14	-	-	-	-
	12/15/14	-	-	1.81	7.37
	03/18/15	-	-	1.81	6.49
	06/10/15	-	-	1.10	6.42
	09/02/15	-	-	-	-

(-) Sample not analyzed for constituent.

99-2946-90

TABLE 3 Continued (Page 5 of 5 Pages)

Groundwater Analytical Results - Natural Attenuation Parameters
North Central Petroleum, Inc., Gasoline Spill, Bridgeport, WA

Monitor Point	Sample Date	Lab Analysis		Field Parameters	
		Sulfate (mg/L)	Nitrate/Nitrite (mg/L)	Dissolved Oxygen (mg/L)	pH
MP4					
	09/17/97	-	<0.01	1.55	6.92
	03/24/98	-	0.1	3.54	7.41
	10/11/98	-	<0.1	9.63	7.20
	03/28/99	-	0.594	1.05	7.33
	09/28/99	-	0.01	1.53	7.25
	03/10/00	71.8	0.0266	0.79	7.48
	09/20/00	113	<0.01	0.37	7.25
	03/14/01	129	25.3	4.47	7.11
	08/28/01	143	51.8	0.37	7.02
	03/21/02	140	<0.01	0.58	7.39
	09/10/02	132	<0.02	1.23	7.40
	09/03/03	134	0.446	6.71	6.40
	09/02/04	79.5	4.5	1.37	7.63
	09/06/05	-	-	1.56	7.43
	09/13/06	-	-	1.75	7.21
	09/24/07	-	-	7.85	7.91
	09/03/08	-	-	6.32	7.72
	09/02/09	-	-	2.73	10.35
	09/07/10	-	-	1.65	6.97
	09/28/11	-	-	1.01	7.76
	09/12/12	-	-	2.58	6.92
	09/10/13	-	-	0.41	3.60
	09/10/14	-	-	2.99	6.62
	12/15/14	-	-	1.79	7.22
	03/18/15	-	-	1.02	6.57
	06/10/15	-	-	1.25	7.03
	09/02/15	-	-	0.56	6.48

(-) Sample not analyzed for constituent.

99-2946-90

TABLE 4

Soil Borehole Analytical Results - WTPH-Gas, BTEX, MTBE
North Central Petroleum, Inc., Gasoline Spill, Bridgeport, WA

Sample Location	Sample Depth (ft)	Sample Date	WTPH-Gas (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	MTBE (mg/kg)
SB1								
	3	06/02/21	<9.3	<0.0373	<0.0932	<0.0932	<0.279	<0.0932
	6	06/02/21	<12	<0.0435	<0.109	<0.109	<0.326	<0.109
SB2								
	3	06/02/21	<8.7	**0.053**	<0.0809	<0.0809	<0.243	<0.0809
	6	06/02/21	<14.4	<0.061	<0.153	<0.153	<0.458	<0.153
SB3 (MW3)								
	4	06/02/21	**878**	**0.218**	1.27	**10.5**	**65**	<0.0743
	6	06/02/21	**2,030**	**0.956**	**22.2**	**89.6**	**597**	<0.0794
SB4								
	3	06/02/21	<8.3	<0.0308	<0.0771	<0.0771	<0.231	<0.0771
	6	06/02/21	<12.1	<0.0365	<0.0912	<0.0912	<0.274	<0.0912
SB5 (MW2)								
	3	06/02/21	<7	<0.0243	<0.0608	<0.0608	<0.182	<0.0608
	7	06/02/21	**193**	<0.0487	<0.122	<0.122	<0.365	<0.122
SB6								
	3	06/02/21	<6.2	<0.0265	<0.0663	<0.0663	<0.199	<0.0663
	6	06/02/21	<7.1	<0.0281	<0.0702	<0.0702	<0.210	<0.0702
SB7								
	3	07/11/23	<4.5	<0.0221	<0.0552	<0.0552	<0.166	<0.0552
SB8								
	4	07/11/23	<7.6	<0.0208	<0.052	<0.052	<0.156	<0.052
	7	07/11/23	10.5	<0.0159	<0.0397	<0.0397	<0.119	<0.0397
SB9								
	4	07/11/23	<4.7	<0.0184	<0.046	<0.046	<0.138	<0.046
SB10								
	4	07/11/23	<4.8	<0.0171	<0.0428	<0.0428	<0.128	<0.0428
SB11								
	4	07/11/23	<5.5	<0.0201	<0.0504	<0.0504	<0.151	<0.0504
SB12								
	8	07/11/23	<5.2	<0.0209	<0.0521	<0.0521	<0.156	<0.0521
MW1								
	5	07/11/23	<5.9	<0.0226	<0.0565	<0.0565	<0.169	<0.0565
	8	07/11/23	<4.5	<0.0184	<0.046	<0.046	<0.138	<0.046
MW4								
	5	07/11/23	<4.7	<0.020	<0.0499	<0.0499	<0.150	<0.0499
Clean Up Level			30	0.03	7	6	9	0.1

Bold indicates that the constituent exceeds the MTCA Method A cleanup level.

TABLE 5

Soil Borehole Groundwater Analytical Results - WTPH-Gas, BTEX, MTBE
North Central Petroleum, Inc., Gasoline Spill, Bridgeport, WA

Sample Location	Sample Date	WTPH-Gas (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)
SB2							
	06/02/21	<100	**49.1**	<1	<1	<3	<1
SB3							
	06/02/21	**12,300**	**77.5**	254	**766**	**3,530**	<1
SB5							
	06/02/21	**6,230**	<1	<1	<1	<3	<1
Clean Up Level		800	5	1,000	700	1,000	20

Bold indicates that the constituent exceeds the MTCA Method A cleanup level.

99-2946-90

Photos

Photo 1: Highway embankment sloping to SB3/MW3 location.

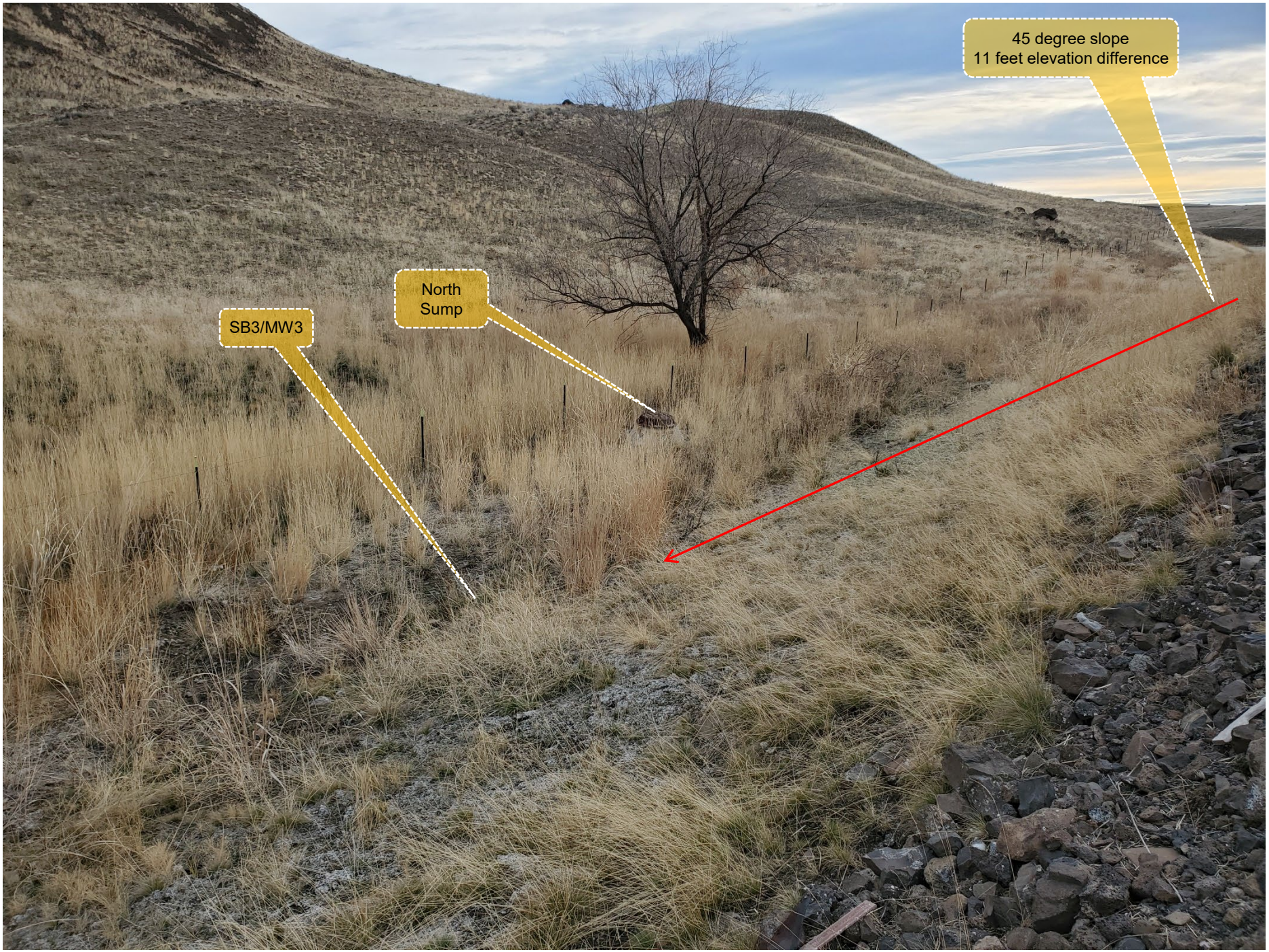


PHOTO 1: Highway embankment sloping to SB3/MW3 location.

Appendix A

PetroFix™ Injection Grid Application Summary

Injection Grid Application Summary

2946 NCP Spill

North ROW

PetroFix Amount	2,800 lb
Electron Acceptor	140 lb
Treatment Surface Area	2,600.0 ft^2
Delivery Points	104
Point Spacing	5.0 ft
Top of Treatment Interval	4.0 ft bgs
Bottom of Treatment Interval	7.0 ft bgs
Vertical Treatment Interval Thickness	3.0 ft
Treatment Volume	289 yd^3
PetroFix Dose	9.69 lb/yd^3

Total Volume	3,502 gal
Product Volume	287 gal
Water Volume	3,216 gal
Injection Volume/Point	34 gal
Inject Volume/Vertical ft	11 gal
Product/Point	2.8 gal
Water/Point	30.9 gal
Soil Type	>75% silt/clay
Effective Pore Volume Fill %	40%

Mix Tank Volume*	275.0 gal
Dilution Factor*	12.22
PetroFix per Mix Tank	22 gal
Water per Mix Tank	252 gal
Electron Acceptor per Mix Tank	11 lb
Total Batches Required	12.74

Specific Area Notes

Native Soil Type: >75% silt/clay

Reported Ground Water Concentrations (µg/L)

Benzene	198	Naphthalenes	0
Toluene	254	MTBE	0
Ethylbenzene	766	TPH-GRO	12,300
Xylenes	3,530	TPH-DRO	0
Trimethylbenzenes	0	**Sum of Dissolved Concentrations:**	**12,300**

Appendix B

Simplified TEE Form

Voluntary Cleanup Program

Washington State Department of Ecology
Toxics Cleanup Program

TERRESTRIAL ECOLOGICAL EVALUATION FORM

Under the Model Toxics Control Act (MTCA), a terrestrial ecological evaluation is necessary if hazardous substances are released into the soils at a Site. In the event of such a release, you must take one of the following three actions as part of your investigation and cleanup of the Site:

1. Document an exclusion from further evaluation using the criteria in WAC 173-340-7491.
2. Conduct a simplified evaluation as set forth in WAC 173-340-7492.
3. Conduct a site-specific evaluation as set forth in WAC 173-340-7493.

When requesting a written opinion under the Voluntary Cleanup Program (VCP), you must complete this form and submit it to the Department of Ecology (Ecology). The form documents the type and results of your evaluation.

Completion of this form is not sufficient to document your evaluation. You still need to document your analysis and the basis for your conclusion in your cleanup plan or report.

If you have questions about how to conduct a terrestrial ecological evaluation, please contact the Ecology site manager assigned to your Site. For additional guidance, please refer to https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Terrestrial-ecological-evaluation.

Step 1: IDENTIFY HAZARDOUS WASTE SITE	
Please identify below the hazardous waste site for which you are documenting an evaluation.	
Facility/Site Name: North Central Petroleum Spill	
Facility/Site Address: SR 17 Near MP 123 Bridgeport	
Facility/Site No: 25378742	VCP Project No.: CE0431

Step 2: IDENTIFY EVALUATOR		
Please identify below the person who conducted the evaluation and their contact information.		
Name: Myles Morris		Title: Senior Project Manager
Organization: WCEC		
Mailing address: 1030 South Avenue West		
City: Missoula	State: MT	Zip code: 59801
Phone: 406-549-8487	Fax: 406-549-8490	E-mail: mmorris@wcec.com

Step 3: DOCUMENT EVALUATION TYPE AND RESULTS

A. Exclusion from further evaluation.

1. Does the Site qualify for an exclusion from further evaluation?

☐ Yes *If you answered **"YES,"** then answer **Question 2**.*

☒ No or Unknown *If you answered **"NO" or "UNKNOWN,"** then skip to **Step 3B** of this form.*

2. What is the basis for the exclusion? *Check all that apply. Then skip to **Step 4** of this form.*

Point of Compliance: WAC 173-340-7491(1)(a)

☐ All soil contamination is, or will be,* at least 15 feet below the surface.

☐ All soil contamination is, or will be,* at least 6 feet below the surface (or alternative depth if approved by Ecology), and institutional controls are used to manage remaining contamination.

Barriers to Exposure: WAC 173-340-7491(1)(b)

☐ All contaminated soil, is or will be,* covered by physical barriers (such as buildings or paved roads) that prevent exposure to plants and wildlife, and institutional controls are used to manage remaining contamination.

Undeveloped Land: WAC 173-340-7491(1)(c)

☐ There is less than 0.25 acres of contiguous[#] undeveloped[±] land on or within 500 feet of any area of the Site and any of the following chemicals is present: chlorinated dioxins or furans, PCB mixtures, DDT, DDE, DDD, aldrin, chlordane, dieldrin, endosulfan, endrin, heptachlor, heptachlor epoxide, benzene hexachloride, toxaphene, hexachlorobenzene, pentachlorophenol, or pentachlorobenzene.

☐ For sites not containing any of the chemicals mentioned above, there is less than 1.5 acres of contiguous[#] undeveloped[±] land on or within 500 feet of any area of the Site.

Background Concentrations: WAC 173-340-7491(1)(d)

☐ Concentrations of hazardous substances in soil do not exceed natural background levels as described in WAC 173-340-200 and 173-340-709.

* An exclusion based on future land use must have a completion date for future development that is acceptable to Ecology.

[±] "Undeveloped land" is land that is not covered by building, roads, paved areas, or other barriers that would prevent wildlife from feeding on plants, earthworms, insects, or other food in or on the soil.

[#] "Contiguous" undeveloped land is an area of undeveloped land that is not divided into smaller areas of highways, extensive paving, or similar structures that are likely to reduce the potential use of the overall area by wildlife.

B. Simplified evaluation.

1. Does the Site qualify for a simplified evaluation?

☒ Yes *If you answered **"YES,"** then answer **Question 2** below.*

☐ No or Unknown *If you answered **"NO"** or **"UNKNOWN,"** then skip to **Step 3C** of this form.*

2. Did you conduct a simplified evaluation?

☒ Yes *If you answered **"YES,"** then answer **Question 3** below.*

☐ No *If you answered **"NO,"** then skip to **Step 3C** of this form.*

3. Was further evaluation necessary?

☐ Yes *If you answered **"YES,"** then answer **Question 4** below.*

☒ No *If you answered **"NO,"** then answer **Question 5** below.*

4. If further evaluation was necessary, what did you do?

☐ Used the concentrations listed in Table 749-2 as cleanup levels. *If so, then skip to **Step 4** of this form.*

☐ Conducted a site-specific evaluation. *If so, then skip to **Step 3C** of this form.*

5. If no further evaluation was necessary, what was the reason? *Check all that apply. Then skip to **Step 4** of this form.*

Exposure Analysis: WAC 173-340-7492(2)(a)

☒ Area of soil contamination at the Site is not more than 350 square feet.

☐ Current or planned land use makes wildlife exposure unlikely. Used Table 749-1.

Pathway Analysis: WAC 173-340-7492(2)(b)

☒ No potential exposure pathways from soil contamination to ecological receptors.

Contaminant Analysis: WAC 173-340-7492(2)(c)

☐ No contaminant listed in Table 749-2 is, or will be, present in the upper 15 feet at concentrations that exceed the values listed in Table 749-2.

☐ No contaminant listed in Table 749-2 is, or will be, present in the upper 6 feet (or alternative depth if approved by Ecology) at concentrations that exceed the values listed in Table 749-2, and institutional controls are used to manage remaining contamination.

☐ No contaminant listed in Table 749-2 is, or will be, present in the upper 15 feet at concentrations likely to be toxic or have the potential to bioaccumulate as determined using Ecology-approved bioassays.

☐ No contaminant listed in Table 749-2 is, or will be, present in the upper 6 feet (or alternative depth if approved by Ecology) at concentrations likely to be toxic or have the potential to bioaccumulate as determined using Ecology-approved bioassays, and institutional controls are used to manage remaining contamination.

C. Site-specific evaluation. A site-specific evaluation process consists of two parts: (1) formulating the problem, and (2) selecting the methods for addressing the identified problem. Both steps require consultation with and approval by Ecology. *See* WAC 173-340-7493(1)(c).

1. Was there a problem? *See* WAC 173-340-7493(2).

☐ Yes *If you answered **"YES,"** then answer **Question 2** below.*

☐ No *If you answered **"NO,"** then identify the reason here and then skip to **Question 5** below:*

- ☐ No issues were identified during the problem formulation step.
- ☐ While issues were identified, those issues were addressed by the cleanup actions for protecting human health.

2. What did you do to resolve the problem? *See* WAC 173-340-7493(3).

- ☐ Used the concentrations listed in Table 749-3 as cleanup levels. *If so, then skip to **Question 5** below.*
- ☐ Used one or more of the methods listed in WAC 173-340-7493(3) to evaluate and address the identified problem. *If so, then answer **Questions 3 and 4** below.*

3. If you conducted further site-specific evaluations, what methods did you use?
Check all that apply. See WAC 173-340-7493(3).

- ☐ Literature surveys.
- ☐ Soil bioassays.
- ☐ Wildlife exposure model.
- ☐ Biomarkers.
- ☐ Site-specific field studies.
- ☐ Weight of evidence.
- ☐ Other methods approved by Ecology. If so, please specify:

4. What was the result of those evaluations?

- ☐ Confirmed there was no problem.
- ☐ Confirmed there was a problem and established site-specific cleanup levels.

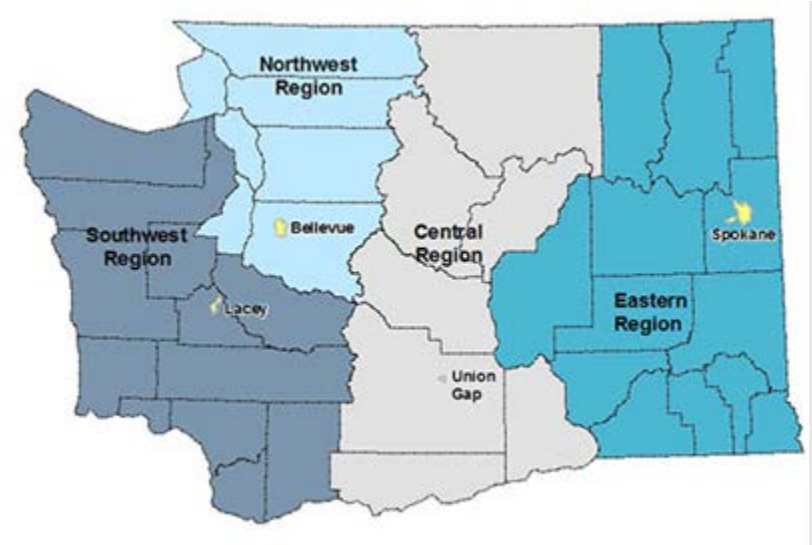
5. Have you already obtained Ecology's approval of both your problem formulation and problem resolution steps?

☐ Yes If so, please identify the Ecology staff who approved those steps:

☐ No

Step 4: SUBMITTAL

Please mail your completed form to the Ecology site manager assigned to your Site. If a site manager has not yet been assigned, please mail your completed form to the Ecology regional office for the County in which your Site is located.



Northwest Region: Attn: VCP Coordinator 3190 160th Ave. SE Bellevue, WA 98008-5452	**Central Region:** Attn: VCP Coordinator 1250 West Alder St. Union Gap, WA 98903-0009
Southwest Region: Attn: VCP Coordinator P.O. Box 47775 Olympia, WA 98504-7775	**Eastern Region:** Attn: VCP Coordinator N. 4601 Monroe Spokane WA 99205-1295