



October 16, 2019

Ms. Marla Stremcha, P.E.
Project Manager
Petroleum Technical Section
Montana Department of Environmental Quality
P.O. Box 200910
Helena, MT 59620-0901

RE: Soil Boring and Monitoring Well Installation Corrective Action Plan (AC-03) Work Plan
B&C Oil Facility
500 North 5th Street, Miles City, MT
Facility ID# 09-05859 Release #5027, WP ID 33890

Dear Ms. Stremcha:

On behalf of Petro Services Company, Inc., Pioneer Technical Services, Inc. (Pioneer) is submitting the following work plan and cost estimate for work at the B&C Facility in Miles City, Montana. As requested in correspondence from the Montana Department of Environmental Quality (DEQ) dated July 22, 2019, Pioneer proposes the scope of work outlined below and associated costs for performing the work.

PROPOSED SCOPE OF SERVICES

The purpose of the work proposed herein is to perform additional remedial and investigative actions at the B&C Oil facility by installing additional soil borings and a monitoring well and conducting groundwater monitoring to further define the extent and magnitude of petroleum contamination near the aboveground storage tank (AST) loading rack at the facility. The investigation will include the installation of 4 soil borings with 1 of the borings being constructed into a 2-inch groundwater monitoring well. To complete the assessment of the petroleum contamination requires the 4 tasks below (each task is detailed in the respective section).

Task 1 - Project management and planning.

Task 2 - Drill four soil borings, collect soil samples, and construct monitoring well.

Task 3 - Conduct groundwater monitoring.

Task 4 - Complete Standardized Soil Boring and Groundwater Monitoring Well Installation Report (AR-03).

Task 1 – Project Management and Planning

Task 1 will include project management, scheduling, organization, and planning. Specifically, this will include completing the following tasks:

- Coordinating utility locates, including a site visit to mark/locate proposed boring locations.
- Scheduling personnel and subcontractors.

- Coordinating activities of owners and regulators.
- Preparing a site-specific health and safety plan.
- Conducting daily site safety briefings.

Prior to mobilization, Pioneer will contact the one-call underground utility locate service to have all public underground utilities located near the project site prior to conducting subsurface intrusive activities (e.g., drilling). The Pioneer project manager will travel to the site to meet with the landowner and mark the proposed boring locations prior to calling in the utility locates. Utilities owned and maintained by the facility will be properly identified by the owner. We will prepare a project site-specific health and safety plan and implement this work plan as approved by the Montana DEQ and the Petroleum Release Compensation Release Board (Petro Board). Upon completion of work, we will manage the payment of the contractors.

Related to scheduling, Pioneer will manage, schedule, and supervise all work to make sure it is completed in a timely manner and a Pioneer representative will be present during soil borings and well installation, as required by the DEQ.

One groundwater monitoring event is included in this work plan, with the sample event taking place at least two weeks after the proposed well is installed.

Task 2 – Drill Four Soil Borings, Collect Soil Samples, and Construct Monitoring Well

The work plan includes installing 4 soil borings in the area near the loading rack of the AST system. This area is considered the area of highest risk from petroleum contamination impact to a construction worker scenario. The plan includes drilling 4 soil borings and constructing 1 of them into a 2-inch groundwater monitoring well. In Attachment A, Figure 1 shows the proposed locations of the borings.

The anticipated total depth of the boring is 10 feet below ground surface (bgs), with the well boring being advanced to 15 feet bgs. This is based on groundwater measured at 9-10 feet bgs at the site. These borings will be advanced and installed with a track-mounted Geoprobe drill rig using direct-push methods. The borings will be located near the loading rack. Final boring locations will be determined in the field after consultations with the Montana DEQ project manager, and will be based on accessibility, underground utilities, the presence of unforeseen impedances, or other factors.

The monitoring well will be constructed with pre-packed, 2-inch diameter, schedule 40 polyvinyl chloride (PVC) pipe. All well screens and piping will be delivered to the site factory wrapped. The monitoring well screen will be 0.01-inch, factory-slotted screen. The well will be screened from the depth of 5 feet to 15 feet to facilitate entry of petroleum vapors and light non-aqueous phase liquids (LNAPL). The remainder of the borehole will be completed with PVC riser pipe to grade. The annual space between the well casing and the borehole will have bentonite completion.

A Pioneer geologist will supervise drilling operations and be present to collect, screen, and log soil types. Soil samples will be collected continuously, and personnel will log the soil type and consistencies and document any visible signs of petroleum impacts. From each boring, soil samples

will be collected for laboratory analysis from the following depth intervals: 0-2 feet, 3-7 feet, and 8-10 feet. Three soil samples from each boring will be submitted for laboratory analysis.

Standard headspace readings from soil samples will be collected using a photoionization (PID) meter. A portion of each soil sample interval will be placed into an airtight container, labeled, and allowed sufficient time for the hydrocarbons, if present, to volatilize. After the equilibration period, each sample will be scanned with a PID by inserting the sampling probe into the headspace of the container. The PID readings from each soil sample collected from each borehole will be recorded.

The soil samples will be placed into a laboratory-supplied container, labeled, stored on ice, and submitted to Energy Laboratories, Inc. (ELI) in Billings, Montana, for volatile petroleum hydrocarbon (VPH) and extractable petroleum hydrocarbon (EPH) screens. If the EPH screen result is greater than 200 milligrams per kilogram (mg/kg), the sample will be submitted for EPH fractionation analysis. For this work plan, we are assuming all 4 samples will need to be fractionated. Chain-of-custody documentation will accompany the samples.

Task 3 – Conduct Groundwater Monitoring

At least 2 weeks after the new well is installed and developed, 1 groundwater sample will be collected from the new well. Prior to groundwater sample collection, the monitoring well will be gauged for the presence of LNAPL. The well will be gauged using an electronic interface probe capable of detecting water or LNAPL hydrocarbons to within 0.01 feet. Groundwater samples will be collected from the well if it does not contain LNAPL.

The groundwater sample will be collected in accordance with low-flow sample techniques. To ensure representative groundwater samples are collected, the water quality parameters of the following intrinsic bioremediation indicators (IBIs) will be monitored and allowed to stabilize during the purging process prior to sample collection: temperature, conductivity, dissolved oxygen, pH, and oxygen reduction potential.

The groundwater sample will be collected with a peristaltic or bladder pump and disposable tubing and transferred to the appropriate laboratory containers. New, decontaminated containers will be supplied by the laboratory prior to sample collection. Groundwater samples will be submitted for laboratory analysis of VPH and EPH screens. This plan accounts for one groundwater sample to be fractionated during the sample event. Each sample container will be preserved as directed by the laboratory, labeled, and packaged on ice. The samples will be delivered to ELI in Billings, Montana. Chain-of-custody documentation will accompany the samples.

Purge water will be infiltrated into the grassy areas available at the site in accordance with Montana DEQ standards.

Task 4 – Complete Standardized Boring and Groundwater Monitoring Report

Following the well installation and after the groundwater sampling results are received, Pioneer will prepare a Standardized Boring and Groundwater Monitoring Report (Report AR-03). The report will

follow the Montana DEQ Standardized Boring and Groundwater Monitoring Report (Report AR-03) format and will include the following:

- Facility maps illustrating locations of utilities, existing and former fuel systems, site buildings, underground utilities, and groundwater monitoring wells.
- Tables summarizing locations/depth of field data, laboratory analytical data for soil samples, and laboratory analytical data for groundwater water samples.
- Laboratory analytical reports for soil and groundwater samples.
- Data validation summary forms for the soil and groundwater test results.
- Logs, field data sheets, and related field data.
- Data interpretation and recommendations relevant for further remediation or site closure.

Cost Estimates

A detailed cost estimate to perform this scope of work is in Attachment 2.

Task 10 – Prepare Schedules

We expect to begin work on this project within 30 days following receipt of both Montana DEQ and Petro Board approvals and obligations, which is expected sometime in the late winter of 2019/early spring of 2020. The project as described in this work plan will last up to 4 months. Therefore, the final report will be issued in the spring or summer of 2020.

If you have any questions about this project or the proposed scope of work, please call me at (406) 702-2430 or email me at cpeterson@pioneer-technical.com.

Sincerely,



Charles L. Peterson, P.G.
Project Manager

Attachment 1: Figure 1 Site Map

Attachment 2: Cost Estimates

cc: Ross Eaton, PTRCB, Helena, MT

ATTACHMENT 1

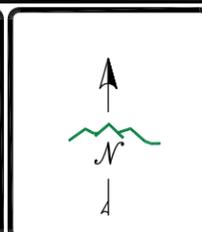
FIGURE



LEGEND:

- WTR— WATER MAIN
- SS— SEWER MAIN
- E.L.C.— UNDERGROUND ELECTRIC LINE
- GAS— UNDERGROUND GAS LINE
- TEL— UNDERGROUND COMMUNICATION LINE
- OHP— OVERHEAD POWER LINE

FACILITY ID # 09-05859
RELEASE # 5027



DISPLAYED AS: _____
 COORD SYS/ZONE: MSP
 DATUM: NAD 83
 UNITS: INT. FEET
 SOURCE: USGS QUADS

SCALE IN FEET
 0 20 40

FIGURE 2

**B&C OIL COMPANY
MILES CITY, MT
SITE MAP**

PIONEER
 TECHNICAL SERVICES, INC.
 2310 BROADWATER AVE., SUITE 1
 BILLINGS, MT 59102
 (406) 545-4805

DATE: 07-09-18

ATTACHMENT 2 COST ESTIMATE

