

September 21, 2020

Mr. Donnie McCurry  
MDEQ Petroleum Tank Cleanup Section  
P.O. Box 200901  
Helena, MT 59620-0901

RE: Semiannual Groundwater Monitoring Work Plan (CAP MR-01)  
Petroleum Release - Former Chuck's Exxon, 3053 10<sup>th</sup> Ave South, Great Falls, MT  
Facility ID 07-05958 (TID 18603), Release #2478; Work Plan ID 34187

Dear Mr. McCurry,

In accordance with the Montana Department of Environmental Quality (MDEQ) request letter dated September 14, 2020, Big Sky Civil & Environmental, Inc. (BSCE) has prepared this Semiannual Groundwater Monitoring Work Plan for the subject property. Groundwater monitoring will be performed semiannually for one year, a total of two (2) monitoring events, to be completed during seasonal-low and seasonal-high groundwater levels.

#### Site Conditions and Background

Per the consulting reports dated July 10, 2014 and November 25, 2014, petroleum hydrocarbon presence onsite consists of both gasoline and diesel. Depth to first groundwater is ~10' bgs. Previous environmental work completed at this site consists of remedial excavation & disposal of petroleum-impacted soils, installation of groundwater monitoring wells, and completion of groundwater monitoring events. Refer to the Groundwater Monitoring Report completed by BSCE on February 12, 2020 for additional details regarding site history and background.

#### Purpose and Objectives

Sampling will be completed so as to assess residual concentrations of petroleum hydrocarbons in groundwater and attenuation trends. Additionally, an updated release closure plan (RCP) will be completed for the purpose of evaluating additional remedial work that may be required to fully resolve the release and move the site toward closure.

#### Proposed Work

BSCE proposes to conduct groundwater monitoring/reporting at the subject release site as defined herein.

- Groundwater monitoring will be completed semiannually for one year at the following site wells: MW-4, MW-5, MW-6, MW-7, MW-8, MW-10, MW-11, and MW-12.
- Groundwater monitoring will be completed using low-flow techniques recommended by MDEQ. During sampling, static water level measurements will be recorded as well as field parameters (dissolved oxygen [DO], pH, Temperature, oxidation-reduction potential [ORP], and turbidity). Groundwater samples will be submitted to Energy Labs in Helena, MT for analysis of volatile petroleum hydrocarbons (VPH) and intrinsic biodegradation indicators (IBIs).

- The condition of groundwater monitoring wells will be documented during the first sampling event. Results will be shared with MDEQ as well as recommendations for repairs and a cost estimate to complete the repairs, if necessary.
- After completion of both monitoring events and analytical testing, one Standardized Groundwater Monitoring Report (MR-01) will be prepared and submitted to MDEQ. At a minimum the report will include the following: exhibits depicting the location of site features, utilities, existing monitoring wells, and former tank basins (if known); analytical data in tabular format, lab reports, data validation summary forms (DVSF), updated Release Closure Plan, data interpretations, conclusions, and recommendations for additional work required to resolve the release and achieve site closure.
- Reports and supporting documentation will be submitted following DEQ submittal requirements.
- Standardized MDEQ report formats will be used for all documents.

All sampling and groundwater monitoring will be completed in strict accordance with BSCE's standard QA/QC procedures. The following procedures will be used during sample collection to provide quality assurance and quality control (QA/QC), to minimize loss of volatiles, and to maintain the suitability of samples for analysis. Sample collection and analytical procedures were consistent with SW-846: *Test Methods for Evaluating Solid Waste*, November 1986, and updates published by the U.S. EPA. QA/QC methods used are defined below:

- All sample containers/preservatives will be supplied by a state-certified laboratory. Analyses will be performed by a state-certified laboratory.
- All samples will be handled in a manner which minimizes the loss of organic compounds to volatilization and biodegradation.
- All samples for analyses will be placed in a cooler on ice (at a temperature of 4° C) immediately following collection.
- Chain-of-custody procedures will be utilized during sampling and delivery.
- Documentation of the sampling and QA/QC procedures including notes will be available for DEQ inspection. These notes will document the procedures for sampling and all other routine activities, along with field notes describing the sequence of activities that took place during the corrective action cleanup and the following monitoring well construction and sampling.

Please feel free to contact us with any questions or concerns you may have.

Respectfully,

**Big Sky Civil & Environmental, Inc.**

  
Joseph N. Murphy, P.E.

  
Paxton Ellis, E.I.

encl. Cost estimate  
Figure 1 – Site Map

cc: Mr. Robert Zadick  
3051 10<sup>th</sup> Ave S  
Great Falls, MT 59405

**FIELDWORK/SAMPLING COST ESTIMATE**

| Task  | Cost                                  | Unit       | Number of Units | Total Cost   |
|---|---------------------------------------|------------|-----------------|--------------|
| <b>Work Plan</b>  |                                       |            |                 |              |
| Groundwater Monitoring WP (CAP MR-01)                               | \$ 630.00                             | /work plan | 1               | \$ 630.00    |
| <b>Project Management</b>   |                                       |            |                 |              |
| Senior Engineer <sup>(1)</sup>                                      | \$ 145.00                             | /hr        | 2               | \$ 290.00    |
| Project Engineer <sup>(1)</sup>                                     | \$ 134.00                             | /hr        | 8               | \$ 1,072.00  |
| <b>Mobilization/Demobilization</b>                                  |                                       |            |                 |              |
| Mobilization/Demobilization <sup>(2)</sup> (4 RT, 15 mi/RT)         | \$ 9.00                               | /mile      | 60              | \$ 540.00    |
| <b>Groundwater Monitoring</b>                                       |                                       |            |                 |              |
| *Set-up for groundwater sampling*                                   | \$ 86.25                              | /event     | 2               | \$ 172.50    |
| *Low-flow GW sampling (8 wells, two events)*                        | \$ 211.24                             | /well      | 16              | \$ 2,957.36  |
| Well assessment and repairs <sup>(3)</sup>                          | \$ 134.00                             | /hr        | 2.5             | \$ 335.00    |
| <b>Report Preparation</b>   |                                       |            |                 |              |
| Semi-annual Groundwater Monitoring Report (MR-01) <sup>(4)</sup>    | \$ 1,960.00                           | /report    | 1.5             | \$ 2,940.00  |
| Data Validation Summary Forms (DVSF)                                | \$ 134.00                             | /hr        | 2               | \$ 268.00    |
| Updated Release Closure Plan (RCP)                                  |                                       | /report    |                 | \$ 670.00    |
|   | <b>Estimated Project Expenses</b>     |            |                 | \$ 9,244.86  |
| <b>Laboratory Analysis - 16 water samples (2 rounds of 8 wells)</b> |                                       |            |                 |              |
| Volatile Petroleum Hydrocarbons (VPH)                               | \$ 125.00                             | /sample    | 16              | \$ 2,000.00  |
| EPA 300.0 (Nitrate)   | \$ 49.00                              | /sample    | 16              | \$ 784.00    |
| EPA 300.0 (Sulfate)   | \$ 20.00                              | /sample    | 16              | \$ 320.00    |
| RSK 175 (Methane)   | \$ 60.00                              | /sample    | 16              | \$ 960.00    |
| EPA 200.7 (Iron and Manganese)                                      | \$ 35.00                              | /sample    | 16              | \$ 560.00    |
| *PTRCB sampling fee*  | \$ 21.70                              | /sample    | 16              | \$ 347.20    |
|   | <b>Estimate of Per Diem &amp; Lab</b> |            |                 | \$ 4,971.20  |
|   | <b>Estimated Total Project Cost</b>   |            |                 | \$ 14,216.06 |

(1) Project Management (scheduling, DEQ/client correspondence, Health and safety plan updates, etc.)

(2) RT - round trip; 2 RT GWM, 2 RT sample delivery to UPS. The \$9.00/mi rate reflects time to load/unload sampling equipment and other prep for GWM

(3) Time for documentation of condition of monitoring wells and completion of cost estimate for repairs; including obtaining any necessary bids from contractors

(4) Two monitoring events requested for one report. Report costs increased by 1.5

**\*See next page for cost breakdown of: Low-flow sampling, Set-up for sampling, and Sampling fee**

**Low-flow sampling:**

| Task | Cost | Unit | Number of Units | Total Cost |
|------|------|------|-----------------|------------|
|------|------|------|-----------------|------------|

**Set-up:**

|  |           |     |     |          |
|--|-----------|-----|-----|----------|
| Senior Eng Tech  | \$ 102.50 | /hr | 0.5 | \$ 51.25 |
| - Time for completion of: Calibration of multimeter probe, decontamination station |           |     |     |          |
| Alconox  |           |     |     | \$ 10.00 |
| DI water (5 gal)   |           |     |     | \$ 20.00 |
| Calibration solution   |           |     |     | \$ 5.00  |

**Set-up subtotal: \$ 86.25**

**Sampling: per well**

|                                  |           |     |      |           |
|----------------------------------|-----------|-----|------|-----------|
| Senior Eng Tech                  | \$ 102.50 | /hr | 1.25 | \$ 128.13 |
| Oil/water interface probe        | \$ 12.00  | /hr | 1.25 | \$ 15.00  |
| Combo Meter (DO, pH, cond, temp) | \$ 12.50  | /hr | 1.25 | \$ 15.63  |
| Turbidity Meter                  | \$ 8.25   | /hr | 1.25 | \$ 10.31  |
| Peristaltic Pump                 | \$ 10.50  | /hr | 1.25 | \$ 13.13  |
| Tubing Silicone (1')             | \$ 2.80   | /ft | 1    | \$ 2.80   |
| Tubing poly (25')                | \$ 1.05   | /ft | 25   | \$ 26.25  |

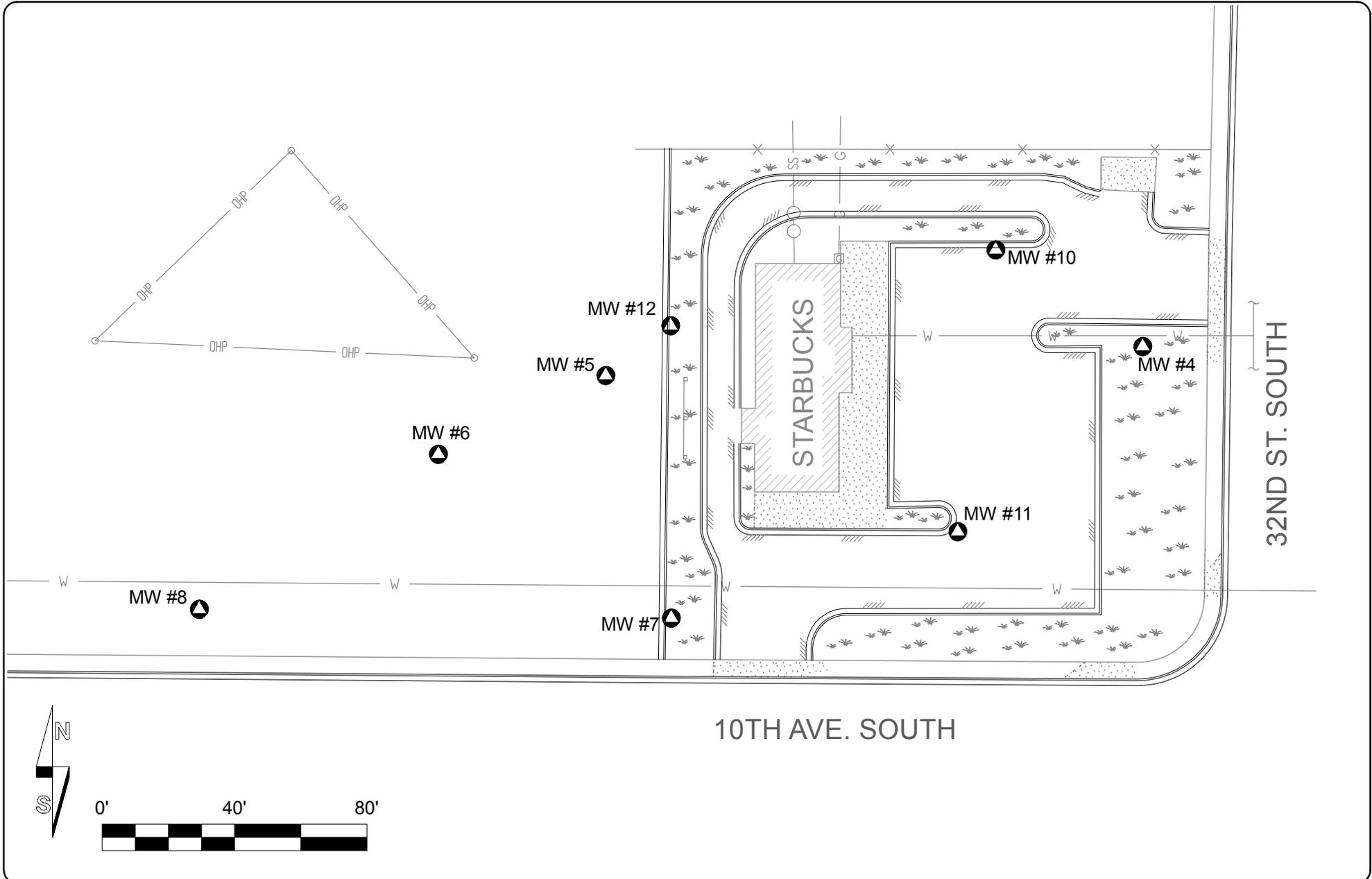
**Sampling (per well) subtotal : \$ 211.24**

**Sampling fee:**

|  |           |     |      |          |
|--|-----------|-----|------|----------|
| Senior Eng Tech  | \$ 102.50 | /hr | 0.75 | \$ 76.88 |
| - Time for completion of Chain-of-Custody (COC) and packaging/shipping samples |           |     |      |          |
| Tape   |           |     |      | \$ 5.00  |
| Ice  |           |     |      | \$ 10.00 |
| Shipping   |           |     |      | \$ 60.00 |

**Subtotal sampling fee: \$ 151.88**

**Sampling fee per well: \$ 21.70**



TITLE:  
**SITE MAP**

PROJECT:  
**FORMER CHUCKS EXXON**

18EF

EXHIBIT:  
**FIG. 1**

**bsc&e**  
**BIG SKY CIVIL & ENVIRONMENTAL, INC**

ENGINEERS - PLANNERS - DESIGNERS -  
 LAND SURVEYORS - ENVIRONMENTAL SPECIALISTS

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