BIG SKY CIVIL & ENVIRONMENTAL, INC

April 26, 2024

Christopher Herman
Petroleum Tank Cleanup Section
Montana Department of Environmental Quality
P.O. Box 200901
Helena, MT 59620-0901

Jeremy Day
Great Falls Subaru
800 Central Avenue
Great Falls, MT 59401

RE: Groundwater Monitoring Work Plan (WP) for the Petroleum Release at Former Bennett Motors Office Lot (Great Falls Subaru), 10 9th Street South, Great Falls, Cascade County, Montana; Facility ID #99-95174 (TID 17377), Release 5094, Work Plan ID 34866

Dear Mr. Herman,

On behalf of our client, Big Sky Civil & Environmental, Inc. (BSCE) has prepared this Groundwater Monitoring Work Plan (WP) for continued compliance monitoring of residual subsurface petroleum contamination at the subject release. In accordance with the Montana DEQ request letter dated April 24, 2024, groundwater monitoring will be completed semiannually for two years (a total of four events).

<u>Facility History and Release Background</u>

Previous facility use: Car Dealership; previous uses unknown.

Current Release: suspected on July 7, 2015 when visual and olfactory signs of contamination were discovered during limited Phase II investigative activities. DEQ was notified about the suspected release shortly after. Analytical results were received on July 27, 2015 confirming the presence of petroleum contamination underlying the subject site. Analytical results were also sent to DEQ upon receipt. Cause, source, type and quantity of petroleum products lost is unknown.

Initial investigation of the release was as follows: first, a Laser-induced Fluorescence (LIF or UVOST) investigation was completed (August 2017), followed by well installation and groundwater monitoring (September 2017). Investigation indicated widespread contamination was present at the subject site and elevated levels of petroleum contamination were encountered; see Remedial Investigation Report (November 2017) for additional information. After the initial assessment, a remedial soil excavation was completed in April and May 2019. Approximately 5,095 banked cubic yards of contaminated soils were removed, disposed of, and replaced with clean import materials.

Post remediation assessment indicated residual soil and groundwater contamination was present at the subject site, but at significantly reduced concentrations when compared with pre-cleanup levels; refer to the AR-07 dated January 31, 2020 for additional information.

Average depth of groundwater that will be sampled is approximately 6'-12' bgs.

Potential exposure and/or receptor concerns: no significant receptor concerns identified; refer to the release closure plan included as Appendix A in the Groundwater Monitoring Report dated December 21, 2022.

Objectives of Groundwater Monitoring

- The objective of groundwater monitoring is to evaluate natural attenuation trends (of petroleum contamination) at the subject site, and to assess levels of contamination for formal closure of the release (compliance monitoring).

Work Plan Tasks

- Two years of semiannual groundwater monitoring will be completed at the subject site for a total of four events. Sampling events will be completed on a rotational basis during seasonally high and low groundwater levels, respectively.

- Groundwater monitoring will be completed using low-flow techniques recommended by DEQ. Prior to sampling, fluid levels will be gauged and recorded at all site wells. Then samples will be collected from MW-19-5, and sent to Energy Labs in Helena, MT, for analysis of volatile petroleum hydrocarbons (VPH) and BTEX via 8260. Additionally, the samples will be analyzed for Intrinsic Biodegradation Indicators (IBIs).
    - For sampling, wells will be purged using a peristaltic pump and field parameters (dissolved oxygen, pH, temperature, conductivity, oxidation-reduction potential and turbidity) as well as water levels will be measured and recorded in approximately five-minute intervals. After stabilization of field parameters, samples will be collected.

- Purge water will be disposed of according to DEQ's Purge Water Disposal Flowchart.

- Fieldwork and related items will be discussed with MDEQ's Project Manager, as necessary, in order to achieve the work plan objectives.

Reporting

- After completion of each groundwater monitoring event and as required by DEQ, an Interim Data Submittal Report will be prepared and submitted following the Groundwater Monitoring Report guidance document.

- After completion of the final monitoring event, a Groundwater Monitoring Report will be prepared following the above-mentioned guidance. At a minimum the report will include scaled map(s) showing the location of all sampling points and physical features of the site, tabular presentation of cumulative groundwater data, a discussion section identifying results of the completed monitoring and conclusions & recommendations to resolve the release. The following will be appended to the report: field data sheets, analytical lab reports, data validation summary forms (DVSFs) and an updated release closure plan (RCP).

- Reports and supporting documentation will be submitted following DEQ submittal requirements.

Quality Assurance and Quality Control (QAQC)

All sampling 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.

Cost Estimate

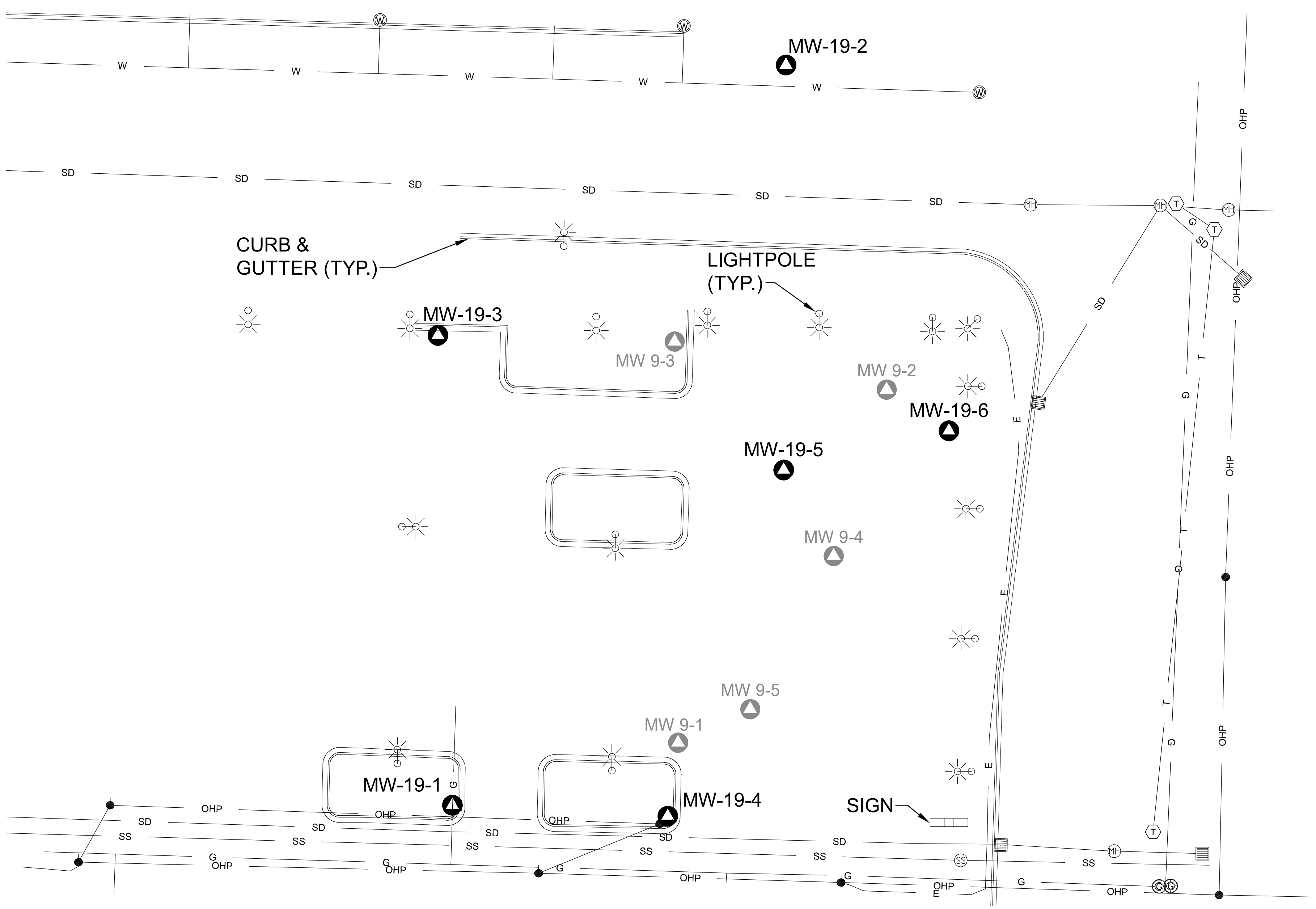
Attached is a cost estimate for completing the above-mentioned groundwater monitoring, analytical testing and report writing.

Signature

Christopher, thank you for your cooperation and assistance with this site. Please feel free to contact us with any questions or concerns you may have regarding this Work Plan.

Respectfully,
Big Sky Civil & Environmental, Inc.

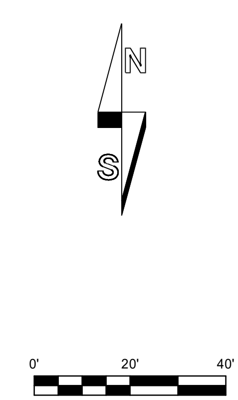
Paxton Ellis, P.E.



LEGEND

	EXISTING MONITORING WELL
	PREVIOUS MONITORING WELL
W	WATER MAIN (TYP. 8" DUCT. IRON, ~5'-7' BGS)
SD	STORM DRAIN LINE (TYP. 12"-24" VITR. CLAY, ~6'-7' BGS)
SS	SANITARY SEWER (TYP. VITR. CLAY, ~10' BGS)
G	NATURAL GAS LINE
T	TELEPHONE
E	BURIED ELECTRIC LINE
OHP	OVERHEAD POWER LINE
	MANHOLE
	CURB STOP

NOTES:
LOCATIONS AND DETAILS BASED ON INFORMATION PROVIDED BY OTHERS



bsc&e
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PROFESSIONAL SEAL

BY: JPE
DATE: 12.21.2022

OWNER:
GFS REAL ESTATE

PROJECT NAME:
FORMER BENNETT MOTORS
10 9TH ST. S.
GREAT FALLS, MT

SHEET TITLE:
SITE MAP

DRAWING INFORMATION:
OFFICE PROJECT NUMBER: 15DN
OWNER FILE NUMBER: XXXX
CADD FILE NAME: 15DN-BASE
ASSOCIATED PROJECTS: XXXX

FIGURE:
FIG. 2

Petroleum Tank Release Compensation Board
STATE OF MONTANA
P.O. Box 200902 • Helena, MT 59620-0902 • (406) 444-9710

Groundwater Monitoring and Sampling Unit Cost Worksheet

7/28/2022

Cost Estimate Expl. | Work Plan Tasks | Unit Cost Worksheet | Help

Contractor Information

Company Name:	Big Sky Civil & Environmental, Inc. (BSCE)		
Address:	PO Box 3625		
City, State, Zip:	Great Falls, MT 59403		
Cost Estimator/Print Name:	Paxton Ellis	Phone:	406-727-2185
Signature:	Paxton Ellis	Date:	4/26/2024

Project Information

Site Name:	Former Bennett Motors Office Lot	Facility ID#	99-95174
Address:	10 9th St S	Release #	5094
City:	Great Falls	WP ID#	34866
		Treads ID#	17377

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Groundwater Monitoring and Sampling Summary Sheet

Cost Estimate Expl. | Work Plan Tasks | Unit Cost Worksheet | Help

Monitoring Well Details

6	Total Number of Wells at Site
20	Number of Fluid Level Measurements Only (2)
4	Number of Wells to be Monitored/Sampled (4-11)
2	Average Well Casing Diameter (inches)
6-12	Average Depth to Groundwater (ft)
15-20	Average Depth of Wells (ft)

Sampling Method

☑	Low-Flow
X	Low Yield Aquifer
	No Purge
☐	Other (please specify)

of Events - Monitoring/Sampling Interval

Estimated Start Date: Spring/Summer '24

1	Semi-Annual
	Annual
	Bi-Annual
	Other

4 Total Events

4	< 25 ft total depth
	25 - 50 ft total depth
	50 - 75 ft total depth
	75 - 100 ft total depth
4	Total

Sampling Instrument

X	Peristaltic Pump
	Bladder Pump
☐	Submersible Pump
☐	Bailer
☐	Other (please specify)

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Cost Estimate Explanations

Site Information | Work Plan Tasks | Unit Cost Worksheet | Help
Technical Guidance Documents | Groundwater Sampling Guidance | Purge Water Disposal Flowchart

(1) Mobilization/Demobilization: Includes all travel time, preparation time, and vehicle use costs (vehicle mileage) to transport equipment, materials, and personnel to and from the site location. More than one mobilization per event will require justification and pre-approval by the DEQ-PTCS and Board staffs. This item should be on a per mile unit rate.

(2) Fluid Level Measurements: Includes all costs (labor, equipment, materials, and well consumables) to measure fluid depth, collect other groundwater information from well, and decontaminate equipment. The well gauging costs should be on a per well basis and does not include purging and sampling of the well.

(3) Groundwater Monitoring Preparation/Setup/Cleanup: Includes all on-site labor costs to unload, setup, and calibrate monitoring equipment prior to initiation of groundwater monitoring activities, and all on-site labor costs to load and secure equipment and samples prior to leaving the site.

(4) Groundwater Monitoring - Peristaltic: Includes all costs (labor, equipment, materials, and well consumables) using a peristaltic pump to monitor, purge, sample groundwater, decontaminate equipment, take water level measurements, and handle contaminated purge water (DEQ understands this to mean disposal of groundwater to the ground surface according to the Disposal of Untreated Purge Water from Monitoring Wells flowchart dated 7/27/2015. If purge water must be containerized and/or treated in a different manner, additional scope and budget may be required.) Groundwater sampling to be conducted using a low-flow method. The cost should be on a per well basis.

(5) Groundwater Monitoring - Bladder: Includes all costs (labor, equipment, materials, and well consumables) using a bladder pump to monitor, purge, sample groundwater, decontaminate equipment, take water level measurements, and handle contaminated purge water (DEQ understands this to mean disposal of groundwater to the ground surface according to the Disposal of Untreated Purge Water from Monitoring Wells flowchart dated 7/27/2015. If purge water must be containerized and/or treated in a different manner, additional scope and budget may be required.) Groundwater sampling to be conducted using a low-flow method. The cost should be on a per well basis.

(6) Groundwater Monitoring – No Purge: Includes all costs (labor, equipment, materials, and well consumables) to monitor, sample groundwater, decontaminate equipment, and take water level measurements.The cost should be on a per well basis.

(7) Groundwater Monitoring – Low Yield Modifier: Includes all additional on-site labor costs associated with groundwater well purging, monitoring, and sampling of wells which are low yield / low production. Low yield is defined as a monitoring well that is not capable of adequate groundwater production at the median low-flow purging rate of 200 ml/min without exhibiting drawdown in excess of DEQ guidelines. The cost should be on a per well basis.

(8) Groundwater Monitoring – IBI Modifier: Includes all additional labor costs necessary for collection of groundwater samples for IBI analyses. The cost should be on a per well basis.

(9) Groundwater Monitoring - Filters: Includes the costs (materials) for the use of a filter during collection of groundwater samples for the analysis of dissolved metals. The cost should be presented on a per well basis.

(10) Contaminated Purge Water - Offsite Disposal: Includes the costs (labor, equipment, and materials) for containerizing, handling, shipping, and disposal or treatment of purge water that cannot be disposed of on the ground surface according to the Disposal of Untreated Purge Water from Monitoring Wells flowchart dated July 27, 2015. This cost should be presented on a per work plan basis.

(11) Duplicate Sample Modifier: Includes the costs (labor and materials) for the collection of a duplicate groundwater sample. The duplicate groundwater sample is to be collected using the same method (e.g., low-flow) and using the same sampling tool as the field groundwater sample. This cost should be on a per duplicate basis.

(12) Laboratory Analysis: Includes all laboratory costs for all wells, for duration of work plan. It is realized that some laboratory analyses will not be conducted for every event and that the well sampling frequency may change.

(13) PTRCB Sampling Fee: Includes all costs related to management of the sample including: sample container, cooler, packing, shipping, handling, sample preservation, and office related handling charges. The Sample is defined as the laboratory ID number on the laboratory invoice. Unusual cost can be reimbursed by presenting clear and convincing evidence to the board staff and receiving approval by the board staff prior to costs being incurred.

(14) Groundwater Monitoring Report Preparation – Base Cost: Includes all costs (labor and materials) for preparation of a base-level groundwater monitoring report. The base-level report documents one monitoring event, including monitoring and sampling of up to 10 sampling points (sum of total monitoring wells, tap samples, etc.), cumulative groundwater data tables, updated site figures showing well locations, a groundwater flow map, COC isocontour figures, analytical data, and completed data validation and summary form(s), and report submittal, including all office related costs, per report. (link to DEQ's reference guide that is currently in progress)

(15) Groundwater Monitoring Report Preparation – Interim Data Submittal: Includes all costs (labor and materials) for preparation of a base-level groundwater monitoring interim data submittal. The interim data submittal documents one monitoring event, including monitoring and sampling of up to 10 sampling points (sum of total monitoring wells, tap samples, etc.), cumulative groundwater data tables, a groundwater flow map, COC isocontour figures, well purging record, analytical data, and completed data validation and summary form(s), and report submitttal, including all office related costs, per report. (link to DEQ's reference guide that is currently in progress)

(16) Groundwater Monitoring Report Preparation – IBI Modifier: Includes all costs (labor and materials) for addition of IBI data tables, IBI data evaluation, and IBI data discussion sections to the base-level groundwater monitoring report. The cost should be presented on a per report basis. (link to DEQ's reference guide that is currently in progress)

(17) Groundwater Monitoring Report Preparation – Additional Wells Modifier: Includes all costs (labor and materials) for addition of monitoring and sampling data, data evaluation, and discussion sections to the base-level groundwater monitoring report for events including monitoring and sampling of more than 10 sampling points per event (sum of total monitoring wells, tap samples, etc. collected per event). The cost should be presented on a per report basis (only one of this modifier is allowed per report).

(18) Release Closure Plan (RCP) Preparation: Includes all costs (labor and materials) for preparation or updating of a DEQ PTCS RCP. The cost should be presented on a per report basis.

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Cost Estimate Expl. | Site Information | Site Information | Unit Cost Worksheet

Helpful Sites	Links
Petroleum Tank Release Compensation Board (PTRCB)	https://deq.mt.gov/cleanupandrec/programs/ptrcb
DEQ - Petroleum Tank Cleanup Section (DEQ-PTCS)	https://deq.mt.gov/cleanupandrec/Programs/petrocleanup
DEQ Guidance Documents	https://deq.mt.gov/cleanupandrec/Programs/petrocleanup#accordion1-collapse5
Groundwater Monitoring Work Plan and Report Guidance	https://deq.mt.gov/files/Land/LUST/Documents/downloadables/GWM_WP_Rpt-Guidance_24Mar21.pdf
Groundwater Sampling Guidance	https://deq.mt.gov/files/Land/LUST/Documents/downloadables/GWSamplingGuidance-FINAL.pdf
Purge Water Disposal Flowchart	https://deq.mt.gov/files/Land/LUST/Documents/downloadables/PurgeWater7_27_15.pdf
Data Validation Guidelines	https://deq.mt.gov/files/Land/LUST/Documents/downloadables/2018-01-26%20DV%20Guidance%20Checklist%20PDF%20Version%201.3.0%20Distributed.pdf
Data Validation Summary Form	https://deq.mt.gov/files/Land/LUST/Documents/TechGuidDocs/2018-01-26%20DV%20Guidance%20Checklist%20PDF%20Version%201.3.0%20Distributed.pdf