

October 28, 2024

Mr. Jay Shearer  
Environmental Science Specialist  
Petroleum Tank Cleanup Section  
Montana Department of Environmental Quality  
P.O. Box 200901  
Helena MT 59620-0901

**RE: Groundwater Monitoring Work Plan for Forsyth Watering Hole (former Kum and Go)  
1017 Front Street, Forsyth, Rosebud County, Montana 59327  
Facility ID #44-01244 (TREADS ID #27590), Release #1035, Work Plan ID #34942**

<b>Owner/ Responsible Party:</b>	RRR Properties, LLC. DeAnne Jonas/Jeremy Smith PO Box 1110 Forsyth, MT 59327 <a href="mailto:forsythwh@yahoo.com">forsythwh@yahoo.com</a>	<b>Consultant/ Work Plan Preparer:</b>	Pioneer Technical Services, Inc. Charles L. Peterson, P.G. 2310 Broadwater Ave, Suite 1 Billings, MT 59102 <a href="mailto:cpeterson@pioneer-technical.com">cpeterson@pioneer-technical.com</a>
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Dear Mr. Shearer:

On behalf of RRR Properties, LLC, Pioneer Technical Services, Inc. prepared the following Groundwater Monitoring Work Plan and cost estimate for performing groundwater monitoring work at the Watering Hole in Forsyth, Montana. As requested in correspondence dated October 3, 2024, from the Montana Department of Environmental Quality, our scope of work and associated proposed costs are outlined below.

If you have any questions concerning this project or the proposed scope of work, please contact me at (406) 702-2430 or [cpeterson@pioneer-technical.com](mailto:cpeterson@pioneer-technical.com).

Sincerely,



Charles L. Peterson, P.G.  
Program Manager  
Pioneer Technical Services, Inc.

Attachment 1: Figures  
Attachment 2: Cost Estimates

cc: DeAnne Jonas/Jeremy Smith, RRR Properties, LLC., PO Box 1110, Forsyth, MT 59327

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SUSTAINABLE FUTURE  
TOGETHER**



## EXECUTIVE SUMMARY

The purpose of this document is to provide a Groundwater Monitoring Work Plan (work plan) for the Watering Hole facility (Site), located at 1017 Front Street, Forsyth, Rosebud County, Montana, Facility ID #44-01244, as requested in electronic correspondence from the Montana Department of Environmental Quality (DEQ) dated October 3, 2024. The purpose of the proposed work activities is to further evaluate the groundwater impacts associated with Release #1035 by conducting two semi-annual groundwater monitoring events to determine a pathway to resolve Release #1035.

Montana DEQ outlined these recommendations in the work plan request letter dated October 3, 2024. These recommended actions are included in this work plan, which involves conducting two semi-annual groundwater monitoring events, preparing an Interim Data Submittal (IDS) following the initial event and preparing a Groundwater Monitoring Report appended with a Release Closure Plan (RCP) upon completion of all activities. These activities are detailed in the following work plan.

## 1 FACILITY SUMMARY AND CURRENT CONDITIONS

The Site is situated in a mixed commercial and residential area within the boundaries of the town of Forsyth, Montana. The Site is located at the northeast intersection of Front Street and 10<sup>th</sup> Avenue near the urban core of the town. The Site is currently occupied by a single-story, brick and block, slab-on-grade convenience store building and a set of retail gasoline fuel pump islands located under a canopy at the front (south) of the store. According to Montana Cadastral, the existing convenience store building was constructed in 1982 (Montana State Library, 2024). The Site currently has a gasoline underground storage tank (UST) basin that consists of one 8,000-gallon and two 6,000-gallon gasoline USTs and associated underground supply piping. This UST basin is located to the east of the building. The surface surrounding the building is paved with asphalt.

The property is bordered to the north by a paved parking lot and a vacant commercial building, to the east by private single-family homes, to the south by Front Street, across from which is a motel, and to the west by 10<sup>th</sup> Avenue South, across from which is a former gasoline station and former bulk fuel storage yard currently occupied by a restaurant. This area of Forsyth is served by public utility city services (e.g., potable water and sanitary and storm sewer systems). The location of the Site is shown on the Location and Vicinity Map (Figure 1) and Site Map (Figure 2) provided in Attachment 1.

In February 1992, the former owners (Home Oil) of the subject facility removed three USTs from the ground due to a failed tank tightness test. These tanks were formerly located west of the existing on-Site building. During removal, the USTs were observed to be heavily pitted. Three new USTs were installed in a tank basin location to the east of the existing building. Montana DEQ assigned Release #1035 to the previously mentioned release.

As part of a remedial investigation (RI) for Release #1035, soil samples showed moderate levels of hydrocarbons in the vadose zone. Water samples collected from monitoring wells at the time of drilling indicated total dissolved benzene, toluene, ethylbenzene, and xylenes (BTEX) concentrations of up to 18,000 micrograms per liter ( $\mu\text{g/L}$ ) (AJM, 2012a). In 1995, a soil vapor extraction (SVE) system was installed at the Site. Monitoring of the SVE system indicated that a significant portion of contaminants had been removed from the groundwater, and the system was shut down in November 2001 at the request of Montana DEQ. Periodic groundwater monitoring events were conducted from 2007 until 2012 (AJM, 2012a). In August 2010, AJM, Inc. removed the existing Knack boxes, remedial equipment, abandoned air-sparge and SVE wells, and polyvinyl chloride (PVC) vent lines; Montana-Dakota Utilities removed associated electrical components (AJM, 2012a).

Results from the June 2012 groundwater monitoring report indicated monitoring wells MW-1, MW-2, MW-4, MW-6, MW-8, and MW-9 were below DEQ risk-based screening levels (RBSLs).

Monitoring well MW-3 was still above the respective groundwater DEQ RBSLs (AJM, 2012b). No other work related to Release #1035 was completed at the Site until Release #5387 was discovered in 2018.

On December 6, 2018, the facility failed a tightness test on an unleaded line between the middle and western pump islands. Based on impacted soil gathered from below the piping in the leak area, DEQ assigned Release #5387 to this release.

As requested by the DEQ on October 7, 2022, Pioneer Technical Services, Inc. (Pioneer) submitted RI Work Plans #34621 and #34622 on behalf of RRR Properties, LLC to perform additional RI activities at the Site (Pioneer, 2022). Montana DEQ approved both work plans on January 10, 2023. The work plans included installing additional soil borings and monitoring wells, installing vapor intrusion (VI) sampling ports, completing soil sampling, groundwater monitoring, and soil VI sampling, and preparing a RI report and updated RCP.

A total of 11 soil borings were advanced on July 11 and 12, 2023. Out of these soil borings, 7 of the 11 were completed as groundwater monitoring wells, and 1 of the 11 was completed as a near-soil vapor port. From October 25 to 26, 2023, a groundwater monitoring and sampling event and a soil vapor sampling event were completed. The results from the RI and monitoring event are summarized below:

- Soil encountered during boring advancement was consistent with characteristics of an alluvial depositional environment. Soil types at the Site included silty clay, sandy clay, sand, and variations of sand and gravel. Encountered soil lithology was generally consistent in all borings. The water table was encountered at approximately 6.00 to 6.75 feet below ground surface (bgs).
- During monitoring well development and evaluation, it was determined that monitoring wells MW-4 and MW-9 were no longer serviceable and were abandoned.
- A total of 27 soil samples, including two duplicate samples, were submitted for laboratory analysis. No lead scavengers were present above their respective DEQ RBSLs or laboratory reporting limits in any of the soil samples analyzed.
- Volatile petroleum hydrocarbon (VPH) constituents were present above the most conservative DEQ RBSLs in soil borings MW23-10, MW23-12, and MW23-15 (located near and downgradient of the 2018 line release) from 2 to 10 feet bgs and/or 6 to 10 feet bgs.
- The extractable petroleum hydrocarbon (EPH) screening level (200 milligram per kilogram [mg/kg]) was exceeded in MW23-12 from 6 to 10 feet bgs (329 mg/kg) and MW23-15 from 2 to 10 feet bgs (963 mg/kg). The EPH fractionation analysis for both samples indicated no constituents above the DEQ RBSLs Direct Contact (Commercial) for soil samples from monitoring wells MW23-12 and MW23-15.

- A total of 13 groundwater samples, including one duplicate sample, were submitted for laboratory analyses. No lead scavengers were present above laboratory reporting limits in any of the groundwater samples analyzed.
- Monitoring wells MW23-10, MW23-13, and MW23-14 had groundwater VPH constituents in concentrations above the Montana DEQ Tier 1 Groundwater RBSLs (DEQ, 2018a).
- Monitoring wells exceeding the groundwater EPH screening (1,000 µg/L) level include MW-3 (1,020 µg/L), MW23-14 (6,180 µg/L), and MW23-15 (2,860 µg/L). An EPH fractionation analysis indicated all monitoring wells had groundwater EPH fractionation constituents below respective DEQ RBSLs. Post fractionation, MW23-14 and MW23-15 had total extractable hydrocarbon values of 3,390 µg/L and 1,240 µg/L, respectively.
- Vapor Probe VI21-01 had a soil vapor C<sub>5</sub> to C<sub>8</sub> aliphatic concentration (15,000 micrograms per cubic meter [µg/m<sup>3</sup>]) above Environmental Protection Agency (EPA) Sub-Slab and Near-Source Soil Gas Commercial Regional Screening Level (RSL) (EPA, 2024).
- All remaining soil vapor constituent concentrations were below their respective Commercial RSL.

Soil samples taken within the former areas of impact related to Release #1035 (soil borings SB23-01, SB23-03, and MW23-16) indicate no lead scavenger or VPH or EPH constituents above respective RBSLs. Monitoring well MW-3 (downgradient of the existing UST) required EPH fractionation analysis, but indicated no EPH fractionation constituents present post-fractionation. Monitoring well MW-8 (downgradient of the existing UST) had an increase in VPH constituents detected above laboratory reporting limits relative to historical results, but all constituents remain below their respective RBSLs. The remaining downgradient monitoring wells and monitoring wells within the 1991 excavation area indicate no VPH or EPH constituents above RBSLs in the groundwater.

The groundwater monitoring tasks proposed in this work plan will be used to further evaluate the impacts of Release #1035 by further defining the extent and magnitude of the groundwater contamination at the Site to help determine a pathway to remediation and resolution of Release #1035.

## **2 OBJECTIVES OF CORRECTIVE ACTION WORK PLAN**

In summary, this work plan involves conducting two semi-annual groundwater monitoring events, preparing an IDS following the initial event, and preparing a Groundwater Monitoring Report appended with a RCP upon completion of all activities. These activities are detailed in the following work plan.

Specifically, this work plan proposes the following actions to achieve these goals:

- Performing two semi-annual groundwater monitoring events.

- Validating all laboratory analytical data using DEQ's Data Validation Summary Form.
- Discussing work plan tasks and results with DEQ's project manager; any modifications required to complete the work plan objectives will be submitted and agreed upon.
- Updating the RCP and discussing the results with DEQ's project manager.
- Submitting a Groundwater Monitoring Report that details the results of the monitoring events.
- Work plan and reports will be submitted electronically following the Petroleum Tank Cleanup Section submittal requirements (DEQ, 2021).

These investigation activities will be provided to delineate the magnitude and extent of the release in order to resolve Release #1035. As requested by the DEQ, Pioneer proposes the following scope of work:

- Task 1: Project Management and Planning.
- Task 2: Semi-Annual Groundwater Monitoring.
- Task 3: Reporting.

The following sections describe each task for the proposed work along with Pioneer's cost estimate and proposed schedule.

## ***2.1 Task 1 – Project Management and Planning***

Task 1 Project Management and Planning work will include:

- Prepare a work plan and cost estimate.
- Project scheduling.
- Prepare a Health and Safety Plan.
- Coordinate with subcontractors, owners, and regulators.
- Site work preparation.

## ***2.2 Task 4 – Semi-Annual Groundwater Monitoring***

This work plan proposes performing two semi-annual groundwater monitoring events. During each semi-annual event, Pioneer will collect groundwater samples from the twelve on-Site wells MW-1, MW-2, MW-3, MW-6, MW-8, MW23-10, MW23-11, MW23-12, MW23-13, MW23-14, MW23-15, and MW23-16. For each event, we will gauge and purge the wells and collect groundwater samples. We will attempt to complete the sampling events in conjunction with the typically high and low groundwater conditions.

Prior to groundwater sample collection, we will gauge each of the six monitoring wells for the presence of light non-aqueous phase liquid (LNAPL). Each well will be gauged using an electronic interface probe capable of detecting water or LNAPL hydrocarbons to within 0.01

feet. If the well does not contain LNAPL, the team will collect groundwater samples. If LNAPL is detected, the team will not collect any samples, will note the conditions in a logbook, and notify the DEQ project manager.

The groundwater samples will be collected according to low-flow sample techniques. To ensure representative groundwater samples are collected, we will monitor the water quality parameters for the following intrinsic bioremediation indicators and allow them to stabilize during the purging process prior to sample collection: temperature (plus or minus 3%), pH (plus or minus 0.1), dissolved oxygen (plus or minus 10%), specific conductance (plus or minus 3%), oxidation-reduction potential (plus or minus 10 millivolts), and turbidity (plus or minus 10%). To complete groundwater sampling according to DEQ's low-flow sampling guidance, the wells will be gauged at each field parameter monitoring interval with a water level meter to ensure that excessive drawdown (plus or minus 0.3 feet) does not occur prior to sampling (DEQ, 2018b).

We will collect the groundwater samples with a peristaltic pump and disposable tubing and transfer the samples to the appropriate laboratory containers. The laboratory will supply new, decontaminated containers prior to sample collection. Groundwater samples from all twelve monitoring wells will be submitted for laboratory analysis of VPH. Based on the absence during the historical sampling at the Site, lead scavengers have been excluded.

Analysis of groundwater samples will be in accordance with DEQ's *Risk-Based Corrective Action (RBCA) Guidance for Petroleum Releases* (DEQ, 2024). We will collect one field duplicate during each sampling event. Each sample container will be preserved as directed by the laboratory, labeled, and packaged on ice. The samples will be delivered to Energy Laboratories, Inc. Chain of custody documentation will accompany the samples.

Purge water generated during the sampling activities will be infiltrated into the grassy areas available at the Site in accordance with Montana DEQ standards.

### **2.3 Task 3 – Reporting**

Pioneer will prepare two separate reports for this work plan: one IDS, which will include the first groundwater sampling event, and one Groundwater Monitoring Report, which will include the results of the second groundwater sampling event and an updated RCP.

#### **Interim Data Submittal**

Following the first round of groundwater monitoring, Pioneer will prepare and submit an IDS in accordance with *Montana Groundwater Monitoring Work Plan and Report Guidance for Petroleum Releases* (DEQ, 2021). The report will follow the Montana DEQ report format and include the following:

- Cover Letter with brief (one page or less) executive summary including a discussion of the groundwater monitoring event.

- Updated facility maps illustrating the locations of the former fuel systems, Site building, locations of petroleum source material areas, receptors including underground utilities, locations of groundwater monitoring wells, and potentiometric surface maps.
- Tables summarizing field data and cumulative laboratory analytical data for groundwater samples.
- Laboratory analytical reports for the groundwater and tap water samples.
- Field sample data sheets and related field data.
- Data validation documentation using DEQ Data Validation Summary Forms.

Following the second round of groundwater sampling, we will analyze the results and compile and submit a Groundwater Monitoring Report, prepared according to DEQ's Montana Report Guidance for Petroleum Releases (DEQ, 2021) that will include the following:

- Updated Site maps illustrating the locations of the new and existing monitoring wells, underground utilities, and surface features.
- Tables summarizing locations/depths of field data and laboratory analytical data for the new monitoring wells and the first and second round of groundwater monitoring.
- Laboratory analytical reports for groundwater samples.
- Logs, field data sheets, and related field data.
- Laboratory data validation.
- Recommendations relevant for further investigation or remedial action.
- An updated RCP.

### **3 COST ESTIMATE**

A detailed cost estimate to perform this scope of work is presented on the worksheet in Attachment 2.

### **4 SCHEDULES**

Pioneer proposes to perform the first groundwater sampling event (Task 2) during the winter of 2024 or the spring of 2025. The IDS will be completed and submitted within 45 days of receipt of all laboratory analytical reports for the groundwater sampling event. The second groundwater sampling event will be completed 6 months after the first sampling event. The groundwater monitoring report will be completed and submitted within 45 days of receipt of all laboratory analytical reports for groundwater samples. The full duration of the project is approximately 12 to 14 months, and the final report will be issued sometime in the early spring of 2026.



## 5 REFERENCES

AJM, 2012a. Corrective Action Report KUM & GO Convenience Store. AJM Incorporated. January 24, 2012.

AJM, 2012b. Groundwater Sampling Report 7-11 (KUM & GO) Convenience Store. AJM Incorporated. October 23, 2012.

DEQ, 2018a. Montana Tier 1 Risk-Based Corrective Guidance for Petroleum Releases. Montana Department of Environmental Quality. May 2018.

DEQ, 2018b. Groundwater Sampling Guidance. Montana Department of Environmental Quality Contaminated Site Cleanup Bureau. DEQ-WMRD-GWM-1. March 6, 2018. Helena, Montana 59601.

DEQ, 2021. Montana Groundwater Monitoring Work Plan and Report Guidance for Petroleum Releases. Montana Department of Environmental Quality, Waste Management and Remediation Division Petroleum Tank Cleanup Section. March 2021.

DEQ, 2024. Montana Risk-Based Corrective Action Guidance for Petroleum Releases. Montana Department of Environmental Quality. February 2024.

EPA, 2024. Vapor Intrusion Screening Level Calculator. Available at [Vapor Intrusion Screening Level Calculator | US EPA](#).

Montana State Library, 2024. Montana Cadastral. Available at [Map | Montana Cadastral](#).

Pioneer, 2022. Remedial Investigation Work Plan for Petroleum Releases at Forsyth Watering Hole, 1017 Front Street, Forsyth, Rosebud County, MT 59327. Facility ID #44-01244 (TREADS ID #27590), Release #5387 and #1035, Work Plan IDs #34621 and 34622. Prepared by Pioneer Technical Services, Inc. October 7, 2022.

# Attachment 1

## Figures

Figure 1. Location and Vicinity Map  
Figure 2. Site Map



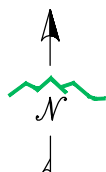
**PROJECT  
LOCATION**



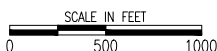
**SITE VICINITY MAP**

DEQ FACILITY ID: #44-01244  
 RELEASE NUMBER: #1035  
 WORK PLAN NUMBER: #34942

FORSYTH WATERING HOLE  
 1017 FRONT STREET  
 FORSYTH, MONTANA 59327



DISPLAYED AS:  
 COORD SYS/ZONE: NAD83, NAVD88  
 DATUM: MSP  
 UNITS: INT. FEET  
 SOURCE: ----



**FIGURE 1**

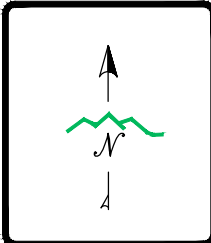
**FORSYTH WATERING  
 HOLE  
 LOCATION AND  
 VICINITY MAP**

DATE: OCTOBER 2024



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DEQ FACILITY ID: #44-0144  
 RELEASE NUMBER: #1035  
 WORK PLAN NUMBER: #34942



DISPLAYED AS:  
 COORD SYS/ZONE: NAD83, NAVD88  
 DATUM: MSP  
 UNITS: INT. FEET  
 SOURCE: BING

SCALE IN FEET  
 0 25 50



**FIGURE 2**  
**FORSYTH WATERING HOLE SITE MAP**

DATE: OCTOBER 2024