



Environmental Resources, LLC

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December 5, 2024

Mr. Eric Kreuger
DEQ-PTCS
P.O. Box 200901
Helena, MT 59620

Subject: Groundwater Monitoring Work Plan
Dale's Conoco, Clyde Park, Montana
DEQ Facility ID No. 34-07600, (TID 26059)
DEQ Release No. 3013 Work Plan 34931

Responsible Party: Mr. Dale Jones
P.O. Box 90
Clyde Park, MT 59018

Dear Mr. Kreuger:

Environmental Resources, LLC is pleased to submit this Groundwater Monitoring Work Plan to outline activities associated with groundwater monitoring and reporting at the above referenced petroleum release site. Submittal of this work plan was requested by the Montana Department of Environmental Quality (DEQ) in a letter dated September 6, 2024.

Submitted by
Environmental Resources, LLC

Robert H. Waller, Principal Geologist

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1.0 Executive Summary

Environmental Resources, LLC has been retained by Mr. Dale Jones to investigate and remediate petroleum contaminated soil and groundwater discovered at the Dale's Conoco facility in Clyde Park, Montana. The project site is underlain by coarse alluvium consisting of andesite cobbles mixed with sand. Groundwater occurs at approximately 12-15 feet below ground surface.

Dale's Conoco has been operated as an automobile refueling facility and mechanic shop since construction. The petroleum storage and delivery system was removed and replaced in December 1998. Based upon the UST closure soil sample results, DEQ subsequently required a Remedial Investigation. A dissolved petroleum contaminant plume was delineated that extends approximately 250 feet southwesterly from the project site.

2.0 Facility Summary and Current Conditions

The Dale's Conoco petroleum release site is located within the city limits of Clyde Park, Montana at 301 Highway 89 as shown in Figure 1 (Appendix A). One 560-gallon gasoline underground storage tank (UST) and one 1000-gallon diesel UST were removed on September 24, 1996 from the locations shown on Figure 2. Evidence of a petroleum release was noted upon removal of the gasoline UST. Closure soil samples obtained from beneath the USTs contained 200 mg/kg Diesel Range Organics and 680 mg/kg Gasoline Range Organics.

Based upon the closure soil sample analyses, DEQ subsequently required that a Remedial Investigation (RI) be conducted at the Dale's Conoco facility to determine the extent and magnitude of the petroleum release. Eleven groundwater monitoring wells were installed during three phases of investigation as shown on Figure 3. A dissolved petroleum contaminant plume was delineated that extends southwesterly from the project site.

Buried utility corridors probably are not in contact with petroleum contamination and are not likely to act as conduits for contaminant migration due to the depth difference between the utility burial depth and the depth groundwater. A water service main is present downgradient from the petroleum release site. However, it appears that the utility burial depths are shallower than the static water level by approximately 10-13 feet.

2.1 Site Geology

Site geology is characterized by fine- to very coarse-grained alluvial materials. Surficial soils are underlain by sand and cobbles deposited by the Shields River system. Groundwater is expected to occur at approximately 12-15 feet below ground surface

and is inferred to flow west-southwesterly toward the Shields River. Groundwater beneath the site may be potable but does not appear to be used for human consumption.

3.0 Purpose and Objectives

The purpose of this investigation is to assess current groundwater quality beneath the project site. Specific objectives of the investigation include:

- 1) Measure and record depth to groundwater in all site monitoring wells.
- 2) Collect groundwater samples for laboratory analysis from monitoring wells MW-1, MW-2, MW-5, MW-6 and MW-11 on a quarterly basis for one year.
- 3) Analyze samples at an analytical laboratory in accordance with Montana Title 17 Risk-Based Corrective Action Guidance for Petroleum Releases. Include analyses for Intrinsic Biodegradation Indicators (IBIs).
- 4) Validate all laboratory data.
- 5) Prepare an Interim Data Submittal for each interim groundwater monitoring event.
- 6) Prepare an updated Release Closure Plan (RCP).
- 7) Prepare a Groundwater Monitoring Report.

4.0 Scope of Work

4.1 Groundwater Sample Collection and Analysis

Groundwater samples will be collected from monitoring wells MW-1, MW-2, MW-5, MW-6 and MW-11 on a quarterly basis for one year. Groundwater elevations will be measured in all of the site monitoring wells prior to purging and sample collection.

All of the well covers will be opened and the locking caps removed at least 30 minutes prior to obtaining water level measurements. Static water levels will be measured from a reference point on top of the north side of each well casing using a Keck ET-89 electronic water levels indicator. The water level indicator will be decontaminated prior to each measurement. Decontamination will be accomplished by scrubbing the indicator tip in an *Alconox*® wash solution, rinsing with a 10% methanol solution and triple rinsing with distilled water.

Following measurement of the static water levels, sample collection will commence using a submersible pump and low flow sampling methods. Indicator parameters turbidity, oxidation-reduction potential, dissolved oxygen, pH, specific conductance and temperature will be measured during sample purging. Samples will be collected when the measured

indicator parameters stabilize according to Section 2.5 of the DEQ Groundwater Sampling Guidance (2018).

Samples will be decanted into appropriate sample containers, preserved and placed on ice while awaiting delivery to the analytical laboratory. Groundwater samples will be analyzed for Volatile Petroleum Hydrocarbons (VPH) and for IBIs at Energy Laboratories in Helena, MT. One QA/QC duplicate sample will be collected from monitoring well MW-5 during each monitoring event and will be analyzed for VPH. Additionally, samples collected from monitoring well MW-1 will be analyzed for EPH during the initial monitoring event. Future groundwater sampling will not include EPH Screen analyses unless the initial sampling indicates the presence of diesel weight range hydrocarbons.

Additionally, during the first groundwater monitoring event, nearby structures will be evaluated for the presence of subgrade spaces and for the potential for vapor intrusion.

4.2 Investigation Derived Waste

Drill cuttings, excess sample materials, drilling fluids, and water removed from a well during installation, development, and aquifer testing and all other investigation derived wastes will be disposed of according to all applicable local, state and federal laws and regulations governing the disposition of investigation derived wastes.

4.3 Reporting

An Interim Data Submittal will be prepared for each interim groundwater monitoring event and will include all required attachments. One Groundwater Monitoring Report will be prepared following completion of the final groundwater monitoring event. The RCP will be updated and included in the final report along with Data Validation Summary Forms.

4.4 Investigative Methods

Methods practiced during this investigation will follow generally accepted practices of similar consulting firms in the same geographical area. Quality Assurance/ Quality Control methods will be employed throughout all phases of this investigation to ensure meaningful and reproducible results and data.

4.5 Health and Safety

Health and safety issues will be addressed throughout this investigation to prevent exposure of site workers and other onsite personnel to potentially hazardous situations and chemical compounds. Several physical hazards will inherently be present throughout the field investigation while heavy equipment is being utilized for soil borings and monitoring well installation. Site specific health and safety precautions and information will be contained in a Health and Safety Plan which will remain onsite during all field activities.

5.0 Budget

Costs for groundwater monitoring are outlined on the attached Unit Cost Worksheets included in Appendix C.

6.0 LIMITATIONS

This work was performed in accordance with generally accepted practices of other consulting firms conducting similar studies. Environmental Resources, LLC observed that degree of care and skill generally exercised by other consultants under similar conditions. Our findings and conclusions must not be considered as scientific certainties, but as opinions based upon our professional judgment based upon the data gathered during the course of this investigation. Other than this, no warranty is implied or intended.

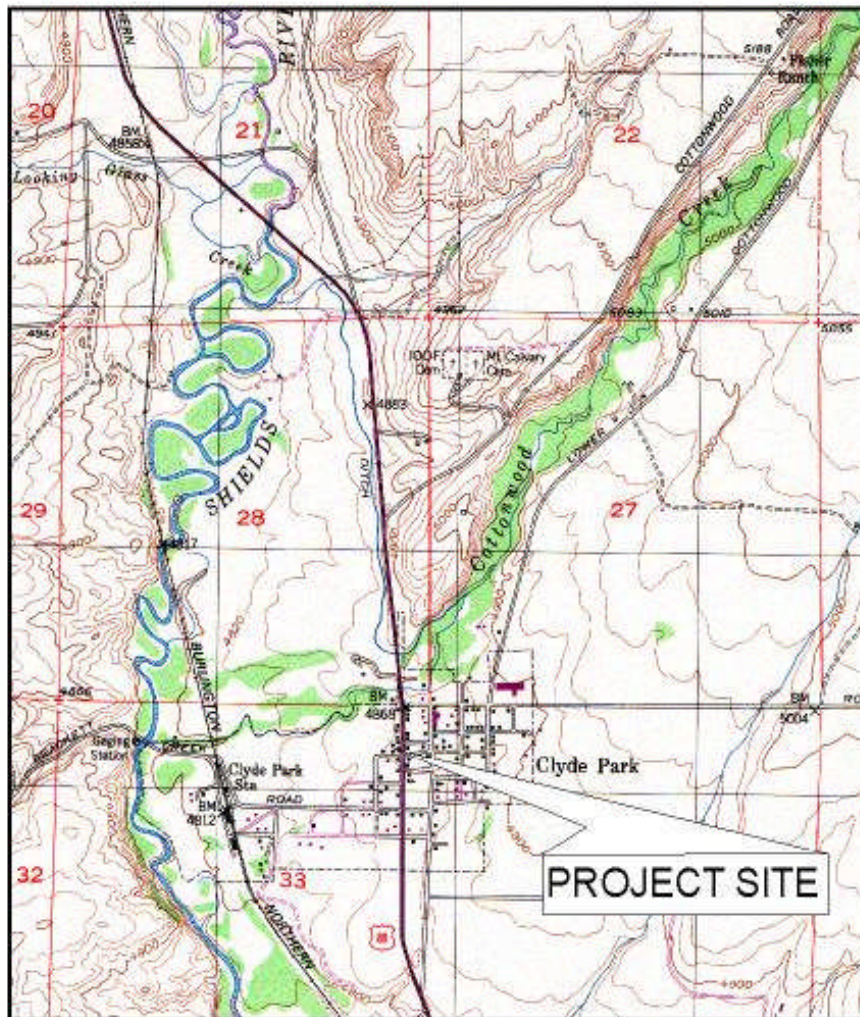
Submitted by
Environmental Resources, LLC

A handwritten signature in black ink that reads "Robert Waller". The signature is written in a cursive style with a long, sweeping underline.

Robert H. Waller, Principal Geologist

Appendix A

Figures

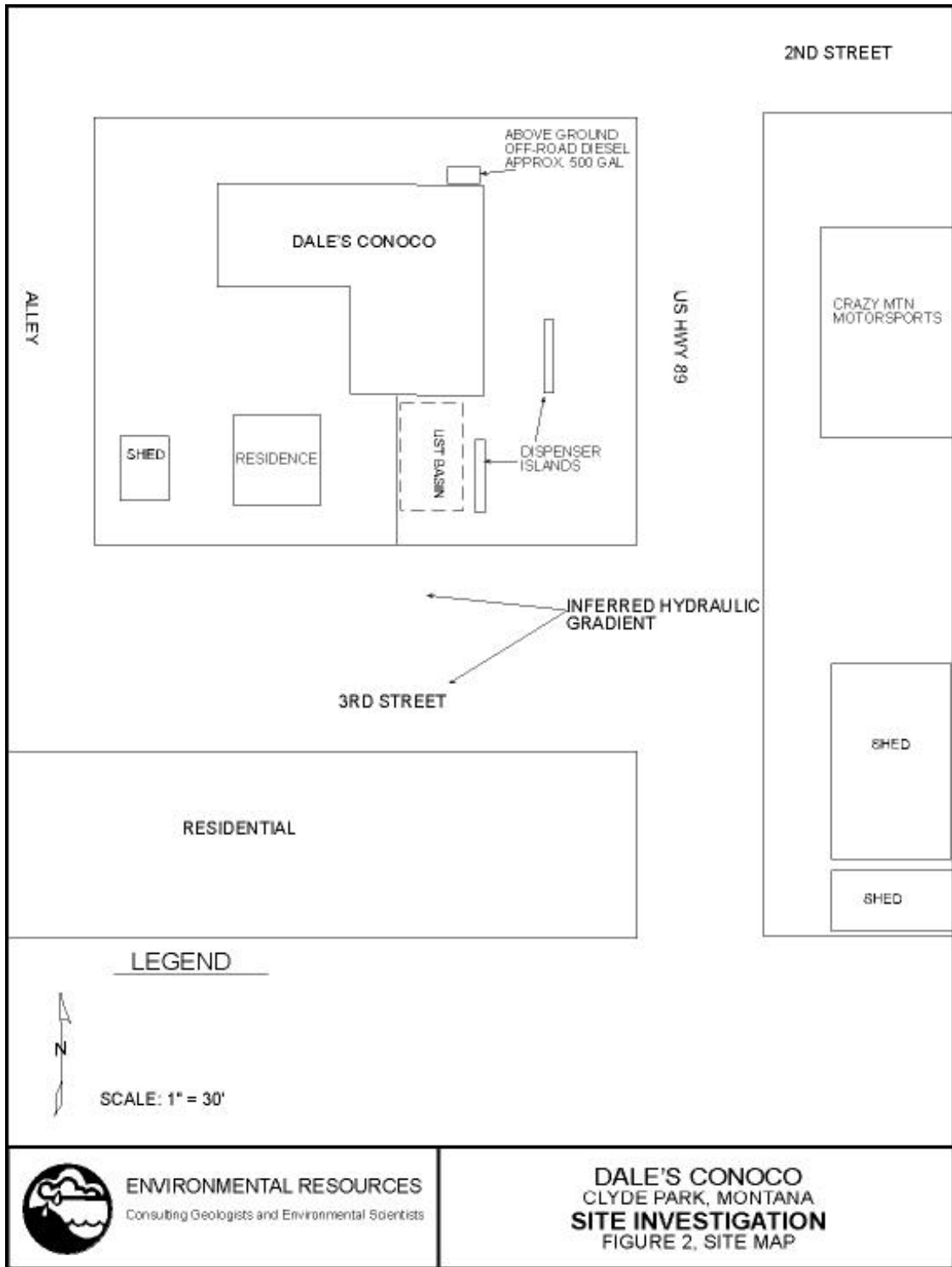


SCALE: 1" = 2000'



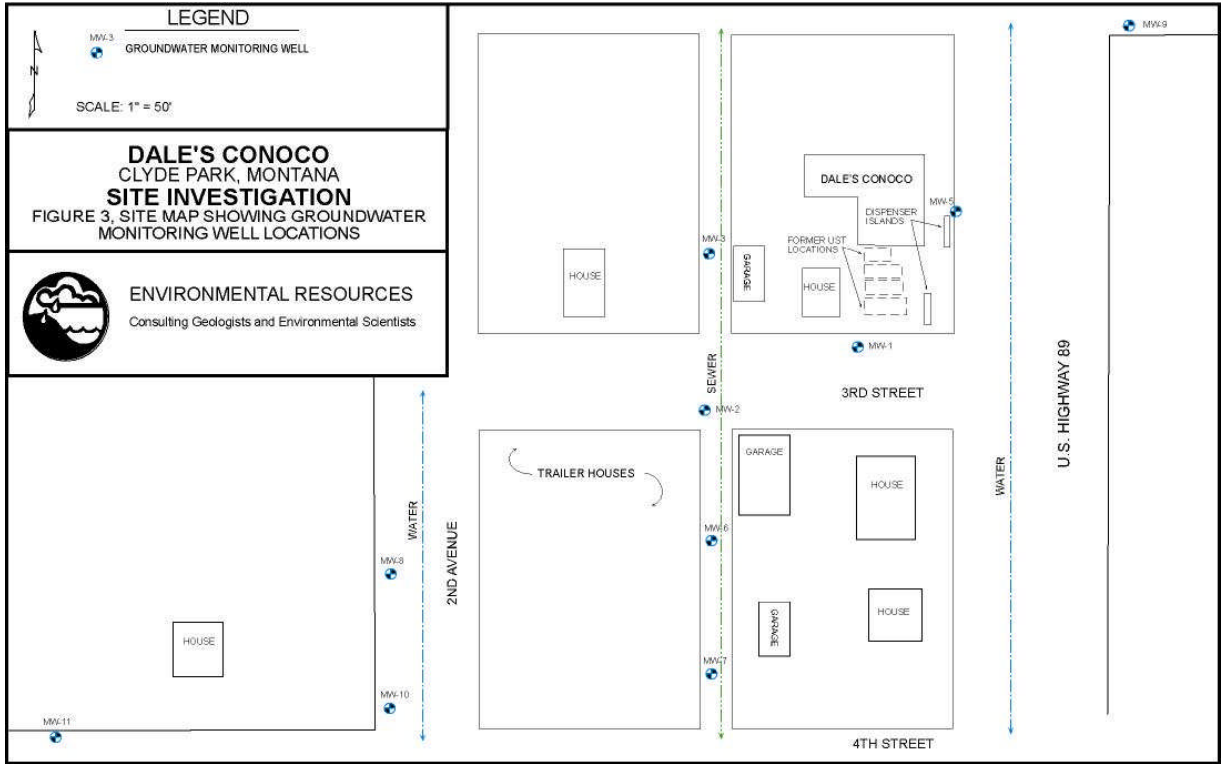
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DALE'S CONOCO
 CLYDE PARK, MONTANA
SITE INVESTIGATION
 FIGURE 1, REGIONAL SITE LOCATION MAP



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DALE'S CONOCO
 CLYDE PARK, MONTANA
SITE INVESTIGATION
 FIGURE 2, SITE MAP



Appendix B
Standard Operating Procedures

Appendix C
Budget