**Environmental Resources, LLC**
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July 6, 2024

Mr. William Bergum
DEQ-PTCS
P.O. Box 200901
Helena, MT 59620

Subject: Groundwater Monitoring Work Plan
Former Mr. Tire, Malta, Montana
DEQ Facility ID No. 36-06518 (TID 26261)
DEQ Release No. 1390, Work Plan ID 34887

Responsible Party: Mr. Stan Green
Green's Sales, Inc.
P.O. Box 1091
Malta, Montana 59538

Dear Mr. Bergum:

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 June 13, 2024.

Submitted by
Environmental Resources, LLC

Robert H. Waller, Principal Geologist

Attachments: Unit Cost Worksheets

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## 1.0 Executive Summary

Environmental Resources, LLC has been retained by Green's Sales, Inc. to investigate and remediate petroleum contaminated soil and groundwater discovered at the former Mr. Tire facility in Malta, Montana. Subsurface geology at the project site is characterized by floodplain deposits of the nearby Milk River that consist of intervals of fine-grained silty sand, sand, and sandy silt interbedded with thin layers of silty clay and sandy clay. Near surface floodplain deposits are underlain by coarse alluvium at depth. Groundwater is encountered at approximately 18-23 feet below ground surface at the project site and has been measured to flow south-southwesterly. Shallow groundwater resources are not utilized for human consumption near the project site.

The project site has served as an automobile refueling facility since its construction in the 1930's. A petroleum release was discovered in 1992 during underground storage tank (UST) removal work. Remediation work conducted during two phases has resulted in a significant reduction of dissolved petroleum concentrations beneath the site.

## 2.0 Facility Summary and Current Conditions

The Mr. Tire refueling facility is located at 2 North 1st Street East in Malta, Montana. The project site is situated in the southwest quarter of the northwest quarter of Section 18, Township 30 North, Range 30 East, MPM as shown in Figure 1. The site is bordered by U.S. Highway 2 to the north, Burlington Northern Railroad to the south, U.S. Highway 191 to the west and a lumber storage building to the east. The Milk River is situated approximately 650 feet to the northwest of the project site.

The project site was originally developed as a gasoline service station in the 1930's. In 1974 during Husky ownership, four aboveground storage tanks (ASTs) and four underground storage tanks (USTs) were removed and replaced with five USTs (Figure 2). Mr. Stan Green purchased the station in 1978 and operated it as an automobile refueling facility and tire repair shop until 1992 when the fuel storage and dispensing systems were removed from service. A petroleum release was confirmed on September 25, 1992 during removal of the underground fuel storage tanks and piping.

Delta Engineering was retained by Mr. Stan Green in 1992 to investigate the extent and magnitude of soil and groundwater contamination following discovery of the petroleum release. Delta Engineering installed a soil vapor extraction (SVE) and air injection (AI) system in June 1994 to address the petroleum contaminated soil and groundwater (Figure 4). The extraction subsystem consisted of five monitoring wells connected in parallel with a 2hp, 100-cfm regenerative blower. The injection subsystem consisted of a 17 cfm rotary-vane compressor connected to 4 injection wells.

Operation of the remediation system for approximately three years resulted in the removal of a significant mass of petroleum hydrocarbons. However, continued groundwater monitoring showed that dissolved petroleum concentrations in groundwater beneath the site remained elevated. In October 1999, Environmental Resources installed a dual phase vapor extraction (DPVE) system at the site. Installation of the remediation system at the Mr. Tire petroleum release site consisted of drilling and completing 12 soil vacuum extraction wells, 16 air sparging wells and installing subsurface piping necessary to extract contaminants and deliver air to and from the remediation wells. A 20-horsepower liquid ring vacuum pump was installed to extract soil gas and total fluids from the SVE wells. The remediation system reduced the magnitude of petroleum contamination significantly and was dismantled in 2011 due to lack of petroleum production.

Thirteen groundwater monitoring wells were installed around the project site in several phases as shown on Figure 3. The monitoring well network was last monitored in 2018. DEQ requested additional groundwater monitoring work and the following sections outline methods that will be used to conduct that work.

**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) Conduct an initial site inspection to assess the condition of monitoring wells associated with the release site. Contact DEQ if any monitoring wells are found to require replacement, repair or abandonment.
2) Monitor groundwater semi-annually for one year. Gauge fluid levels at all site monitoring wells.
3) Collect groundwater samples for laboratory analysis from monitoring wells MW-1-13 using low flow sampling methodology.
4) Analyze samples at an analytical laboratory in accordance with Montana Tier 1 Risk-Based Corrective Action Guidance for Petroleum Releases. Also analyze groundwater samples for lead scavengers and Intrinsic Biodegradation Indicators (IBIs).
5) Validate all laboratory data.
6) Prepare an Interim Data Submittal (IDS).
7) Update the Release Closure Plan (RCP).
8) 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-1-13 on a semi-annual schedule. 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 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), for lead scavengers 1,2 DCA and EDB and for IBIs at Energy Labs in Helena, MT.

### 4.2 Investigation Derived Waste

Drill cuttings, excess sample materials, drilling fluids, and water removed from a well during installation, development, and sampling 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 IDS will be prepared and submitted following completion of the first semi-annual groundwater monitoring event. One Groundwater Monitoring Report will be prepared following completion of the second groundwater monitoring event. The RCP will be updated and included in the final report along with Data Validation Summary Forms (DVSF) and field data collection sheets.

### 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 B.

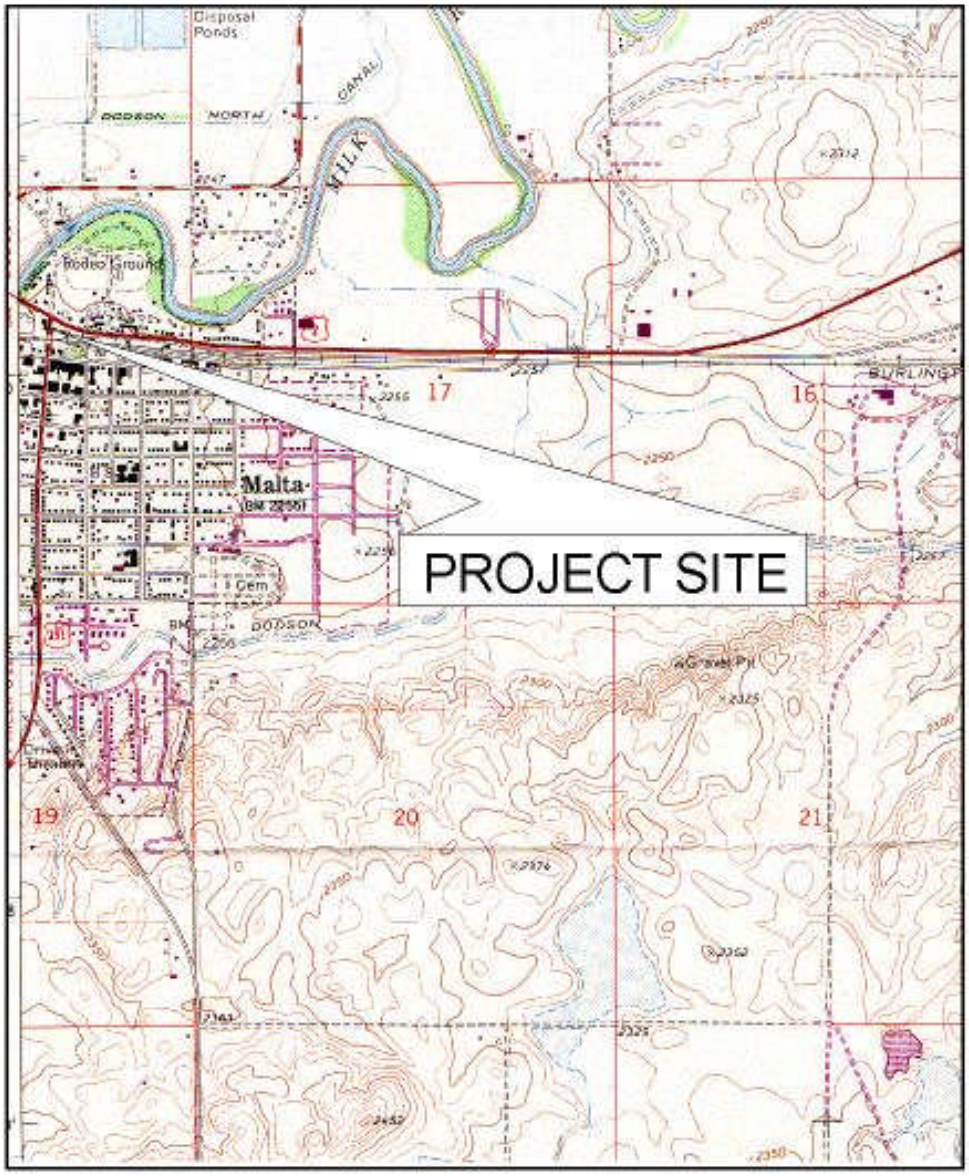
## 6.0 Limitations

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

Robert H. Waller, Principal Geologist

# Appendix A
# Figures




SCALE: 1" = 2000' N

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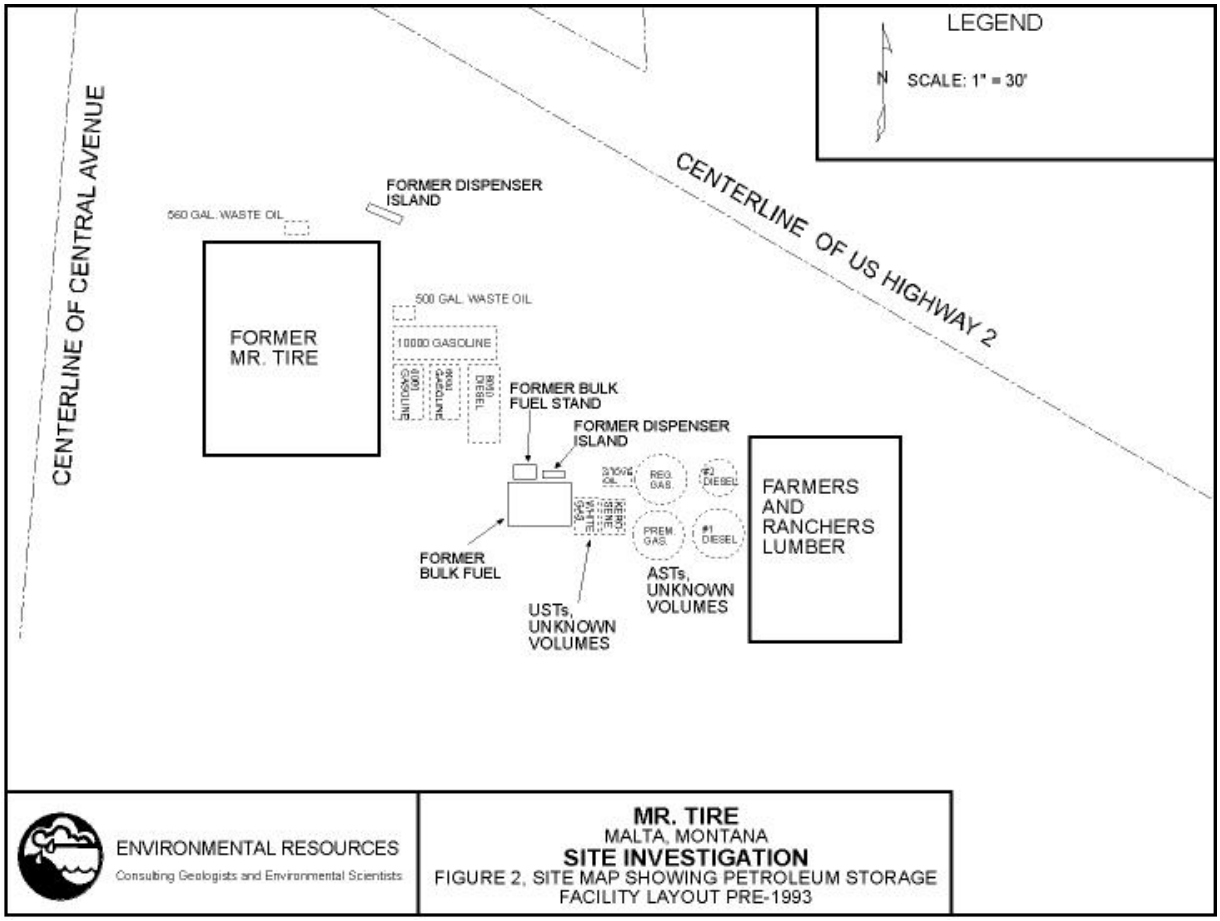
**MR. TIRE**
MALTA, MONTANA
**SITE INVESTIGATION**
FIGURE 1, REGIONAL SITE LOCATION MAP


LEGEND
N
SCALE: 1" = 30'
CENTERLINE OF CENTRAL AVENUE
CENTERLINE OF US HIGHWAY 2
560 GAL. WASTE OIL
FORMER DISPENSER ISLAND
FORMER MR. TIRE
500 GAL. WASTE OIL
10000 GASOLINE
8000 GASOLINE
8000 GASOLINE
8000 DIESEL
FORMER BULK FUEL STAND
FORMER DISPENSER ISLAND
REG. GAS.
#2 DIESEL
PREM. GAS.
#1 DIESEL
FARMERS AND RANCHERS LUMBER
FORMER BULK FUEL
USTs, UNKNOWN VOLUMES
ASTs, UNKNOWN VOLUMES
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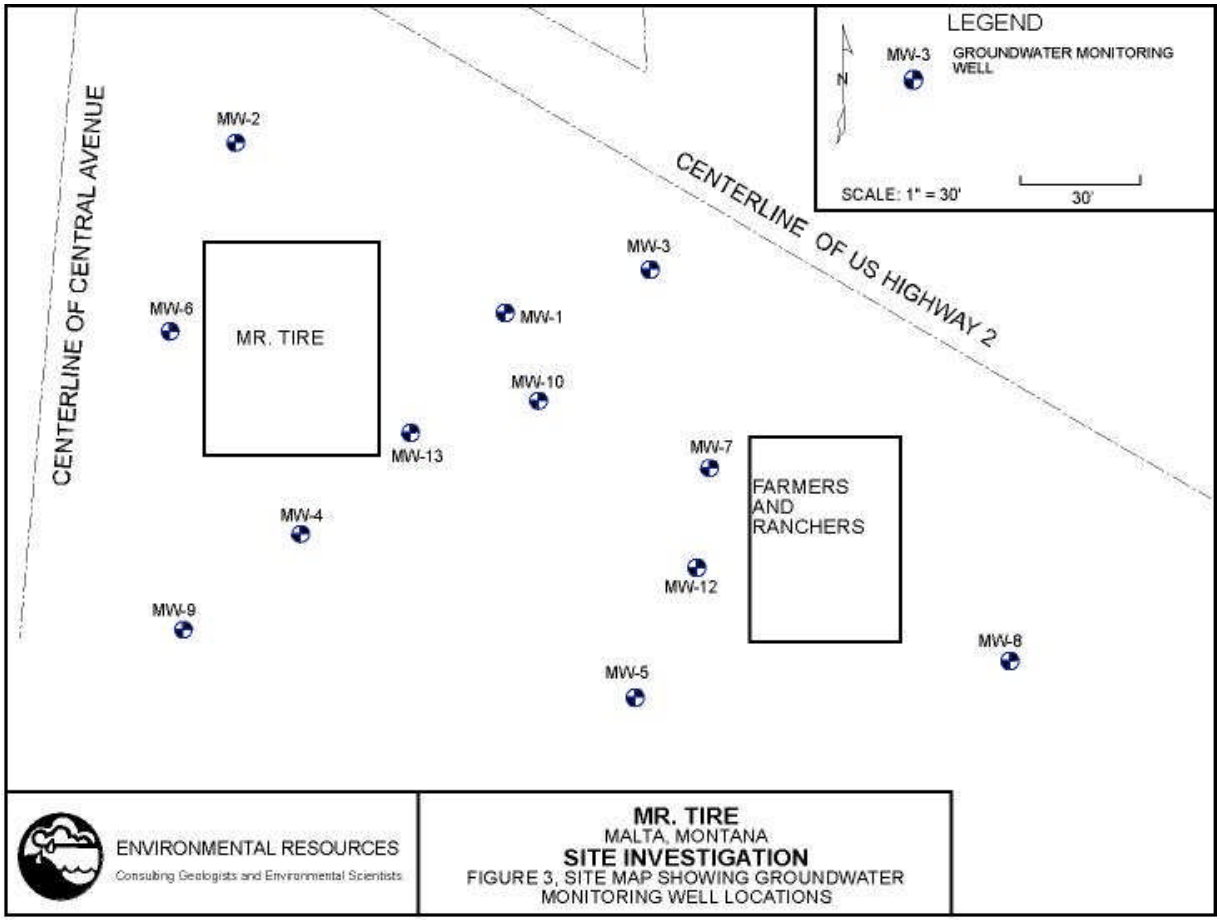
SITE INVESTIGATION
FIGURE 2, SITE MAP SHOWING PETROLEUM STORAGE FACILITY LAYOUT PRE-1993


LEGEND
MW-3 GROUNDWATER MONITORING WELL
N
SCALE: 1" = 30'
30'
CENTERLINE OF CENTRAL AVENUE
CENTERLINE OF US HIGHWAY 2
MW-2
MW-3
MW-6
MR. TIRE
MW-1
MW-10
MW-13
MW-7
FARMERS AND RANCHERS
MW-4
MW-12
MW-9
MW-8
MW-5
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SITE INVESTIGATION
FIGURE 3, SITE MAP SHOWING GROUNDWATER MONITORING WELL LOCATIONS