

Corrective Action Plan 35095

Lolo Hot Springs
38600 US Highway 12 West
Lolo, MT 59847
Facility ID# 32-09722, Release# 4280,
Work Plan# 35095

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October 31, 2025
WCEC Project No. 13-9648-70

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Emergency Response



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1.0 Introduction

West Central Environmental Consultants (WCEC) has prepared this Corrective Action Plan for the Lolo Hot Springs facility (Facility ID# 32-09722, Release# 4280, Work Plan# 35095) as requested by the Montana Department of Environmental Quality (MTDEQ) on September 18, 2025.

1.1 Site Location

The Lolo Hot Springs facility is located at 38600 US Highway 12 West, Lolo, Montana. A site location map is included as Figure 1, and a site details map is included as Figure 2. The Public Land Survey System (PLSS) description for the site is the SW/4, NE/4, SE/4 of Section 7, T11N, R23W. The geographic coordinates are Latitude 46.7241°, Longitude -114.5337°. Township, range, and section information was obtained using the United States Geological Survey (USGS) Lolo Hot Springs, Montana 1:24,000 Quadrangle. The site is located within the Bitterroot Hydrologic Unit.

1.2 Geologic/ Hydrogeologic Setting

The surficial geology at the location of Lolo Hot Springs consists of Quaternary alluvial deposits from Lolo Creek. These alluvial deposits consist of rounded cobbles and gravel inter-bedded with silt/sand. These Alluvial deposits are underlain by granitic rock of the Lolo Hot Springs Batholith formed during the Eocene [Lewis, 1998]. The depth of alluvial deposits likely varies depending on location in the narrow valley with alluvial deposits exhibiting the greatest thickness at the center of the valley and becoming thinner closer to the valley margins. Well logs in the section which the facility is located record alluvial deposits being 8 feet to 16 feet in thickness. Well logs record clay, silt/sand, and gravel varying with location [GWIC, 2014].

2.0 Scope of Work

2.1 Planned Scope of Work

The Scope of Work consists of:

- Complete groundwater monitoring on a semiannual basis for 1 years.
- Continue quarterly operation and maintenance of the thermal system.
- Prepare and submit a final report documenting system operation and groundwater monitoring events following receipt of analytical for the final sampling event. The report will include sections outlined in the Montana Groundwater Monitoring Work Plan and Report Guidance for Petroleum Releases including:
 - o Discussion and recommendation to bring the site to closure
 - o Figures detailing groundwater flow direction and gradient
 - o Tabulated summary of all historical soil and groundwater data.
 - o Assessment of release closure via implementation of a Petroleum Mixing Zone.
 - o Append the DVSF and laboratory reports.
 - o Append Release Closure Plan.
- Discuss ongoing WP tasks and results with DEQ's project manager; submit written agreed-upon WP modifications as required to complete the WP objectives.

2.4 Groundwater Monitoring

WCEC will conduct semi-annual groundwater monitoring events during high and low groundwater conditions at the facility for one year. The spring semiannual sampling event will include collection of field parameters and analytical sample collection as detailed in the chart below.

Analytical Analysis Chart					
Spring 2026 Semiannual sampling event					
Sample Location	VPH	EPH	Lead Scavengers	Intrinsic Biological Indicators -IBI	Depth to Water only
MW1					x
MW2					x
MW4					x
MW5	x				
MW7					x
PZ9					x
PZ10					x
PZ11					x
MW12	x				
MW13	x				
MW14	x				
MW15	x		x		
PZ16	x	x			
Analysis Spring SA Event	6	1	1	0	7

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The Fall semiannual sampling event will include collection of field parameters and analytical sample collection as detailed in the chart below.

Fall 2026 Semiannual sampling event					
Sample Location	VPH	EPH	Lead Scavengers	Intrinsic Biological Indicators -IBI	Depth to Water only
MW1					x
MW2					x
MW4					x
MW5					x
MW7					x
PZ9					x
PZ10					x
PZ11					x
MW12	x				
MW13	x				
MW14	x				
MW15	x		x		
PZ16	x	x			
Analysis Fall SA Event	5	1	1	0	8
Total all events	11	2	2	0	15

Depth to water measurements will be recorded from all site monitoring wells to provide potentiometric surface plot data, flow direction, and gradient. Purging will be conducted using a low flow peristaltic pump prior to sampling. All site wells will be purged and sampled using the same methodology. Groundwater quality parameters (pH, DO, conductivity, temperature, salinity, and ORP) will be obtained using a flow through cell attached to a peristaltic pump

2.3 Thermal System Operation & Maintenance

WCEC will monitor the temperature of groundwater in piezometers PZ9, PZ10, PZ11, and PZ16. These temperatures will be compared to the temperature of monitoring well MW4 to assess the effectiveness of the system in sustaining elevated thermal biodegradation rates. WCEC will also measure the change in water temperature in conjunction with the water flow through the system to calculate the total heat transfer to the subsurface soils and groundwater by the geothermal system. The two pumps in the thermal system were replaced in fall 2023 to allow for continued system operation. Continued operation of this system supports

biodegradation rates through the winter months and enhances the anticipated rate of degradation throughout the entire year.

2.4 Petroleum Mixing Zone Assessment

An evaluation of the potential to achieve closure through the implementation of a petroleum mixing zone will be conducted. This will include surveying all the drinking water wells located on the property and within 500 feet of the property boundary. First order decay calculations for constituents of concern on select wells will be completed for analysis of the timeline to closure through natural attenuation and assessment of the need for additional targeted injection of remediation products near MW15.

3.0 Report Preparation

3.1 Release Closure Plan

WCEC will complete an RCP outlining basic information pertaining to the release, a conceptual site model, evaluation of cleanup alternatives, and assessment of future compliance monitoring. The RCP will be included as an appendix of the remedial investigation report.

3.2 Data Validation

WCEC will complete the MTDEQ Data Validation Summary Form (DVSF) for each analytical report. The completed data validation form will be included after each appended laboratory analytical report. These forms will be included with both the interim data submittals and the final report for this corrective action plan.

3.3 Remedial Activities Report

WCEC will submit remedial activities report covering all the action outlined in this corrective action plan. It will detail all the groundwater monitoring events and the thermal system operation and maintenance events. Maps illustrating all past excavations, boring/monitoring well locations, site utilities, thermal system infrastructure, drinking water wells, and surface water locations will be included in the final report. Groundwater flow direction and gradient will be depicted for each sampling event. Laboratory and field data will be presented in tables detailing all historical data for the facility. MTDEQ RBSLs will also be included in the tables for reference. The remedial activities report will include discussion of potential closure through a petroleum mixing zone or compliance with regulatory standards for constituents of concern. Groundwater field sampling forms, laboratory analytical data, DVSF forms, and an updated RCP will be appended to the report. Based on the RCP and analysis completed under this work plan, WCEC will make recommendations to advance the site towards closure.

4.0 Timeline and Cost

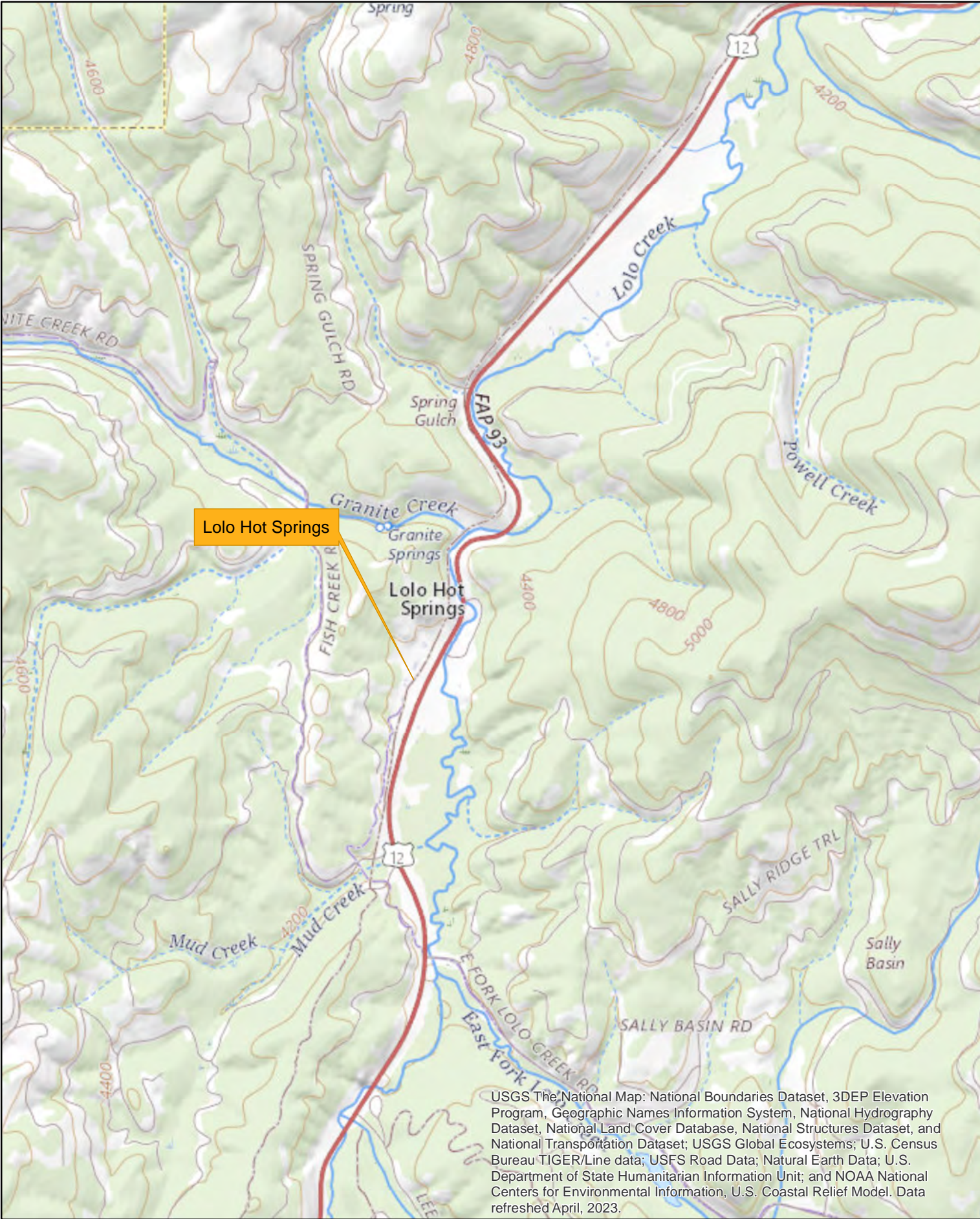
The attached *Estimated Costs spreadsheet* [Appendix A] details anticipated project costs to complete the MTDEQ required scope of work. A *PTRCB Groundwater Monitoring and Sampling Unit Cost Work Sheet* covering the semiannual groundwater monitoring events is also included as Appendix B.

It is anticipated that the initial semiannual sampling event will be conducted in May 2026. A work plan completion date of January 31, 2027, is requested for this work plan.

List of Figures

Figure 1: Site Location Maps

Figure 2: Site Details Map



Lolo Hot Springs 38500 US Highway 12 W Lolo, MT 59847 Project No. 13-9648-70				Site Location Maps					
DRAWN BY: NGO		DATE: 02/12/24		SOURCE: ESRI		IMAGE: 08/26/16		FIGURE 1	



Appendix A

Estimated Cost Sheet

Appendix B

PTRCB Groundwater Unit Cost Work Sheet