

# State of Colorado Oil and Gas Conservation Commission

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Receive Date:

Report taken by:

## Site Investigation and Remediation Workplan (Supplemental Form)

This form shall be submitted to the Director for approval prior to the initiation of site investigation and remediation activities. However, this shall not preclude the Operator from taking immediate action to protect public health or safety, the environment, wildlife, or livestock.

This Form 27 describes site conditions as currently understood by the Operator; approval of this Form 27 by COGCC is based on the site conditions accurately described herein; any changes in site conditions identified during or subsequent to the performance of the approved workplan may necessitate additional investigation or remediation which shall be described on a supplemental Form 27. This Form 27 is intended to provide basic information regarding the proposed site investigation and remediation actions, but the workplan may be more fully described in attached documentation.

Refer to Rules 340, 905, 906, 907, 908, 909, and 910

### OPERATOR INFORMATION

Name of Operator: LARAMIE ENERGY LLC	Operator No: 10433	<b>Phone Numbers</b> Phone: (970) 9019007 Mobile: (970) 9019007
Address: 1401 17TH STREET SUITE #1400		
City: DENVER	State: CO Zip: 80202	
Contact Person: Matt Kasten	Email: mkasten@laramie-energy.com	

### PROJECT, PURPOSE & SITE INFORMATION

#### PROJECT INFORMATION

Remediation Project #: 17836 Initial Form 27 Document #: 402655184

#### PURPOSE INFORMATION

- ☐ Rule 913.c.(1): Pit or Cuttings Trench closure.  
☐ Rule 913.c.(2): Buried or partially buried vessel closure, which will be by removal.  
☒ Rule 913.c.(3): Remediation of Spill and Releases pursuant to Rule 912.  
☐ Rule 913.c.(4): Land treatment of Oily Waste pursuant to Rule 905.e.  
☐ Rule 913.c.(5): Closure of Centralized E&P Waste Management Facilities pursuant to Rule 907.h.  
☐ Rule 913.c.(6): Remediation of impacted Groundwater pursuant to Rule 915.e.(3).D, and the contaminant concentrations in Table 915-1.  
☐ Rule 913.c.(7): Investigation and remediation of natural gas in soil or Groundwater.  
☐ Rule 913.c.(8): When requested by the Director due to any potential risk to soil, Groundwater, or surface water.  
☐ Rule 913.c.(9): Decommissioning of Oil and Gas Facilities.  
☐ Rule 913.g: Changes of Operator.  
☐ Rule 915.b: Request to leave elevated inorganics in situ.  
☐ Other:

#### SITE INFORMATION

No Multiple Facilities

Facility Type: SPILL OR RELEASE	Facility ID: 479751	API #:	County Name: GARFIELD
Facility Name: Baker Canyon	Latitude: 39.464769	Longitude: -108.243560	
** correct Lat/Long if needed: Latitude:		Longitude:	
QtrQtr: SENW	Sec: 8	Twp: 7S	Range: 97W Meridian: 6 Sensitive Area? Yes

#### SITE CONDITIONS

General soil type - USCS Classifications GC  
 Most Sensitive Adjacent Land Use non-crop land  
 Is domestic water well within 1/4 mile? No  
 Is surface water within 1/4 mile? Yes  
 Is groundwater less than 20 feet below ground surface? No

**Other Potential Receptors within 1/4 mile**

Static GW depths 25' - 31' BGS.

**SITE INVESTIGATION PLAN****TYPE OF WASTE:**☒ **E&P Waste** ☐ **Other E&P Waste** ☐ **Non-E&P Waste**☐ Produced Water☐ Workover Fluids☐ Oil☐ Tank Bottoms☒ Condensate☐ Pigging Waste☐ Drilling Fluids☐ Rig Wash☐ Drill Cuttings☐ Spent Filters☐ Pit Bottoms☐ Other (as described by EPA)**DESCRIPTION OF IMPACT**

Impacted?	Impacted Media	Extent of Impact	How Determined
Yes	GROUNDWATER	TBD	Additional delineation needed
Yes	SOILS	TBD	Soil Sampling
No	SURFACE WATER	NA	Lab reported

**INITIAL ACTION SUMMARY**

Description of initial action or emergency response measures take to abate, investigate, and/or remediate impacts associated with E&amp;P Waste.

During lease operations, water was found to be surfacing along the gas processing line. Line was immediately shut in and a berm and booms were installed around leak area to minimize spill. Initial soil samples were collected to characterize surface spill impact. Additionally, a water sample was collected down gradient from spill area along Conn Creek. It is not anticipated that Conn Creek will be impacted with the release. Excavation of the area will be completed once the utilities are cleared. Additional information will be provided with the Supplemental Form 19.

**PROPOSED SAMPLING PLAN****Proposed Soil Sampling**☒ Will soil samples be collected as part of this investigation? ( Number, type (grab/composite), analyses, and locations of samples ):

Additional soil borings proposed to further delineate. All samples will be analyzed for table 915. Surface removal of impacts will occur and re-samples will be collected to ensure clearance from original spill path.

**Proposed Groundwater Sampling**☒ Will groundwater samples be collected as part of this investigation? ( Number, analyses, and locations of samples ):

Groundwater sampling to continue during delineation bi-weekly to monitor wells and will be analyzed for 915.

**Proposed Surface Water Sampling**☒ Will surface water samples be collected as part of this investigation? ( Number, analyses, and locations of samples ):

Surface water is being monitored by field staff to ensure no sheen occurs. Sampling of surface water will occur during events.

**Additional Investigative Actions**☐ Additional alternative investigative actions described in attached Site Investigation Plan ( summary ):

Further delineation of site is proposed.

# SITE INVESTIGATION REPORT

## SAMPLE SUMMARY

### Soil

Number of soil samples collected 46

Number of soil samples exceeding 915-1 28

Was the areal and vertical extent of soil contamination delineated? No

Approximate areal extent (square feet) 32

### NA / ND

-- Highest concentration of TPH (mg/kg) 10900

-- Highest concentration of SAR 14.4

BTEX > 915-1 Yes

Vertical Extent > 915-1 (in feet) 32

### Groundwater

Number of groundwater samples collected 8

Was extent of groundwater contaminated delineated? No

Depth to groundwater (below ground surface, in feet) 25'

Number of groundwater monitoring wells installed 5

Number of groundwater samples exceeding 915-1 2

-- Highest concentration of Benzene (µg/l) 164

-- Highest concentration of Toluene (µg/l) 328

-- Highest concentration of Ethylbenzene (µg/l) 7.52

-- Highest concentration of Xylene (µg/l) 116

NA Highest concentration of Methane (mg/l)

### Surface Water

1 Number of surface water samples collected

0 Number of surface water samples exceeding 915-1

If surface water is impacted, other agency notification may be required.

## OTHER INVESTIGATION INFORMATION

☐ Were impacts to adjacent property or offsite impacts identified?

☒ Were background samples collected as part of this site investigation?

background samples were collected during initial investigation

☐ Was investigation derived waste (IDW) generated as part of this investigation?

Volume of solid waste (cubic yards)

Volume of liquid waste (barrels)

☒ Is further site investigation required?

Further site delineation proposed in supplemental form 27.

## REMEDIAL ACTION PLAN

Does this Supplemental Form 27A include changes to a previously approved Remedial Action Plan? No

## SOURCE REMOVAL SUMMARY

Describe how source is to be removed.

Original source was to be removed by heavy equipment. After repair, excavation began and was determined that a drill rig was needed to delineate location. If source removal is transported to facility for disposal, supplemental form 27(s) will be updated and provide documentation. Due to source being beyond excavator reach and within pipeline corridor, additional drilling and remediation approach will be selected after next phase of delineation.

## REMEDIAL ACTION SUMMARY

Describe how remediation of existing impacts to soil and groundwater is to be accomplished (i.e. summarize remedial action plan). Provide a brief narrative description including: technical justification, schedule for implementation, estimated time to attain NFA status, plus plans and specifications for the selected remedial action technology.

Due to groundwater impacts, remediation approach/strategy will follow after 2nd delineation and timeline for closure will be updated after 2nd delineation. Due to groundwater impacts being present, closure will be over 1 year due to quarterly sampling requirements.

## Soil Remediation Summary

☒

**In Situ**

\_\_\_\_\_ Bioremediation ( or enhanced bioremediation )  
\_\_\_\_\_ Chemical oxidation  
\_\_\_\_\_ Air sparge / Soil vapor extraction  
\_\_\_\_\_ Natural Attenuation  
\_\_\_\_\_ Other \_\_\_\_\_

**Ex Situ**

Yes \_\_\_\_\_ Excavate and offsite disposal  
\_\_\_\_\_ If Yes: Estimated Volume (Cubic Yards) \_\_\_\_\_ 65  
\_\_\_\_\_ Name of Licensed Disposal Facility or COGCC Facility ID # \_\_\_\_\_  
\_\_\_\_\_ Excavate and onsite remediation  
\_\_\_\_\_ Land Treatment  
\_\_\_\_\_ Bioremediation (or enhanced bioremediation)  
\_\_\_\_\_ Chemical oxidation  
\_\_\_\_\_ Other \_\_\_\_\_

**Groundwater Remediation Summary**

☐ \_\_\_\_\_ Bioremediation ( or enhanced bioremediation )  
☐ \_\_\_\_\_ Chemical oxidation  
☐ \_\_\_\_\_ Air sparge / Soil vapor extraction  
☐ \_\_\_\_\_ Natural Attenuation  
☐ \_\_\_\_\_ Other \_\_\_\_\_

**GROUNDWATER MONITORING**

If groundwater has been impacted, describe proposed monitoring plan, including # of wells or sample points, monitoring schedule, analytical methods, points of compliance. Attach a groundwater monitoring location diagram.

5 additional wells are proposed for site delineation. Wells are scheduled to be sampled biweekly for table 915. Shown in potentio, groundwater flow is moving south/southwest. If additional wells are required, it is likely they will be added further southwest.

## REMEDIATION PROGRESS UPDATE

### PERIODIC REPORTING

#### Approved Reporting Schedule:

☒ Quarterly☐ Semi-Annually☐ Annually☐ Other

#### ☐ Request Alternative Reporting Schedule:

☐ Semi-Annually☐ Annually☐ Other

Rule 913.e:

After initial approval of a Form 27, the Operator will provide quarterly update reports in a Supplemental Form 27 to document progress of site investigation and remediation, unless an alternative reporting schedule has been requested by the Operator and approved by the Director. The Director may request a more frequent reporting schedule based on site-specific conditions.

#### Report Type:

☒ Groundwater Monitoring☐ Land Treatment Progress Report☐ O&M Report☒ Other Rem Progress Report

### WASTE DISPOSAL INFORMATION

Was E&P waste generated as part of this remediation? Yes

Describe beneficial use, if any, of E&P Waste derived from this remediation project:

na

Volume of E&P Waste (solid) in cubic yards 65

E&P waste (solid) description soil with hydrocarbon impacts/original pothole material added to disposal for line locates

COGCC Disposal Facility ID #, if applicable:

Non-COGCC Disposal Facility: Greenleaf

Volume of E&P Waste (liquid) in barrels 0

E&P waste (liquid) description na

COGCC Disposal Facility ID #, if applicable:

Non-COGCC Disposal Facility: na

## REMEDIATION COMPLETION REPORT

### REMEDIATION COMPLETION SUMMARY

Is this a Final Closure Request for this Remediation Project? No

If YES:

☐ Compliant with Rule 913.h.(1).☐ Compliant with Rule 913.h.(2).☐ Compliant with Rule 913.h.(3).

Do all soils meet Table 915-1 standards?

Does the previous reply indicate consideration of background concentrations?

Does Groundwater meet Table 915-1 standards?

Is additional groundwater monitoring to be conducted?

Operator shall comply with the COGCC 1000-Series Reclamation Requirements for all impacted and disturbed areas.

## RECLAMATION PLAN

### **RECLAMATION PLANNING**

Describe reclamation plan. Discuss existing and new grade recontouring; method and testing of compaction alleviation; and reseeding program, including location of new seed, seed mix and noxious weed prevention. Attach diagram or drawing.

Reclamation/seeding is not expected to be part of this project. If reclamation must occur, 1000 series rules will be followed and updated in supplemental form 27(s).

Is the described reclamation complete? \_\_\_\_\_

Does the reclamation described herein constitute interim or final reclamation of the Oil and Gas Location?

☐ Interim ☐ Final

Did the Surface Owner provide the seed mix? \_\_\_\_\_

If YES, does the seed mix comply with local soil conservation district recommendations? \_\_\_\_\_

Did the local soil conservation district provide the seed mix? \_\_\_\_\_

### **SITE RECLAMATION DATES**

Proposed date of commencement of Reclamation. \_\_\_\_\_

Proposed date of completion of Reclamation. \_\_\_\_\_

## IMPLEMENTATION SCHEDULE

Per Rule 913.d.(2): Any change from the approved implementation schedule will be requested at least 14 days in advance, and the Operator may not make the change without the Director's approval.

### **PRIOR DATES**

Date of Surface Owner notification/consultation, if required. \_\_\_\_\_

Actual Spill or Release date, or date of discovery. \_\_\_\_\_

### **SITE INVESTIGATION DATES**

Date of Initial Actions described in Site Investigation Plan (start date). 04/06/2021

Proposed site investigation commencement. 04/06/2021

Proposed completion of site investigation. \_\_\_\_\_

### **REMEDIAL ACTION DATES**

Proposed start date of Remediation. 04/06/2021

Proposed date of completion of Remediation. \_\_\_\_\_

Per Rule 913.d.(2): Any change from the approved implementation schedule will be requested at least 14 days in advance, and the Operator may not make the change without the Director's approval.

☐ Change from approved implementation schedule per Rule 913.d.(2).

Basis for change in implementation schedule:

**OPERATOR COMMENT**

5 additional wells proposed on submittal, biweekly sampling to continue on wells and surface water (inspection/sampling). Scheduling of rig pending on next availability.

I hereby certify all statements made in this form are to the best of my knowledge true, correct, and complete.

Signed: ` Matt Kasten \_\_\_\_\_

Title: Project Manager \_\_\_\_\_

Submit Date: ` \_\_\_\_\_

Email: mkasten@laramie-energy.com \_\_\_\_\_

Based on the information provided herein, this Application for Site Investigation and Remediation Workplan complies with COGCC Rules and applicable orders and is hereby approved.

COGCC Approved: \_\_\_\_\_

Date: \_\_\_\_\_

Remediation Project Number: 17836 \_\_\_\_\_

**COA Type****Description**

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**Attachment Check List**

Upon approval, the approved Form 27 and all listed attachments will be indexed to the Remediation Project file. Only the approved Form 27 will also be indexed to the related Facilities.

**Att Doc Num****Name**

402707382	ANALYTICAL RESULTS
402707384	ANALYTICAL RESULTS
402707386	ANALYTICAL RESULTS
402707387	DISPOSAL MANIFESTS
402707398	ANALYTICAL RESULTS
402707400	SITE MAP
402707402	SOIL SAMPLE LOCATION MAP
402707408	LOGS
402707416	REMEDIAL ACTION PLAN

Total Attach: 9 Files

**General Comments****User Group****Comment****Comment Date**

		Stamp Upon Approval
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Total: 0 comment(s)