

# State of Colorado Oil and Gas Conservation Commission

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Document Number:

401564122

Receive Date:

06/12/2018

Report taken by:

Steven Arauza

## Site Investigation and Remediation Workplan (Initial 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: <u>LARAMIE ENERGY LLC</u>		Operator No: <u>10433</u>	<b>Phone Numbers</b>
Address: <u>1401 SEVENTEENTH STREET #1400</u>			
City: <u>DENVER</u>	State: <u>CO</u>	Zip: <u>80202</u>	
Contact Person: <u>Lorne C Prescott</u>			
Email: <u>lprescott@laramie-energy.com</u>			Phone: <u>(970) 8125311</u>
			Mobile: <u>(970) 2106889</u>

### PROJECT, PURPOSE & SITE INFORMATION

#### PROJECT INFORMATION

Remediation Project #: 11426

Initial Form 27 Document #: \_\_\_\_\_

#### PURPOSE INFORMATION

- |  |  |
|--|--|
| <input type="checkbox"/> 901.e. Sensitive Area Determination                                       | <input type="checkbox"/> 909.c.(5), Rule 910.b.(4): Remediation of impacted ground water                   |
| <input checked="" type="checkbox"/> 909.c.(1), Rule 905: Pit or PW vessel closure                  | <input type="checkbox"/> Rule 909.e.(2)A.: Notice completion of remediation in accordance with Rule 909.b. |
| <input type="checkbox"/> 909.c.(2), Rule 906: Spill/Release Remediation                            | <input type="checkbox"/> Rule 909.e.(2)B.: Closure of remediation project                                  |
| <input type="checkbox"/> 909.c.(3), Rule 907.e.: Land treatment of oily waste                      | <input type="checkbox"/> Rule 906.c.: Director request   |
| <input type="checkbox"/> 909.c.(4), Rule 908.g.: Centralized E&P Waste Management Facility closure | <input type="checkbox"/> Other _____   |

#### SITE INFORMATION

N Multiple Facilities ( in accordance with Rule 909.c. )

Facility Type: <u>PIT</u>	Facility ID: <u>291970</u>	API #: _____	County Name: <u>GARFIELD</u>
Facility Name: <u>CC POND 3/604-41-32</u>		Latitude: <u>39.557361</u>	Longitude: <u>-108.218677</u>
		** correct Lat/Long if needed: Latitude: _____	Longitude: _____
QtrQtr: <u>Lot 12</u>	Sec: <u>4</u>	Twp: <u>6S</u>	Range: <u>97W</u>
		Meridian: <u>6</u>	Sensitive Area? <u>Yes</u>

#### SITE CONDITIONS

General soil type - USCS Classifications OHMost Sensitive Adjacent Land Use RanchingIs domestic water well within 1/4 mile? NoIs surface water within 1/4 mile? NoIs groundwater less than 20 feet below ground surface? No

Other Potential Receptors within 1/4 mile

 None

## 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
UNDETERMINED	SOILS	Unknown	TBD subsequent to liner removal.

### INITIAL ACTION SUMMARY

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

This action/description is intended to accomodate the closure and reclamation of Pond 3, Facility 291970. Subsequent to dewatering the Pond the residual sediment was analyzed and determined to contain hydrocarbon constituents. Prior to liner removal, this materials will be removed and shipped to a licensed waste facility.

### 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 ):

Subsequent to the removal of the existig liner, the soils beneath the liner will be sampled at discrete locations. Samples will be gathered from both the sides and bottom of the Pond. Analytical results from the soil sampling will be assessed against the COGCC Table 910-1 constituent levels.

#### Proposed Groundwater Sampling

☐ Will groundwater samples be collected as part of this investigation? ( Number, analyses, and locations of samples ):

There are no ground water wells in proximity to this location.

#### Proposed Surface Water Sampling

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

There are no surface water features in proximity to this location.

### Additional Investigative Actions

☒ Additional alternative investigative actions described in attached Site Investigation Plan ( summary ):

This location (Pond 3) has been used exclusively for storage of fresh water since 2015. Water samples were taken annually in order to confirm that only fresh water was in the Pond. Laramie was not pumping any water into the Pond, the fluids that have accumulated since Laramie acquired the asset have come from precipitation and snowmelt. The remaining water (fluid) has been pumped from the pond and the residual sediments were analyzed according to Table 910-1 criteria. The results indicated there were hydrocarbons in the sediment/sludge, thus Laramie will clean the liner, gather the sediment and ship it to a licensed wate disposal facility. The liner will also be shipped to a licensed waste disposal facility.

# SITE INVESTIGATION REPORT

## SAMPLE SUMMARY

### Soil

Number of soil samples collected \_\_\_\_\_ 0

Number of soil samples exceeding 910-1 \_\_\_\_\_

Was the areal and vertical extent of soil contamination delineated? \_\_\_\_\_

Approximate areal extent (square feet) \_\_\_\_\_

### NA / ND

\_\_\_\_\_ Highest concentration of TPH (mg/kg) \_\_\_\_\_

\_\_\_\_\_ Highest concentration of SAR \_\_\_\_\_

\_\_\_\_\_ BTEX > 910-1 \_\_\_\_\_

\_\_\_\_\_ Vertical Extent > 910-1 (in feet) \_\_\_\_\_

### Groundwater

Number of groundwater samples collected \_\_\_\_\_ 0

Was extent of groundwater contaminated delineated? No \_\_\_\_\_

Depth to groundwater (below ground surface, in feet) \_\_\_\_\_

Number of groundwater monitoring wells installed \_\_\_\_\_

Number of groundwater samples exceeding 910-1 \_\_\_\_\_

\_\_\_\_\_ Highest concentration of Benzene (µg/l) \_\_\_\_\_

\_\_\_\_\_ Highest concentration of Toluene (µg/l) \_\_\_\_\_

\_\_\_\_\_ Highest concentration of Ethylbenzene (µg/l) \_\_\_\_\_

\_\_\_\_\_ Highest concentration of Xylene (µg/l) \_\_\_\_\_

\_\_\_\_\_ Highest concentration of Methane (mg/l) \_\_\_\_\_

### Surface Water

\_\_\_\_\_ 0 Number of surface water samples collected

\_\_\_\_\_ Number of surface water samples exceeding 910-1

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?

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

Volume of solid waste (cubic yards) \_\_\_\_\_ 10

Volume of liquid waste (barrels) \_\_\_\_\_ 0

☐ Is further site investigation required?

# 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.

If required, after the liner removal, any contaminated soils that cannot be remediated in place will be removed via back hoe or other earthmoving equipment.

## **REMEDIATION 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.

Laramie believes the integrity of the liner system was maintained throughout the use of the facility. As such, Laramie does not anticipate the soil beneath the liner will require remediation. If the criteria levels prohibit in place treatment, the materials will be hauled to a licensed facility for disposal.

## **Soil Remediation Summary**

### ☐ In Situ

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

### ☐ Ex Situ

- \_\_\_\_\_ Excavate and offsite disposal
- \_\_\_\_\_ If Yes: Estimated Volume (Cubic Yards) \_\_\_\_\_
- \_\_\_\_\_ 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.

## REMEDATION PROGRESS UPDATE

### PERIODIC REPORTING

**Frequency:** ☐ Quarterly ☐ Semi-Annually ☐ Annually ☐ Other \_\_\_\_\_

**Report Type:** ☐ Groundwater Monitoring ☐ Land Treatment Progress Report ☐ O&M Report  
☐ Other \_\_\_\_\_

### WASTE DISPOSAL INFORMATION

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

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

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

E&P waste (solid) description \_\_\_\_\_

COGCC Disposal Facility ID #, if applicable: \_\_\_\_\_

Non-COGCC Disposal Facility: \_\_\_\_\_

Volume of E&P Waste (liquid) in barrels \_\_\_\_\_

E&P waste (liquid) description \_\_\_\_\_

COGCC Disposal Facility ID #, if applicable: \_\_\_\_\_

Non-COGCC Disposal Facility: \_\_\_\_\_

## 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.

Laramie intends to remove this Pond and reclaim the facility. As noted in the Site Investigation portion of this report, this location (Pond 3) has been used exclusively for storage of fresh water since 2015. Water samples were taken annually in order to confirm that only fresh water was in the Pond. Laramie was not pumping any water into the Pond, the fluids that have accumulated since Laramie acquired the asset have come from precipitation and snowmelt. The remaining water (fluid) has been pumped from the pond and the residual sediments were analyzed according to Table 910-1 criteria. The results indicated there were hydrocarbons in the sediment/sludge, thus Laramie will clean the liner, gather the sediment and ship it to a licensed waste disposal facility. The liner will also be shipped to a licensed waste disposal facility. Proposed soil sampling points are included as an attachment to this document.

Is the described reclamation complete? ☐ No \_\_\_\_\_

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

☐ Interim? ☐ Final?

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

If NO, does the seed mix comply with local soil conservation district recommendations? \_\_\_\_\_

## IMPLEMENTATION SCHEDULE

### **PRIOR DATES**

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

Actual Spill or Release date, if known. \_\_\_\_\_

### **SITE INVESTIGATION DATES**

Date of Initial Actions described in Site Investigation Plan (start date). 06/15/2018

Date of commencement of Site Investigation. 06/15/2018

Date of completion of Site Investigation. 06/20/2018

### **REMEDIAL ACTION DATES**

Date of commencement of Remediation. \_\_\_\_\_

Date of completion of Remediation. \_\_\_\_\_

### **SITE RECLAMATION DATES**

Date of commencement of Reclamation. 06/15/2018

Date of completion of Reclamation. 06/20/2018

**OPERATOR COMMENT**

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

Signed: Lorne C Prescott

Title: Reg & Enviro Compliance

Submit Date: 06/12/2018

Email: lprescott@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: Steven Arauza

Date: 06/18/2018

Remediation Project Number: 11426

**COA Type****Description**

	If groundwater is encountered during site investigation and/or pit closure operations, operator shall collect a groundwater sample for laboratory analysis of BTEX & TPH.
	COGCC does not approve of plans to remediate soil impacts in place at this time. Operator shall submit Supplemental eForm 27 to report soil confirmation sample results and to request COGCC approval for plan to remediate any soil impacts based on analytical results. Operator shall attach a diagram that shows soil locations, depths, and analyte results compared to Table 910-1 along with complete laboratory report to Supplemental eForm 27.
	Operator shall dispose of pit liner in accordance with Rule 905.b.(3) liner disposal requirements.

**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**

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Total Attach: 0 Files

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

Environmental	Removed the following language from Remediation Summary section, per 6/13/2018 conversation with operator: "If sampling of soils below the liner determines the exceedances of Table 910-1 criteria levels are moderate, Laramie intends to remediate in place via the addition of clean soils, sawdust and/or other organic materials."	06/18/2018
Environmental	Unnamed, intermittent drainage to Little Creak located approximately 900' north of pit.	06/18/2018
Environmental	Although Laramie has only used the pit for fresh water, data indicates that prior operator used the pit for E&P waste (produced water) therefore F-27 is required for closure. Notify COGCC a minimum of 72 hrs prior to field closure activities.	06/12/2018

Total: 3 comment(s)