

State of Colorado
Oil and Gas Conservation Commission

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Receive Date:
08/05/2020

Report taken by:
ALEX FISCHER

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: <u>LARAMIE ENERGY LLC</u>	Operator No: <u>10433</u>	Phone Numbers
Address: <u>1401 SEVENTEENTH STREET #1401</u>		Phone: <u>(970) 263-3641</u>
City: <u>DENVER</u> State: <u>CO</u> Zip: <u>80202</u>		Mobile: <u>()</u>
Contact Person: <u>Joan Proulx</u>	Email: <u>jproux@laramie-energy.com</u>	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION	
Remediation Project #: <u>12614</u>	Initial Form 27 Document #: <u>401915503</u>
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 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 checked="" 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 <u> </u> Multiple Facilities (in accordance with Rule 909.c.)	
Facility Type: <u>SPILL OR RELEASE</u>	Facility ID: <u>457869</u> API #: _____ County Name: <u>GARFIELD</u>
Facility Name: <u>9-41 Legacy Spill</u>	Latitude: <u>39.379777</u> Longitude: <u>-108.322205</u>
** correct Lat/Long if needed: Latitude: _____ Longitude: _____	
QtrQtr: <u>NWNW</u> Sec: <u>10</u> Twp: <u>8s</u> Range: <u>98W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>	
SITE CONDITIONS	
General soil type - USCS Classifications <u>GW</u>	Most Sensitive Adjacent Land Use <u>Ranching</u>
Is domestic water well within 1/4 mile? <u>No</u>	Is surface water within 1/4 mile? <u>Yes</u>
Is groundwater less than 20 feet below ground surface? <u>No</u>	
Other Potential Receptors within 1/4 mile	
<div style="border: 1px solid black; height: 40px; width: 100%;"></div>	

SITE INVESTIGATION PLAN

TYPE OF WASTE:

- | | | |
|--|--|--|
| <input checked="" type="checkbox"/> E&P Waste | <input type="checkbox"/> Other E&P Waste | <input type="checkbox"/> Non-E&P Waste |
| <input type="checkbox"/> Produced Water | <input type="checkbox"/> Workover Fluids | |
| <input type="checkbox"/> Oil | <input type="checkbox"/> Tank Bottoms | |
| <input type="checkbox"/> Condensate | <input type="checkbox"/> Pigging Waste | |
| <input type="checkbox"/> Drilling Fluids | <input type="checkbox"/> Rig Wash | |
| <input checked="" type="checkbox"/> Drill Cuttings | <input type="checkbox"/> Spent Filters | |
| | <input type="checkbox"/> Pit Bottoms | |
| | <input type="checkbox"/> Other (as described by EPA) | |

DESCRIPTION OF IMPACT

Impacted?	Impacted Media	Extent of Impact	How Determined
Yes	SOILS	15 by 30 feet	Examination of historical data, visual observ.

INITIAL ACTION SUMMARY

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

Dark soil/materials were discovered during clean up of a surface spill (Doc 401792289). Laramie suspected legacy contamination of sub surface soils on the well pad. Dialogue with COGCC, BLM and review of historcal records indicated a possible drill cuttings remediation site used by the previous operator. Follow up investigation and excavation has determined the extent of the contamination is considerably less that originally thought. Results of soils taken during excavation indicate low level exceedances for SAR, Arsenic and Barium.

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):

Soils removed from an area on the surface. Sampling of soils accompanied the excavation. See attached diagram for an estimate of the focus area. Rather than try to differentiate small contaminated portions of soil, all clean and potentially contaminated soil was collected during excavation, the bulk of the materials were taken to Greenleaf for disposal (approximately 6 truckloads, 60 cu/yds). Soils samples were collected during this process and sent to lab for analysis, see attached data for results.

Proposed Groundwater Sampling

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

No impacts to groundwater were anticipated or discovered.

Proposed Surface Water Sampling

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

No impacts to groundwater were anticipated or discovered.

Additional Investigative Actions

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

Additional sampling occurred as the result of exceedances of Barium.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 19

Number of soil samples exceeding 910-1 9

Was the areal and vertical extent of soil contamination delineated? Yes

Approximate areal extent (square feet) 1625

NA / ND

-- Highest concentration of TPH (mg/kg) 1690

-- Highest concentration of SAR 39.7

BTEX > 910-1 No

Vertical Extent > 910-1 (in feet) 3

Groundwater

Number of groundwater samples collected 0

Was extent of groundwater contaminated delineated? No

Depth to groundwater (below ground surface, in feet) 95

Number of groundwater monitoring wells installed 0

Number of groundwater samples exceeding 910-1 0

NA Highest concentration of Benzene (µg/l)

NA Highest concentration of Toluene (µg/l)

NA Highest concentration of Ethylbenzene (µg/l)

 Highest concentration of Xylene (µg/l)

NA Highest concentration of Methane (mg/l)

Surface Water

0 Number of surface water samples collected

0 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) 60

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.

Soils were excavated using a backhoe. Location was monitored visually to determine the extent of possible contamination during excavation. No discerable odors during excavation.

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.

As the extent of contamination was determined (via excavation) potentially impacted material (soils) was hauled to a licensed disposal facility. Excavation was refilled with clean soils from locations assigned by the landowner (BLM). Soil samples were collected and analyzed to confirm the extent of deliniation/contamination. Subsequent review of lab results determined the areas exposed during excavation are below table 910-1 criteria for everything except SAR, SC, Arsenic and Barium. Additional sampling occurred due to the Barium exceedances; results were all less than Table 910-1 values.

Soil Remediation Summary

In Situ

Ex Situ

_____ Bioremediation (or enhanced bioremediation)

Yes _____ Excavate and offsite disposal

_____ Chemical oxidation

If Yes: Estimated Volume (Cubic Yards) _____ 60

_____ Air sparge / Soil vapor extraction

Name of Licensed Disposal Facility or COGCC Facility ID # _____

_____ Natural Attenuation

No _____ Excavate and onsite remediation

_____ Other _____

_____ Land Treatment

_____ Bioremediation (or enhanced bioremediation)

_____ Chemical oxidation

_____ Other _____

Groundwater Remediation Summary

No _____ Bioremediation (or enhanced bioremediation)

No _____ Chemical oxidation

No _____ Air sparge / Soil vapor extraction

No _____ Natural Attenuation

No _____ 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.

N/A

REMEDIATION PROGRESS UPDATE

PERIODIC REPORTING

Frequency: Quarterly Semi-Annually Annually Other Remediation complete, request closure.

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? Yes

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

None

Volume of E&P Waste (solid) in cubic yards 60

E&P waste (solid) description Partially contaminated soils.

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 N/A

COGCC Disposal Facility ID #, if applicable: _____

Non-COGCC Disposal Facility: _____

REMEDIATION COMPLETION REPORT

REMEDIATION COMPLETION SUMMARY

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

Do all soils meet Table 910-1 standards? No

Does the previous reply indicate consideration of background concentrations? _____

Are the only residual soil impacts pH, SAR, or EC at depths greater than 3 feet below ground surface? Yes

Does Groundwater meet Table 910-1 standards? Yes

Is additional groundwater monitoring to be conducted? No

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.

Pad will remain in use as an active producing location.

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? Yes

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

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). 01/07/2019

Date of commencement of Site Investigation. 01/07/2019

Date of completion of Site Investigation. 01/11/2019

REMEDIAL ACTION DATES

Date of commencement of Remediation. 01/07/2019

Date of completion of Remediation. 01/11/2019

SITE RECLAMATION DATES

Date of commencement of Reclamation. _____

Date of completion of Reclamation. _____

OPERATOR COMMENT

Spill #401768884, REM #11986
 Spill #401772140, REM #11988
 Spill #401915503, REM #12614

The original sampling for the above referenced spills was based on the idea that the spills on the Homer Deep Unit 9-41 pad would be treated as one spill. Recently it was agreed between the COGCC and Laramie Energy that the spills would be handled as three separate spills rather than one spill. Because of this, the sampling data was re-packaged and there will be data contained with a data report that does not pertain to the spill that is directly being referenced. In order to alleviate some confusion, the lab report number for the sample being referenced has been added to the data table.

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

Signed: ` Joan Proulx _____

Title: Regulatory Analyst _____

Submit Date: ` 08/05/2020 _____

Email: jproulx@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: ALEX FISCHER _____

Date: 09/11/2020 _____

Remediation Project Number: 12614 _____

COA Type**Description**

	Samples from the 7/9/2020 confirmation sampling were collected from 0-6" and 12-18" depths. The EBot:3.5' sample date 1/7/2019 indicated barium at 15400 mg/kg was collected from a depth of 3.5 feet. The BLM contacted the COGCC on 9/19/2020 and after discussion it was determined that the Operator shall remediate the barium impact to Table 910-1 concentration levels.
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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**

402460483	FORM 27-SUPPLEMENTAL-SUBMITTED
402460515	ANALYTICAL RESULTS
402460517	ANALYTICAL RESULTS
402460521	AERIAL IMAGE
402460526	ANALYTICAL RESULTS
402460527	ANALYTICAL RESULTS
402460528	MAP
402460529	OTHER

Total Attach: 8 Files

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

Environmental	Under the Remediation Completion Report tab the Final Closure Request has been changed from YES to NO.	09/11/2020
Environmental	EBot:3.5' sample date 1/7/2019 barium at 15400 mg/kg. HDU 9-41 SS1 0-6" Sample Date 9/20/2018 barium at 26000 mg/kg and Sample Date 7/9/2020SS1BA 0-6" 1870 mg/kg and 12-18" 318 mg/kg.	09/11/2020
Environmental	Doc#s 402460528, 402460529, 402460527, and 402460526 refer to to background arsenic samples collected near to the location.	09/11/2020

Total: 3 comment(s)