

# State of Colorado Energy & Carbon Management Commission

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403534141

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09/19/2023

Report taken by:

Chris Sanchez

## 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.

Closure request is not available for an Initial Site Investigation and Remediation Workplan.

### OPERATOR INFORMATION

Name of Operator: EVERGREEN NATURAL RESOURCES LLC	Operator No: 10705	Phone Numbers Phone: (303) 2848820 Mobile: ( )
Address: 1875 LAWRENCE ST STE 1150		
City: DENVER	State: CO Zip: 80202	
Contact Person: Mackenzie Smith	Email: mackenzie.smith@enrllc.com	

### PROJECT, PURPOSE & SITE INFORMATION

#### PROJECT INFORMATION

Remediation Project #: 26090 Initial Form 27 Document #: 403201740

#### 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: PIT	Facility ID: 301194	API #: _____	County Name: LAS ANIMAS
Facility Name: LOLA 21-3 TR	Latitude: 37.205140	Longitude: -104.769000	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NENW	Sec: 3	Twp: 33S	Range: 66W Meridian: 6 Sensitive Area? Yes

#### SITE CONDITIONS

General soil type - USCS Classifications SC Most Sensitive Adjacent Land Use non-crop land

Is domestic water well within 1/4 mile? Yes Is surface water within 1/4 mile? No

Is groundwater less than 20 feet below ground surface? No

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

Trujillo sandy loam, 3 to 9 percent slopes

**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	TBD	TBD

**INITIAL ACTION SUMMARY**

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

inspection by COGCC completed on 10/8/2022 identifying pit liner not maintained. Fluid level in the pit immediately reduced by operator and investigation completed internally. Once lowered, pit taken out of use and pit liner removed from pit on 10/12/2022 and properly disposed of. Soil sampling completed on 10/19/2022.

**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 ):

three in-situ samples from the pit will be taken, and one native sample from outside of the pit will be taken. These will be grab samples and analyzed for soil solubility for reclamation standards. Impacts from organic compounds are not as likely from coal bed methane "CBM" produced water. As such, analysis of some Table 915-1 Organic Compounds in Soils or other contaminants of concern may not be necessary to analyze for closure of CBM produced water Pits. Attached analytical results from the Lola 21-3 TR well demonstrate that the CBM produced water does not contain liquid hydrocarbons and we are requesting a reduction in the 915-1 constituents to match the Soil Suitability for Reclamation list of EC, SAR, pH and boron.

**Proposed Groundwater Sampling**

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

**Proposed Surface Water Sampling**

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

**Additional Investigative Actions**

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

**SITE INVESTIGATION REPORT**

## **SAMPLE SUMMARY**

### **Soil**

Number of soil samples collected 17  
Number of soil samples exceeding 915-1 16  
Was the areal and vertical extent of soil contamination delineated? No  
Approximate areal extent (square feet) 32

### **NA / ND**

NA Highest concentration of TPH (mg/kg) \_\_\_\_\_  
-- Highest concentration of SAR 32  
BTEX > 915-1 No  
Vertical Extent > 915-1 (in feet) 1

### **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 915-1 \_\_\_\_\_

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 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?

one background sample was collected

☐ 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?

Yes, all in-situ samples still showing signs of non-compliance for pH, with elevated levels of SAR found at Sample points 2 & 3. Both increased SAR and pH values are decreasing over time with natural attenuation, and therefore quarterly sampling will be continued.

## **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.

Natural Attenuation will be utilized for source removal.

## **REMEDIAL 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.

Impact of Source (produced water) and steps for removal will be determined once initial soil samples are completed. Natural Attenuation will be utilized for source removal. If continued soil samples don't indicate continued improvement, soil treatment will be considered and completed.

## **Soil Remediation Summary**

☒ In Situ

☐ Ex Situ

No Bioremediation ( or enhanced bioremediation ) \_\_\_\_\_ Excavate and offsite disposal \_\_\_\_\_

☐ No Chemical oxidation  
☐ No Air sparge / Soil vapor extraction  
☐ Yes Natural Attenuation  
☐ No Other \_\_\_\_\_

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.

## 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

### Adequacy of Operator's General Liability Insurance and Financial Assurance

Describe the adequacy of the Operator's general liability insurance and Financial Assurance to fully address the anticipated costs of Remediation, including the estimated remaining cost for this project (below).

If this information has been provided on a Form 27 within the last 12 months, provide the Document Number of that form.

Operator does not have site-specific financial assurance for this project, however Operator has inactive well, blanket and surface bonding, as well as commercial general liability and/or umbrella/excess insurance meeting the requirements of 705.b. Operator does not anticipate making an insurance claim for this report. Assessment activities as outlined herein are proposed. Costs included herein are estimates only and they may change over time base on numerous factors. Accordingly, Operator makes no guarantee as to the accuracy of such cost estimates, thus providing that estimate for the next year below.

Operator anticipates the remaining cost for this project to be: \$ 1000

### WASTE DISPOSAL INFORMATION

Was E&P waste generated as part of this remediation? No

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:

## 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.

This Form 27 is in response to Field Inspection, Document #403190406. ENR will proceed with closure and remediation of this pit. Clean soil source: If back berm of pit exists, this material will be utilized to backfill pit. Native fill material may be collected from recontouring slopes. Clean fill material will be brought onsite if needed. The area will be seeded with approved seed mix.

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 provide the seed mix? No

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

Did the local soil conservation district provide the seed mix? No

### SITE RECLAMATION DATES

Proposed date of commencement of Reclamation. 01/01/2023

Proposed date of completion of Reclamation. 03/01/2024

## 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). 10/09/2022

Proposed site investigation commencement. 10/10/2022

Proposed completion of site investigation. 10/11/2022

### REMEDIAL ACTION DATES

Proposed start date of Remediation. 12/01/2023

Proposed date of completion of Remediation. 03/01/2024

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**

Implementation schedule updated to reflect current ongoing sampling procedures. Evaluated the increased pH and SAR values since initial sampling. Most recent sampling, conducted on 8/8/2023 indicates reduced levels of pH and SAR at all sampling points.

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

Signed: Mackenzie Smith

Title: Regulatory Consultant

Submit Date: 09/19/2023

Email: mackenzie.smith@enrllc.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: Chris Sanchez

Date: 09/22/2023

Remediation Project Number: 26090

**COA Type****Description**

	Operator will continue quarterly reporting until the site investigation is complete and the implementation schedule can be updated.
	Operator shall submit Quarterly Updates for this remediation project every 90 days as required by Rule 913.e. Quarterly updates shall include a current map of the subject location including current excavation limits and/or sample locations, proposed/actual soil boring locations and monitoring well locations. GPS data used to create the map must comply with ECMC Rule 216. Operator will include historical and recent soil analytical data in a table format in Quarterly updates. Operator shall submit field notes of all field activities reported during a Quarterly Update.
2 COAs	

**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**

403534141	FORM 27-SUPPLEMENTAL-SUBMITTED
403534170	ANALYTICAL RESULTS
403534172	ANALYTICAL RESULTS

Total Attach: 3 Files

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

		Stamp Upon Approval
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Total: 0 comment(s)