

State of Colorado Oil and Gas Conservation Commission

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Document Number:

403156708

Receive Date:

09/09/2022

Report taken by:

Jason Kosola

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 #: 19662 Initial Form 27 Document #: 402782552

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: 112908 | API #: _____ | County Name: LAS ANIMAS |
| Facility Name: RED DOG 21-32 | Latitude: 37.221312 | Longitude: -104.695807 | |
| ** correct Lat/Long if needed: Latitude: _____ | | Longitude: _____ | |
| QtrQtr: NENW | Sec: 32 | Twp: 32S | Range: 65W Meridian: 6 Sensitive Area? Yes |

SITE CONDITIONS

General soil type - USCS Classifications CH Most Sensitive Adjacent Land Use Non-Crop Land

Is domestic water well within 1/4 mile? Yes Is surface water within 1/4 mile? Yes

Is groundwater less than 20 feet below ground surface? Yes

SITE INVESTIGATION PLAN

TYPE OF WASTE:

- | | | |
|--|--|--|
| <input type="checkbox"/> E&P Waste | <input checked="" 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 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 | TBD | Soil Samples |

INITIAL ACTION SUMMARY

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

All CBM water was removed from the pit and transported to the gunbarrel system at Burro Compressor Station by an ENR employee in an ENR owner water truck.

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):

Soil samples were collected and attached hereto.

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):

Soil samples do not indicate conditions improving, and therefore Evergreen will be completing a full remediation and excavation of the soil within the Red Dog pit. Impacts will be buried 3 ft deep and clean fill material will be used to backfill impacted area. Clean soil source: If back berm of pit exists, this material will be utilized to backfill pit. Native fill material may be collected from the recontouring slopes. Clean fill material will be brought onsite if needed. The area will be seeded with the basin-wide approved NRCS seed mix

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 13
Number of soil samples exceeding 915-1 12
Was the areal and vertical extent of soil contamination delineated? Yes
Approximate areal extent (square feet) 1404

NA / ND

-- Highest concentration of TPH (mg/kg) 1600
-- Highest concentration of SAR 42
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 0
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?

Composite native samples from 4 different areas were collected in the initial sampling event on June 24, 2021. No additional background samples are expected to be collected during this 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?

Impacts will be excavated 3 ft deep and clean fill material will be used to backfill impacted area. Clean soil source: If backfill of pit exists, this material will be utilized to backfill pit. Native fill material may be collected from the recontouring slopes. Clean fill material will be brought onsite if needed. The area will be seeded with the basin-wide approved NRCS seed mix

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.

Impacted soil was treated with Oil Gator bioremediation product on September 21, 2021 and mixed into the impacted soil. SDS and product application description are attached hereto. The product was further mixed on October 28, 2021 and November 10, 2021. Second round of soil samples were collected on December 14th, 2021, and third round was collected on February 28, 2022. Results showed improvement in soil quality through the treatment process. A second round of bioremediation product was applied on June 10, 2022, however soil sample results indicated no improvement from operations. Impacts will be excavated 3 ft deep and clean fill material will be used to backfill impacted area. Clean soil source: If backfill of pit exists, this material will be utilized to backfill pit. Native fill material may be collected from the recontouring slopes. Clean fill material will be brought onsite if needed. The area will be seeded with the basin-wide approved NRCS seed mix

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.

Bioremediation product will be applied per specification to the impacted soil and monitored at 3 months and 6 months with follow up soil sample collection to ensure compliance and remediation of pit soil. If the Red Dog 21-32 well is not able to produce, fresh water will be hauled to location for use with the bioremediation product. Existing top soil from the pit pile will then be used to backfill the pit which will be seeded and mulched per reclamation rules. Impacts will be excavated 3 ft deep and clean fill material will be used to backfill impacted area. Clean soil source: If backfill of pit exists, this material will be utilized to backfill pit. Native fill material may be collected from the recontouring slopes. Clean fill material will be brought onsite if needed. The area will be seeded with the basin-wide approved NRCS seed mix

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) _____ 3
_____ Name of Licensed Disposal Facility or COGCC Facility ID # _____
_____ Excavate and onsite remediation
_____ No Land Treatment
_____ No Bioremediation (or enhanced bioremediation)
_____ Chemical oxidation
_____ Other _____

Groundwater Remediation Summary

No _____ 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

Approved Reporting Schedule:

☐ Quarterly☐ Semi-Annually☐ Annually☒ Other

Upon collection and receipt of additional soil samples taking into consideration winter conditions.

☐ 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: \$ 5000

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: _____

REMEDATION COMPLETION REPORT

REMEDATION 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.

Existing pit pile will be used to backfill pit. Should additional material be needed, clean fill will be hauled in. Area will be reclaimed to match existing countour, seeded and mulched.

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. 08/30/2021

Proposed date of completion of Reclamation. 04/29/2022

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. 06/17/2021

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). _____

Proposed site investigation commencement. _____

Proposed completion of site investigation. _____

REMEDIAL ACTION DATES

Proposed start date of Remediation. 08/23/2021

Proposed date of completion of Remediation. 04/22/2022

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

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

Signed: Mackenzie Smith

Title: Production Engineer

Submit Date: 09/09/2022

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: Jason Kosola

Date: 09/13/2022

Remediation Project Number: 19662

Condition of Approval**COA Type****Description**

| | |
|--------|--|
| | <p>No impacts are allowed to remain in place without an approved Rule 915.b. Reclamation Plan.</p> <p>If Operator will propose to leave material with elevated levels of inorganics in situ, the Operator shall provide a detailed Reclamation plan that includes, but is not limited to, soil analysis from adjacent undisturbed lands, revegetation techniques, site stabilization, and details of seeded species. Operator will submit the Reclamation plan on a Form 27 Supplemental Report for Director review pursuant to Rule 915.b. Any Table 915-1 exceedances in soil intended to be left in situ shall be fully delineated and results submitted on Reclamation plan. Additional soil sampling may be required to delineate impacts planned to be left in place. Refer to Rule 915.b. Guidance Document for questions on what to include in plan.</p> |
| | Operator shall continue to monitor location for all Table 915-1 exceedances. Only the constituents that exceed 915-1 need to be sampled for future compliance sampling. |
| 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**

| | |
|-----------|--------------------------------|
| 403156708 | FORM 27-SUPPLEMENTAL-SUBMITTED |
| 403156758 | ANALYTICAL RESULTS |
| 403156759 | ANALYTICAL RESULTS |
| 403156760 | SOIL SAMPLE LOCATION MAP |

Total Attach: 4 Files

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

| | | |
|---------------|--|------------|
| Environmental | The required financial assurance information is missing. | 09/09/2022 |
|---------------|--|------------|

Total: 1 comment(s)