

State of Colorado Oil and Gas Conservation Commission

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Report taken by:

KRIS NEIDEL

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>ANTLER ENERGY LLC</u>	Operator No: <u>10407</u>	Phone Numbers Phone: <u>(307) 3807616</u> Mobile: <u>()</u>
Address: <u>PO BOX 104</u>		
City: <u>BAGGS</u>	State: <u>WY</u> Zip: <u>82321</u>	
Contact Person: <u>Clay Evans</u>	Email: <u>clay@antler-energy.com</u>	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 7362 Initial Form 27 Document #: 2230847

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 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 checked="" type="checkbox"/> Other <u>LAND TREATMENT FOR SOIL</u> |

SITE INFORMATION

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

Facility Type: <u>LOCATION</u>	Facility ID: <u>313000</u>	API #: <u></u>	County Name: <u>MOFFAT</u>
Facility Name: <u>PTASYNISKI-611N97W 17SWNW</u>		Latitude: <u>40.915179</u>	Longitude: <u>-108.322537</u>
		** correct Lat/Long if needed: Latitude: <u></u>	Longitude: <u></u>
QtrQtr: <u>SWNW</u>	Sec: <u>17</u>	Twp: <u>11N</u>	Range: <u>97W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

SITE CONDITIONS

General soil type - USCS Classifications SC Most Sensitive Adjacent Land Use PASTURE
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

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
	SOILS	WITHIN PIT	EXCAVATED TO NON IMPACTED SOIL

INITIAL ACTION SUMMARY

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

THE BLM GAVE VERBAL APPROVAL FOR THE CONSTRUCTION OF A LAND TREATMENT FACILITY DESIGNED TO TREAT SOIL EXCAVATED FROM PRODUCED WATER PITS THAT ARE NO LONGER NECESSARY. THE LAND TREATMENT FACILITY WAS CONSTRUCTED WITH AN ADEQUATE EARTHEN BERM TO ALLOW FOR POTENTIAL STORM EVENTS AND TO PREVENT SURFACE RUNOFF.

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 have been taken. Attached are the soil sample results.
Once approved by COGCC to close the land farm, we will act accordingly to get it closed and reclaimed.

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 2

Number of soil samples exceeding 910-1 0

Was the areal and vertical extent of soil contamination delineated?

Approximate areal extent (square feet) 1200

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

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.

NA / ND

ND Highest concentration of TPH (mg/kg)

ND Highest concentration of SAR

BTEX > 910-1

Vertical Extent > 910-1 (in feet) 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)

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)

Volume of liquid waste (barrels)

☒ Is further site investigation required?

A COMPOSITE SOIL SAMPLE WAS OBTAINED IN AUGUST 2011 FROM SEVERAL AREAS WITHIN THE TREATMENT COMPOUND. THE SAMPLED EXCEEDED THE TABLE 910-1 STANDARDS FOR TPH. THE FACILITY WILL BE RE-SAMPLED FOR TPH IN THE LATE SPRING 2012.

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.

SOIL WERE EXCAVATED WITH A BACKHOE FROM FIVE PITS LOCATED AT THE KLEANHAMMER 3, KLEANHAMMER 3A, PTASYNSKI 1X AND PTASYNSKI #2 - 2 LOCATIONS.

REMEDICATION 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.

The contents within the land farm has been tilled/turned twice a year and will continue until Land farm passes criteria. Soil samples will be taken periodically to check progress.

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.

NO GROUNDWATER WAS IMPACTED.

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: _____

REMEDATION COMPLETION REPORT

REMEDATION COMPLETION SUMMARY

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

Do all soils meet Table 910-1 standards? _____

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? _____

Does Groundwater meet Table 910-1 standards? _____

Is additional groundwater monitoring to be conducted? _____

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.

NO EXCAVATION WAS REQUIRED IN THE AREA OF LAND TREATMENT. THE SURFACE AREA WAS SCRAPED AND BERMS CONSTRUCTED. RECLAMATION ACTIVITIES WILL INCLUDE RE-SEEDING IN ACCORDANCE WITH MOFFAT COUNTY SOIL CONSERVATION RECOMMENDED SEED MIX. THE SEED MIX INCLUDES WESTERN WHEATGRASS, NEEDLE AND THREAD, BLUEBUNCH WHEATGRASS, SAINFOIN, SMALL BURNETT AND SANDBERG BLUEGRASS. THE SEED WILL BE OBTAINED FROM ARKANSAS VALLEY SEED COMPANY, OR SIMILAR, AND WILL BE CERTIFIED NOXIOUS WEED FREE. THE BLM WILL BE CONTACTED FOR THEIR INPUT AND APPROVAL ONCE THE SOIL IS BELOW THE COGCC 910-1 CLEANUP STANDARDS.

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 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). _____

Date of commencement of Site Investigation. 08/17/2010 _____

Date of completion of Site Investigation. 08/17/2010 _____

REMEDIAL ACTION DATES

Date of commencement of Remediation. 08/18/2010 _____

Date of completion of Remediation. _____

SITE RECLAMATION DATES

Date of commencement of Reclamation. _____

Date of completion of Reclamation. _____

OPERATOR COMMENT

Attached are the soil samples.
Once this landfarms clears criteria for closure per COGCC, we would like to get it closed and reclaimed.

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

Signed: ` Clay Evans

Title: Manager

Submit Date: ` 07/27/2019

Email: clay@antler-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: KRIS NEIDEL

Date: 08/16/2019

Remediation Project Number: 7362

COA Type**Description**

	Operator should provide notice to Environmental staff, Kris Neidel (kris.neidel@state.co.us) or 970-871-1963 72hrs prior to mobilization at begin of all sampling events.
	COGCC estimates the land treatment area at 11,200 ft^2. This large of an area will require diligent sampling and recordkeeping. A minimum of 5 samples would be required to define this large of an area.
	Samples location selection should be guided by rule 910.b(3)B. The number of soil samples and their location should be adequate to characterize the impacted area.
	At least one sample should be for COGCC table 910-1, all samples should include BTEX, TPH (GRO and DRO) and EC, SAR, PH.
	By 9/16/2019, Antler shall provide a record of: tilling/treatments, size of treatment area, vertical depth of treated soil, on a supplemental Form 27.

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**

402124330	FORM 27-SUPPLEMENTAL-SUBMITTED
402124332	ANALYTICAL RESULTS

Total Attach: 2 Files

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

Environmental	It is recommended that Antler employ an environmental consultant to manage this project.	08/16/2019
Environmental	The soil samples provided have only metals and Inorganics.	08/16/2019

Total: 2 comment(s)