

State of Colorado
Energy & Carbon Management Commission

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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 ECMC 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: WILLIFORD ENERGY COMPANY	Operator No: 96730	Phone Numbers
Address: 6060 AMERICAN PLAZA SUITE 760		Phone: (918) 495-2700
City: TULSA State: OK Zip: 74135		Mobile: (918) 629-6547
Contact Person: Doug Storts	Email: pds@willifordenergy.com	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 39333 Initial Form 27 Document #: 404005214

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

Yes Multiple Facilities

Facility Type: SPILL OR RELEASE	Facility ID: 486487	API #: _____	County Name: CHEYENNE
Facility Name: RHOADES UNIT 5-4	Latitude: 38.878558	Longitude: -102.798545	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NENE	Sec: 32	Twp: 13S	Range: 48W Meridian: 6 Sensitive Area? No
Facility Type: SPILL OR RELEASE	Facility ID: 486488	API #: _____	County Name: CHEYENNE
Facility Name: RHOADES UNIT 5-4	Latitude: 38.878558	Longitude: -102.798545	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NENE	Sec: 32	Twp: 13S	Range: 48W Meridian: 6 Sensitive Area? No

SITE CONDITIONS

General soil type - USCS Classifications GC

Most Sensitive Adjacent Land Use Pasture

Is domestic water well within 1/4 mile? No

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

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) Soil impacted by produce oil from the well (Hydrocarbon Impacted Soil)

DESCRIPTION OF IMPACT

Impacted?	Impacted Media	Extent of Impact	How Determined
Yes	SOILS	<1 bbl oil	To be determined through onsite investigation.

INITIAL ACTION SUMMARY

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

Please refer to ECMC document # 403977613 and 403977576 for immediate actions taken associated with the historical spill. Visually observed oil stained soil has been removed and placed in a lined containment located at the Rhoades Unit Compressor Station.

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):

Four (4) grab soil samples will be collected as per the sampling diagram (Attachment B).

Proposed Groundwater Sampling

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

If ground water is encountered, a ground water sample will be taken and evaluated. Groundwater was not encountered during removal of visually observed hydrocarbon impacted soil.

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 22

Number of soil samples exceeding 915-1 13

Was the areal and vertical extent of soil contamination delineated? No

Approximate areal extent (square feet) 250

NA / ND

 Highest concentration of TPH (mg/kg)

 Highest concentration of SAR

BTEX > 915-1 Yes

Vertical Extent > 915-1 (in feet) 4

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

ND Highest concentration of Benzene (µg/l)

ND Highest concentration of Toluene (µg/l)

ND Highest concentration of Ethylbenzene (µg/l)

ND Highest concentration of Xylene (µg/l)

ND 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?

Two (2) background samples (BGD-1 and BGD-2) were taken ~100' South of the well head from soil horizons BGD-1 (~12" bgs) and BGD-2 (~36" bgs)

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?

There still exceedances near the well head, primarily to the North and East. There are pH exceedances from all sample locations near the well head. The are three (3) minor Organics exceedances based on GW SSL. Table 915 Metal exceedances are due to naturally high native soil conditions for Arsenic and Barium as indicated in background samples BGD-1 and BGD-2.

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.

Visually observed hydrocarbon impacted soil will be excavated and stored on site in a lined containment area to the South of the pumping unit. Sampling will be used to confirm soils that remain will meet Table 915-1 standards. Clean soil will be filled into any excavated 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.

Closure samples will be taken and analyzed per the rule, though if contamination is noted of a certain type (e.g., hydrocarbon or salt or metals) any additional samples will be analyzed for the compound(s) that were found to exceed Table 915-1 and not all Table 915 compounds.

Soil Remediation Summary

In Situ

- Bioremediation (or enhanced bioremediation)
- Chemical oxidation
- Air sparge / Soil vapor extraction
- Natural Attenuation
- Yes Other Potential treatment of pH using sulfur near wellhead _____

Ex Situ

- Yes Excavate and offsite disposal
- If Yes: Estimated Volume (Cubic Yards) _____ 10
- Name of Licensed Disposal Facility or ECMC 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.

Williford has liability insurance and financial assurance in compliance with ECMC rules.

Operator anticipates the remaining cost for this project to be: \$ 10000

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 _____ 10

E&P waste (solid) description hydrocarbon impacted soil

ECMC Disposal Facility ID #, if applicable: _____

Non-ECMC Disposal Facility: Kit Carson Landfill

Volume of E&P Waste (liquid) in barrels _____ 0

E&P waste (liquid) description _____

ECMC Disposal Facility ID #, if applicable: _____

Non-ECMC 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 ECMC 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.

Any disturbance will be returned to the active working surface of the well pad for continued operation. When the site is decommissioned at a later date, it will be reclaimed in accordance with 1000 Series regulations.

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? _____

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

Did the local soil conservation district provide the seed mix? _____

SITE RECLAMATION DATES

Proposed date of commencement of Reclamation. 05/05/2024

Proposed date of completion of Reclamation. 09/30/2025

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. 03/26/2024

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 05/06/2024

Proposed site investigation commencement. 03/03/2025

Proposed completion of site investigation. 08/29/2025

REMEDIAL ACTION DATES

Proposed start date of Remediation. 03/03/2025

Proposed date of completion of Remediation. 09/30/2025

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

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

Signed: Ty Smith

Title: Consultant

Submit Date: 08/04/2025

Email: tysmith@lesair.com

Based on the information provided herein, this Application for Site Investigation and Remediation Workplan complies with ECMC Rules and applicable orders and is hereby approved.

ECMC Approved: _____

Date: 09/10/2025

Remediation Project Number: 39333

COA Type**Description**

	Operator did not provide data for EC, SAR and Boron during the 7/29/2025 sampling event. COC attached to Laboratory Work Order # 2507063 shows hold for EC, SAR, and Boron. Operator shall provide samples for full Table 915-1 contaminants of concern.
	ECMC does not approve the Operators request for In Situ treatment of pH at the wellhead, " Potential treatment of pH using sulfur near wellhead". The pH and SAR of soil samples collected at the site exceeds the allowable level for Table 915-1 soil suitability for reclamation for pH and exceeds the background sample presented. Therefore, Operator will define the extent of soil with elevated pH, and if Operator proposes to leave soil with elevated pH in place, Operator will submit a Reclamation plan pursuant to Rule 915.b.
	Operator shall continue Quarterly Reporting until the Site Assessment is completed and the remediation area demonstrates Compliance with Table 915-1 Standards.
	Background sampling locations should be sufficiently away from the impacted area to reflect conditions not impacted by oil and gas activity, and should be obtained from similar depths and soil horizons or lithologic materials for comparison to confirmation soil samples.
	Operator shall adhere to Protection of Groundwater Soil Screening Levels
	Operator shall define the vertical and lateral extent of impacts to soil. Additional sampling is required to fully delineate the vertical and lateral impacts to soil Operator shall collect confirmation soil samples for Full Table 915-1 Contaminants of Concern
6 COAs	

ATTACHMENT 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
404303636	FORM 27-SUPPLEMENTAL-SUBMITTED
404303637	AERIAL IMAGE
404303638	SOIL SAMPLE LOCATION MAP
404303639	SOIL SAMPLE LOCATION MAP
404303640	PHOTO DOCUMENTATION
404303641	ANALYTICAL DATA SUMMARY TABLE(S)
404303642	ANALYTICAL RESULTS
404303643	ANALYTICAL RESULTS
404303644	ANALYTICAL RESULTS
404303645	ANALYTICAL RESULTS

Total Attach: 10 Files

Date Run: 9/10/2025 Doc [#404303636]

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
		Stamp Upon Approval

Total: 0 comment(s)