

State of Colorado  
Oil and Gas Conservation Commission

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Document Number:  
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Receive Date:

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Report taken by:

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: <u>LOCIN OIL CORPORATION</u>	Operator No: <u>51130</u>	Phone Numbers Phone: <u>(303) 902-1593</u> Mobile: <u>( )</u>
Address: <u>600 TRAVIS ST STE 6161</u>		
City: <u>HOUSTON</u>	State: <u>TX</u>	Zip: <u>77002</u>
Contact Person: <u>Daniel Benedict</u>	Email: <u>dbenedict@locin.energy</u>	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 13414 Initial Form 27 Document #: 401962566

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: <u>PIT</u>	Facility ID: <u>119476</u>	API #: _____	County Name: <u>GARFIELD</u>
Facility Name: <u>Federal #23-4 119476</u>		Latitude: <u>39.395852</u>	Longitude: <u>-108.995924</u>
		** correct Lat/Long if needed: Latitude: _____	Longitude: _____
QtrQtr: <u>NESW</u>	Sec: <u>4</u>	Twp: <u>8S</u>	Range: <u>104W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

SITE CONDITIONS

General soil type - USCS Classifications SM Most Sensitive Adjacent Land Use Federal - Rangeland

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**

There are three (3) unnamed intermittent streams that trend NW-SE and pass through a ¼-mile buffer around the Federal 23-4 facility. The nearest is located approx. 185ft to the NNE, while the other two intermittent streams are located approx. 450ft to the NNE and SSW of the facility.

**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
Yes	SOILS	East sidewall	Soil sampling

**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 previous Operator collected soil samples at the pit location from the proposed sample originally approved for investigation.

**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 ):

**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 ):  
Due to remaining impacts, Locin is proposing an in situ method of remediation known as soil vapor extraction (SVE) by installing SVE remediation wells. Two different zones will be screened, one shallow (5-15') and one deep (20-30'), to determine effective Radius of Influence (ROI). Screening will consist of a pilot well with two observation wells for each zone. The well design will target the vadose zone with the highest hydrocarbon concentrations and consist of 2-inch PVC wells, installed with 0.010 slot screen. The screened interval will be sealed with hydrated bentonite chips and 10/20 silica sand. Above-ground well completion will consist of 4-inch steel stickup covers and concrete to grade. Following the well installation, SVE pilot testing will begin, and Locin's environmental consultant will provide a remediation feasibility report that includes an SVE Remediation System Performance table, vacuums/pressures, flow rates, VOC emissions, well logs, and other operating parameters.

**SITE INVESTIGATION REPORT**

## SAMPLE SUMMARY

### Soil

Number of soil samples collected 5  
Number of soil samples exceeding 915-1 1  
Was the areal and vertical extent of soil contamination delineated? Yes  
Approximate areal extent (square feet) 100

### NA / ND

-- Highest concentration of TPH (mg/kg) 540  
NA Highest concentration of SAR           
BTEX > 915-1 Yes  
Vertical Extent > 915-1 (in feet) 2

### Groundwater

Number of groundwater samples collected 0  
Was extent of groundwater contaminated delineated? No  
Depth to groundwater (below ground surface, in feet) 0  
Number of groundwater monitoring wells installed 0  
Number of groundwater samples exceeding 915-1 0

-- 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  
0 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?

The previous operator reports that: three (3) background soil samples were collected on 3/2/20 at a nearby location (Federal 28-9) which is approximately 1.72 miles to the north. The background samples collected were analyzed for pH, Arsenic, EC and SAR and will be used to compare to analytical results at the Federal 23-4 location.

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?

Soils from the East wall of the pit currently exceed Table 915-1 standards, therefore, additional excavation and remediation is required. The previous operator conducted additional delineation via a track hoe on 08/25/2021, but the impacts were too deep for the excavating equipment. Vertical delineation was completed via a GeoProbe rig on 10/5/2021 and determined soils comply with COGCC thresholds at approximately 33 feet. Additional excavation was planned and never completed. Because of the remaining impacts, Locin is proposing a new method of remediation.

## REMEDIAL ACTION PLAN

Does this Supplemental Form 27A include changes to a previously approved Remedial Action Plan? Yes

### SOURCE REMOVAL SUMMARY

Describe how source is to be removed.

The initial landfarm was spread out over 2021 and confirmation samples were taken on 12/22/21 indicated the soils meet Table 915-1. Any new excavation will use a stockpile, and operator will continue to landfarm any contaminated soils. The BLM has approved continued landfarming and is supportive of the SVE pilot test and method.

### 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.

Prior excavation and drilling activities have determined that the vertical and horizontal extent of impacts exceed the amount of contaminated waste to make excavation reasonable. Upon approval of this Supplemental Form 27, Locin plans to install SVE remediation wells. Locin will be screening two different zones, shallow (5-15 feet) and deep (20-30 feet), to determine effective Radius of Influence (ROI). Screening will consist of a pilot well with two observation wells for each zone. The well design will target the vadose zone with the highest hydrocarbon concentrations and consist of 2-inch PVC wells, installed with 0.010 slot screen. The screened interval will be sealed with hydrated bentonite chips and 10/20 silica sand. Above ground well completion will consist of 4-inch steel stickup covers and concrete to grade. Following the well installation, SVE pilot testing will begin, and Locin's environmental consultant will provide a remediation feasibility report that includes an SVE Remediation System Performance table, vacuums/pressures, flow rates, VOC emissions, well logs, and other operating parameters. This information will be utilized to calculate the ROI and ultimately determine if SVE is a favorable in situ remediation method for this location. Locin will file a Supplemental Form 27 with results and request approval for ongoing SVE monitoring.

**Soil Remediation Summary**

In Situ

Ex Situ

\_\_\_\_\_ Bioremediation ( or enhanced bioremediation )  
 \_\_\_\_\_ Chemical oxidation  
 Yes \_\_\_\_\_ Air sparge / Soil vapor extraction  
 \_\_\_\_\_ Natural Attenuation  
 \_\_\_\_\_ Other \_\_\_\_\_

\_\_\_\_\_ Excavate and offsite disposal  
 \_\_\_\_\_ If Yes: Estimated Volume (Cubic Yards) \_\_\_\_\_  
 \_\_\_\_\_ Name of Licensed Disposal Facility or COGCC Facility ID # \_\_\_\_\_  
 \_\_\_\_\_ Excavate and onsite remediation  
 Yes \_\_\_\_\_ Land Treatment  
 Yes \_\_\_\_\_ Bioremediation (or enhanced bioremediation)  
 No \_\_\_\_\_ Chemical oxidation  
 No \_\_\_\_\_ 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.

Not anticipated at this time but will be assessed during remedial activities.

# 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 anticipates the remaining cost for this project to be: \$ \_\_\_\_\_

## 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? No

Does the previous reply indicate consideration of background concentrations? \_\_\_\_\_

Does Groundwater meet Table 915-1 standards? Yes

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.

The pit will be reclaimed to the present grade of the location or to the approximate original contour of the landscape and consistent with the 1000-series Rule. Seeding of the disturbed area will be performed in accordance with its' intended use. The seed mix will be prescribed by the landowner. There are no known noxious weeds in the immediate area of the disturbance.

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? Yes

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

Did the local soil conservation district provide the seed mix? \_\_\_\_\_

### SITE RECLAMATION DATES

Proposed date of commencement of Reclamation. 04/30/2023

Proposed date of completion of Reclamation. 05/30/2023

## 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). \_\_\_\_\_

Proposed site investigation commencement. 08/17/2022

Proposed completion of site investigation. 08/26/2022

### REMEDIAL ACTION DATES

Proposed start date of Remediation. 09/12/2022

Proposed date of completion of Remediation. \_\_\_\_\_

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:

Change of Operator

**OPERATOR COMMENT**

Locin is proposing an in situ method of remediation known as soil vapor extraction (SVE). Prior excavation and drilling activities have determined that the vertical and horizontal extent of impacts exceed the amount of contaminated waste to make excavation reasonable. Upon approval of this Supplemental Form 27, Locin plans to install SVE remediation wells. Locin will be screening two different zones, shallow (5-15 feet) and deep (20-30 feet), to determine effective Radius of Influence (ROI). Screening will consist of a pilot well with two observation wells for each zone. The well design will target the vadose zone with the highest hydrocarbon concentrations and consist of 2-inch PVC wells, installed with 0.010 slot screen. The screened interval will be sealed with hydrated bentonite chips and 10/20 silica sand. Above ground well completion will consist of 4-inch steel stickup covers and concrete to grade. Following the well installation, SVE pilot testing will begin, and Locin's environmental consultant will provide a remediation feasibility report that includes an SVE Remediation System Performance table, vacuums/pressures, flow rates, VOC emissions, well logs, and other operating parameters. This information will be utilized to calculate the ROI and ultimately determine if SVE is a favorable in situ remediation method for this location. Locin will file a Supplemental Form 27 with results and request approval for ongoing SVE monitoring.

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

Signed: Melanie Adams

Title: TCO Compliance Mgr

Submit Date: \_\_\_\_\_

Email: meladams@tcolandservices.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: \_\_\_\_\_

Date: \_\_\_\_\_

Remediation Project Number: 13414

**COA Type****Description**

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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**

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Total Attach: 0 Files

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

		Stamp Upon Approval
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Total: 0 comment(s)