

State of Colorado
Energy & Carbon Management Commission

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Report taken by:
Krystal Heibel

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 ECOM 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>MAGPIE OPERATING INC</u>	Operator No: <u>52530</u>	Phone Numbers Phone: <u>(970) 669-6038</u> Mobile: <u>()</u>
Address: <u>2707 SOUTH COUNTY RD 11</u>		
City: <u>LOVELAND</u>	State: <u>CO</u>	Zip: <u>80537</u>
Contact Person: <u>Jody Kost</u>	Email: <u>magpieoil2@yahoo.com</u>	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 6103 Initial Form 27 Document #: 1761290

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: <u>WELL</u>	Facility ID: _____	API #: <u>075-06258</u>	County Name: <u>LOGAN</u>
Facility Name: <u>STATE 1-36</u>	Latitude: <u>40.714817</u>	Longitude: <u>-103.462633</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>NENE</u>	Sec: <u>36</u>	Twp: <u>9N</u>	Range: <u>55W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>
Facility Type: <u>PIT</u>	Facility ID: <u>116333</u>	API #: _____	County Name: <u>LOGAN</u>
Facility Name: <u>STATE 1-36</u>	Latitude: <u>40.714817</u>	Longitude: <u>-103.462663</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>NENE</u>	Sec: <u>36</u>	Twp: <u>9N</u>	Range: <u>55W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

Facility Type: LOCATION Facility ID: 388323 API #: _____ County Name: LOGAN
 Facility Name: STATE-69N55W 36NENE Latitude: 40.714817 Longitude: -103.462633
 ** correct Lat/Long if needed: Latitude: _____ Longitude: _____
 QtrQtr: NENE Sec: 36 Twp: 9N Range: 55W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

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

County Road 40 is located approximately 840 feet northeast of the Site. There are no groundwater wells within 1/2-mile of the Site. No potential receptors are located within 1/4-mile of the Site.

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	420' x 220'	Lab analytical

INITIAL ACTION SUMMARY

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

An inspection was performed on January 03, 2024 (Document 709100202). The findings of the inspection included the observation that sparse vegetation was growing (potential salt kill) in the location of the former tank battery and pit. The associated Corrective Action includes assessment of the historic release by collecting soil samples and analyzing for Table 915-1.

An initial round of soil samples were collected on 2/11/22 in the area of the former pit for boron, EC, SAR, and pH analysis. All source zone samples collected from the surface and 3 feet below ground surface (ft bgs) exceeded some or all soil suitability parameters when compared to Table 915-1 cleanup levels.

A second round of soil samples were collected on 4/18/2024 in the vicinity of the former pit and wellhead for Full Table 915-1 analysis. Results of this investigation are presented in this Form 27, which includes a proposed path forward for the Site. Several source zone samples collected from the surface to 15 ft bgs exceeded some Table 915-1 Soil Suitability and Metals parameters when compared to Table 915-1 cleanup levels.

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):

An additional 9 delineation borings and 2 additional background borings are proposed in the vicinity of the former pit and wellhead to further delineate the impacts found during the second sampling event (see attached figure). Borings will be advanced using a HSA rig. Maggie respectfully requests analysis of Soil Suitability parameters only based on results of the April 2024 investigation. Justification of this request is presented in 'Additional Investigative Actions' below.

Proposed delineation samples will be collected from 9 soil borings to 30 ft. bgs for soil suitability parameters. Proposed stepout locations are based on a comparison of background and source concentrations as presented in Tables 1 and 2.

Additional proposed background samples will be collected from 2 soil borings at 0.5 ft bgs, 5 ft bgs, 10 ft bgs, and 20 ft bgs and analyzed for Table 915-1 Soil Suitability and Metals only.

Soil fertility samples will be collected in support of potential reclamation.

Proposed Groundwater Sampling

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

Groundwater was not observed during the April 2024 investigation. Estimated depth to water at the Site is 351 ft. bgs. based on domestic well permit # 11502A, located approximately 5223 ft. southwest of the Site impacts. A second water level measured at Permit SB00905536CCA1, located approximately 4073 ft. northwest of the Site impacts, indicates a water level of > 300 ft. bgs. (water level elevation and depth to water as indicated on Division of Water Resources records suggest a dry well).

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):

Maggie respectfully requests comparison to residential standards based on depth to groundwater observed (>300 ft. bgs) in nearby wells as presented in 'Proposed Groundwater Sampling' section above. If comparison to Residential standards is approved, Maggie requests soil suitability analysis only for all future samples based on the justification presented below.

Elimination of organics is requested based on non-detect values for all samples, with the exception of TPH detections at SB06@0.5'. DRO and RRO impacts appear vertically and horizontally limited in this area, and will be addressed during reclamation. See attached Table and Figure.

Elimination of metals is requested based on zero detections above residential standards. As, Ba and Pb exceed GWSSLs in several samples but remain < residential standards. Ni, Se and Hg exceed GWSSLs in one sample (SB12@10') but are < residential standards. All metals exceedances above background have been delineated except for SB12@10'.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 58

Number of soil samples exceeding 915-1 58

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

Approximate areal extent (square feet) 10750
0

NA / ND

-- Highest concentration of TPH (mg/kg) 902

-- Highest concentration of SAR 114

BTEX > 915-1 No

Vertical Extent > 915-1 (in feet) 15

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?

2 background samples were collected from 0.5' bgs and 2.5' bgs at 3 locations around the perimeter of the former facility, totaling 6 background samples collected on 2/11/22. The background samples were analyzed for Boron, EC, pH, and SAR at Origins. 4 additional background samples were collected from 0.5' bgs, 5' bgs, 10' bgs, and 15' bgs or refusal at 5 locations around the perimeter of the former facility, totaling 20 background samples collected on 4/18/24. The background samples were analyzed for Table 915-1 Metals and Soil Suitability at Origins.

BG03@0.5, BG03@5', BG03@10', BG05@0.5' and BG05@5' were excluded from evaluation due to anomalous soil suitability values.

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?

Additional delineation and background soil samples are proposed as outlined above to delineate the extent of soil impacts.

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.

No E&P waste generated to date.

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.

Inorganic soil impacts remain. Magpie is working with the landowner on a reclamation plan that will address remaining inorganic impacts. That reclamation plan will be submitted on a subsequent SF27 pending source zone delineation.

Soil Remediation Summary

In Situ

Ex Situ

_____ Bioremediation (or enhanced bioremediation)

_____ Excavate and offsite disposal

_____ Chemical oxidation

_____ If Yes: Estimated Volume (Cubic Yards) _____

_____ Air sparge / Soil vapor extraction

_____ Name of Licensed Disposal Facility or ECMC Facility ID # _____

_____ Natural Attenuation

_____ Excavate and onsite remediation

_____ Other _____

_____ 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.

Groundwater has not been encountered to date.

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 Inorganics in soil (former pit and potentially wellhead/pit/tank battery area) _____

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.

Magpie has complied with General Liability Insurance requirements per Rule 705 and is fully bonded per Rule 702 to fully address the anticipated costs of remediation.

Operator anticipates the remaining cost for this project to be: \$ 40000 _____

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 _____

ECMC Disposal Facility ID #, if applicable: _____

Non-ECMC Disposal Facility: _____

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

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? No

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 reseeded program, including location of new seed, seed mix and noxious weed prevention. Attach diagram or drawing.

Site assessment activities represent inorganic soil impacts remain. The Colorado State Land Board of Commissioners has been consulted regarding a potential reclamation plan under ECMC Rule 915..b Soil Suitability for Reclamation. Magpie intends to conduct additional delineation beginning in March 2024.

The Operator will adhere to the concentrations for soil in Table 915 1 for restoring soil to the agronomic properties for electrical conductivity ("EC"), sodium adsorption ratio ("SAR"), pH, and boron for soils. Subject to prior approval by ECMC staff, the Operator may leave materials with elevated concentrations of EC, SAR, or pH in situ. In this case, the Operator will 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.

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. 09/30/2024

Proposed date of completion of Reclamation. 08/31/2025

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. 03/21/2024

Actual Spill or Release date, or date of discovery. 01/03/2024

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 06/13/2019

Proposed site investigation commencement. 06/13/2019

Proposed completion of site investigation. 09/30/2024

REMEDIAL ACTION DATES

Proposed start date of Remediation. 08/25/2024

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

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

Signed: Patrick Lawler

Title: Agent for Magpie

Submit Date: 07/30/2024

Email: plawler@quandaryconsulting.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: Krystal Heibel

Date: 09/19/2024

Remediation Project Number: 6103

COA Type

Description

	<p>If the Operator proposes to leave material with elevated levels of pH, SAR, and EC in situ, the Operator shall define the vertical and lateral extent of impacts and 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 pursuant to Rule 915.b. on a Form 27 Supplemental Report for Director review.</p> <p>Please note that boron cannot be left in situ per rule. Operator shall provide a different remediation plan for boron exceedances.</p>
	<p>ECMC does not approve the operator's reduced analyte suite request due to the TPH exceedance at "SB06", multiple metal exceedances, and the location of "SB06". Source of historical impacts are not readily identified. Operator shall analyze confirmation soil samples for complete Table 915-1 Contaminants of Concern.</p> <p>Operator will provide additional data to characterize the Metals in Soils analyte concentrations at the site and to determine its source in the next quarterly report.</p> <p>For the TPH exceedance, the operator should perform sampling and analysis to fully delineate the lateral and vertical extent of those impacts. Operator shall collect a confirmation soil sample to confirm that remediation is complete.</p>
	<p>If groundwater is encountered, Operator will analyze groundwater samples for Table 915-1 Groundwater Inorganic Parameters (total dissolved solids, sulfate, chloride) and organic compounds in groundwater.</p>
	<p>ECMC approves Operator's request for use of Residential SSLs based on the depth to groundwater and the local lithology suggesting a pathway to groundwater at this location is not likely.</p>
4 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

403812701	INVESTIGATION/REMEDATION WORKPLAN (SUPPLEMENTAL)
403813595	SOIL SAMPLE LOCATION MAP
403846076	ANALYTICAL RESULTS
403846077	ANALYTICAL RESULTS
403846078	ANALYTICAL RESULTS

403846080	ANALYTICAL RESULTS
403846108	SOIL SAMPLE LOCATION MAP
403846110	LOGS
403846111	LOGS
403846304	SOIL SAMPLE LOCATION MAP
403846305	SOIL SAMPLE LOCATION MAP
403927434	FORM 27-SUPPLEMENTAL-SUBMITTED

Total Attach: 12 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Environmental	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.	09/19/2024
Environmental	"Inorganic soil impacts remain. Magpie is working with the landowner on a reclamation plan that will address remaining inorganic impacts. That reclamation plan will be submitted on a subsequent SF27 pending source zone delineation."	09/19/2024

Total: 2 comment(s)