FORM 27 Rev 5/22

State of Colorado
Oil and Gas Conservation Commission

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Report taken by: CHRIS CANFIELD

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 INFORMATON

Name of Operator: CITY & COUNTY OF DENVER Operator No: 17320
Address: 8500 PENA BLVD AOB 10TH FLOOR
City: DENVER State: CO Zip: 80249-6340
Contact Person: Jacob Harter

Phone Numbers
Phone: (970) 946-3761
Mobile: ( )
Email: jharter@cottonwoodconsulting.com

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 25218 Initial Form 27 Document #: 403147779

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.
- [X] 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: WELL Facility ID: API #: 001-06732 County Name: ADAMS
Facility Name: BOX ELDER J 1 Latitude: 39.918770 Longitude: -104.693460
** correct Lat/Long if needed: Latitude: Longitude:
QtrQtr: NWSW Sec: 32 Twp: 1S Range: 65W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications OL
Most Sensitive Adjacent Land Use Agriculture
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:

- [X] **E&P Waste**
  - [X] Produced Water
  - [X] Oil
  - [ ] Condensate
  - [ ] Drilling Fluids
  - [ ] Drill Cuttings
- [ ] **Other E&P Waste**
  - [ ] Workover Fluids
  - [ ] Tank Bottoms
  - [ ] Pigging Waste
  - [ ] Rig Wash
  - [ ] Spent Filters
  - [ ] Pit Bottoms
  - [ ] Other (as described by EPA) _____
- [ ] **Non-E&P Waste** _____

DESCRIPTION OF IMPACT

Impacted?	Impacted Media	Extent of Impact	How Determined
Yes	SOILS	TBD	Laboratory Analytical Results

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 City and County of Denver has plugged the BOX ELDER J 1 well and decommissioned the associated flowlines and production equipment. Initial assessment and sampling occurred on October 05, 2022, January 6, 2023, and January 23, 2023 and indicated soil impacts above COGCC standards as described in the Site Investigation Report section below. Proposed impact removal and confirmation sampling is described in the Proposed Sampling Plan below.

PROPOSED SAMPLING PLAN

Proposed Soil Sampling

[X] Will soil samples be collected as part of this investigation? (Number, type (grab/composite), analyses, and locations of samples):

Confirmation soil samples were collected for laboratory analysis of COGCC Table 915-1 constituents. One soil sample was collected from the wellhead, three soil samples from flowline segments, one soil sample from base of the AST, one soil sample from base of the pit tank, one soil sample from the separator, and one soil sample from the incinerator, one soil sample from the pumping unit and one soil sample from an impacted soil pile. Prior to collecting soil samples, soil was field screened using a PID and visual/olfactory observations.

Proposed Groundwater Sampling

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

No groundwater was encountered during the initial assessment and sampling conducted on October 05, 2022.

Proposed Surface Water Sampling

[ ] Will surface water samples be collected as part of this investigation? (Number, analyses, and locations of samples):

No surface water sampling was conducted.

Additional Investigative Actions

[ ] Additional alternative investigative actions described in attached Site Investigation Plan (summary):

Field personnel performed a visual/olfactory inspection of the site.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected: 10

Number of soil samples exceeeding 915-1: 6

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

Approximate areal extent (square feet): 0

NA / ND

-- Highest concentration of TPH (mg/kg): 2080

-- Highest concentration of SAR: 2.09

BTEX > 915-1: No

Vertical Extent > 915-1 (in feet): 0

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?

[X] Were background samples collected as part of this site investigation?

Background soil samples were collected from nearby, non-impacted native soil to establish background concentrations. Background samples were analyzed for Table 915-1 constituents. Background samples indicted pH valves outside of the COGCC Table 915-1 range. Also, background samples indicated Arsenic values above the COGCC Table 915-1 standards. It is requested that background concentration be considered when evaluating the site for final closure.

[ ] Was investigation derived waste (IDW) generated as part of this investigation?

Volume of solid waste (cubic yards):

Volume of liquid waste (barrels):

[X] Is further site investigation required?

Initial assessment and sampling occurred on October 5, 2022, January 6, 2023, and January 23, 2023 and indicated soil impacts above COGCC standards. SS01 (Pumping Unit) failed for TPH; SS04 (Incinerator) failed for pH; SS05 (Flowline) failed for Arsenic and Chromium (VI); SS07 (AST) failed for Chromium (VI); SS09 (Soil Pile) failed for TPH; SS10 (Wellhead) failed for pH. Further site investigation may be needed to fully define the horizontal and vertical extent of impacts at the site. Please note, background samples indicated Arsenic values above the COGCC Table 915-1 standards and pH values outside of the COGCC Table 915-1 range. It is requested that background concentration be considered when evaluating the site for final closure. Additionally, based on initial assessment and sampling results, a reduced list of analytes is requested for future sampling. It is requested that analytes that did not exceed COGCC Table 915-1 standards be removed from future sampling.

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.

Based on results from the initial site investigation, a remediation plan will be created to address site impacts and will be documented on a supplemental Form 27.

REMEDIATION 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.

Remediation will consist of removal of impacted soil and disposal at an approved disposal facility. Remediation activities would commence in 2023 and NFA status is anticipated by the end of 2023.

Soil Remediation Summary

☐ **In Situ**

- ____ Bioremediation (or enhanced bioremediation)
- ____ Chemical oxidation
- ____ Air sparge / Soil vapor extraction
- ____ Natural Attenuation
- ____ Other _____

☒ **Ex Situ**

- Yes Excavate and offsite disposal
  - If Yes: Estimated Volume (Cubic Yards) 25
  - Name of Licensed Disposal Facility or COGCC Facility ID # 0
- ____ 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:

[X] 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.

The City and County of Denver is a registered operator with the COGCC. It has provided adequate financial assurance that meets or exceeds the requirements of COGCC Rule 703.b (see 2022 Financial Report; COGCC document number 1310886). Additionally, the City and County of Denver have adequate financial assets to complete all remediation activities specified in this Site Investigation Work Plan (Form 27).

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

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:

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 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.

Reclamation will be in accordance with COGCC 1000 Series Rules and per surface owner stipulations.

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 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. _____

Proposed date of completion of Reclamation. _____

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). 09/30/2022

Proposed site investigation commencement. 09/30/2022

Proposed completion of site investigation. 09/30/2023

REMEDIAL ACTION DATES

Proposed start date of Remediation. _____

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:

OPERATOR COMMENT

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

Signed: Jacob Harter Title: Consultant

Submit Date: 02/18/2023 Email: jharter@cottonwoodconsulting.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: CHRIS CANFIELD Date: 04/11/2023

Remediation Project Number: 25218

COA Type	Description
0 COA	

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
403292980	FORM 27-SUPPLEMENTAL-SUBMITTED
403320162	ANALYTICAL RESULTS
403320164	ANALYTICAL RESULTS
403320167	ANALYTICAL RESULTS
403321020	PHOTO DOCUMENTATION
403321021	SOIL SAMPLE LOCATION MAP
403321973	ANALYTICAL RESULTS

Total Attach: 7 Files

General Comments

User Group	Comment	Comment Date
		Stamp Upon Approval

Total: 0 comment(s)