

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.

Closure request is not available for an Initial Site Investigation and Remediation Workplan.

OPERATOR INFORMATION

Name of Operator: CHEVRON USA INC	Operator No: 16700	Phone Numbers Phone: (925) 842-4249 Mobile: (925) 493-9858
Address: 760 HORIZON DRIVE STE 401		
City: GRAND JUNCTION State: CO Zip: 81506		
Contact Person: Shelby Lathrop	Email: SLathrop@chevron.com	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 5248 Initial Form 27 Document #: 2521415

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: PIT	Facility ID: 111762	API #: _____	County Name: GARFIELD
Facility Name: FEDERAL 27-11	Latitude: 39.421414	Longitude: -108.977252	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: SESW	Sec: 27	Twp: 7S	Range: 104W Meridian: 6 Sensitive Area? No

SITE CONDITIONS

General soil type - USCS Classifications ML Most Sensitive Adjacent Land Use NON CROP LAND
Is domestic water well within 1/4 mile? No Is surface water within 1/4 mile? Yes
Is groundwater less than 20 feet below ground surface? No

Other Potential Receptors within 1/4 mile

WEST SALT CREEK.

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	GROUNDWATER	Approx. 300'x100' (L/W)	MONITOR WELLS
Yes	SOILS	Approx. 135'x130'x65' (L/W/D)	SOIL BORINGS

INITIAL ACTION SUMMARY

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

2008-2012•Initiated Federal 27-11 pit closure in 2008. Excavation extent (45 ft wide, 45 ft long, and 18 ft deep). Addressed vadose zone impacts to a depth of 18 ft below ground surface (bgs), based on COGCC Table 910 Allowable Concentrations (Criteria). Soils above Criteria were left in place below 18 ft bgs.

- Define the horizontal and vertical limits of hydrocarbon concentrations above Criteria. Assess potential impacts to groundwater and surface water. 2010 - Installed four monitor wells (MW-1 through MW-4) and advanced three boreholes (SB-1 through SB-3). 2011 – Installed three monitor wells (MW-5 through MW-7) off well pad.
- Comparison of soil data to Criteria. TPH, benzene, toluene, and xylenes exceed criteria. Soil has been defined to MW-1, SB-2, and SB-3. Soil samples collected from vadose zone at MW-2, -3, -4, -6 and SB-1 below Criteria. Impacts observed at depths greater than 40 feet bgs represent the upper smear zone. Soil above Criteria has been delineated.
- Groundwater samples collected semi-annually 2010-2012. Benzene, toluene, and ethylbenzene are the only COPCs to exceed Criteria. Remaining COPCs less than Criteria. Max benzene concentrations found at MW-1, -2, and -3. LNAPL observed at MW-2 (less than 0.05 ft. in thickness). Impacts in groundwater are above Criteria and extend to MW-6, but do not extend to well MW-7. Groundwater plume has been delineated.
- Dissolved-phase benzene plume has remained relatively stable. MW-4 is showing decreasing concentrations, although other wells remain constant. Reducing conditions are likely present. Negative ORP values within the plume. Geochemical data indicate reduction of Fe3+. Biodegradation processes are occurring and are expected to continue to reduce benzene concentrations further.

2013-2016•Semi-annual groundwater monitoring and sampling and MNA.
 2017-2021•Semi-annual groundwater monitoring and sampling, MNA, and Mobile Multi-Phase Extraction (MMPE). MMPE events have been successful at reducing LNAPL.

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):

•Conduct the 2022 semi-annual groundwater monitoring and sampling events in Second and Third Quarter 2022 with laboratory analysis to include BTEX, naphthalene, 1,2,4-trimethylbenzene, and 1,3,5-trimethylbenzene, TDS, chloride, and sulfate. During one of the semi-annual groundwater monitoring and sampling events, additional laboratory analysis to include the MNA parameters nitrate, ferrous iron, and methane.

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):

•Conduct semi-annual Mobile Multi-Phase Extraction (MMPE) events at MW-2, MW-3, and MW-6 in Second and Third Quarter 2022.
 •Recommendations that address the COGCC Conditions of Approval to the 2020 Annual Report will be submitted in a response letter under a separate cover.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 0
Number of soil samples exceeding 915-1 _____
Was the areal and vertical extent of soil contamination delineated? _____
Approximate areal extent (square feet) _____

NA / ND

_____ Highest concentration of TPH (mg/kg) _____
_____ Highest concentration of SAR _____
_____ BTEX > 915-1 _____
_____ Vertical Extent > 915-1 (in feet) _____

Groundwater

Number of groundwater samples collected 7
Was extent of groundwater contaminated delineated? Yes
Depth to groundwater (below ground surface, in feet) 65
Number of groundwater monitoring wells installed 0
Number of groundwater samples exceeding 915-1 5

-- _____ Highest concentration of Benzene (µg/l) 13000
-- _____ Highest concentration of Toluene (µg/l) 2200
-- _____ Highest concentration of Ethylbenzene (µg/l) 1200
-- _____ Highest concentration of Xylene (µg/l) 7500
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?

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

Volume of solid waste (cubic yards) 0 Volume of liquid waste (barrels) 1

Is further site investigation required?

The following recommendations for 2022 are based on data gathered during the 2021 semi-annual groundwater monitoring and sampling events, MMPE events, as well as historical Site data:

- Conduct the 2022 semi-annual groundwater monitoring and sampling events in Second and Third Quarter 2022 with laboratory analysis to include BTEX, naphthalene, 1,2,4-trimethylbenzene, and 1,3,5-trimethylbenzene, TDS, chloride, and sulfate. During one of the semi-annual groundwater monitoring and sampling events, additional laboratory analysis to include the MNA parameters nitrate, ferrous iron, and methane.
- Conduct two MMPE events at MW-2, MW-3, and MW-6 in Second and Third Quarter 2022.
- Recommendations that address the COGCC Conditions of Approval to the 2020 Annual Report will be submitted in a response letter under a separate cover.

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.

Monitored natural attenuation (MNA) and semi-annual Mobile Multi-Phase Extraction (MMPE) events at MW-2, MW-3, and MW-6 in Second and Third Quarter 2022. Additionally, recommendations that address the COGCC Conditions of Approval to the 2020 Annual Report will be submitted in a response letter under a separate cover.

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.

Conduct semi-annual Mobile Multi-Phase Extraction (MMPE) events at MW-2, MW-3, and MW-6 in Second and Third Quarter 2022. Additionally, recommendations that address the COGCC Conditions of Approval to the 2020 Annual Report will be submitted in a response letter under a separate cover.

Soil Remediation Summary

In Situ

Ex Situ

_____ Bioremediation (or enhanced bioremediation)

_____ Chemical oxidation

_____ Air sparge / Soil vapor extraction

_____ Natural Attenuation

Yes _____ Other _____ Mobile Multi-Phase Extraction (MMPE)

_____ 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

Yes _____ Natural Attenuation

Yes _____ Other _____ Mobile Multi-Phase Extraction

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.

•Conduct the 2022 semi-annual groundwater monitoring and sampling events in Second and Third Quarter 2022 with laboratory analysis to include BTEX, naphthalene, 1,2,4-trimethylbenzene, and 1,3,5-trimethylbenzene, TDS, chloride, and sulfate. During one of the semi-annual groundwater monitoring and sampling events, additional laboratory analysis to include the MNA parameters nitrate, ferrous iron, and methane.

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 Mobile Multi-Phase Extraction (MMPE)

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? _____

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 completed following remediation of this area.

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). 01/01/2008

Proposed site investigation commencement. _____

Proposed completion of site investigation. _____

REMEDIAL ACTION DATES

Proposed start date of Remediation. 01/01/2008

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

Attention: Mr. John Heil
 West Environmental Protection Specialist
 Colorado Oil and Gas Conservation Commission
 Department of Natural Resources
 818 Taughenbaugh Blvd, Suite 103, Rifle, CO 81650
 Phone 303.894.2100, ext. 5692
 John.heil@state.co.us

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

Signed: Christopher Beall

Title: Senior Geologist

Submit Date: 05/03/2022

Email: Christopher.Beall@stantec.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: John Heil

Date: 12/20/2022

Remediation Project Number: 5248

COA Type**Description**

<u>COA Type</u>	<u>Description</u>
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**

403032985	FORM 27-SUPPLEMENTAL-SUBMITTED
403035913	MONITORING REPORT

Total Attach: 2 Files

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

Environmental	See 06/22/2022 Form 27 Doc #403083645 for response to COAs on 04/07/2021 Form 27 Doc #402635767.	12/20/2022
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Total: 1 comment(s)