

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 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>BENCHMARK ENERGY LLC</u>	Operator No: <u>10380</u>	Phone Numbers Phone: <u>(303) 894-2100</u> Mobile: <u>(303) 905-5341</u>
Address: <u>PO BOX 8747</u>		
City: <u>PRATT</u>	State: <u>KS</u>	Zip: <u>67124</u>
Contact Person: <u>James Hix - East OWP EPS</u>	Email: <u>james.hix@state.co.us</u>	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 18166 Initial Form 27 Document #: 402694706

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: Supplemental - Submit revised site investigation report and table

SITE INFORMATION

No Multiple Facilities

Facility Type: <u>WELL</u>	Facility ID: _____	API #: <u>075-60014</u>	County Name: <u>LOGAN</u>
Facility Name: <u>LOGAN J SAND UNIT (OWP) 4-24</u>	Latitude: <u>40.682788</u>	Longitude: <u>-103.356853</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>SESE</u>	Sec: <u>1</u>	Twp: <u>8N</u>	Range: <u>54W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

SITE CONDITIONS

General soil type - USCS Classifications SC Most Sensitive Adjacent Land Use cropland
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

No DWR permitted water wells w/in 1/4-mile, nearest domestic water well (~1370 ft SE) DWR Permit #243914 (DTW = 220 ft, TD= 560 ft); No surface water w/in 1/4-mile, No NWI mapped wetlands, No CPW mapped HPH; no bldgs w/in 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)

DESCRIPTION OF IMPACT

Impacted?	Impacted Media	Extent of Impact	How Determined
Yes	SOILS	Wellhead	Laboratory Analysis

INITIAL ACTION SUMMARY

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

Pursuant to Colorado ECMC (fka COGCC) Rule 911 the OWP conducted a site investigation at the LOGAN J SAND UNIT 4-24 following PA wellhead cut and cap performed by Noble/Chevron as part of a public project. The LOGAN J SAND UNIT 4-24 is in the ECMC Orphaned Well Program. Subsurface investigation activities performed on 02/13/2023 and 04/18/2023 further assessed the lateral and vertical extent of E&P Waste impacts discovered at the time of the cut and cap sampling conducted on 08/05/2021.

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):

Grab soil samples will be collected at the base of the excavation or the area showing the highest degree of impact during field screening activities at the wellhead excavation. A grab confirmation soil sample will be collected at the wellhead excavation. Soil samples will be analyzed by a certified laboratory for TPH (total volatile [C6-C10] and extractable [C10-C36] hydrocarbons) organic compounds in soil per ECMC Table 915-1, and EC, SAR, pH, and boron. All samples collected will be analyzed by a certified laboratory using approved ECMC laboratory analysis methods.

Proposed Groundwater Sampling

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

Groundwater samples are not expected to be collected as part of this investigation. If encountered in sufficient quantity to enable sample collection, a grab groundwater sample or samples will be collected and submitted for analysis of organic compounds (BTEX; Naphthalene; 1,2,4-Trimethylbenzene; 1,3,5-Trimethylbenzene) and inorganic parameters (total dissolved solids (TDS), chloride ion, sulfate ion).

Proposed Surface Water Sampling

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

Surface water samples are not expected to be collected as part of this investigation.

Additional Investigative Actions

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

No additional alternative investigative actions are expected to be conducted as part of this site investigation.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 8
Number of soil samples exceeding 915-1 5
Was the areal and vertical extent of soil contamination delineated? No
Approximate areal extent (square feet) 75

NA / ND

-- Highest concentration of TPH (mg/kg) 599
-- Highest concentration of SAR 6
BTEX > 915-1 No
Vertical Extent > 915-1 (in feet) 9

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?

Background soil samples, Sample ID #312345_BK01@3' and 312345_BK02@3', were collected as part of the 2023 site investigation to supplement results for background sample BG-1 ~1 ft collected on 08/05/2021. Arsenic was elevated in the site-specific background soil samples (1.98 mg/kg, 3.05 mg/kg, 1.43 mg/kg). Results for soil reclamation suitability parameters indicated that electrical conductance, SAR, boron, and metals met Table 915-1 cleanup soil screening levels (SSL). Soil pH levels reported around the well were above those reported for site-specific background samples. The soil pH will need to be addressed during site reclamation.

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 site investigation and remediation activities are required to define the vertical extent of impacts and remove E&P Waste impacted soils to meet the Table 915-1 residential soil screening levels (SSL) or site-specific background levels.

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.

Soils impacted with E&P waste from around the wellhead will be excavated, temporarily stockpiled on location, and disposed at a commercial disposal facility. Excavation around the former wellhead is warranted to remove E&P Waste (TPH and organic compounds) exceeding Table 915-1 cleanup concentrations.

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.

The E&P Waste impacted soils will be excavated, hauled to a commercial disposal facility. Horizontal and vertical extent of the E&P Waste impacts will be defined and removed during the excavation. Site data will be evaluated and remediation technologies implemented to meet Table 915-1 soil residential screening levels, protection of groundwater screening levels, Table 915-1 groundwater and WQCC Regulation 41 numeric and narrative levels as applicable to site conditions.

Soil Remediation Summary

In Situ

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

Ex Situ

- _____ 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
- _____ 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 Supplemental Form 27 - Remediation Workplan Results

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 Subsequent Report

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 BENCHMARK ENERGY LLC - LOGAN J SAND UNIT (OWP) #4-24 well (Location #312345) is in the ECMC Orphaned Well Program. The former Operator's bond and other funding will be used to Plug and Abandon (PA) the orphaned well, remediate, and reclaim the orphaned oil and gas location.

Operator anticipates the remaining cost for this project to be: \$ 50000

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 be in accordance with COGCC 1000 Series Rules under a separate scope of work. Reclamation planning will include discussion of existing and new grade recontouring, the method and testing of compaction alleviation, consulting the surface owner, and a reseeding program consisting of new seed, seed mix, and noxious weed prevention. Final reclamation will be performed in accordance with Rule 1004.

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. _____

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. 02/22/2018

Actual Spill or Release date, or date of discovery. 08/05/2021

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 08/05/2021

Proposed site investigation commencement. 02/13/2023

Proposed completion of site investigation. 04/18/2023

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:

This oil and gas location is in the COGCC Orphaned Well Program. Exact timing of site investigation and remediation activities are subject to change dependent on OWP project funding, contractor availability, and the prioritization score within the OWP site list.

OPERATOR COMMENT

The BENCHMARK ENERGY LLC -10380 LOGAN J SAND UNIT #4-24 (OWP) (API #05-075-60014) is in the ECMC Orphaned Well Program ("OWP"). This supplemental Form 27 presents copies of a revised 2023 Site Investigation Report and revised summary analytical table. Although it did not change the report conclusions and recommendations, the May 2023 report included incorrect screening criteria for some of the Table 915-1 PAH compounds and added a footnote to clarify that the hexavalent chromium PQL was used as the screening criteria. This supplemental Form 27 also presents updated information to the workplan for future site remediation.

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

Signed: James Hix _____

Title: East OWP EPS _____

Submit Date: 12/04/2023 _____

Email: james.hix@state.co.us _____

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: Krystal Heibel _____

Date: 01/17/2024 _____

Remediation Project Number: 18166 _____

COA Type**Description**

	OWP shall provide justification for use of Residential SSL including but not limited to depth to groundwater and the local lithology.
	If a spill/release of produced fluids or E&P waste causes an impact to soil, OWP should perform sampling and analysis to fully delineate the lateral and vertical extent of those impacts.
2 COAs	

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**

403583227	FORM 27-SUPPLEMENTAL-SUBMITTED
403583351	SITE INVESTIGATION REPORT
403583422	ANALYTICAL RESULTS

Total Attach: 3 Files

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

Environmental	OWP comment: "Weston recommends additional investigation near the three pumphouse samples, and flowline sample to delineate the extent of the soil suitability parameter exceedances for reclamation purposes. The wellhead location should be re-excavated and delineated vertically and horizontally until the Table 915-1 cleanup standards are achieved. It is anticipated that the impacted soil volume will exceed 10 cubic yards. "	01/17/2024
Environmental	Based on the OWPs assessment of background conditions at the subject location, arsenic results for confirmation soil samples appear to be representative of background as opposed to E&P activities. Therefore, the OWPs demonstration of background will be accepted as an alternative to the default standard in ECMC's Table 915-1.	01/17/2024

Total: 2 comment(s)