

State of Colorado  
Oil and Gas Conservation Commission

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Report taken by:  
RICK ALLISON

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>BAYSWATER EXPLORATION &amp; PRODUCTION LLC</u> | Operator No: <u>10261</u>                              | <b>Phone Numbers</b>         |
| Address: <u>730 17TH ST STE 500</u>                                 | City: <u>DENVER</u> State: <u>CO</u> Zip: <u>80202</u> | Phone: <u>(303) 893-2503</u> |
| Contact Person: <u>Andy Verbonitz</u>                               | Email: <u>averbonitz@bayswater.us</u>                  | Mobile: <u>( )</u>           |

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 17111 Initial Form 27 Document #: 402611297

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: Rule 911 Closure of Oil and Gas Facilities

SITE INFORMATION

No Multiple Facilities

|  |                            |                               |   |
|--|----------------------------|-------------------------------|---|
| Facility Type: <u>LOCATION</u>                 | Facility ID: <u>305865</u> | API #: _____                  | County Name: <u>WELD</u>  |
| Facility Name: <u>DEINES-67N66W 31SENE</u>     | Latitude: <u>40.532520</u> | Longitude: <u>-104.815220</u> |   |
| ** correct Lat/Long if needed: Latitude: _____ |                            | Longitude: _____              |   |
| QtrQtr: <u>SENE</u>                            | Sec: <u>31</u>             | Twp: <u>7N</u>                | Range: <u>66W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u> |

SITE CONDITIONS

General soil type - USCS Classifications SM Most Sensitive Adjacent Land Use Building Unit 200' South  
Is domestic water well within 1/4 mile? Yes Is surface water within 1/4 mile? Yes

Is groundwater less than 20 feet below ground surface? Yes

**Other Potential Receptors within 1/4 mile**

Irrigation Ditch 150' South

**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                            |
|-----------|----------------|------------------|---|
| No        | GROUNDWATER    | Initial          | Laboratory analytical                     |
| Yes       | SOILS          | 60 CU            | Laboratory analytical and field screening |

**INITIAL ACTION SUMMARY**

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

Contamination discovered under separator was excavated and hauled to North Weld Landfill. Groundwater was pulled from the excavations and hauled to licensed injection facility. Confirmation soil and groundwater samples were collected and 100 pounds of activated carbon (COGAC™) were emplaced in the open excavation prior to backfilling. Safety Data Sheets for the activated carbon are included as an attachment.

**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 ):

Confirmation soil samples were collected from the lateral extent of the excavation and from the assessment potholes. Please see attached updated soil table, laboratory analytical reports, and updated Site Map. During monitoring well installation, one soil sample will be collected from each boring at a point above groundwater saturation. Soil samples will be analyzed for full Table 915-1 analysis. Additionally, If crop conditional at the time of monitoring well installations allow, background samples will also be collected from an undisturbed offsite location via soil boring to identify natural pH and EC concentrations at depths similar to the confirmation samples.

**Proposed Groundwater Sampling**

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

Groundwater samples were collected from the open excavation and from the assessment potholes. Please see attached groundwater table, laboratory analytical reports, and Site Map. Following final reclamation implementation, monitoring wells will be installed to ensure no impacts resulting from the historical contamination migrate offsite or persist onsite. Quarterly groundwater monitoring will be conducted for a period of one year following initial receipt of compliant monitoring results.

**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 ):

Two background samples were collected from an adjacent, undisturbed location. EC concentrations exceeded the Table 915-1 allowable concentrations in sample BG02. During monitoring well installation additional background samples will be collected at similar depths to the previously collected confirmation samples.

# SITE INVESTIGATION REPORT

## SAMPLE SUMMARY

### Soil

Number of soil samples collected 25  
Number of soil samples exceeding 915-1 19  
Was the areal and vertical extent of soil contamination delineated? Yes  
Approximate areal extent (square feet) 200

### NA / ND

ND Highest concentration of TPH (mg/kg) \_\_\_\_\_  
-- Highest concentration of SAR 1.6  
BTEX > 915-1 No  
Vertical Extent > 915-1 (in feet) 5

### Groundwater

Number of groundwater samples collected 12  
Was extent of groundwater contaminated delineated? Yes  
Depth to groundwater (below ground surface, in feet) 5'  
Number of groundwater monitoring wells installed 8  
Number of groundwater samples exceeding 915-1 1

-- Highest concentration of Benzene (µg/l) 310  
-- Highest concentration of Toluene (µg/l) 270  
-- Highest concentration of Ethylbenzene (µg/l) 13  
-- Highest concentration of Xylene (µg/l) 87  
NA 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?

Two background samples (BG01 and BG02) were collected during initial sampling. Sample BG02 exceeded the Table 915-1 standard for EC at 4.6 mmhos/cm. During monitoring well installation, MW01 was installed up gradient and away from the contamination source area. Soil sample SS-12 was collected from the monitoring well soil boring and exceeded the Table 915-1 Protection of Groundwater Soil Screening Levels for arsenic, barium, and selenium at 7.29 mg/kg, 106 mg/kg, and 0.91 mg/kg, respectively. MW01 groundwater results will also serve as background data for chloride, sulfate, and TDS.

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

Volume of solid waste (cubic yards) 60                      Volume of liquid waste (barrels) 153

Is further site investigation required?

Quarterly groundwater monitoring will be conducted for a period of one year following initial receipt of compliant monitoring results.

## 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.

Approximately 60 cubic yards of potentially impacted soil were excavated and hauled to Waste Management's North Weld Landfill, in Ault, Colorado for disposal.

### 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.

To ensure soil met Table 915-1 Protection of Groundwater Soil Screening Levels (PGSSLs), one soil sample was collected from each soil boring during monitoring well installation. Soil sample SS-17 was collected from MW06 soil boring and exceeded the PGSSL for benzo(a)anthracene at a concentration of 0.0191 mg/kg. All monitoring well soil boring samples exceeded the PGSSLs for arsenic, barium, and selenium but were within range of the background soil boring sample SS-12 collected from the MW01 boring. Based on background pH data, results for pH in the excavation soil samples are also within range of soil variability at the location.

The 4th Quarter 2021 Groundwater Monitoring Report, Soil Boring Logs, Site Maps, and Laboratory Analytical Data are included as attachments.

**Soil Remediation Summary**

In Situ

Ex Situ

\_\_\_\_\_ Bioremediation ( or enhanced bioremediation )

Yes \_\_\_\_\_ Excavate and offsite disposal

\_\_\_\_\_ Chemical oxidation

\_\_\_\_\_ If Yes: Estimated Volume (Cubic Yards) \_\_\_\_\_ 60

\_\_\_\_\_ Air sparge / Soil vapor extraction

\_\_\_\_\_ Name of Licensed Disposal Facility or COGCC Facility ID # \_\_\_\_\_

\_\_\_\_\_ Natural Attenuation

\_\_\_\_\_ Excavate and onsite remediation

\_\_\_\_\_ Other \_\_\_\_\_

\_\_\_\_\_ Land Treatment

\_\_\_\_\_ Bioremediation (or enhanced bioremediation)

\_\_\_\_\_ Chemical oxidation

\_\_\_\_\_ Other \_\_\_\_\_

**Groundwater Remediation Summary**

Yes \_\_\_\_\_ Bioremediation ( or enhanced bioremediation )

Yes \_\_\_\_\_ 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.

Following monitoring well installation, groundwater samples were collected from each of the eight monitoring wells. All groundwater samples were compliant with Table 915-1 allowable levels or the site specific background concentrations identified by MW01 groundwater analytical results. Based on the soil sample results of SS-17, groundwater sample MW06 was also analyzed for benzo(a)anthracene and compared to the WQCC Regulation 41 standards. MW06 groundwater was compliant with the WQCC Regulation 41 standards for benzo(a)anthracene. The 4th Quarter 2021 Groundwater Monitoring Report, Soil Boring Logs, Site Maps, and Laboratory Analytical Data are included as attachments.

# REMEDIATION PROGRESS UPDATE

## PERIODIC REPORTING

### Approved Reporting Schedule:

Quarterly    Semi-Annually    Annually    Other   Annual or NFA

### 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 \_\_\_\_\_

## WASTE DISPOSAL INFORMATION

Was E&P waste generated as part of this remediation? Yes

Describe beneficial use, if any, of E&P Waste derived from this remediation project:

All waste was disposed of at licensed disposal facilities.

Volume of E&P Waste (solid) in cubic yards 50

E&P waste (solid) description Hydrocarbon Bearing Soil

COGCC Disposal Facility ID #, if applicable: \_\_\_\_\_

Non-COGCC Disposal Facility: Waste Management's North Weld Landfill, in Ault, Colorado

Volume of E&P Waste (liquid) in barrels 153

E&P waste (liquid) description Potentially impacted groundwater

COGCC Disposal Facility ID #, if applicable: \_\_\_\_\_

Non-COGCC Disposal Facility: Licensed injection 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? Yes

Does the previous reply indicate consideration of background concentrations? Yes

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.

Following abandonment and decommissioning, all former locations of oil and gas facilities will be re-contoured and reclaimed in accordance with COGCC 1000 series regulations.

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? No \_\_\_\_\_

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

Did the local soil conservation district provide the seed mix? No \_\_\_\_\_

## SITE RECLAMATION DATES

Proposed date of commencement of Reclamation. 05/12/2021

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. 02/17/2021

Actual Spill or Release date, or date of discovery. \_\_\_\_\_

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 03/15/2021

Proposed site investigation commencement. \_\_\_\_\_

Proposed completion of site investigation. 09/03/2021

### REMEDIAL ACTION DATES

Proposed start date of Remediation. \_\_\_\_\_

Proposed date of completion of Remediation. 09/01/2022

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: ` Andy Verbonitz \_\_\_\_\_

Title: Environmental Coordinator \_\_\_\_\_

Submit Date: ` 01/11/2022 \_\_\_\_\_

Email: averbonitz@bayswater.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: RICK ALLISON \_\_\_\_\_

Date: 01/25/2022 \_\_\_\_\_

Remediation Project Number: 17111 \_\_\_\_\_

**Condition of Approval****COA Type****Description**

|        |   |
|--------|---|
|        | Continue monitoring for benzo(a)anthracene.                 |
|        | Continue Quarterly Reporting during groundwater monitoring. |
| 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**

|           |                                |
|-----------|--------------------------------|
| 402919665 | FORM 27-SUPPLEMENTAL-SUBMITTED |
| 402922940 | REMEDICATION PROGRESS REPORT   |
| 402922946 | SOIL SAMPLE LOCATION MAP       |
| 402922947 | ANALYTICAL RESULTS             |
| 402922948 | LOGS                           |
| 402922952 | ANALYTICAL RESULTS             |
| 402922957 | SOIL SAMPLE LOCATION MAP       |
| 402922958 | ANALYTICAL RESULTS             |

Total Attach: 8 Files

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

|  |  |                     |
|--|--|---------------------|
|  |  | Stamp Upon Approval |
|--|--|---------------------|

Total: 0 comment(s)