

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 INFORMATION

Name of Operator: ENERGY SEARCH CO ADBA ENERGY SEARCH CO INC	Operator No: 27635	Phone Numbers
Address: PO BOX 1896		Phone: (303) 894-2100 x5181
City: EDWARDS State: CO Zip: 81632		Mobile: (303) 905-5341
Contact Person: James Hix - OWP EPS	Email: james.hix@state.co.us	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 20914 Initial Form 27 Document #: 402869463

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: TANK BATTERY	Facility ID: 480987	API #: _____	County Name: ADAMS
Facility Name: ES_Green (OWP) TB 1S67W/18NENW	Latitude: 39.971574	Longitude: -104.935495	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NE NW	Sec: 18	Twp: 1S	Range: 67W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications CL 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**

Irrigation Ditch < 2000 ft SE; housing development < 1320 ft West; City of Thornton < 300 ft north

**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)      E&P Debris: Flowlines, Aboveground Storage Tanks, Separator

**DESCRIPTION OF IMPACT**

Impacted?	Impacted Media	Extent of Impact	How Determined
UNDETERMINED	SOILS	UNKNOWN	Visual, Field Screening, Soil Samples

**INITIAL ACTION SUMMARY**

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

Potential soil impacts will be assessed during decommissioning of the Energy Search Co Green (OWP) TB1S67W 18NENW Tank Battery Location by collecting soil samples beneath the tanks, loadout bucket, separator, and flowline risers. Flowlines from the Green (OWP) 2 and Green (OWP) 3 well pads to the tank battery will be removed.

**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 ):

Soil impacts will be assessed during decommissioning of the Energy Search Co TB1S67W 18NENW Tank Battery facility by collecting grab five (5) soil samples beneath the tanks, loadout bucket, separator, and flowline risers submitted for laboratory analysis of Table 915-1 parameters. See Figure 3 Proposed Soil Sample Locations.

**Proposed Groundwater Sampling**

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

Groundwater is not expected to be encountered. If surficial soil impacts are found to extend several feet below the surface, then impact to groundwater resources will be evaluated. There are no permitted shallow water wells (total depth < 20 ft) within 1/4 mile of the Energy Search Green (OWP) TB1S67W 18NENW Tank Battery. The DWR permitted water wells in the area have total depths ranging from 350 ft to 960 ft below ground surface.

**Proposed Surface Water Sampling**

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

There are no surface waters within 1320 ft of the Green (OWP) TB1S67W 18NENW Tank Battery facility. The nearest surface water is Signal Ditch located within 2000 ft to the southeast. Therefore, surface water samples are not expected to be collected during this investigation.

**Additional Investigative Actions**

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

Additional alternative investigative actions will be evaluated once the off-location flowlines, production aboveground storage tanks, and separator are removed, field observations and screening are performed, and the laboratory results of confirmation soil samples are received.

**SITE INVESTIGATION REPORT**

**SAMPLE SUMMARY**

**Soil**

Number of soil samples collected 5  
 Number of soil samples exceeding 915-1 2  
 Was the areal and vertical extent of soil contamination delineated? No  
 Approximate areal extent (square feet) 250

**NA / ND**

-- Highest concentration of TPH (mg/kg) 24670  
 -- Highest concentration of SAR 6.6  
 BTEX > 915-1 No  
 Vertical Extent > 915-1 (in feet) 4

**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 \_\_\_\_\_

NA Highest concentration of Benzene (µg/l) \_\_\_\_\_  
 NA Highest concentration of Toluene (µg/l) \_\_\_\_\_  
 NA Highest concentration of Ethylbenzene (µg/l) \_\_\_\_\_  
 NA Highest concentration of Xylene (µg/l) \_\_\_\_\_  
 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?

Five soil samples were collected (Sample IDs: AST, PWV, SEPW-4, AST-Spill Bucket, and PWV DUMP 3). Analytical results reported SAR at 6.60 (PWV) and 6.54 (PWV DUMP 3). Concentrations of naphthalene, 1,2,4-Trimethylbenzene, and 1,3,5-Trimethylbenzene were reported above the Protection of Groundwater SSL Table 915-1 concentrations in grab soil sample PWV DUMP 3 at 3 ft bgs.

Were background samples collected as part of this site investigation?

Sample BG at 0.5 ft was collected on 01/10/2022 southwest of the ES\_Green (OWP) Tank Battery 1S67W 18NENW location and access road. Sample BG was submitted for analysis of pH, EC, SAR, and Boron.

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 excavation and confirmation soil sampling is required in the vicinity of soil sample PWV DUMP 3 to meet Table 915-1 SAR and hydrocarbon concentrations/levels. Considering the reported depth to groundwater in the area, it is unlikely that the reported concentrations of naphthalene, 1,2,4-Trimethylbenzene, and 1,3,5-Trimethylbenzene would migrate to groundwater.

**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.

If stained soils are encountered during the Production Facility/Tank Battery facility - the impacted soils will be excavated and hauled to an offsite commercial disposal facility. Soils will be screened on location using field instrumentation such as a photoionization detector (PID) and visually examined for evidence of staining. Confirmation soil samples will be collected from beneath the flowline risers, separator, loadout and aboveground storage tanks.

**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.

If encountered, impacted soils will be excavated, temporarily stockpiled on location, and will be hauled to a commercial disposal facility. It is expected that laboratory analytical results for confirmation soil samples will demonstrate the lateral and vertical extent have been defined. If soil analytical results exceed Table 915-1 parameter concentrations or levels the need for additional excavation or additional alternative investigative actions to determine the vertical extent of impacts will be evaluated.

**Soil Remediation Summary**

In Situ

Ex Situ

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

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

\_\_\_\_\_ Chemical oxidation  
\_\_\_\_\_ Air sparge / Soil vapor extraction  
\_\_\_\_\_ Natural Attenuation  
\_\_\_\_\_ Other \_\_\_\_\_

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.

# REMEDATION PROGRESS UPDATE

## PERIODIC REPORTING

### Approved Reporting Schedule:

Quarterly  Semi-Annually  Annually  Other Additional Site Investigation and Remediation is Needed.

### Request Alternative Reporting Schedule:

Semi-Annually  Annually  Other Subsequent Report - Site Investigation and Remediation Workplan: need for future reporting schedule will be determined.

### 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 Decommissioning of the Energy Search Green (OWP)  
TB1S67W 18NENW Tank Battery and flowlines.

## 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.

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: \_\_\_\_\_

## REMEDATION COMPLETION REPORT

### REMEDATION 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.

If encountered, and once the nature and extent of soil impacts have been delineated, excavated, and removed from the location for offsite disposal, the surface will be regraded and restored to approximate natural contours. The OWP will coordinate with the surface owner as to reclamation of this location. Previous land use was cropland.

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. \_\_\_\_\_

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

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 12/13/2021

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

Proposed completion of site investigation. \_\_\_\_\_

### 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**

This supplemental Form 27 is submitted to update the site investigation and document facility closure at the Energy Search Green Tank Battery - Orphaned Well Program. Additional excavation and collection of confirmation soil samples is necessary to meet Table 915-1 concentrations/levels.

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

Signed: James Hix

Title: OWP EPS

Submit Date: 06/30/2022

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: CHRIS CANFIELD

Date: 07/11/2022

Remediation Project Number: 20914

**Condition of Approval****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**

402988363	FORM 27-SUPPLEMENTAL-SUBMITTED
402988365	SITE INVESTIGATION REPORT

Total Attach: 2 Files

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

		Stamp Upon Approval
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Total: 0 comment(s)