

# State of Colorado Oil and Gas Conservation Commission

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Report taken by:

BOB CHESSON

## 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.

Refer to Rules 340, 905, 906, 907, 908, 909, and 910

### OPERATOR INFORMATION

Name of Operator: <u>HIGHPOINT OPERATING CORPORATION</u>	Operator No: <u>10071</u>	<b>Phone Numbers</b>
Address: <u>1099 18TH ST STE 2300</u>		Phone: <u>(303) 312-8717</u>
City: <u>DENVER</u>	State: <u>CO</u>	Zip: <u>80202</u>
Contact Person: <u>Rusty Frishmuth</u>	Email: <u>rfrishmuth@hpres.com</u>	Mobile: <u>(303) 518-2290</u>

### PROJECT, PURPOSE & SITE INFORMATION

#### PROJECT INFORMATION

Remediation Project #: 10938Initial Form 27 Document #: 401490034

#### PURPOSE INFORMATION

- |  |  |
|--|--|
| <input type="checkbox"/> 901.e. Sensitive Area Determination                                       | <input type="checkbox"/> 909.c.(5), Rule 910.b.(4): Remediation of impacted ground water                   |
| <input type="checkbox"/> 909.c.(1), Rule 905: Pit or PW vessel closure                             | <input type="checkbox"/> Rule 909.e.(2)A.: Notice completion of remediation in accordance with Rule 909.b. |
| <input checked="" type="checkbox"/> 909.c.(2), Rule 906: Spill/Release Remediation                 | <input type="checkbox"/> Rule 909.e.(2)B.: Closure of remediation project                                  |
| <input type="checkbox"/> 909.c.(3), Rule 907.e.: Land treatment of oily waste                      | <input type="checkbox"/> Rule 906.c.: Director request   |
| <input type="checkbox"/> 909.c.(4), Rule 908.g.: Centralized E&P Waste Management Facility closure | <input type="checkbox"/> Other _____   |

#### SITE INFORMATION

N Multiple Facilities ( in accordance with Rule 909.c. )

Facility Type: <u>FLOWLINE</u>	Facility ID: <u>-99999</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>Flowline from wellhead</u>		Latitude: <u>40.013342</u>	Longitude: <u>-104.516050</u>
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>NWNE</u>	Sec: <u>35</u>	Twp: <u>1N</u>	Range: <u>64W</u>
Meridian: <u>6</u>	Sensitive Area? <u>Yes</u>		

#### SITE CONDITIONS

General soil type - USCS Classifications SMMost Sensitive Adjacent Land Use Agriculture and ReservoirIs domestic water well within 1/4 mile? NoIs surface water within 1/4 mile? YesIs groundwater less than 20 feet below ground surface? Yes

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

Prospect Reservoir is located 475 feet to the Northeast.

## SITE INVESTIGATION PLAN

### TYPE OF WASTE:

- |  |  |  |
|--|--|--|
| <input checked="" type="checkbox"/> E&P Waste      | <input type="checkbox"/> Other E&P Waste             | <input type="checkbox"/> Non-E&P Waste |
| <input checked="" type="checkbox"/> Produced Water | <input type="checkbox"/> Workover Fluids             |  |
| <input checked="" type="checkbox"/> Oil            | <input type="checkbox"/> Tank Bottoms                |  |
| <input type="checkbox"/> Condensate                | <input type="checkbox"/> Pigging Waste               |  |
| <input type="checkbox"/> Drilling Fluids           | <input type="checkbox"/> Rig Wash                    |  |
| <input type="checkbox"/> Drill Cuttings            | <input type="checkbox"/> Spent Filters               |  |
|  | <input type="checkbox"/> Pit Bottoms                 |  |
|  | <input type="checkbox"/> Other (as described by EPA) |  |

### DESCRIPTION OF IMPACT

Impacted?	Impacted Media	Extent of Impact	How Determined
Yes	GROUNDWATER	To be determined	Lab Analytical
Yes	SOILS	80' E-W x 50' N-S x 12-16'	Lab Analytical

### INITIAL ACTION SUMMARY

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

While conducting flowline testing a leak was discovered and after investigation impacted soils were observed. The release was reported to the COGCC in a Form 19 (COGCC Document #401438797). Impacted soil was removed via excavation.

### 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 ):

Twenty-two (22) grab soil samples were collected during excavation activities. The samples were collected from the excavation floor and sidewalls. The sidewall samples were collected at the depth exhibiting staining and/or highest photo-ionization detector (PID) measurements. The soil samples were analyzed by a certified laboratory for TPH-DRO, TPH-GRO, and BTEX. Sample locations and excavation dimensions are shown on the attached figure.

#### Proposed Groundwater Sampling

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

A grab groundwater sample was collected during excavation activities. The sample was analyzed by a certified laboratory for BTEX. Six groundwater monitoring wells were installed at the Site on February 16, 2018, and will be sampled quarterly for analysis of BTEX. The locations of the monitoring wells are shown on the attached figures. Two quarterly sampling events were conducted on February 23, 2018 and May 8, 2018. Results are attached.

#### 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 ):

Analytical results of the February 2018 and May 2018 groundwater sampling events indicate that additional point of compliance monitoring wells are required to fully delineate the lateral extent of dissolved phase petroleum hydrocarbon impact to groundwater at the Site. The additional point of compliance groundwater monitoring wells will be installed pending COGCC location approval. A map illustrating proposed locations is attached.

# SITE INVESTIGATION REPORT

## SAMPLE SUMMARY

### Soil

Number of soil samples collected 22

Number of soil samples exceeding 910-1 1

Was the areal and vertical extent of soil contamination delineated? Yes

Approximate areal extent (square feet) 4000

### NA / ND

-- Highest concentration of TPH (mg/kg) 539

NA Highest concentration of SAR

BTEX > 910-1 No

Vertical Extent > 910-1 (in feet) 16

### Groundwater

Number of groundwater samples collected 13

Was extent of groundwater contaminated delineated? No

Depth to groundwater (below ground surface, in feet) 10'

Number of groundwater monitoring wells installed 6

Number of groundwater samples exceeding 910-1 8

-- Highest concentration of Benzene (µg/l) 7000

-- Highest concentration of Toluene (µg/l) 3.8

-- Highest concentration of Ethylbenzene (µg/l) 1440

-- Highest concentration of Xylene (µg/l) 11000

NA Highest concentration of Methane (mg/l)

### Surface Water

0 Number of surface water samples collected

0 Number of surface water samples exceeding 910-1

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)

Volume of liquid waste (barrels)

☒ Is further site investigation required?

Six groundwater monitoring wells were installed at the Site. Additional groundwater monitoring wells will be installed to establish points of compliance where appropriate, pending COGCC location approval.

# 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.

Impacted soil above COGCC Table 910-1 standards was removed via excavation.

## 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.

Impacted soil above COGCC Table 910-1 standards was removed and taken to Buffalo Ridge landfill. Soils were screened with a PID (Photoionization Detector) throughout the excavation. Once PID screenings were below 200 ppm (parts per million), a sample was collected and submitted to a certified lab to ensure compliance with the COGCC Table 910-1 standards.

## 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) \_\_\_\_\_ 1777  
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  
☐ \_\_\_\_\_ 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.

Six groundwater monitoring wells were installed at the Site. The February and May 2018 groundwater sampling events indicated that additional points of compliance are needed to fully delineate the dissolved phase petroleum hydrocarbon impact to groundwater. Additional point of compliance monitoring wells will be installed following COGCC approval. Groundwater monitoring wells will be sampled quarterly for analysis of BTEX until laboratory analytical results demonstrate four consecutive quarters in compliance with the applicable COGCC Table 910-1 standards. The locations of monitoring wells are shown on the attached figures.

## REMEDIATION PROGRESS UPDATE

### PERIODIC REPORTING

**Frequency:** ☐ Quarterly ☐ Semi-Annually ☒ Annually ☐ Other \_\_\_\_\_

**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:

Impacted soil was excavated and disposed of at a licensed landfill. No beneficial re-use.

Volume of E&P Waste (solid) in cubic yards 1777

E&P waste (solid) description Impacted soil above COGCC Table 910-1

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

Non-COGCC Disposal Facility: Buffalo Ridge Landfill

Volume of E&P Waste (liquid) in barrels 0

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 \_\_\_\_\_

Do all soils meet Table 910-1 standards? Yes \_\_\_\_\_

Does the previous reply indicate consideration of background concentrations? No \_\_\_\_\_

Are the only residual soil impacts pH, SAR, or EC at depths greater than 3 feet below ground surface? \_\_\_\_\_

Does Groundwater meet Table 910-1 standards? No \_\_\_\_\_

Is additional groundwater monitoring to be conducted? Yes \_\_\_\_\_

## 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.

The excavation has been filled with clean and graded soil to match the adjacent topography. The facility is an active production facility and will be reseeded when the facility is decommissioned.

Is the described reclamation complete? Yes \_\_\_\_\_

Does the reclamation described herein constitute interim or final reclamation of the Oil and Gas Location?

☒ Interim? ☐ Final?

Did the Surface Owner approve the seed mix? No \_\_\_\_\_

If NO, does the seed mix comply with local soil conservation district recommendations? No \_\_\_\_\_

## IMPLEMENTATION SCHEDULE

### **PRIOR DATES**

Date of Surface Owner notification/consultation, if required. \_\_\_\_\_

Actual Spill or Release date, if known. 10/21/2017 \_\_\_\_\_

### **SITE INVESTIGATION DATES**

Date of Initial Actions described in Site Investigation Plan (start date). 10/23/2017 \_\_\_\_\_

Date of commencement of Site Investigation. 11/03/2017 \_\_\_\_\_

Date of completion of Site Investigation. \_\_\_\_\_

### **REMEDIAL ACTION DATES**

Date of commencement of Remediation. \_\_\_\_\_

Date of completion of Remediation. \_\_\_\_\_

### **SITE RECLAMATION DATES**

Date of commencement of Reclamation. \_\_\_\_\_

Date of completion of Reclamation. \_\_\_\_\_

**OPERATOR COMMENT**

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

Signed: ` Rusty Frishmuth

Title: EHS Manager

Submit Date: ` 07/30/2018

Email: rfrishmuth@hpres.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: BOB CHESSON

Date: 09/17/2018

Remediation Project Number: 10938

**COA Type****Description**

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**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**

401565796	FORM 27-SUPPLEMENTAL-SUBMITTED
401565972	SITE MAP
401565977	GROUND WATER ELEVATION MAP
401565978	GROUND WATER SAMPLE LOCATION
401565981	ANALYTICAL RESULTS
401716590	ANALYTICAL RESULTS
401716591	GROUND WATER ELEVATION MAP
401716593	GROUND WATER SAMPLE LOCATION
401716594	ANALYTICAL RESULTS
401717389	SITE INVESTIGATION PLAN

Total Attach: 10 Files

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

		Stamp Upon Approval
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Total: 0 comment(s)