

State of Colorado  
Oil and Gas Conservation Commission

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Document Number:  
402269068  
Receive Date:  
12/25/2019  
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. Refer to Rules 340, 905, 906, 907, 908, 909, and 910

OPERATOR INFORMATON

Name of Operator: <u>HIGHPOINT OPERATING CORPORATION</u>	Operator No: <u>10071</u>	<b>Phone Numbers</b>
Address: <u>555 17TH ST STE 3700</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>	Phone: <u>(303) 518-2290</u>
		Mobile: <u>(303) 518-2290</u>

PROJECT, PURPOSE & SITE INFORMATION

**PROJECT INFORMATION**  
Remediation Project #: 12265 Initial Form 27 Document #: 401889549

**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 checked="" 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 Facilites ( in accordance with Rule 909.c. )

Facility Type: <u>SPILL OR RELEASE</u>	Facility ID: <u>452577</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>Lion Creek 03-14H</u>	Latitude: <u>40.914786</u>	Longitude: <u>-104.505064</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>SESE</u>	Sec: <u>14</u>	Twp: <u>11N</u>	Range: <u>64W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

**SITE CONDITIONS**

General soil type - USCS Classifications GM Most Sensitive Adjacent Land Use Open range

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**

None

# 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 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
UNDETERMINED	SOILS	To be determined	To be determined

## INITIAL ACTION SUMMARY

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

Upon discovery 1 bbl of crude oil was reported to be recovered. Subsequent soil sampling did not indicate the presence of any hydrocarbons in excess of Table 910 standards. However, pH and EC were exceeded in nearly all samples - including those that did not contain hydrocarbons. Work was completed by a prior operators. Based on data collected to date it appears that the roadbase material used to construct the site has elevated pH and EC, however, there is not currently sufficient data to document this. Laboratory analytical results from the previous sampling events in October 2017 and January 2018 are attached.

## 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 ):

A hand auger assessment will be conducted in or before December 2019. Three soil borings will be advanced in the immediate vicinity of the wellhead. One of the borings will be located where previous soil sample SS07 had exceedances of applicable COGCC Table 910-1 standards for pH and SAR. The remaining two borings will be located at low spots where released fluids would likely pool. Samples will be collected from each boring from 0"-6" bgs and 18"-24" bgs for laboratory analysis of pH, EC, and SAR. Additionally, three background soil borings will be advanced at the edges of the pad in unimpacted roadbase. Samples will be collected from each background boring from 0"-6" bgs and 18"-24" bgs for laboratory analysis of pH, EC, and SAR.

### Proposed Groundwater Sampling

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

### 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 ):

# SITE INVESTIGATION REPORT

## SAMPLE SUMMARY

### Soil

Number of soil samples collected 17

Number of soil samples exceeding 910-1 17

Was the areal and vertical extent of soil contamination delineated? No

Approximate areal extent (square feet) 40

### NA / ND

--            Highest concentration of TPH (mg/kg) 176

--            Highest concentration of SAR 113.0  
           1

BTEX > 910-1 No

Vertical Extent > 910-1 (in feet) 2

### 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 910-1           

           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 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?

One background sample was collected and analyzed for SAR and pH. Sample exceeded Table 910 standard for pH.

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?

# 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.

NA

## **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.

Inorganic impact remains onsite and will be addressed upon final reclamation in accordance with 1000 series regulations

## **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

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? \_\_\_\_\_

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? Yes \_\_\_\_\_

Do all soils meet Table 910-1 standards? No \_\_\_\_\_

Does the previous reply indicate consideration of background concentrations? \_\_\_\_\_

Are the only residual soil impacts pH, SAR, or EC at depths greater than 3 feet below ground surface? No \_\_\_\_\_

Does Groundwater meet Table 910-1 standards? Yes \_\_\_\_\_

Is additional groundwater monitoring to be conducted? No \_\_\_\_\_

## 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.

Active oil and gas production facility. Pad reclamation will be in accordance with series 1000 regulations.

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 approve the seed mix? \_\_\_\_\_

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

## IMPLEMENTATION SCHEDULE

### **PRIOR DATES**

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

Actual Spill or Release date, if known. 10/13/2017

### **SITE INVESTIGATION DATES**

Date of Initial Actions described in Site Investigation Plan (start date). 10/13/2017

Date of commencement of Site Investigation. 10/27/2017

Date of completion of Site Investigation. 11/18/2019

### **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**

Six additional soil samples were collected from three hand auger borings (SS08, SS09, and SS10), collecting a sample from the surface interval and the deep interval from each boring, which reached a total depth of two feet below ground surface. Samples were submitted for analysis of pH, EC and SAR to further evaluate inorganic exceedances on the pad. pH results reported for all six samples exceed the table 910-1 standard for pH. Two samples submitted for analysis from soil boring SS09 exceed the 910-1 standard for EC. All six samples submitted for analysis of SAR are compliant with the table 910-1 standard. The one background sample submitted for analysis of pH by Quandry consulting exceeds the table 910-1 standard for pH. Due to the status of the pad as an active production facility, high EC at SS09 will be addressed upon pad reclamation in accordance with 1000 series rules.

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

Signed: Rusty Frishmuth

Title: Director, EHS

Submit Date: 12/25/2019

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: RICK ALLISON

Date: 01/06/2020

Remediation Project Number: 12265

**COA Type****Description**

	Soil sample analytical results indicate that the electrical conductivity (EC) of soil in the vicinity of the release is above the Table 910-1 Allowable Level of 4 mmhos/cm. Sodium Adsorption Ratio (SAR) and pH of soil appears to comply with the Table 910-1 levels. Additionally, BTEX and total petroleum hydrocarbons (TPH) concentrations of the soil are in compliance with the Table 910-1 Allowable Levels. Therefore, COGCC will not require further action at this time. However, should future conditions at the site indicate contaminant concentrations in soils exceeding COGCC standards or if groundwater or surface water is found to be impacted, then further investigation and/or remediation activities may be required.
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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**

402269068	FORM 27-SUPPLEMENTAL-SUBMITTED
402269208	ANALYTICAL RESULTS
402269209	MAP
402269213	ANALYTICAL RESULTS
402269232	ANALYTICAL RESULTS
402269233	ANALYTICAL RESULTS

Total Attach: 6 Files

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

		Stamp Upon Approval
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Total: 0 comment(s)