

**State of Colorado**  
**Oil and Gas Conservation Commission**

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Document Number:

401665332

Receive Date:

06/06/2018

Report taken by:

ROB YOUNG

## 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>DIAMOND OPERATING, INC.</u>	Operator No: <u>24320</u>	<b>Phone Numbers</b>
Address: <u>6666 GUNPARK DR STE #200</u>		
City: <u>BOULDER</u>	State: <u>CO</u> Zip: <u>80301</u>	
Contact Person: <u>Dave Peterson</u>	Email: <u>davep@flatironenergy.com</u>	
		Phone: <u>(303) 4944420</u>
		Mobile: <u>(303) 5173399</u>

### PROJECT, PURPOSE & SITE INFORMATION

#### PROJECT INFORMATION

Remediation Project #: 10429Initial Form 27 Document #: 401386393

#### 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 checked="" 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 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>PIT</u>	Facility ID: <u>104604</u>	API #: _____	County Name: <u>WASHINGTON</u>
Facility Name: <u>WARD 4</u>		Latitude: <u>39.899631</u>	Longitude: <u>-103.403517</u>
		** correct Lat/Long if needed: Latitude: <u>39.900197</u>	Longitude: <u>-103.404641</u>
QtrQtr: <u>SESE</u>	Sec: <u>3</u>	Twp: <u>2S</u>	Range: <u>54W</u> Meridian: <u>6</u> Sensitive Area? <u>No</u>

#### SITE CONDITIONS

General soil type - USCS Classifications MLMost Sensitive Adjacent Land Use Dryland FarmingIs domestic water well within 1/4 mile? NoIs surface water within 1/4 mile? YesIs groundwater less than 20 feet below ground surface? No

Other Potential Receptors within 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	Area along east side of pit	Visual

### INITIAL ACTION SUMMARY

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

No initial action or emergency response required.

### 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 ):

Small area of oil stained soil on east side of pit will be removed. Confirmation soil sample will be collected and tested for BTEX and TPH after soil removal. Two soil samples in the base of the pit will be collected and tested for inorganics [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 4

Number of soil samples exceeding 910-1 0

Was the areal and vertical extent of soil contamination delineated?           

Approximate areal extent (square feet) 0

### NA / ND

NA Highest concentration of TPH (mg/kg)           

-- Highest concentration of SAR 0.963

BTEX > 910-1 No

Vertical Extent > 910-1 (in feet) 0

### 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           

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 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?

Collected one sample 30' north of pit and one sample 60' west of pit. See lab analyses for results of background tests.

☐ 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.

Any oil-stained soil will be removed by an excavator and hauled to a licensed disposal facility.

### **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.

Any soil analyses that exceed the maximum allowable on Table 910-1 will be removed from the pit.

### **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.

## REMEDATION 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: \_\_\_\_\_

## REMEDATION COMPLETION REPORT

### REMEDATION COMPLETION SUMMARY

Is this a Final Closure Request for this Remediation Project? No \_\_\_\_\_

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

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? \_\_\_\_\_

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

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

## 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.

In the spring of 2018 after the pit has fully dried up, we will backfill the pit to grade with the field that is north of the pit. We will put down a soil amendment to reduce the alkalinity of the soil and then drill grass seed [PBSI.Native Pasture Mix - PB-39286-16]. After the seed has been planted we will crimp straw in the soil to prevent erosion. A request for final reclamation approval will follow.

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 approve the seed mix? No \_\_\_\_\_

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

## IMPLEMENTATION SCHEDULE

### PRIOR DATES

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

Actual Spill or Release date, if known. \_\_\_\_\_

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 11/01/2017

Date of commencement of Site Investigation. 11/01/2017

Date of completion of Site Investigation. 11/15/2017

### REMEDIAL ACTION DATES

Date of commencement of Remediation. 05/01/2018

Date of completion of Remediation. 05/29/2018

### SITE RECLAMATION DATES

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

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

### OPERATOR COMMENT

All work at Ward pit closure site has been completed. Just waiting for the grass to grow. Diamond will submit a request for final reclamation approval at some point in the future.

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

Signed: Dave Peterson

Title: President

Submit Date: 06/06/2018

Email: davep@flatironenergy.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: ROB YOUNG

Date: 06/06/2018

Remediation Project Number: 10429

### 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

401665332	FORM 27-SUPPLEMENTAL-SUBMITTED
401665354	PHOTOS

Total Attach: 2 Files

## General Comments

### User Group

### Comment

### Comment Date

Environmental	Remediation of location is complete. Please request project closure on a supplemental Form 27. Closure will be conditionally approved pending adequate reclamation.	06/06/2018
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Total: 1 comment(s)