

# State of Colorado Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203  
Phone: (303) 894-2100 Fax: (303) 894-2109



Document Number:

401198405

Receive Date:

Report taken by:

## 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>PROSPECT ENERGY LLC</u>	Operator No: <u>10312</u>	<b>Phone Numbers</b>
Address: <u>880 WOLVERINE COURT</u>		Phone: <u>(720) 3591589</u>
City: <u>CASTLE ROCK</u>	State: <u>CO</u>	Zip: <u>80108</u>
Contact Person: <u>Lauren Walsh</u>	Email: <u>lwalsh@progressivepcs.net</u>	Mobile: <u>( )</u>

### PROJECT, PURPOSE & SITE INFORMATION

#### PROJECT INFORMATION

Remediation Project #: 9188 Initial Form 27 Document #: 2495221

#### PURPOSE INFORMATION

- |  |  |
|--|--|
| <input type="checkbox"/> 901.e. Sensitive Area Determination                                       | <input checked="" 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 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>LOCATION</u>	Facility ID: <u>333083</u>	API #: _____	County Name: <u>LARIMER</u>
Facility Name: <u>MSSU-68N68W 30NWNW</u>		Latitude: <u>40.638260</u>	Longitude: <u>-105.053433</u>
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>NWNW</u>	Sec: <u>30</u>	Twp: <u>8N</u>	Range: <u>68W</u>
Meridian: <u>6</u>		Sensitive Area? <u>Yes</u>	

#### SITE CONDITIONS

General soil type - USCS Classifications SM Most Sensitive Adjacent Land Use RESIDENTIAL

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

992' FROM SURFACE WATER 302' FROM WETLANDS 303' FROM NEAREST OCCUPIED BUILDING 600' NEAREST WTR WELL

# 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	SOILS	TO BE DETERMINED	SOIL BORING W/LAB ANALYSIS OF SAMPL

## INITIAL ACTION SUMMARY

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

PLEASE REFER TO SPILL DOCUMENTS #400845210, 400847822. THIS IS FOR THE INITIAL SPILL AND A SUBSEQUENT RELEASE THAT OCCURRED AT THE EXCAVATION DURING MITIGATION OF THE INITIAL RELEASE. SOIL FROM THE EXCAVATION HAS BEEN STORED ON LOCATION (SUNDRY DOCUMENT #400858349 (REJECTED)). THE TWO AREAS WHERE SOIL IS STORED ON LOCATION HAVE BEEN TREATED WITH 35 GALLONS OF ACT. TOTAL SOIL IS ESTIMATED AT APPROXIMATELY 300 YARDS, WHICH IS LESS THAN PREVIOUS ESTIMATES. SOIL SAMPLES HAVE BEEN COLLECTED FROM THE SOIL TREATMENT AREAS AND ARE BEING ANALYZED FOR BTEX, TPH-GRO AND DRO. IF ANALYTICAL RESULTS PASS COGCC TABLE 910-1 THRESHOLD CONCENTRATIONS, THE SOIL WILL BE REMOVED AND USED AS EXCAVATION BACKFILL OR ELSEWHERE ON SITE. IF ANALYTICAL RESULTS DO NOT PASS COGCC TABLE 910-1 THRESHOLD CONCENTRATIONS, THE SOIL WILL BE REMOVED AND TREATED BY "SOIL SHREDDING", A PROPRIETARY TREATMENT USED BY TALON LPE FROM AMARILLO TEXAS.

## 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 ):

### Proposed Groundwater Sampling

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

Groundwater will be sampled from monitoring wells MW-1, MW-2A, MW-3A, MW-4, MW-6, MW-7, MW-8 and MW-9A on a quarterly basis. Samples will be analyzed for BTEX. Sample Location is provided in attached Analytical 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 ):

# SITE INVESTIGATION REPORT

## SAMPLE SUMMARY

### Soil

Number of soil samples collected 1

Number of soil samples exceeding 910-1 0

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

Approximate areal extent (square feet) 0

### NA / ND

-- Highest concentration of TPH (mg/kg) 2180

NA Highest concentration of SAR

BTEX > 910-1 No

Vertical Extent > 910-1 (in feet) 3

### Groundwater

Number of groundwater samples collected 8

Was extent of groundwater contaminated delineated? No

Depth to groundwater (below ground surface, in feet) 26

Number of groundwater monitoring wells installed 3

Number of groundwater samples exceeding 910-1 2

-- Highest concentration of Benzene (µg/l) 310

-- Highest concentration of Toluene (µg/l) 8.6

-- Highest concentration of Ethylbenzene (µg/l) 38

-- Highest concentration of Xylene (µg/l) 160

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?

YES. SEE PAGE 1

# REMEDIAL ACTION PLAN

Does this Supplemental Form 27A include changes to a previously approved Remedial Action Plan? Yes \_\_\_\_\_

## SOURCE REMOVAL SUMMARY

Describe how source is to be removed.

THE EXTENT OF CONTAMINATION (AERIAL AND DEPTH) WILL BE DETERMINED BY ADVANCING SOIL BORINGS IN AN ITERATIVE MANNER EXTENDING OUTWARD FROM THE PRESENT EXCAVATION. SOIL SAMPLES WILL BE COLLECTED FROM THE BORINGS AND ANALYZED FOR BTEX, TPH-GRO AND DRO. IF GROUNDWATER IS ENCOUNTERED IN THE BORINGS, SAMPLES WILL BE COLLECTED AND ANALYZED FOR THE SAME COMPOUNDS. FURTHER REMEDIATION WILL DEPEND UPON THE SCOPE OF IMPACT ENCOUNTERED. IF SOIL IMPACT IS ACCESSABLE, THE OPERATOR PROPOSES TO EXCAVATE AND TREAT THE SOIL BY "SOIL SHREDDING" (TALON LPE). IF INACCESSABLE SOIL IMPACT OR SIGNIFICANT GROUNDWATER IMPACT IS ENCOUNTERED, THE OPERATOR PROPOSES IN-SITU TREATMENT OF THE SOIL AND GROUNDWATER THROUGH INJECTION OF A PROPRIETARY COMPOUND (TALON LPE) BASED ON HYDROGEN PEROXIDE. BEFORE ANY INJECTION TREATMENT IS STARTED, THE OPERATOR WILL AMEND THE REMEDIATION WORKPLAN AND GET ANY NEEDED APPROVALS FROM THE COGCC, CDPHE AND EPA (INJECTION APPROVAL).

## 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.

Remediation of soil impacts was performed utilizing excavation and soil shredding. Groundwater remediation still exists on the site and is currently being remediated using Oxygen Release Compound Advanced (ORC-A) socks in monitoring well MW-3A. It is anticipated the ORC-A sock will reduce BTEX constituent concentrations to below COGCC Table 910-1 standards within 6-12 months. Once achieved, quarterly groundwater monitoring will continue for a minimum of four quarters (one year) to ensure rebound of concentrations do not occur. Request for No Further Action will be submitted once all groundwater concentrations are demonstrated to be below COGCC Table 910-1 standards for four quarters.

## 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.

IF GROUNDWATER IS ENCOUNTERED DURING THE INVESTIGATION, SAMPLES WILL BE COLLECTED AND ANALYZED. IF GROUNDWATER CONCENTRATIONS EXCEED TABLE 910-1 CONCENTRATIONS, A GROUNDWATER REMEDIATION PLAN WILL BE PUT INTO PLACE, SUBJECT TO COGCC APPROVAL.

## 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? 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 AREA OF IMPACT IS AT AN EXISTING TANK BATTERY. THE SURFACE IS OWNED BY THE OPERATOR. THE DISTURBED AREA WILL BE MACHINE COMPACTED, LEVELED, CONTOURED AND COVERED WITH ROAD BASE.

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? \_\_\_\_\_

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. \_\_\_\_\_

### SITE INVESTIGATION DATES

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

Date of commencement of Site Investigation. 05/17/2015

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

### REMEDIAL ACTION DATES

Date of commencement of Remediation. 05/14/2015

Date of completion of Remediation. 11/30/2015

### SITE RECLAMATION DATES

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

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

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

Signed: Lauren Walsh

Title: Regulatory Analyst

Submit Date: \_\_\_\_\_

Email: lwalsh@progressivepcs.net

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: \_\_\_\_\_

Date: \_\_\_\_\_

Remediation Project Number: 9188

### COA Type

### Description

--	--

### Attachment Check List

#### Att Doc Num

#### Name

401198406	MONITORING REPORT
-----------	-------------------

Total Attach: 1 Files

### General Comments

#### User Group

#### Comment

#### Comment Date

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

Total: 0 comment(s)