

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:  
401982596

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: SANDRIDGE EXPLORATION & PRODUCTION LLC	Operator No: 10598	Phone Numbers Phone: (405) 4295745 Mobile: (405) 651-6853
Address: 123 ROBERT S KERR AVE		
City: OKLAHOMA CITY State: OK Zip: 73102		
Contact Person: Matt Church Email: mchurch@sandridgeenergy.com		

PROJECT, PURPOSE & SITE INFORMATION

**PROJECT INFORMATION**

Remediation Project #: 12718 Initial Form 27 Document #: 401963723

**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: WELL	Facility ID: _____	API #: 057-06531	County Name: JACKSON
Facility Name: Ray Ranch 0780 #1-16H	Latitude: 40.569537	Longitude: -106.376011	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NWNE	Sec: 21	Twp: 7N	Range: 80W Meridian: 6 Sensitive Area? Yes

**SITE CONDITIONS**

General soil type - USCS Classifications SC Most Sensitive Adjacent Land Use Livestock Grazing

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

# SITE INVESTIGATION PLAN

## TYPE OF WASTE:

- |                                          |                                                                               |                                        |
|------------------------------------------|-------------------------------------------------------------------------------|----------------------------------------|
| <input type="checkbox"/> E&P Waste       | <input checked="" type="checkbox"/> Other E&P Waste                           | <input type="checkbox"/> Non-E&P Waste |
| <input type="checkbox"/> Produced Water  | <input type="checkbox"/> Workover Fluids                                      |                                        |
| <input 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 checked="" type="checkbox"/> Other (as described by EPA) Oil Based Mud |                                        |

## DESCRIPTION OF IMPACT

Impacted?	Impacted Media	Extent of Impact	How Determined
Yes	SOILS	Approximately 100 square feet.	Form 19 Supplemental Investigation

## INITIAL ACTION SUMMARY

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

Initial Form 19 was submitted 2/18/2019. The surface area potentially impacted was 10 feet wide by 10 feet in length, approximately 100 square feet total. Snow pack kept the material from penetrating through the ice and into the ground surface. The temperature was 10F with no precipitation. The spill area was cleaned by scraping the material with a front-end loader, loading it into a transport truck, and hauling to Twin Enviro for disposal in Milner, CO. A Supplemental Form 19 was submitted 2/27/2019. The COGCC approved the Form 19 Supplemental with a condition of approval that soil samples be collected and submitted via Form 27.

## 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 ):

On 3/5/2019, 1 soil grab sample was collected (1-2 inches in depth) from stockpiled impacted material waiting to be removed from location (SDE\_PR\_SS\_01; 40.569537, -106.375307). Another soil grab sample was collected (1-2 inches in depth below ground surface) from the bottom of the excavation to confirm that all impacted material was removed (SDE\_PR\_SS\_CFM\_01; 40.569595, -106.37621). Samples were screened for the presence of hydrocarbons with a photoionization detector (PID) and submitted to Pace/ESC Labs for COGCC Table 910-1 Analyses.

### 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 2

Number of soil samples exceeding 910-1 1

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

Approximate areal extent (square feet) 100

### NA / ND

--            Highest concentration of TPH (mg/kg) 11225

--            Highest concentration of SAR 1.77

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           

           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?

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.

SandRidge has completed all excavation and removal of impacted materials, which were loaded onto transport trucks and haul to Twin Enviro for disposal in Milner, CO.

## 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.

The spilled material and adjacent area was immediately cleaned by scraping the material with a front-end loader. The waste characterization sample, SDE\_SS\_R\_01, collected from the stockpiled material had elevated concentrations of TPH, above Table 910-1 allowable concentrations. The confirmation sample collected from the excavation bottom, SDE\_SS\_RR\_CFM\_01, all analyses for organic compounds were below Table 910-1 concentrations. Both samples had arsenic concentrations above the Table 910-1 acceptable concentration. Sandridge is requesting relief from the Table 910-1 arsenic concentration limit of 0.39 mg/kg based upon the COGCC 2008 Rulemaking FAQ 31 response stating that "an operator need not meet a concentration level specified in Table 910-1 if the operator can demonstrate to the COGCC's satisfaction that the Table 910-1 level is exceeded by the background level in the native soils or groundwater, as applicable."

## 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) \_\_\_\_\_ 83  
Name of Licensed Disposal Facility or COGCC Facility ID # \_\_\_\_\_ 211979  
\_\_\_\_\_ 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 Closure Report

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:

Soil waste was excavated and hauled to Twin Enviro for disposal.

Volume of E&P Waste (solid) in cubic yards \_\_\_\_\_ 83

E&P waste (solid) description Oil impacted soil waste

COGCC Disposal Facility ID #, if applicable: \_\_\_\_\_ 211979

Non-COGCC Disposal Facility: \_\_\_\_\_

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

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

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

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

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.

The facility is presently in use and reclamation activities are not warranted at this time onsite.

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. 02/17/2019

Actual Spill or Release date, if known. 02/17/2019

## **SITE INVESTIGATION DATES**

Date of Initial Actions described in Site Investigation Plan (start date). 02/18/2019

Date of commencement of Site Investigation. 02/18/2019

Date of completion of Site Investigation. 03/05/2019

## **REMEDIAL ACTION DATES**

Date of commencement of Remediation. 02/18/2019

Date of completion of Remediation. 03/06/2019

## **SITE RECLAMATION DATES**

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

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

**OPERATOR COMMENT**

SandRidge requests closure of Remediation Project #12718.

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

Signed: Joel Mason

Title: Project Manager

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

Email: joel.mason@absarokasolutions.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: \_\_\_\_\_

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

Remediation Project Number: 12718

**COA Type****Description**

	Based on review of information presented it appears that no further action is necessary at this time, and COGCC approves the closure request. However, should future conditions at the site indicate contaminant concentrations in soils exceeding COGCC standards or if ground water is found to be significantly impacted, then further investigation and/or remediation activities may be required at the site.
--	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

**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**

401989169	MAP
401989170	SOIL SAMPLE LOCATION MAP
401989176	OTHER
401989187	ANALYTICAL RESULTS
401989188	ANALYTICAL RESULTS
401989254	OTHER
401989257	PHOTOS
401990364	DISPOSAL MANIFESTS

Total Attach: 8 Files

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

Environmental	need area of spill for closure. Project sent back to draft.	04/09/2019
Environmental	This project was created to document the remediation of spill number 462206.	04/09/2019

Total: 2 comment(s)