

State of Colorado  
Oil and Gas Conservation Commission

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FOR OGCC USE ONLY

REM 9764  
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Date 07/20/2016

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OGCC Employee

Spill  Complaint  
 Inspection  NOAV

Tracking No: \_\_\_\_\_

**SITE INVESTIGATION AND REMEDIATION WORKPLAN**

This form shall be submitted to the Director for approval prior to the initiation of site investigation and remediation activities. Form 27 is intended to be used whenever possible. Additional documentation will be required when large volumes of soil and groundwater have been impacted or involve large facilities with multiple source areas. See Rule 910. Attach as many pages as needed to fully describe the proposed work.

**CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED**

Spill or Release  Plug & Abandon  Central Facility Closure  Site/Facility Closure  Other (describe): drill cuttings

OGCC Operator Number: <u>10516</u>	Contact Name and Telephone: <u>Bryan Burns</u>
Name of Operator: <u>LINN Operating, Inc.</u>	No: <u>303-999-4245</u>
Address: <u>1999 Broadway, Suite 3700</u>	Fax: <u>303-999-4345</u>
City: <u>Denver</u> State: <u>CO</u> Zip: <u>80202</u>	

API Number: <u>05-045-11174</u>	County: <u>Garfield</u>
Facility Name: <u>Long Ridge J15 595</u>	Facility Number: <u>335568</u>
Well Name: <u>Long Ridge</u>	Well Number: <u>10B J15 595</u>
Location: (QtrQtr, Sec, Twp, Rng, Meridian): <u>NW 1/4 SE 1/4 T5S R95W</u> Latitude: <u>39.61111</u> Longitude: <u>108.03823</u>	

**TECHNICAL CONDITIONS**

Type of Waste Causing Impact (crude oil, condensate, produced water, etc): drill cuttings

Site Conditions: Is location within a sensitive area (according to Rule 901e)?  Y  N If yes, attach evaluation.

Adjacent land use (cultivated, irrigated, dry land farming, industrial, residential, etc.): rangeland and natural gas production

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: \_\_\_\_\_

Potential receptors (water wells within 1/4 mi, surface waters, etc.): \_\_\_\_\_

Description of Impact (if previously provided, refer to that form or document):

Impacted Media (check):	Extent of Impact:	How Determined:
<input checked="" type="checkbox"/> Soils	<u>drill cuttings contained within soil berm</u>	<u>laboratory testing</u>
<input type="checkbox"/> Vegetation	_____	_____
<input type="checkbox"/> Groundwater	_____	_____
<input type="checkbox"/> Surface Water	_____	_____

**REMEDIALTION WORKPLAN**

Describe initial action taken (if previously provided, refer to that form or document):

Pit will be drained and prepared for decommissioning. Drill cuttings, liquids, the synthetic liner, and any stained soil beneath the liner will be excavated and tested for Table 910-1 parameters. These cuttings will then be stockpiled on-site before landfarming begins. Upon removal of water in the pit, a discrete sample will be collected from the pit bottom materials to evaluate compliance with Table 910-1 standards for this material.

Describe how source is to be removed:

Drill cuttings will be excavated from the drilling pit, stockpiled on the well pad, and will be enclosed by the soil berm. The water storage pit bottom materials will be excavated and landfarmed on site if test results show concentrations about the Table 910-1 standards.

Describe how remediation of existing impacts is to be accomplished, including removal and disposal at an injection well or licensed facility, land treatment on site, removal of impacted groundwater, insitu bioremediation, burning of oily vegetation, etc.:

Drill cuttings will be landfarmed on site within a bermed area. Background soil samples will be collected and analyzed for arsenic in the vicinity of the pit to characterize natural soil arsenic concentrations. The water storage pit bottom materials will be landfarmed on site if test results show concentrations about the Table 910-1 standard. Landfarming methods could include tilling, application of fertilizer, and the addition of organic materials, i.e., sawdust with added nitrogen and/or phosphorus amendments.



Tracking Number: \_\_\_\_\_  
Name of Operator: \_\_\_\_\_  
OGCC Operator No: \_\_\_\_\_  
Received Date: \_\_\_\_\_  
Well Name & No: \_\_\_\_\_  
Facility Name & No: \_\_\_\_\_

REMIEDIATION WORKPLAN (Cont.)

OGCC Employee: \_\_\_\_\_

If groundwater has been impacted, describe proposed monitoring plan (# of wells or sample points, sampling schedule, analytical methods, etc.):

There are no impacts to groundwater.

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. Use additional sheet for description if required.

The site is currently used for water storage. After the use of the water storage pit is completed, the pit will be drained, and the liner removed and disposed of at a certified landfill. Once background levels of arsenic in the drill cuttings are demonstrated and the COGCC Table 910-1 standards are met, drill cuttings will be blended with non-contaminated on-site materials and buried in the pit and compacted. The remainder of the pit will be backfilled using native rock and soil, regraded to conform to the surrounding ground surface, and reseeded using an approved seed mix. Noxious weeds will be controlled as necessary using approved methods.

If COGCC Table 910-1 standards are not met, then the spoil material taken from the pit bottom will be treated on-site by landfarming. The pit will be excavated until clean spoil is apparent and will be tested again repeatedly until 910-1 Standards are met. The existing spoil material that is on-site will also be tested and land farmed on-site if required. The treatment will include adding nitrogen and/or phosphorus amendments. The treated material meeting COGCC minimum standards will be blended with clean non-contaminated on-site materials and will be buried on locations per COGCC standards. Exterior slopes on east, west, and north sides shall be pulled up and materials will be pushed into the existing pit. The exterior slopes will be laid back at a minimum 3:1. Top soil will be spread over all slopes and will be resseeded with an approved seed mix. LINN Operating, Inc. has addressed and will accommodate the wildlife concerns during the site stabilization of this pad.

Attach samples and analytical results taken to verify remediation of impacts. Show locations of samples on an onsite schematic or drawing.

Is further site investigation required?  Y  N If yes, describe:

During closure of the water storage pit, samples of the pit bottom materials will be collected and analyzed for the Table 910-1 parameters to evaluate the compliance with the standards. Quarterly sampling will be conducted until all landfarming areas meet safe standards set and approved by the COGCC.

Final disposition of E&P waste (landtreated and disposed onsite, name of licensed disposal facility, recycling, reuse, etc.):

The remediated drill cuttings and water storage pit bottom materials will be blended with on-site materials and buried in the pit as described above.

IMPLEMENTATION SCHEDULE

Date Site Investigation Began: 6/20/2014 Date Site Investigation Completed: \_\_\_\_\_ Date Remediation Plan Submitted: \_\_\_\_\_  
Remediation Start Date: 6/20/2014 Anticipated Completion Date: 6/20/2016 Actual Completion Date: \_\_\_\_\_

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

Print Name: Bryan Burns

Signed: [Signature]

Title: Environmental, Health, and Safety Representative

Date: 7/20/16

OGCC Approved: \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_

Linn Operating, Inc.  
Piceance Asset  
Parachute, Colorado

J15 595 Interim Site Stabilization Plan  
June 20, 2014

- Pit will be drained; liner removed and disposed of at a certified land fill.
- Soil samples from bottom of pit will be analyzed – upon meeting COGCC standards, pit will qualify for backfilling.
- Exterior slopes on east, west, and north sides shall be pulled up and materials shall be pushed into existing pit.
- Exterior slopes shall be laid back at a minimum 3:1
- Spoil material that is being treated on site by land farming is remnants from drilling and completion operations from wells on this pad. The existing spoil material shall remain on site and we will continue to conduct land farming operations. This treatment may include adding organic materials, i.e., sawdust and adding a nitrogen and/or phosphorus amendment. The treated contaminated material meeting COGCC minimum standards will be blended with clean non-contaminated on-site materials and will be buried on location per COGCC standards.
- Quarterly sampling will be conducted until all land farming areas meet safe standards set and approved by the COGCC.
- Top soil will be spread over all slopes and reseeded with a landowner approved seed mix.
- Linn Operating, Inc. has addressed and accommodated the wildlife concerns during the site stabilization of this pad.