

State of Colorado
Oil and Gas Conservation Commission

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received 12/14/2015
Project 9419
Remediation 200438370
Spill 442687
Document #: 2210753

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.

Spill Complaint
 Inspection NOAV
Tracking No: _____

CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED

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

OGCC Operator Number: <u>100322</u>	Contact Name and Telephone: <u>Jacob Evans</u>
Name of Operator: <u>Noble Energy, Inc.</u>	No: <u>970-304-5329</u>
Address: <u>1625 Broadway, Suite 2200</u>	Fax: <u>303-228-4286</u>
City: <u>Denver</u> State: <u>CO</u> Zip: <u>80202</u>	

API Number: <u>05-123-20081</u> 442687	County: <u>Weld</u>
Facility Name: <u>Bernhardt 64N66W/18NWSW</u>	Facility Number: <u>331055</u>
Well Name: <u>Bernhardt</u>	Well Number: <u>18-32</u>
Location: (QtrQtr, Sec, Twp, Rng, Meridian): <u>NWSW SEC.18 T4N R66W</u>	Latitude: <u>40.306653</u> Longitude: <u>-104.829028</u>

TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc): Produced Water

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.): pasture/undeveloped

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: Aquolls and Aquent, gravelly substratum

Potential receptors (water wells within 1/4 mi, surface waters, etc.): Permit #13701-irrigation-450' NW; South Platte River ~1,820' E,

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

Impacted Media (check):	Extent of Impact:	How Determined:
<input type="checkbox"/> Soils	_____	_____
<input type="checkbox"/> Vegetation	_____	_____
<input checked="" type="checkbox"/> Groundwater	<u>See Assessment Report</u>	<u>Laboratory Analytical Results</u>
<input type="checkbox"/> Surface Water	_____	_____

REMEDIALTION WORKPLAN

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

All production equipment was in the process of being decommissioned when release was discovered. Following initial assessment, confirmation soil sampling and well installation was scheduled.

Describe how source is to be removed:

Soil around the produced water vault was removed and backfilled with clean fill. Residual dissolved benzene was observed during initial assessment. The site will be monitored for natural attenuation.

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.:

The soil source was removed during excavation activities. Laboratory analytical results indicated that soil clean up levels comply with COGCC Table 910-1. Groundwater was encountered at approximately 4.5 feet below ground surface. Monitored natural attenuation will be utilized to address residual dissolved benzene impacts.



Tracking Number: Name of Operator: OGCC Operator No: Received Date: Well Name & No: Bernhardt 18-32 Facility Name & No: Bernhardt 64N66W/18NWSW 331055

REMEDIATION WORKPLAN (Cont.)

Page 2

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

Six (6) monitoring wells were installed at the site to delineate dissolved groundwater impacts. Groundwater samples will be collected from the monitoring wells on a quarterly schedule. Groundwater will be analyzed for BTEX following EPA Method 8260c. The monitoring plan may be ammended based on quarterly groundwater analytical results. Based on August 2015 groundwater analytical results, there are no observed concentrations of BTEX over the COGCC Table 910-1 regulatory limits.

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 excavation was backfilled with clean fill to grade. Reseeding does not appear necessary at this time. The environmental footprint will be assessed post remediation to determine if reseeding is necessary.

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 [x] N If yes, describe:

Groundwater samples collected in August 2015 did not contain concentrations of BTEX above the COGCC Table 910-1 regulatory limits. POC has been established on the site.

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

All remaining soil and groundwater impacts will be treated in-situ, therefore no E&P waste will be disposed of.

IMPLEMENTATION SCHEDULE

Date Site Investigation Began: 7/29/15 Date Site Investigation Completed: 8/13/15 Date Remediation Plan Submitted: 12/14/2015 Remediation Start Date: 8/13/15 Anticipated Completion Date: TBD Actual Completion Date: TBD

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

Print Name: Jacob Evans

Signed: Jacob Evans

Digitally signed by Jacob Evans DN: cn=Jacob Evans, o=Noble Energy, Inc., ou, email=jevans@nobleenergyinc.com, c=US Date: 2015.12.14 14:03:06 -0700'

Title: Senior Environmental Specialist

Date: 12/14/2015

OGCC Approved: Title: Date: