

State of Colorado
Oil and Gas Conservation Commission



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

#8380

FOR OGCC USE ONLY

Received

3/31/2014

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): _____

OGCC Employee:

☐ Spill ☐ Complaint
☐ Inspection ☐ NOAV

Tracking No:

OGCC Operator Number: 100322Name of Operator: Noble Energy, Inc.Address: 1625 Broadway, Suite 2200City: DenverState: CO Zip: 80202

Contact Name and Telephone:

Jacob EvansNo: 303-228-4000Fax: 303-228-4286API Number: 05-123-13826County: WeldFacility Name: Lilli Unit 2-11Facility Number: 112051Well Name: Lilli UnitWell Number: 2-11Location: (QtrQtr, Sec, Twp, Rng, Meridian): NWNE 11 8N 58W 6 PMLatitude: 40.682186Longitude: -103.827354

TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc): Produced waterSite 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.): RangelandSoil type, if not previously identified on Form 2A or Federal Surface Use Plan: Kim-Shingle complex, 6% to 30% slopesPotential receptors (water wells within 1/4 mi, surface waters, etc.): Unnamed creek approximately 635 feet east of the facility

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

Impacted Media (check):



Soils



Vegetation



Groundwater



Surface Water

Extent of Impact:

Unknown

How Determined:

TBD via excavation

REMEDIALTION WORKPLAN

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

A site assessment was conducted to evaluate potential soil impact at the pit. A hand auger was advanced to 6 feet below ground surface at the pit. One discrete soil sample was collected from 5 feet below ground surface. The soil sample was submitted for laboratory analysis of BTEX, TPH, EC, SAR, and pH. A site map is attached.

Describe how source is to be removed:

Analytical results indicate there are elevated benzene, toluene, and TPH concentrations in the pit. The pit will be excavated until confirmation soil samples from the sidewalls and floor of the excavation demonstrate concentrations within COGCC allowable levels.

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 impacted soil will be treated on site via exsitu chemical oxidation. The excavated soil will be placed in a soil shredder. The soil shredder will loosen the soil and spray it with hydrogen peroxide to reduce hydrocarbon impacts to levels below COGCC Table 9-10 standards. The treated soil will be utilized as backfill for the excavation once confirmation soil samples demonstrate concentrations within COGCC allowable levels for BTEX, TPH, and naphthalene. If the laboratory analytical results indicate the material is not suitable for backfill, additional remediation will be conducted.



| | |
|---------------------|------------------------|
| Tracking Number: | |
| Name of Operator: | Noble Energy Inc. |
| OGCC Operator No: | 100322 |
| Received Date: | 3/31/2014 |
| Well Name & No: | Lilli Unit 2-11 |
| Facility Name & No: | Lilli Unit 2-11 112051 |

REMEDIATION WORKPLAN (Cont.)

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

Groundwater was not encountered during the site assessment.

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 pit will be filled and graded to match adjacent topography. Reclamation activities at the site will be compliant with COGCC regulations.

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:

The results of the excavation and soil treatment will be provided under a separate cover.

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

The impacted soil will be treated on site via exsitu chemical oxidation. The treated soil will be used to backfill the excavation.

IMPLEMENTATION SCHEDULE

| | | |
|------------------------------------------|----------------------------------------|--------------------------------------------|
| Date Site Investigation Began: 5-17-2011 | Date Site Investigation Completed: --- | Date Remediation Plan Submitted: 9-04-2013 |
| Remediation Start Date: 5-17-2011 | Anticipated Completion Date: --- | 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

Title: Senior Environmental Specialist

Date: 9-04-2013

OGCC Approved: _____ Title: Northeast EPS Date: 4/24/2014

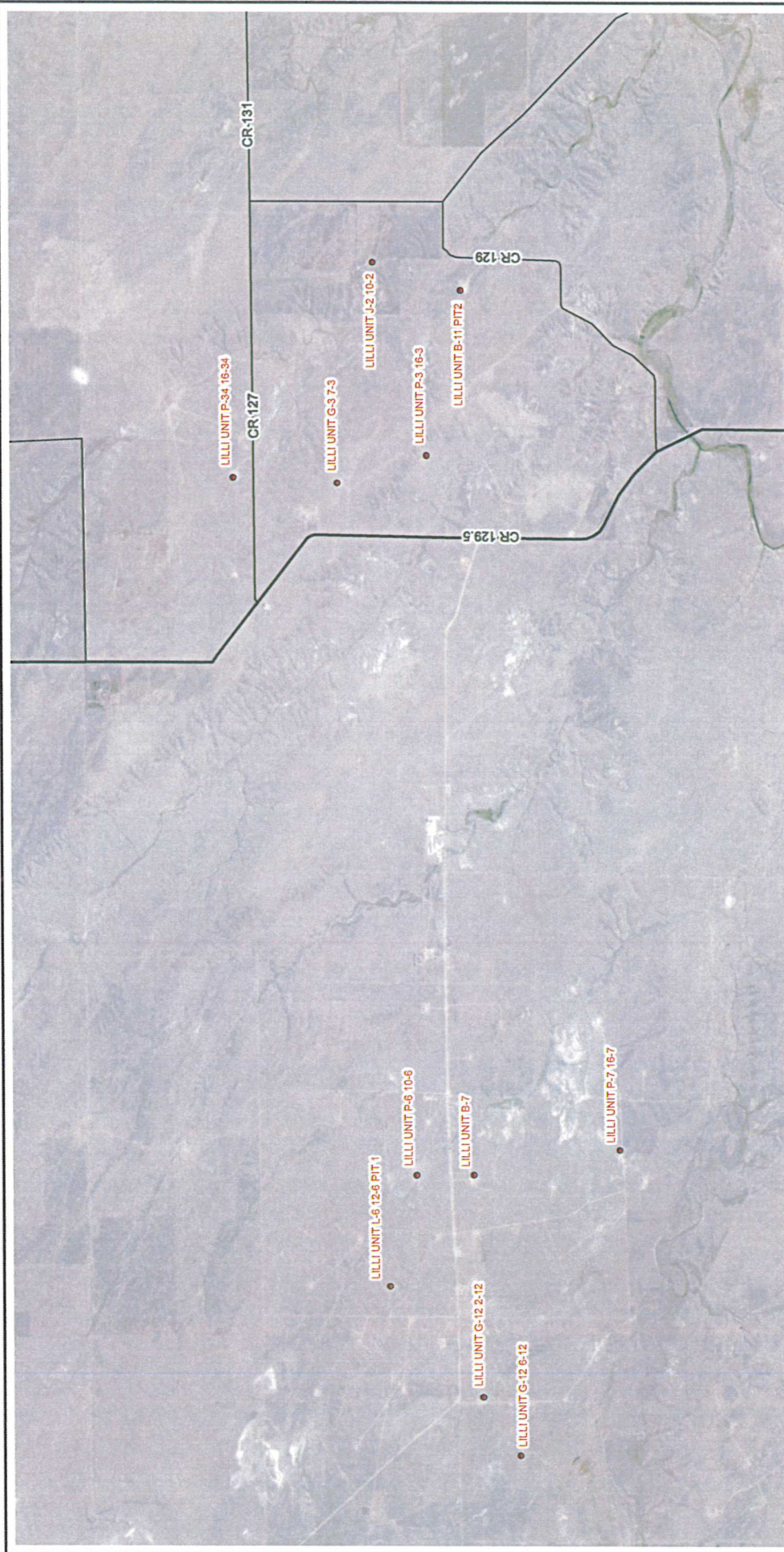
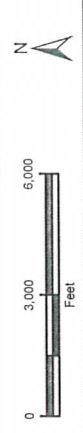


IMAGE COURTESY OF ESRI/ING MAPS



LEGEND

- SITE
- MAJOR ROAD
- LOCAL ROAD

FIGURE 1
LILLI PIT SITE LOCATION MAP
WELD COUNTY, COLORADO



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