

State of Colorado  
**Oil and Gas Conservation Commission**



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

#7167

FOR OGCC USE ONLY

RECEIVED  
7/31/2012

**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.

OGCC Employee:  
 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): Lined Earthen Pit Closure

OGCC Operator Number: <u>100185</u>	Contact Name and Telephone: <u>Chris Hines</u>
Name of Operator: <u>Encana Oil &amp; Gas (USA)</u>	No: <u>970.285.2653</u>
Address: <u>2717 County Road 215, Suite 100</u>	Fax: <u>970.285.2705</u>
City: <u>Parachute</u> State: <u>CO</u> Zip: <u>81635</u>	

API Number: <u>285021 (Facility ID)</u>	County: <u>Garfield</u>
Facility Name: <u>NP EF07B</u>	Facility Number: <u>N30 595</u>
Well Name: <u>N/A (N30 Well Pad)</u>	Well Number: <u>335670 (Location ID)</u>
Location: (QtrQtr, Sec, Twp, Rng, Meridian): <u>SESW, Sec 30, T5S, R95W, 6th PM</u> Latitude: <u>39.58089</u> Longitude: <u>-108.099</u>	

**TECHNICAL CONDITIONS**

Type of Waste Causing Impact (crude oil, condensate, produced water, etc): Produced water was stored in pit.

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

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: Nihill Channery loam, 1 to 6 percent slopes

Potential receptors (water wells within 1/4 mi, surface waters, etc.): According to the COGCC GIS OnLine mapping service there is one stream, and one water well within 1/4 mile of the well pad.

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

Impacted Media (check):	Extent of Impact:	How Determined:
<input type="checkbox"/> Soils	<u>Any identified impacts will be detailed in the</u>	<u>Any identified impacts will be detailed in the</u>
<input type="checkbox"/> Vegetation	<u>required Form 19.</u>	<u>required Form 19.</u>
<input type="checkbox"/> Groundwater	<u>_____</u>	<u>_____</u>
<input type="checkbox"/> Surface Water	<u>_____</u>	<u>_____</u>

**REMEDIATION WORKPLAN**

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

Describe how source is to be removed:  
See attached.

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.:  
See attached.

FORM  
27  
Rev 6/99

State of Colorado  
Oil and Gas Conservation Commission  
1120 Lincoln Street, Suite 801, Denver, Colorado 80203  
(303)894-2100 Fax: (303)894-2109



Tracking Number: \_\_\_\_\_  
Name of Operator: ENCA NA  
OGCC Operator No: \_\_\_\_\_  
Received Date: \_\_\_\_\_  
Well Name & No: N30 / Location #335670  
Facility Name & No: Pit Facility ID # 285021

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**REMEDIATION WORKPLAN (Cont.)**

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

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

See attached.

**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.

See attached.

**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:

See attached.

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

See attached.

\*TBD - To Be Determined

**IMPLEMENTATION SCHEDULE**

Date Site Investigation Began: July, 2012 Date Site Investigation Completed: \*TBD Date Remediation Plan Submitted: 07-31-12  
Remediation Start Date: \*TBD 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: Christopher Hines

Signed: \_\_\_\_\_

Title: Environmental Field Coordinator

Date: 07-31-2012

OGCC Approved: \_\_\_\_\_

Title: FOR Chris Canfield

Date: 08/02/2012

EPS NW Region

NARRATIVE ATTACHMENT  
FORM 27 (SITE INVESTIGATION AND REMEDIATION WORKPLAN)

North Parachute Ranch – N30 Pit Closure  
Document Date – 07/30/2012

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**TECHNICAL CONDITIONS**

**Is location within a sensitive area (according to Rule 901e)?**

Yes, Based on distance to surface water.

This Form 27 (Site Investigation and Remediation Workplan) was prepared for the purpose of generating a remediation project number for Location ID 335670. The N30 Facility ID is 285021, which is located on Encana's North Parachute Ranch operational area within Garfield County. This document includes a topographic map illustrating the location covered by this form.

This submittal is intended to start the document trail for the identified location, and provide an overview of Encana's general approach to remediation of potential below-liner impacts identified during pit closure activities. Site-specific information related to pit dimensions, associated impacts, and remediation activities will be provided in the required Form 19 (Spill / Release Report), Notification of Completion and Form 4 (Sundry Notice).

**REMEDIATION WORKPLAN**

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

All activities conducted in support of this pit closure project will be carried out in accordance with COGCC Rules 905, 907, and 909 for conducting a site investigation in support of this pit closure.

The following discussion was prepared to present general procedures for Encana's approach to pit closures and any associated remediation and documentation. All subsequent data gathered in support of this project will be submitted to the COGCC as required in a Form 19(Spill/Release Report), Notification of Completion and Form 4 (Sundry Notice), and will reference the COGCC assigned Remediation Project number.

The following activities have, or will be carried out in support of pit closure activities conducted in support of this project:

- 905.b(2) & 905.b(4) – All above-liner fluids and solids will be removed from the pit and will be reused or disposed of at a permitted disposal facility under manifest.
- 905.b(3) – Liner will be removed, and reused/recycled or disposed of at a permitted disposal facility under manifest.
- 905.b(4) – Representative samples will be collected from the pit bottom following removal of the pit liner and will be analyzed for compliance with COGCC Table 910-1.
  - Sample results will be provided to the COGCC in supplementary submission(s) for this remediation project.
- 905.c – In the event of the constituents of concern found below the liner are in excess of Table 910-1 allowable concentrations and above background concentrations, Form 19(Spill/Release Report) will be submitted to document the failure of the pit liner and subsequent release of fluids.
  - If below-liner concentrations identified in Table 910-1 allowable concentrations, but below background no Form 19 will be submitted. However, a Form 4(Sundry Notice) and Notification of Completion will be submitted to document the onsite disposal of material in excess of the allowable concentrations identified in Table 910-1.



**Describe how source is to be removed:**

Any impacted material identified below the liner would be evaluated upon discovery and depending upon severity would be removed using heavy equipment and remediated onsite, or disposed of offsite at a permitted disposal facility. The effectiveness of excavation efforts and removal of impacts will be verified through sample collection and laboratory analysis conducted in accordance with COGCC Rule 910, and to reflect the procedures described above. These activities would be described in the Form 4 (Sundry Notice) and Notification of Completion for this remediation project.

Any impacts identified below the liner would be documented and reported on a Form 19 (Spill/Release Report).

**Describe how remediation of existing impact 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.:**

In the event that below-liner impacts are identified, a Form 19 would be prepared and submitted to the COGCC, and the following approach to remediation would be utilized;

- In most cases impacted material would be removed and remediated onsite, and returned to the excavation upon successful remediation of impacts. Complete removal of impacted materials and successful remediation of impacts will be demonstrated through sample collection and laboratory analysis.
  - Occasionally due to operational considerations the pit may need to be closed after impacted material has been removed. Excavated material would then need to be remediated and disposed of independently of the pit closure, and any onsite disposal of that material would be carried out in accordance with COGCC Rule 907 and documented on a Form 4 (Sundry Notice).
  - If cuttings are present on location, an effort will be made to utilize the below-grade capacity of the pit and dispose of the cuttings during the pit closure. Any disposal of cuttings in this fashion would be conducted in accordance with Rule 907 and demonstrated through sample collection and laboratory analysis carried out in accordance with Rule 910. Utilization of this disposal option would be identified in the Notification of Completion and in a Form 4 (Sundry Notice).
- In the event that groundwater contamination is identified, or the depth of contamination makes removal of impacted material through conventional excavation impractical, the vertical and lateral extent of contamination would be determined by a third party contractor and an appropriate insitu remediation and monitoring plan would be developed and submitted to the COGCC for prior approval.

All remediation activities are verified with sample collection and laboratory analysis, conducted in accordance with COGCC Rule 910, and when necessary under an approved monitoring plan and analytical suite. These activities would be described in the Notification of Completion for this remediation project.

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

In the event that impacts to groundwater are identified, a vertical and lateral extent would be determined by a third party contractor and an appropriate insitu remediation and monitoring plan would be prepared and submitted to the COGCC for prior approval.



NARRATIVE ATTACHMENT  
FORM 27 (SITE INVESTIGATION AND REMEDIATION WORKPLAN)

North Parachute Ranch – N30 Pit Closure

Document Date – 07/30/2012

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**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 footprint for the backfill pit occurs within the pad boundary for this location. During reclamation the backfill pit may be part of the pad's working surface and/or covered by recontoured and reseeded sloped installed to meet reclamation objectives. Interim and final reclamation activities will be carried out in accordance with COGCC 1000 Series requirements, and will be documented accordingly.

**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? If yes, describe:**

The site investigation for this project will be carried out as described above. All analytical data collected in support of this remediation project will be provided to the COGCC in a Form 19, if applicable, and/or in the Form 4 (Sundry Notice) and Notification of Completion. A site diagram showing the location of collected samples will also be provided.

In the event that groundwater contamination is identified, or the depth of contamination makes removal of impacted material through conventional excavation impractical, the vertical and lateral extent of contamination would be determined by a third party contractor and an appropriate insitu remediation and monitoring plan would be developed and submitted to the COGCC for prior approval.

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

Final onsite disposition of E&P waste would be detailed in the Notification(s) of Completion, and if necessary, in the associated Sundry Notice(s). Documentation of offsite disposal of E&P waste generated during this project would be kept on record at Encana's Parachute Field Office and would be available upon request.





N30 Storage Pit Location  
Parachute Field (NPR)  
Garfield County, Colorado

