

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



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

FOR OGCC USE ONLY

**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: **2605298**

**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>Lanney Massey</u>
Name of Operator: <u>Encana</u>	No: <u>970.645.4477</u>
Address: <u>1125 Escalante Dr.</u>	Fax: <u>970-675-4433</u>
City: <u>Rangely</u> State: <u>CO</u> Zip: <u>81648</u>	

API Number: <u>05-103-09984</u>	County: <u>Rio-Blanco</u>
Facility Name: <u>Hells Hole 9122 FED Well Pad</u>	Facility Number: <u>NA</u>
Well Name: <u>9122 HH</u>	Well Number: _____
Location: (QtrQtr, Sec, Twp, Rng, Meridian): <u>NWSE, Section 14, T2S-R104W, 6th Principle</u> Latitude: <u>39.872851</u> Longitude: <u>-109.032408</u>	

**TECHNICAL CONDITIONS**

Type of Waste Causing Impact (crude oil, condensate, produced water, etc): Produced Water / Condensate from Production Tank

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: Rentsac channery loam, 5 to 50 percent slopes

Potential receptors (water wells within 1/4 mi, surface waters, etc.): According to the GIS datasets acquired from the CO state engineers office in 2007 and 2009, there are no permitted water wells within 1/4 mile of the well pad. There are no surface waters 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 checked="" type="checkbox"/> Soils	<u>50 sq ft. [area] x Unknown ft. [depth]</u>	<u>site investigation and laboratory results</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):  
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: \_\_\_\_\_  
OGCC Operator No: \_\_\_\_\_  
Received Date: \_\_\_\_\_  
Well Name & No: \_\_\_\_\_  
Facility Name & No: \_\_\_\_\_

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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.

IMPLEMENTATION SCHEDULE

Date Site Investigation Began: 4/12/10 Date Site Investigation Completed: 4/16/10 Date Remediation Plan Submitted: 4/12/10  
Remediation Start Date: 4/14/10 Anticipated Completion Date: Unknown 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: Kathy Friesen Signed: [Signature]  
Title: Environmental Coordinator Date: 4/12/10

OGCC Approved: [Signature] Title: FOR CHRIS CANFIELD Date: 05/20/2011  
EPS NW Region

## 9122 (Hells Hole)– FORM 27 – SPILL REMEDIATION NARRATIVE

04/13/2010

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

In accordance with COGCC Rule 905.c, a Form 19 was submitted to document this release.

In summary, all free liquids that accumulated on in the secondary containment were recovered and the valve was replaced. The areas adjacent to the secondary containment and immediately down gradient from the location were inspected for possible contamination. Three small test holes were excavated in and around the containment to assess the level of contamination (visual and olfactory). A composite sample was collected from three feet below ground surface adjacent to the release source. Also, a background sample was collected from the fill slope approximately two feet below the surface. Sample locations are provided on the attached figure.

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

The production tank and all associated piping have been removed and will be re-installed near the cut slope on the east side of the location. A lined (30 mil HDPE) corrugated steel containment measuring 43' x 45' will be installed prior to re-setting the tank.

Once the production equipment has been removed impacted soil will be recovered for on-site bio-remediation.

### **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.:**

Impacted soil will be recovered and bio-remediated on-site. To minimize the quantity of soil to be remediated the area of impact will be delineated by potholing in the vicinity of the release. Once delineated (using visual or olfactory indicators) the impacted portion of the fill slope will be recovered and staged in a lined containment. Recovery will begin at the furthest down gradient extent of the impact and continue into the well pad until all the impacted soils are recovered.

Field screening for the presence of hydrocarbons will be conducted with a PetroFLAG® test kit (U.S. EPA SW-846 method 9074). Once the extent of contamination is realized the field tests will verify that hydrocarbon concentrations are below the 500 mg/kg allowable concentration. When field tests indicate that the impacted soil has been removed, clearance samples will be collected from the side walls and bottom of the excavation. Samples will be collected using EPA methodology and will be sent to an EPA certified laboratory for analysis.

The excavation will not be backfilled until clearance sample results are received and demonstrate that the area of impact is free of constituents of concern above the allowable concentrations identified in COGCC Table 910-1 or background levels.

During the spring and summer of 2010, the impacted soil from the excavation will be remediated to meet constituent limits identified in COGCC Table 910-1 or background concentrations. Remediation will include mixing/tilling and the application of microbes.

**9122 (Hells Hole)– FORM 27 – SPILL REMEDIATION NARRATIVE**

04/13/2010

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

There is no indication of impacts to groundwater. If groundwater is encountered it will be sampled for COGCC Table 910-1 constituents.

**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.**

Impacts from the recovery are likely to occur within close proximity of the working surface of the location. In all likelihood only a portion of the revegetated fill slope will need to be disturbed. To the greatest extent possible all existing vegetation will be avoided and top soil will be segregated. After the recovery process is complete, the foot print of the working surface will likely get smaller, rendering the contours of the fill slope more gradual where the impact occurred. Reclamation activities will be carried out in accordance with COGCC Rule 1000 Series requirements.

**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:**

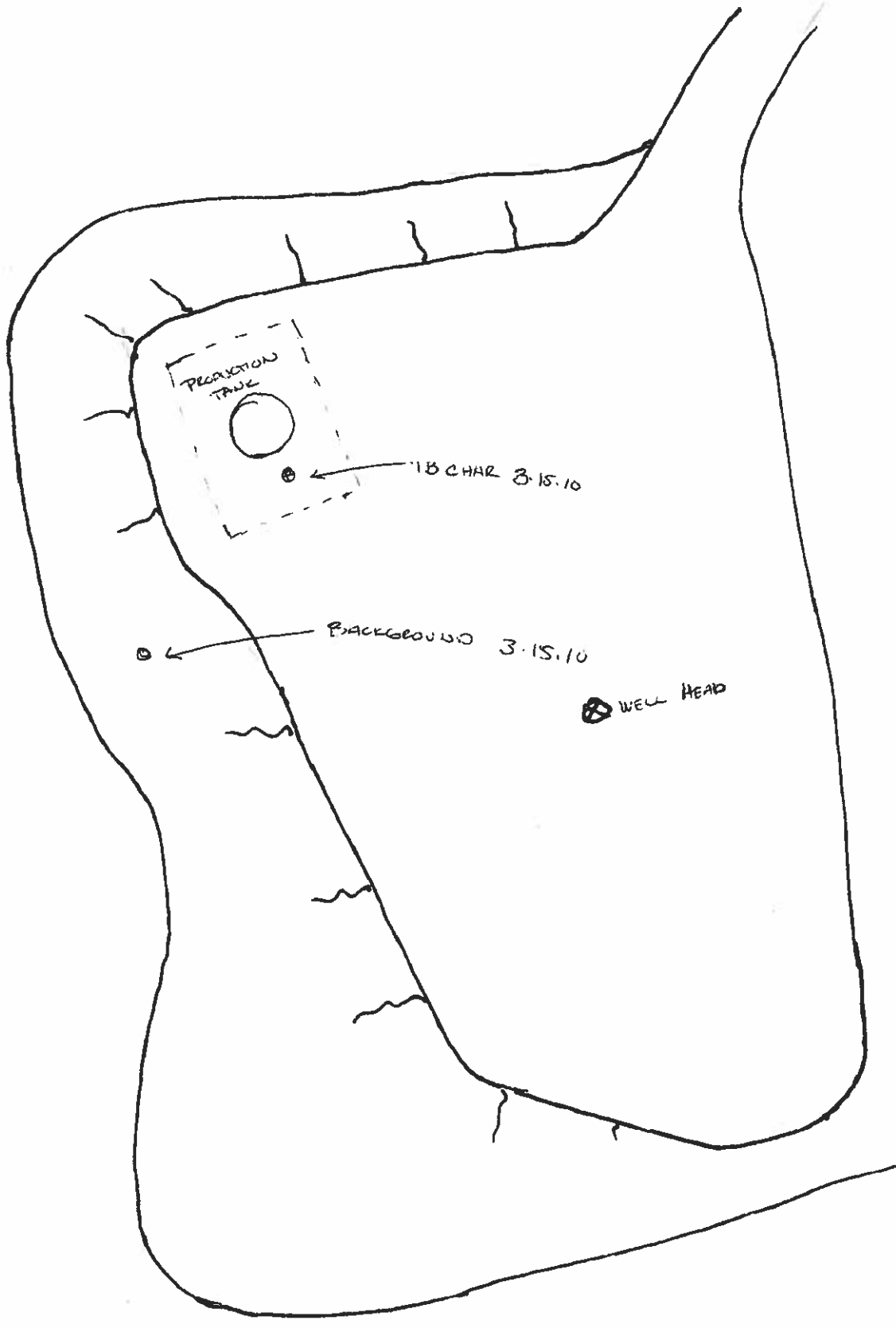
A summary of the laboratory results for samples collected in support of this site investigation are provided as an attachment to this form. A diagram showing the location of the release, proposed bio-remediation, and sample points is also attached.

Since clearance sampling will be required and the positioning and dimensions of the excavation are unknown at this time, the samples will be collected as follows:

- At least two samples will be collected from the bottom of the excavation.
- At least one sample from each side wall (one each cardinal direction) of the excavation at 5 foot intervals.

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

The impacted soil will be buried on location once constituents are below the allowable concentrations. Treated soil will be sampled at the end on the 2010 growing season.



Hells Hole 9122

NOT TO SCALE