

State of Colorado
Oil and Gas Conservation Commission

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

CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED

Spill or Release Plug & Abandon Central Facility Closure Site/Facility Closure Other (describe): Supplemental, No Further Action

GENERAL INFORMATION

OGCC Operator Number: 69175		Contact Name and Telephone	
Name of Operator: Petroleum Development Corporation		Name: John Nussbaumer	
Address: 1775 Sherman Street, Suite 3000		No: (303) 860-5800	
City: Denver State: CO Zip: 80203		Fax: (303) 860-5838	
API/Facility No: 05-123-11509	County: Weld		
Facility Name: Mellon	Facility Number:		
Well Name: Mellon	Well Number: 28-2		
Location (QtrQtr, Sec, Twp, Rng, Meridian): SESW Sec 28 T5N R67W 6th Principal Meridian Latitude: Longitude:			

TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc.): Condensate and produced water

Site Conditions: Is location within a sensitive area (according to Rule 901e)? Y N If yes, attach evaluation. Groundwater < 20 feet bgs.

Adjacent land use (cultivated, irrigated, dry land farming, industrial, residential, etc.): Agriculture

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

Potential receptors (water wells within 1/4 mi, surface waters, etc.): Surface water is located 70' southwest of the site, a building is located 400' southeast of the site, a water well is located 2,500' southwest of the site, and depth to groundwater is 15-17' below ground surface (bgs).

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>40' N-S x 30' E-W x 11' bgs</u>	<u>Soil samples for field screening and laboratory analysis</u>
<input type="checkbox"/> Vegetation		
<input checked="" type="checkbox"/> Groundwater	<u>See attached data</u>	<u>Collected groundwater samples for laboratory analysis</u>
<input type="checkbox"/> Surface water		

REMEDIATION WORKPLAN

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

Form 19 provided 5/26/08 (Spill# 1982317). Form 27 provided 11/14/08.

Describe how source is to be removed:

During a routine tank battery upgrade, a leak in the water sump was observed to have released an unknown volume of produced water and condensate to the subsurface. Once the water sump was removed, impacted soil above the COGCC allowable level was excavated in April and May 2008. Soil samples were collected from the base and sidewalls of the excavation and were submitted for analysis of Total Petroleum Hydrocarbons (TPH) by EPA Modified Method 8015. Laboratory results indicated TPH concentrations (C6-C36) at the extents of the excavation were below the COGCC sensitive area standard of 1,000 mg/kg (Table 910-1 prior to 4/1/09). Groundwater entering the excavation was analyzed for benzene, toluene, ethyl benzene, and xylenes (BTEX) by EPA Method 8260B. Laboratory results indicated benzene concentrations exceeded the CDPHE Water Quality Control Commission (WQCC) Regulation 41- The Basic Standards for Groundwater of 5 micrograms per liter (µg/l). Before backfilling the excavation, a bio-remediation solution was applied to the groundwater and exposed smear zone soils. A topographic map and site map are provided as Figures 1 and 2. Soil and groundwater analytical results are provided in Tables 1 and 2.

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.:

A total of 425 cubic yards of impacted soil above the COGCC allowable level was transported to the Waste Management landfill in Ault, CO for disposal.



REMEDIATION WORKPLAN (CONT.)

OGCC Employee: _____

Tracking Number: _____
 Name of Operator: Petroleum Development Corporation
 OGCC Operator No: 69175
 Received Date: _____
 Well Name & No: Mellon 28-2
 Facility Name & No.: Mellon 28-2

If groundwater has been impacted, describe proposed monitoring plan (# of wells or sample points, sampling schedule, analytical methods, etc.):
 Three monitoring wells (MW01 through MW03) were installed at the site on June 20, 2008. Each of the wells were developed and purged following installation. Groundwater samples were collected and submitted for laboratory analysis of BTEX by EPA Method 8260B on June 24, September 23, December 11, 2008, and March 18, 2009. Analytical results indicated BTEX levels in groundwater samples collected from monitoring wells MW01 through MW03 were not detected above the laboratory reporting limit of 1 µg/l for four consecutive quarters.

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 in use as a PDC production facility.

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:
 Groundwater samples collected from each of the wells have remained below the Basic Standards for Groundwater for four consecutive quarters. During the installation of monitoring wells MW01, MW02, and MW03 soil samples were collected from the groundwater smear zone. Each of the soil samples were submitted for analysis of TPH by EPA Method 8015B, and analytical results indicated the soil sample collected from well MW02 exceeded the COGCC allowable level. However, groundwater samples collected from MW02 have remained non-detect for BTEX and therefore well below the Basic Standards for Groundwater for four consecutive quarters indicating that the smear zone soil impact has been remediated. Based on the laboratory results, PDC is requesting No Further Action status for this site.

Final disposition of E&P waste (landtreated and disposed onsite, name of licensed disposal facility, recycling, reuse, etc.):
 A total of 425 cubic yards of impacted soil above the COGCC allowable level was transported to the Waste Management Landfill in Ault, CO for disposal.

IMPLEMENTATION SCHEDULE

Date Site Investigation Began:	<u>5/5/08</u>	Date Site Investigation Completed:	<u>3/18/09</u>	Remediation Plan Submitted:	<u>11/14/08</u>
Remediation Start Date:	<u>5/5/08</u>	Anticipated Completion Date:	<u>5/8/09</u>	Actual Completion Date:	<u>5/7/09</u>

I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct, and complete.
 Print Name: Randall Ferguson
 Signed: *Randall Ferguson* Title: Environmental Supervisor Date: 5/11/09

OGCC Approved: _____ Title: _____ Date: _____