

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	
OGCC Employee:	
<input type="checkbox"/> Spill	<input type="checkbox"/> Complaint
<input type="checkbox"/> Inspection	<input type="checkbox"/> NOAV
Tracking No: REMED #4475	

**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): \_\_\_\_\_

**GENERAL INFORMATION**

OGCC Operator Number: <u>69175</u>	Contact Name and Telephone
Name of Operator: <u>Petroleum Development Corporation</u>	Name: <u>Randall Ferguson</u>
Address: <u>1775 Sherman Street, Suite 3000</u>	No: <u>(303) 860-5800</u>
City: <u>Denver</u> State: <u>CO</u> Zip: <u>80203</u>	Fax: <u>(303) 860-5838</u>
API/Facility No: <u>05-123-20120</u>	County: <u>Weld</u>
Facility Name: <u>Weingardt 24 &amp; 33-22</u>	Facility Number: _____
Well Name: <u>Weingardt</u>	Well Number: <u>24-22</u>
Location (QtrQtr, Sec, Twp, Rng, Meridian) <u>SESW Sec 22 T3N R68W 6th PM</u>	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, residential, reservoir

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: Aquolls and Aquepts, flooded

Potential receptors (water wells within 1/4 mi, surface waters, etc.): Mulligan Reservoir is 20' east of the site: depth to ground water is between 2' and 9' 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>20' N-S x 20' E-W x 9' 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	_____	_____

**REMEDATION WORKPLAN**

Describe initial action taken (if previously provided, refer to that form or document):  
Form 19 submitted on 2/25/2009. (Spill # 1942629). An initial Form 27 was submitted on 5/28/09 (Remediation #4475).

Describe how source is to be removed:  
During a routine tank battery upgrade, a dump line leak appeared to have released an unknown volume of produced water and condensate to the subsurface. Impacted soil above the COGCC standards was excavated during February 2009. Soil samples were collected from the sidewalls of the excavation and submitted for analysis of TPH by EPA Modified Method 8015. Laboratory results indicated TPH concentrations (C6-C36) along the excavation perimeter were in compliance with the COGCC sensitive area standard of 1,000 mg/kg (Table 910-1 prior to 4/1/09). A groundwater sample was collected from the open excavation and was submitted for analysis of BTEX by EPA Method 8260B. Laboratory results indicated BTEX concentrations exceeded the CDPHE Water Quality Control Commission Regulation 41 Basic Standards for Ground Water. Before backfilling the excavation, activated carbon was applied to the groundwater and exposed smear zone soils. A topographic site location map and site map are provided as Figures 1 and 2. Soil and groundwater analytical results are summarized 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 198 cubic yards of impacted soil above the COGCC sensitive area standard (Table 910-1 prior to 4/1/09) was excavated and transported to the Waste Management landfill in Ault, CO for disposal.

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Tracking Number: \_\_\_\_\_  
Name of Operator: Petroleum Development Corporation  
OGCC Operator No: 69175  
Received Date: \_\_\_\_\_  
Well Name & No: Weingardt 24-22  
Facility Name & No.: Weingardt 24 & 33-22

REMEDIATION WORKPLAN (CONT.)

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

If groundwater has been impacted, describe proposed monitoring plan (# of wells or sample points, sampling schedule, analytical methods, etc.):  
Monitoring wells MW06 through MW08 were installed on 4/23/09. Groundwater samples were collected from the wells and submitted for laboratory analysis of BTEX by EPA Method 8260B on 5/6/09. Analytical results indicated BTEX levels in groundwater samples collected from all three monitoring wells were in compliance with Table 910-1 standards. The installation of downgradient Point-of-Compliance (POC) monitoring well MW09 was delayed until on 5/12/09. Groundwater analytical results also indicated BTEX levels in groundwater samples collected from well MW09 were in compliance with Table 910-1 standards. Monitoring well MW08 was damaged after the 5/6/09 sampling event. Monitoring well MW07 was damaged after the 8/28/09 sampling event. Lab results indicated non-detectable BTEX concentrations in monitoring wells MW07 and MW08 prior to damage. Remaining wells were sampled until 2/26/10. Analytical results indicated non-detectable BTEX concentrations in MW06 and downgradient POC well MW09 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 was restored to its pre-release grade. PDC's production facility remains at the site.

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:  
Monitoring well MW08 was damaged following the 5/6/09 sampling event which indicated non-detectable BTEX concentrations. Monitoring well MW07 was damaged following the 8/28/09 sampling event. MW07 exhibited non-detectable BTEX concentrations for two consecutive quarters. Although monitoring wells MW07 and MW08 were not sampled for four consecutive quarters, analytical results indicate the former groundwater impacts at these locations have been remediated. Monitoring wells MW06 and POC well MW09 exhibited non-detectable BTEX concentrations for four consecutive quarters. Based on the analytical results, PDC is requesting a No Further Action determination for this site.

Final disposition of E&P waste (landtreated and disposed onsite, name of licensed disposal facility, recycling, reuse, etc.):  
A total of 198 cubic yards of impacted soil above the COGCC sensitive area standard (Table 910-1 prior to 4/1/09) was transported to the Waste Management landfill in Ault, CO for disposal.

IMPLEMENTATION SCHEDULE

Date Site Investigation Began:	<u>2/17/09</u>	Date Site Investigation Completed:	<u>2/26/10</u>	Remediation Plan Submitted:	<u>6/4/10</u>
Remediation Start Date:	<u>2/20/09</u>	Anticipated Completion Date:	<u>2/17/10</u>	Actual Completion Date:	<u>3/6/10</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:  Title: Environmental Supervisor Date: 6/4/10

OGCC Approved: \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_