

**2R - 799**

**Q4 GWMR**

**03/19/2012**



DCP Midstream  
370 17<sup>th</sup> Street, Suite 2500  
Denver, CO 80202  
303-595-3331  
303-605-2226 FAX

March 19, 2012

Mr. Glenn von Gonten  
Oil Conservation Division  
New Mexico Energy, Minerals  
& Natural Resources Department  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

RECEIVED OCD  
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**RE: Fourth Quarter 2011 Groundwater Monitoring Report  
Burton Flats Compressor Station  
Lots 4 and 5, Section 1, Township 21 South, Range 27 East  
Eddy County, New Mexico  
OCD Case No. 2R799**

Dear Mr. von Gonten:

DCP Midstream, LP (DCP) is pleased to submit for your review one copy of the Fourth Quarter 2011 Groundwater Monitoring Report for the DCP Burton Flats Booster Station located in Eddy County, New Mexico (Lots 4 and 5, Section 1, Township 21 South, Range 27 East).

Groundwater monitoring activities were completed December 14, 2011. The next groundwater monitoring event is scheduled for the end of March or beginning of April 2012.

If you have any questions regarding the report, please call at 303-605-1695 or e-mail me [CECole@dcpmidstream.com](mailto:CECole@dcpmidstream.com).

Sincerely,

DCP Midstream, LP

Chandler E Cole  
Senior Environmental Specialist

Enclosure

cc: Mr. Mike Bratcher - EMNRD  
Mr. Jim Griswold - EMNRD  
Mr. Jim Amos - BLM Carlsbad  
Environmental Files

2R-799



## FOURTH QUARTER 2011 GROUNDWATER MONITORING REPORT

**BURTON FLATS BOOSTER STATION  
EDDY COUNTY, NEW MEXICO**

**Prepared For:**

**Mr. Chandler Cole  
DCP Midstream  
370 17<sup>th</sup> Street, Suite 2500  
Denver, Colorado 80202**

A handwritten signature in black ink, appearing to read 'Nicole Taylor', written over a horizontal line.

**Nicole Taylor  
Project Geologist**

A handwritten signature in black ink, appearing to read 'John Riggi', written over a horizontal line.

**John Riggi, P.G.  
Senior Project Geologist**

**Prepared by:  
Conestoga-Rovers  
& Associates**

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**MARCH 13, 2012  
REF. NO. 070537(4)**

This report is printed on recycled paper.



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& ASSOCIATES**

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& ASSOCIATES**

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## 1.0 INTRODUCTION

Conestoga-Rovers & Associates (CRA) is submitting this *Fourth Quarter 2011 Groundwater Monitoring Report* to DCP Midstream, LP (DCP) for the Burton Flats Booster Station in Eddy County, New Mexico. This report summarizes the December 2011 groundwater sampling event. Groundwater monitoring and sampling details, analytical results, and conclusions are presented below.

### **Site Background**

The site is a booster station located in Eddy County, New Mexico. The property's legal description is Lots 4 and 5, Section 1, Township 21 South (T21S), Range 27 East (R27E) (Figure 1). Four groundwater monitoring wells MW-1 through MW-4 were installed in 2011.

### **Hydrogeology**

Static groundwater depths ranged from 21.17 (MW-1) to 23.02 feet (ft) below ground surface (bgs) (MW-3) on December 14, 2011 (Figure 2). The recently installed wells are scheduled to be surveyed in 2012; groundwater flow direction could not be determined.

## 2.0 GROUNDWATER MONITORING AND SAMPLING

CRA gauged and collected samples from groundwater monitoring wells MW-1 through MW-3 on December 14, 2011. Monitoring well MW-4 was not gauged or sampled due to detections of hydrogen sulfide concentrations in ambient air above CRA's action levels. CRA will re-assess the ambient air conditions around MW-4 during the first quarter 2012 groundwater sampling event. Each well cap was removed to allow groundwater levels to stabilize and equilibrate prior to gauging. All sampled groundwater monitoring wells were purged of approximately three well-casing volumes while temperature, pH, and conductivity were measured. Groundwater samples, including a duplicate sample, were collected using clean disposable bailers and decanted into clean containers supplied by the analytical laboratory. Groundwater samples were submitted under chain-of-custody to Accutest Laboratories of Texas. CRA well sampling forms are presented as Appendix A. CRA's standard operating procedures for groundwater monitoring and sampling are presented as Appendix B.

### **Purged Groundwater**

Purged groundwater was transported to the DCP Linam Ranch Facility, where purged groundwater was disposed in the onsite sump.



### 3.0 ANALYTICAL RESULTS

#### **Groundwater Analytical Methods**

Groundwater samples collected from MW-1 through MW-3 were analyzed for:

- Benzene, toluene, ethylbenzene, and xylenes (BTEX) by SW846 8021B
- Total petroleum hydrocarbons as gasoline (TPH GRO) by SW846 8015
- Total petroleum hydrocarbons as diesel (TPH DRO) by SW845 8015M and SW846 3510C
- Chlorides by Environmental Protection Agency 300/SW846 9056

#### **Groundwater Sampling Results**

No BTEX was detected above New Mexico Water Quality Control Commission (NMWQCC) cleanup levels in groundwater samples MW-2 and MW-3. Groundwater sample MW-1 contained 140 micrograms per liter ( $\mu\text{g}/\text{l}$ ) benzene, 111  $\mu\text{g}/\text{l}$  xylenes, 3,890  $\mu\text{g}/\text{l}$  TPH GRO, and 44,900  $\mu\text{g}/\text{l}$  TPH DRO. Sample MW-2 contained the highest chloride concentration (1,170,000  $\mu\text{g}/\text{l}$ ). Current groundwater analytical results are summarized in Table 1. The laboratory analytical report is presented as Appendix C.

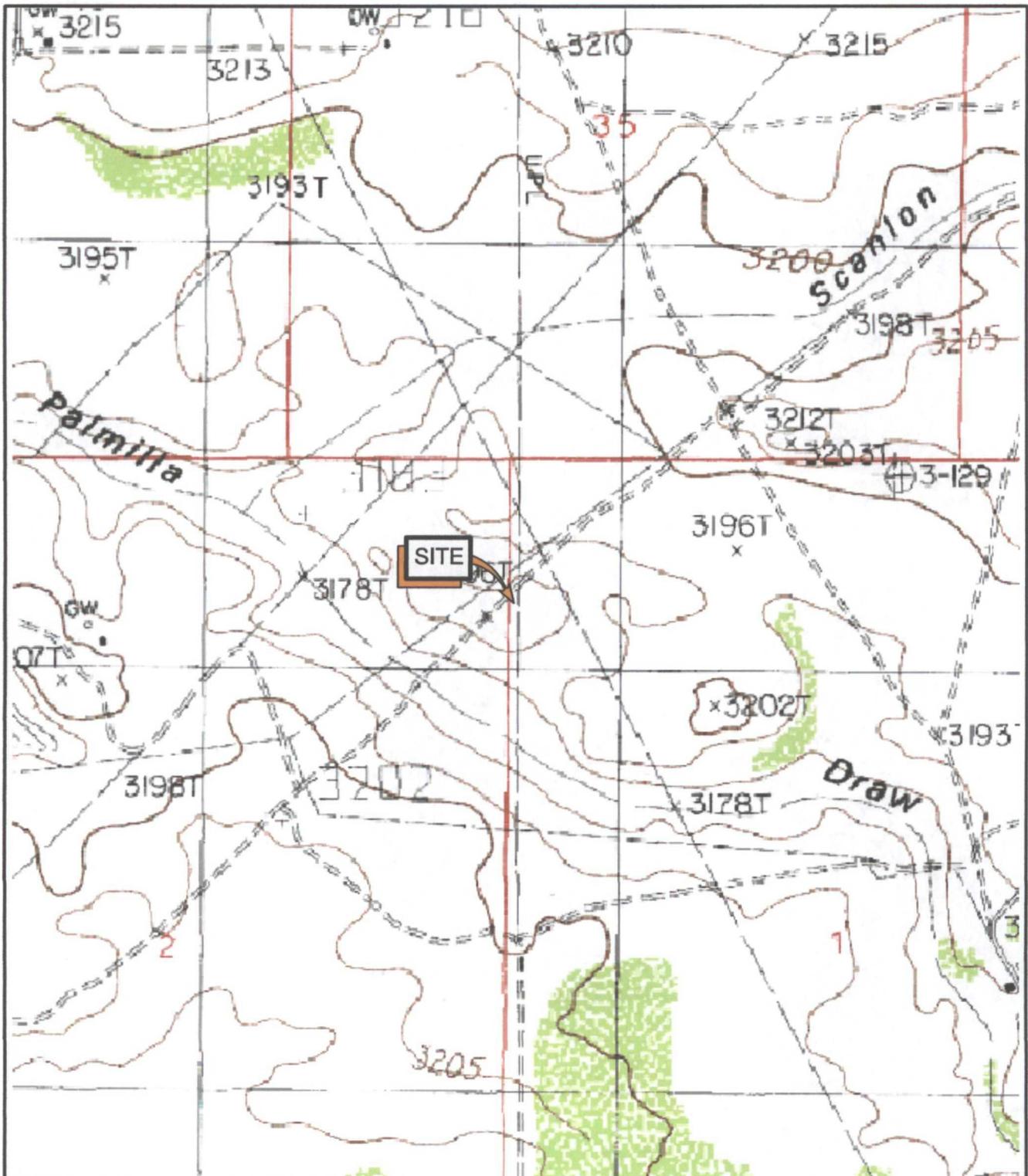
### 4.0 CONCLUSIONS

Benzene was detected above groundwater cleanup levels in monitoring well MW-1. Chloride has been detected above NMWQCC cleanup levels in groundwater samples MW-1 through MW-3. DCP will continue quarterly monitoring and sampling in 2012 to evaluate site groundwater conditions.

FIGURES

FIGURE 1: VICINITY MAP

FIGURE 2: SITE PLAN



USGS QUADRANGLE: ANGEL DRAW, NEW MEXICO  
 N 32.51969 W 104.15140

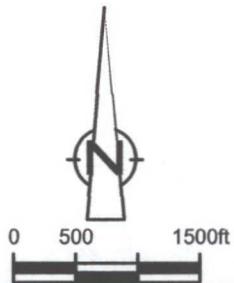
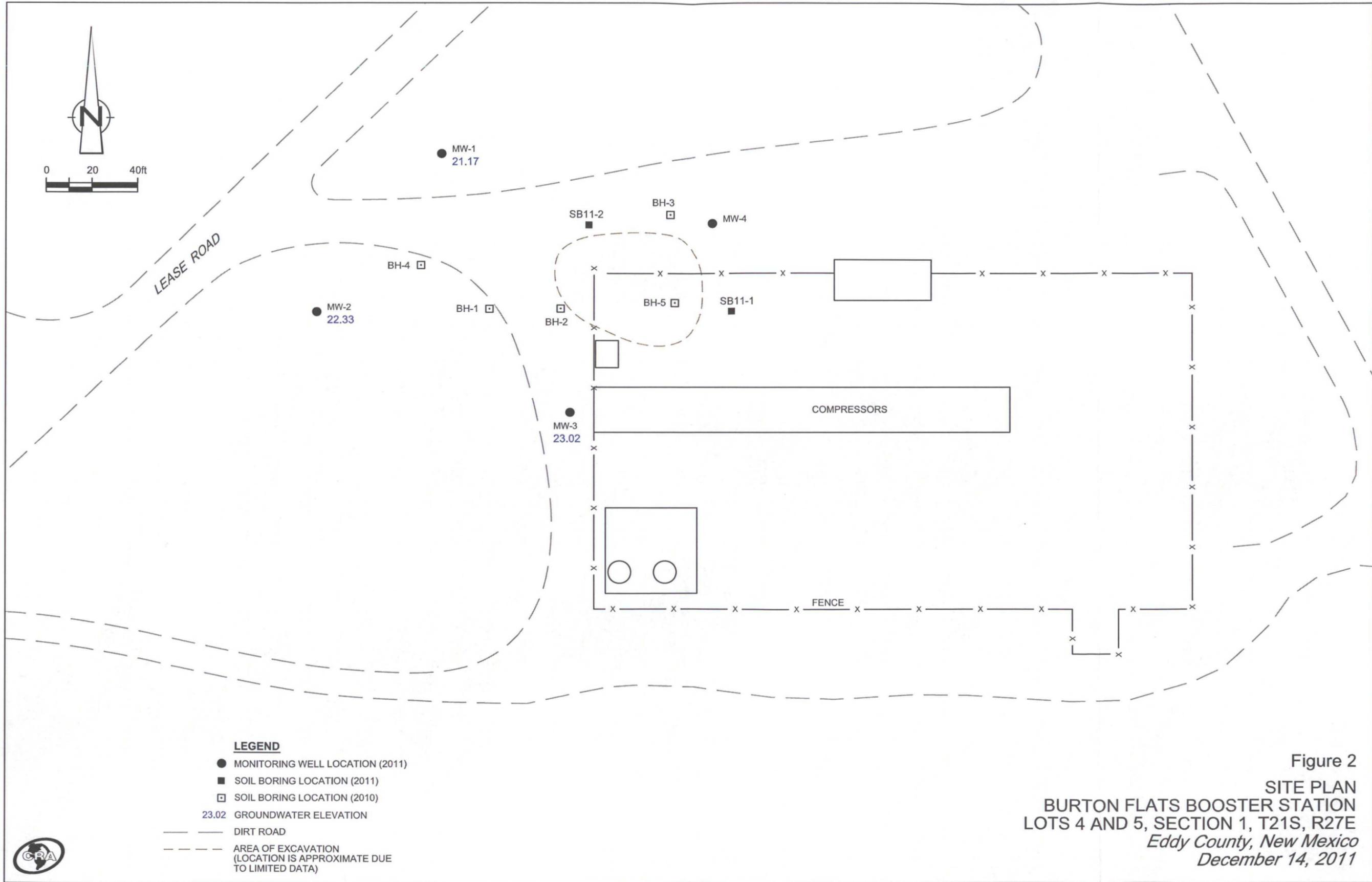


figure 1  
 VICINITY MAP  
 BURTON FLATS  
 EDDY COUNTY, NEW MEXICO  
 DCP Midstream



- LEGEND**
- MONITORING WELL LOCATION (2011)
  - SOIL BORING LOCATION (2011)
  - SOIL BORING LOCATION (2010)
  - 23.02 GROUNDWATER ELEVATION
  - DIRT ROAD
  - - - AREA OF EXCAVATION (LOCATION IS APPROXIMATE DUE TO LIMITED DATA)

Figure 2  
 SITE PLAN  
 BURTON FLATS BOOSTER STATION  
 LOTS 4 AND 5, SECTION 1, T21S, R27E  
 Eddy County, New Mexico  
 December 14, 2011



TABLES

TABLE 1: CURRENT GROUNDWATER ANALYTICAL RESULTS

## CONESTOGA-ROVERS & ASSOCIATES

**Table 1. Current Groundwater Analytical Results - Burton Flats Booster Station, Eddy County, New Mexico**

Well ID	Date	TOC (ft msl)	DTW (ft bgs)	GWE (ft msl)	Concentrations in µg/l						
					Benzene	Toluene	Ethyl - benzene	Total Xylenes	TPH GRO	TPH DRO	Chloride
<b>NMWQCC Cleanup Levels</b>					<b>10</b>	<b>750</b>	<b>750</b>	<b>620</b>	<b>.</b>	<b>.</b>	<b>250,000</b>
MW-1	12/14/2011	--	21.17	--	<b>108/140</b>	3.4 / 2.6	200 / 178	111 / 99.9	3,890 / 2,880	44,900 / 37,300	<b>665,000/641,000</b>
MW-2	12/14/2011	--	22.33	--	<1.0	<1.0	<1.0	<3.0	<50.0	106	<b>1,170,000</b>
MW-3	12/14/2011	--	23.02	--	<1.0	<1.0	<1.0	<3.0	<50.0	139	<b>426,000</b>

**Notes and Abbreviations:**

ID = Identification

TOC = Top of casing

DTW = Depth to water

GWE = Groundwater elevation

BTEX = Benzene, toluene, ethylbenzene, and total xylenes by SW846 8021

TPH GRO = Total petroleum hydrocarbons as gasoline by SW846 8015

TPH DRO = Total petroleum hydrocarbons as diesel by SW845 8015M and SW846 3510C

Chloride = By Environmental Protection Agency 300/SW846 9056

ft msl = Feet above mean sea level

ft bgs = Feet below ground surface

µg/l = Micrograms per liter

. = NMWQCC Cleanup Level not established

-- = Not measured

x/y = Sample results/blind duplicate results

<x = Not detected above x µg/l

**BOLD** = Indicates concentration above the NMWQCC Cleanup Levels

NMWQCC = New Mexico Water Quality Control Commission

APPENDIX A  
WELL SAMPLING FORMS



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## Groundwater Monitoring Field Sheet

Well ID	Time	DTP	DTW	Depth to Bottom	Product Thickness	Amount of Product Removed	Casing Diam.	Comments
MW-3	1248	—	23.02	34.08	—	—	2	
MW-2	1250	—	22.33	32.91	—	—	2	
MW-1	1251	—	21.17	34.13	—	—	2	DUP-1
<del>MW-4</del>								

Project Name: 070537 Project Number/Task:

Field Staff: J. PRIMERA ~~\_\_\_\_\_~~  
B. HAYNES

Date: 12-14-11



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## WELL SAMPLING FORM

Project Name: <u>BURTON FLATS</u>	CRA Mgr: John Riggi	Well ID: <u>MW-3</u>
Project Number: <u>070537</u>	Date: <u>12-14-2011</u>	Well Yield: <u>5-50</u>
Site Address:  <u>BF</u>	Sampling Method: Hand Bailing	Well Diameter <u>2</u>
		Field Staff: <u>JP/BH</u>
Initial Depth to Water: <u>23.02</u>	Total Well Depth: <u>34.08</u>	Water Column Height: <u>11.06</u>
Volume/ft: <u>.16</u>	1 Casing Volume: <u>1.76</u>	3 Casing Volumes: <u>5.30</u>
Purging Device: <u>BALLER</u>	Did Well Dewater?: <u>Yes</u>	Total Gallons Purged: <u>5.50</u>
Start Purge Time: <u>1258</u>	Stop Purge Time: <u>1306</u>	Total Time: <u>7min</u>

1 Casing Volume = Water column height x Volume/ ft.

Well Diam.	Volume/ft (gallons)
2"	0.16
4"	0.65
6"	1.47

Time	Volume Purged (gallons)	Temp. (°C)	pH	Cond. (uS)	Comments
<u>1304</u>	<u>.25</u>	<u>19.8</u>	<u>7.64</u>	<u>9513</u>	
<u>1305</u>	<u>.25</u>	<u>19.8</u>	<u>7.62</u>	<u>9524</u>	
<u>1306</u>	<u>.25</u>	<u>19.8</u>	<u>7.60</u>	<u>9501</u>	

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
<u>MW-3</u>	<u>12-14-11</u>	<u>1308</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>



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## WELL SAMPLING FORM

Project Name: <u>BURTON FLATS</u>	CRA Mgr: John Riggi	Well ID: <u>MW-2</u>
Project Number: <u>670537</u>	Date: <u>12-14-11</u>	Well Yield: <u>5-10</u>
Site Address:  <u>BF</u>	Sampling Method: Hand Bailing	Well Diameter <u>2</u>
		Field Staff: <u>JP/BHL</u>
Initial Depth to Water: <u>22.33</u>	Total Well Depth: <u>32.91</u>	Water Column Height: <u>10.58</u>
Volume/ft: <u>.16</u>	1 Casing Volume: <u>1.69</u>	3 Casing Volumes: <u>5.07</u>
Purging Device: <u>BAILER</u>	Did Well Dewater?: <u>NO</u>	Total Gallons Purged: <u>5.10</u>
Start Purge Time: <u>1315</u>	Stop Purge Time: <u>1326</u>	Total Time: <u>11min</u>

1 Casing Volume = Water column height x Volume/ ft.

Well Diam.	Volume/ft (gallons)
2"	0.16
4"	0.65
6"	1.47

Time	Volume Purged (gallons)	Temp. (°C)	pH	Cond. (uS)	Comments
<u>1324</u>	<u>.25</u>	<u>19.7</u>	<u>7.65</u>	<u>14.76</u>	
<u>1325</u>	<u>.25</u>	<u>19.4</u>	<u>7.56</u>	<u>14.82</u>	
<u>1326</u>	<u>.25</u>	<u>19.3</u>	<u>7.51</u>	<u>14.86</u>	

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
<u>MW-2</u>	<u>12-14-11</u>	<u>1327</u>				



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DUP-1

# WELL SAMPLING FORM

DUP-1

Project Name: <u>BARTON FLATS</u>	CRA Mgr: John Riggi	Well ID: <u>mw-1</u>
Project Number: <u>070537</u>	Date: <u>12-14-11</u>	Well Yield: <u>6.30</u>
Site Address:  <u>BF</u>	Sampling Method: Hand Bailing	Well Diameter <u>2</u>
		Field Staff: <u>JP/BH</u>
Initial Depth to Water: <u>21.17</u>	Total Well Depth: <u>34.13</u>	Water Column Height: <u>12.96</u>
Volume/ft: <u>.16</u>	1 Casing Volume: <u>2.07</u>	3 Casing Volumes: <u>6.22</u>
Purging Device: <u>BAILER</u>	Did Well Dewater?: <u>NO</u>	Total Gallons Purged: <u>6.30</u>
Start Purge Time: <u>1330</u>	Stop Purge Time: <u>1345</u>	Total Time: <u>15-min</u>

1 Casing Volume = Water column height x Volume/ ft.

Well Diam.	Volume/ft (gallons)
2"	0.16
4"	0.65
6"	1.47

Time	Volume Purged (gallons)	Temp. (°C)	pH	Cond. (uS)	Comments
<u>1343</u>	<u>.25</u>	<u>18.7</u>	<u>7.32</u>	<u>10.0</u>	
<u>1344</u>	<u>.25</u>	<u>18.7</u>	<u>7.21</u>	<u>9983</u>	
<u>1345</u>	<u>.25</u>	<u>18.7</u>	<u>7.19</u>	<u>9874</u>	

DUP-1

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
<u>mw-1</u>	<u>12-14-11</u>	<u>1347</u>	<hr/>			

**APPENDIX B**

**STANDARD OPERATING PROCEDURES FOR  
GROUNDWATER MONITORING AND SAMPLING**



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## **STANDARD FIELD PROCEDURES FOR GROUNDWATER MONITORING AND SAMPLING**

This document presents standard field methods for groundwater monitoring, purging and sampling, and well development. These procedures are designed to comply with Federal, State and local regulatory guidelines. Conestoga-Rovers & Associates' specific field procedures are summarized below.

### **Groundwater Monitoring**

Prior to performing monitoring activities, the historical monitoring and analytical data of each monitoring well shall be reviewed to determine if any of the wells are likely to contain separate phase hydrocarbons (SPH) and to determine the order in which the wells will be monitored (i.e. cleanest to dirtiest). Groundwater monitoring should not be performed when the potential exists for surface water to enter the well (i.e. flooding during a rainstorm).

Prior to monitoring, each well shall be opened and the well cap removed to allow water levels to stabilize and equilibrate. The condition of the well box and well cap shall be observed and recommended repairs noted. Any surface water that may have entered and flooded the well box should be evacuated prior to removing the well cap. In wells with no history of SPH, the static water level and total well depth shall be measured to the nearest 0.01 foot with an electronic water level meter. Wells with the highest contaminant concentrations shall be monitored last. In wells with a history of SPH, the SPH level/thickness and static water level shall be measured to the nearest 0.01 foot using an electronic interface probe. The water level meter and/or interface probe shall be thoroughly cleaned and decontaminated at the beginning of the monitoring event and between each well. Monitoring equipment shall be washed using soapy water consisting of Liqui-nox™ or Alconox™ followed by one rinse of clean tap water and then two rinses of distilled water.

### **Groundwater Purging and Sampling**

Prior to groundwater purging and sampling, the historical analytical data of each monitoring well shall be reviewed to determine the order in which the wells should be purged and sampled (i.e. cleanest to dirtiest). No purging or groundwater sampling shall be performed on wells with a measurable thickness of SPH or floating SPH globules. If a sheen is observed, the well should be purged and a groundwater sample collected only if no SPH is present. Wells shall be purged either by hand using a disposal or PVC bailer or by using an aboveground pump (e.g. peristaltic or Wattera™) or down-hole pump (e.g. Grundfos™ or DC Purger pump).

Groundwater wells shall be purged approximately three to ten well-casing volumes (depending on the regulatory agency requirements) or until groundwater parameters of temperature, pH, and conductivity have stabilized to within 10% for three consecutive readings. Temperature, pH, and conductivity shall be measured and recorded at the start of purging, once per well casing volume removed, and at the completion of purging. The total volume of groundwater removed shall be recorded along with any other notable physical characteristic such as color and odor. If required, field parameters such as turbidity, dissolved oxygen (DO), and oxidation-reduction potential (ORP) shall be measured prior to collection of each groundwater sample.

Groundwater samples shall be collected after the well has been purged and allowed to recharge to 80% of the pre-purging static water level, or if the well is slow to recharge, after waiting a minimum of 2 hours. Groundwater samples shall be collected using clean disposable bailers or



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pumps (if an operating remediation system exists on site and the project manager approves of its use for sampling) and shall be decanted into clean containers supplied by the analytical laboratory. New latex gloves and disposable tubing or bailers shall be used for sampling each well. If a PVC bailer or down-hole pump is used for groundwater purging, it shall be decontaminated before purging each well by using soapy water consisting of Liqui-nox™ or Alconox™ followed by one rinse of clean tap water and then two rinses of distilled water. If a submersible pump with non-dedicated discharge tubing is used for groundwater purging, both the inside and outside of pump and discharge tubing shall be decontaminated as described above.

**Sample Handling**

Except for samples that will be tested in the field, or that require special handling or preservation, samples shall be stored in coolers chilled to 4° C for shipment to the analytical laboratory. Samples shall be labeled, placed in protective foam sleeves or bubble wrap as needed, stored on crushed ice at or below 4° C, and submitted under chain-of-custody (COC) to the laboratory. The laboratory shall be notified of the sample shipment schedule and arrival time. Samples shall be shipped to the laboratory within a time frame to allow for extraction and analysis to be performed within the standard sample holding times.

Sample labels shall be filled out using indelible ink and must contain the site name; field identification number; the date, time, and location of sample collection; notation of the type of sample; identification of preservatives used; remarks; and the signature of the sampler. Field identification must be sufficient to allow easy cross-reference with the field datasheet.

All samples submitted to the laboratory shall be accompanied by a COC record to ensure adequate documentation. One copy of the COC shall be kept in the QA/QC file and another copy shall be retained in the project file. Information on the COC shall consist of the project name and number; project location; sample numbers; sampler/recorder's signature; date and time of collection of each sample; sample type; analyses requested; name of person receiving the sample; and date of receipt of sample.

Laboratory-supplied trip blanks shall accompany the samples and be analyzed to check for cross-contamination, if requested by the project manager.

**Well Development**

Wells shall be developed using a combination of groundwater surging and extraction. A surge block shall be used to swab the well and agitate the groundwater in order to dislodge any fine sediment from the sand pack. After approximately ten minutes of swabbing the well, groundwater shall be extracted from the well using a bailer, pump and/or reverse air-lifting through a pipe to remove the sediments from the well. Alternating surging and extraction shall continue until the sediment volume in the groundwater (i.e. turbidity) is negligible, which typically requires extraction of approximately ten well-casing volumes of groundwater. Preliminary well development usually is performed during well installation prior to placing the sanitary surface seal to ensure sand pack stabilization. Well development that is performed after surface seal installation, should occur 72 hours after seal installation to ensure that the cement has had adequate time to set.



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### **Waste Handling and Disposal**

Groundwater extracted during development and sampling shall be stored onsite in sealed U.S. DOT H17 55-gallon drums. Each drum shall be labeled with the contents, date of generation, generator identification and consultant contact. If hydrocarbon concentrations in the purged groundwater are below ADEC cleanup levels or the site is in a remote area (pending ADEC approval) groundwater will be discharged to the ground surface, at least 100 feet from the nearest surface water body.

\\DEN-S1\Shared\Denver\Alaska\AK SOP\CRA Alaska SOP\AK Groundwater Monitoring and Sampling SOP - CRA.doc

APPENDIX C

LABORATORY ANALYTICAL REPORT