DCP Midstream
370 17th Street, Suite 2500
Denver, CO 80202
303-595-3331
303-605-2226 *FAX*

October 15, 2012

Mr. Leonard Lowe
Environmental Engineer
New Mexico Oil Conservation Division
1220 S. St. Francis Dr.
Santa Fe, NM 87505

RE: 2nd Quarter 2012 Groundwater Monitoring Results
DCP Hobbs Gas Plant (AP-122)
Unit G, Section 36, Township 18 South, Range 36 East
Lea County, New Mexico

Dear Mr. Lowe:

DCP Midstream, LP (DCP) is pleased to submit for your review, one copy of the 2nd Quarter 2012 Groundwater Monitoring Results for the DCP Hobbs Gas Plant located in Lea County, New Mexico (Unit G, Section 36, Township 18 South, Range 36 East).

If you have any questions regarding the report, please call at 303-605-1718 or e-mail me swweathers@dcpmidstream.com.

Sincerely

DCP Midstream, LP

Stephen Weathers, P.G.
Principal Environmental Specialist

cc: Geoffrey Leking, OCD Hobbs District Office (Copy on CD)
Environmental Files

SECOND QUARTER 2012 GROUNDWATER MONITORING REPORT

DCP HOBBS GAS PLANT
AP-122
LATITUDE: N 32.70533° LONGITUDE: W 103.3066°
LEA COUNTY, NEW MEXICO

Prepared For:
Mr. Steve Weathers
DCP Midstream, LP
370 17th Street, Suite 2500
Denver, Colorado 80202

Nicole Taylor
Project Geologist

John Riggi, P.G.
Senior Project Geologist

Prepared by:
Conestoga-Rovers & Associates

14998 West 6th Avenue, Suite 800
Golden, CO 80401

Office: 720-974-0935
Fax: 720-974-0936

OCTOBER 10, 2012
REF. NO. 059097(14)
This report is printed on recycled paper.

CONESTOGA-ROVERS
& ASSOCIATES

TABLE OF CONTENTS

Page

CONESTOGA-ROVERS
& ASSOCIATES

LIST OF FIGURES
(Following Text)

LIST OF TABLES
(Following Text)

LIST OF APPENDICES

CONESTOGA-ROVERS
& ASSOCIATES

1.0 INTRODUCTION

Conestoga-Rovers & Associates (CRA) is submitting this *Second Quarter 2012 Groundwater Monitoring Report* to DCP Midstream, LP (DCP) for the Hobbs Gas Plant in Lea County, New Mexico. This report summarizes the June 2012 groundwater sampling event. Groundwater monitoring and sampling details, analytical results, and conclusions are presented below.

Site Background

The site is a cryogenic processing plant located in Lea County, New Mexico approximately nine miles west of Hobbs, New Mexico (Figure 1). The site occupies approximately 3.5 acres in an undeveloped area. Facilities include a laboratory, an amine unit, compressors, sumps, mol sieve dehydration, tank batteries and an onsite water production well used for non-potable water. The DCP Apex Compressor Station is located approximately 750 feet (ft) north of the Hobbs Gas Plant. There are six groundwater monitoring wells onsite.

Hydrogeology

Historical static groundwater depths have ranged between 60.13 (MW-A) and 63.30 ft below ground surface (bgs) (MW-F). Static groundwater depths ranged from 61.54 (MW-A) to 63.30 ft bgs (MW-F) on June 19, 2012. Groundwater flows to the southeast with a gradient of 0.004 ft/ft (Figure 2).

2.0 GROUNDWATER MONITORING AND SAMPLING

CRA gauged and collected samples from groundwater monitoring wells MW-A and MW-C through MW-F on June 19, 2011. Light non-aqueous phase liquids (LNAPL) was measured at a thickness of 1.65 ft in well MW-B; a sample was not collected. 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-A and MW-C through MW-F were analyzed for:

- Benzene, toluene, ethylbenzene, and xylenes (BTEX) by SW-846 8260B.

Groundwater Sampling Results

No BTEX was detected above New Mexico Water Quality Control Commission (NMWQCC) cleanup levels in groundwater samples MW-A, MW-D, MW-E, and MW-F. Groundwater sample MW-C contained 66.8 micrograms per liter (µg/l) benzene. BTEX concentrations in groundwater are presented on Figure 3. Current groundwater analytical results are summarized in Table 1. Historical groundwater analytical results are summarized in Table 2. The laboratory analytical report is presented as Appendix C.

4.0 CONCLUSIONS

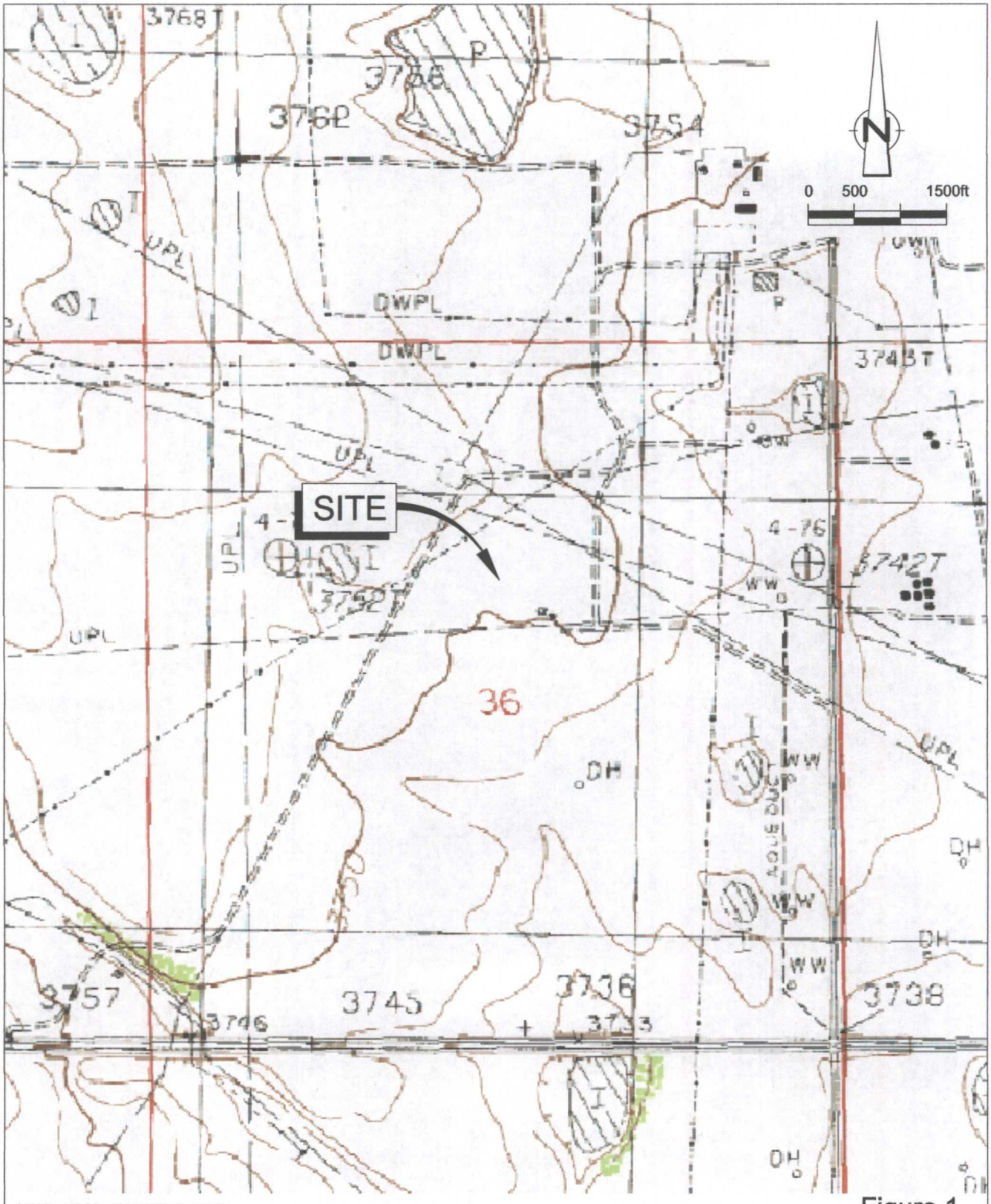
No BTEX has been detected above NMWQCC cleanup levels in samples MW-A, MW-D, MW-E, or MW-F since 2008. LNAPL was measured in well MW-B at a thickness of 1.65 ft. DCP will continue quarterly monitoring and sampling in 2012 to evaluate site groundwater conditions.

FIGURES

FIGURE 1: VICINITY MAP

FIGURE 2: GROUNDWATER ELEVATION CONTOUR MAP

FIGURE 3: GROUNDWATER BTEX ANALYTICAL RESULTS

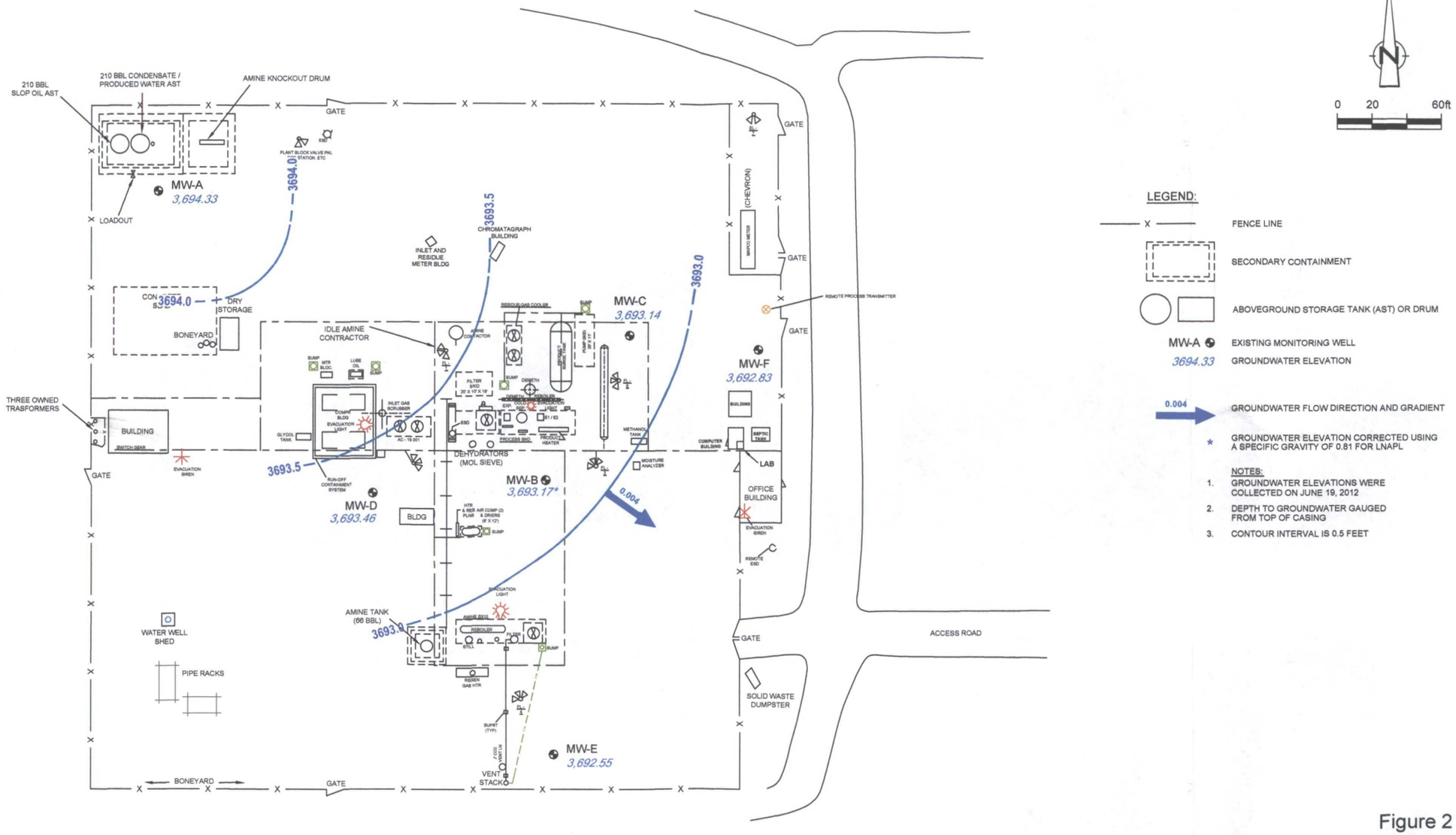


QUAD: USGS MONUMENT NORTH

Figure 1

VICINITY MAP
HOBBS GAS PLANT
LEA COUNTY, NEW MEXICO
DCP Midstream

059097-10(010)GN-MD001 FEB 09/2010



LEGEND:

- FENCE LINE
- SECONDARY CONTAINMENT
- ABOVEGROUND STORAGE TANK (AST) OR DRUM
- MW-A — EXISTING MONITORING WELL
- 3694.33 — GROUNDWATER ELEVATION
- 0.004 — GROUNDWATER FLOW DIRECTION AND GRADIENT
- * GROUNDWATER ELEVATION CORRECTED USING A SPECIFIC GRAVITY OF 0.81 FOR LNAPL

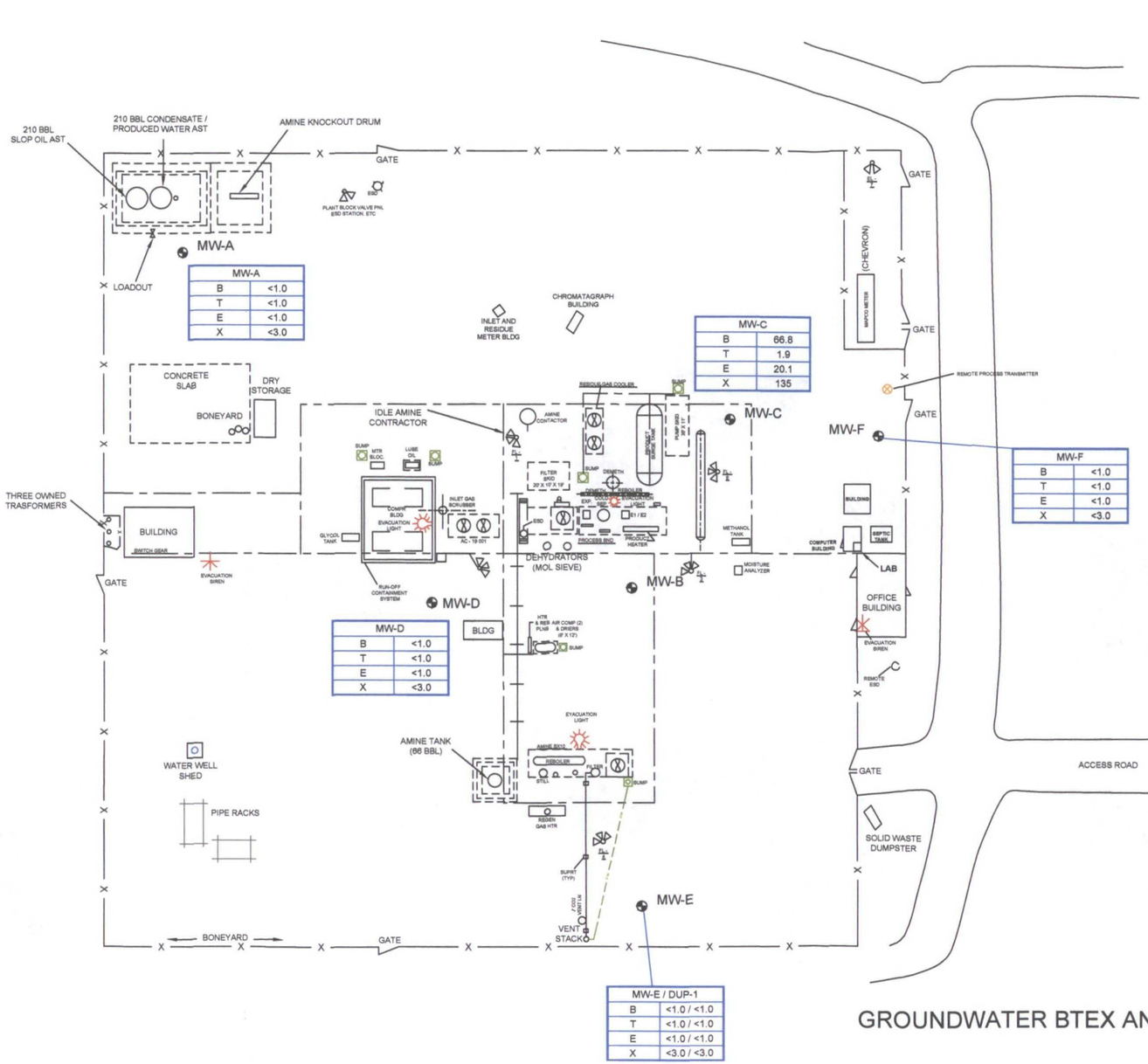
NOTES:

1. GROUNDWATER ELEVATIONS WERE COLLECTED ON JUNE 19, 2012
2. DEPTH TO GROUNDWATER GAUGED FROM TOP OF CASING
3. CONTOUR INTERVAL IS 0.5 FEET

Figure 2

GROUNDWATER ELEVATION CONTOUR MAP - SECOND QUARTER 2012
DCP HOBBS GAS PLANT
LEA COUNTY, NEW MEXICO
DCP Midstream
June 19, 2012

059097-2012(014)GN-DN002 SEP 29/2012



LEGEND:

- FENCE LINE
- SECONDARY CONTAINMENT
- ABOVEGROUND STORAGE TANK (AST) OR DRUM
- MW-A — EXISTING MONITORING WELL

MW-C		
BENZENE	B	<1.0
TOLUENE	T	<1.0
ETHYLBENZENE	E	<1.0
XYLENES	X	<3.0

CONCENTRATION IN µg/L

NOTES:

1. GROUNDWATER SAMPLES WERE COLLECTED ON JUNE 19, 2012.
2. BTEX ANALYSIS WAS BY EPA METHOD 8260 AND REPORTED IN µg/L.
3. MW-B NOT SAMPLED DUE TO LIGHT NON-AQUEOUS PHASE LIQUID (LNAPL).

Figure 3

GROUNDWATER BTEX ANALYTICAL RESULTS - SECOND QUARTER 2012
DCP HOBBS GAS PLANT
LEA COUNTY, NEW MEXICO
DCP Midstream
June 19, 2012

TABLES

TABLE 1: CURRENT GROUNDWATER ANALYTICAL RESULTS

TABLE 2: HISTORICAL GROUNDWATER ANALYTICAL RESULTS

CONESTOGA-ROVERS & ASSOCIATES

Table 1. Current Groundwater Analytical Results - DCP Hobbs Gas Plant, Lea County, New Mexico

Well ID	Date	TOC (ft msl)	DTW (ft bgs)	GWE (ft msl)	Benzene	Toluene	Ethyl - benzene	Total Xylenes
					Concentrations in µg/l			
NMWQCC Cleanup Levels					**10**	**750**	**750**	**620**
MW-A	6/19/2012	3755.87	61.54	3694.33	<1.0	<1.0	<1.0	<3.0
MW-B*	6/19/2012	3755.94	64.10	3693.17	**LNAPL present**			
MW-C	6/19/2012	3755.59	62.45	3693.14	**66.8**	1.9	20.1	135
MW-D	6/19/2012	3755.43	61.97	3693.46	<1.0	<1.0	<1.0	<3.0
MW-E	6/19/2012	3754.36	61.81	3692.55	<1.0/<1.0	<1.0/<1.0	<1.0/<1.0	<3.0/<3.0
MW-F	6/19/2012	3756.13	63.30	3692.83	<1.0	<1.0	<1.0	<3.0

Notes and Abbreviations:

ID = Identification

TOC = Top of casing

DTW = Depth to water

GWE = Groundwater elevation

BTEX = Benzene, toluene, ethylbenzene, and total xylenes by SW-846 8021 or 8260B

ft msl = Feet above mean sea level

ft bgs = Feet below ground surface

µg/l = Micrograms per liter

x/y = Sample results/blind duplicate results

<x = Not detected above x µg/l

BOLD = Indicates concentration above the NMQCC Cleanup Levels

a = results from run #2

NMWQCC = New Mexico Water Quality Control Commission

* = Groundwater elevation corrected using a LNAPL specific gravity of 0.81

Table 2. Historical Groundwater Analytical Results - DCP Hobbs Gas Plant, Lea County, New Mexico

Well ID	Date	TOC (ft msl)	DTW (ft bgs)	LNAPL thickness feet	GWE (ft msl)	pH s.u.	Conductivitiy µS/cm	Temperature °C	DO mg/l	ORP mV	Benzene	Toluene	Ethyl - benzene	Total Xylenes
											Concentrations in µg/l			
NMWQCC Cleanup Levels											**10**	**750**	**750**	**620**
MW-F	3/5/2008	3756.13	62.01	--	3694.12	6.76	657	17.01	9.71	3.6	1.9	< 5.0	< 1.0	3.8
MW-F	6/2/2008	3756.13	62.06	--	3694.07	6.76	879	19.00	3.08	21.4	< 0.46	< 0.48	< 0.45	< 1.4
MW-F	9/15/2008	3756.13	62.44	--	3693.69	6.43	876	19.17	2.52	234.3	< 0.46	< 0.48	< 0.45	< 1.4
MW-F	12/3/2008	3756.13	62.22	--	3693.91	6.76	917	17.79	3.79	188.4	< 0.46	< 0.48	< 0.45	< 1.4
MW-F	2/27/2009	3756.13	61.97	--	3694.16	6.77	857	18.61	3.85	93.4	< 0.46	< 0.48	< 0.45	< 1.4
MW-F	6/25/2009	3756.13	61.96	--	3694.17	6.20	100	19.80	5.56	221.0	< 2.0	< 2.0	< 2.0	< 6.0
MW-F	9/1/2009	3756.13	62.18	--	3693.95	6.51	110	19.25	5.27	108.0	< 2.0	< 2.0	< 2.0	< 6.0
MW-F	11/17/2009	3756.13	62.13	--	3694.00	6.93	1,030	18.67	--	--	< 2.0	< 2.0	< 2.0	< 6.0
MW-F	3/25/2010	3756.13	62.02	--	3694.11	6.94	1,053	19.00	--	--	< 2.0	< 2.0	< 2.0	< 6.0
MW-F	6/8/2010	3756.13	62.12	--	3694.01	7.03	900	22.06	--	--	< 2.0	< 2.0	< 2.0	< 6.0
MW-F	9/21/2010	3756.13	61.92	--	3694.21	6.67	1,003	19.10	--	--	<0.50	<0.43	<0.55	<1.7
MW-F	12/16/2010	3756.13	61.93	--	3694.20	6.90	1,058	17.60	--	--	<0.50	<0.43	<0.55	<1.7
MW-F	3/11/2011	3756.13	62.05	--	3694.08	6.84	1,017	19.00	--	--	<2.0	<2.0	<2.0	<6.0
MW-F	6/14/2011	3756.13	62.35	--	3693.78	6.53	1,053	20.10	--	--	<1.0	<1.0	<1.0	<3.0
MW-F	9/27/2011	3756.13	62.85	--	3693.28	7.05	890	20.40	--	--	<1.0	<1.0	<1.0	<3.0
MW-F	12/13/2011	3756.13	63.05	--	3693.08	7.12	922.0	16.7	--	--	<1.0	<1.0	<1.0	<3.0
MW-F	3/27/2012	3756.13	63.16	--	3692.97	7.20	754.8	20.6	--	--	<1.0	<1.0	<1.0	<3.0
MW-F	6/19/2012	3756.13	63.30	--	3692.83	7.23	776.1	19.7	--	--	<1.0	<1.0	<1.0	<3.0

Notes and Abbreviations:

ID = Identification

TOC = Top of casing

DTW = Depth to water

LNAPL = Light non-aqueous phase liquids

GWE = Groundwater elevation

DO = Dissolved oxygen

ORP = Oxidation reduction potential

BTEX = Benzene, toluene, ethylbenzene, and total xylenes by SW-846 8021 or 8260B

ft msl = Feet above mean sea level

ft bgs = Feet below ground surface

s.u. = Standard unit

µS/cm = Microsiemens per centimeter

°C = Degrees Celcius

mg/l = Milligrams per liter

mV = Millivolts

µg/l = Micrograms per liter

NMWQCC = New Mexico Water Quality Control Commission

a = Result is from run # 2

BOLD = Indicates concentration above the NMWQCC Cleanup Levels

<x = Not detected above x µg/l

-- = Not measured/not analyzed

(d) = Duplicate sample

Table 2 **Historical Groundwater Analytical Results** - DCP Hobbs Gas Plant, Lea County, New Mexico

Well ID	Date	TOC (ft msl)	DTW (ft bgs)	LNAPL thickness feet	GWE (ft msl)	pH s.u.	Conductivitiy µS/cm	Temperature °C	DO mg/l	ORP mV	Benzene	Toluene	Ethyl-benzene	Total Xylenes
											Concentrations in µg/l			
NMWQCC Cleanup Levels											**10**	**750**	**750**	**620**
MW-A	3/5/2008	3755.87	60.18	--	3693.44	7.20	431	17.46	11.42	21.3	**11**	<5.0	3.8	15.0
MW-A	6/2/2008	3755.87	60.19	--	3693.87	7.31	573	20.57	5.49	31.1	< 0.46	< 0.48	< 0.45	< 1.4
MW-A	9/15/2008	3755.87	60.58	--	3694.32	6.81	533	19.27	4.96	238.7	< 0.46	< 0.48	< 0.45	< 1.4
MW-A	12/3/2008	3755.87	60.41	--	3694.44	7.37	505	18.20	7.17	183.9	< 0.46	< 0.48	< 0.45	< 1.4
MW-A	2/27/2009	3755.87	60.18	--	3693.02	7.29	505	19.34	8.15	64.1	< 0.46	< 0.48	< 0.45	< 1.4
MW-A	6/25/2009	3755.87	60.21	--	3695.66	6.90	660	19.80	8.20	145.0	< 2.0	< 2.0	< 2.0	< 6.0
MW-A	9/1/2009	3755.87	60.37	--	3695.50	7.07	670	19.86	8.11	69.0	< 2.0	< 2.0	< 2.0	< 6.0
MW-A	11/17/2009	3755.87	60.40	--	3695.47	7.82	576	17.67	--	--	< 2.0	< 2.0	< 2.0	< 6.0
MW-A	3/25/2010	3755.87	60.40	--	3695.47	7.51	567	21.70	--	--	< 2.0	< 2.0	< 2.0	< 6.0
MW-A	6/8/2010	3755.87	60.39	--	3695.48	7.36	513		--	--	< 2.0	< 2.0	< 2.0	< 6.0
MW-A	9/21/2010	3755.87	60.13	--	3695.74	7.11	585.0	20.30	--	--	<0.50	<0.43	<0.55	<1.7
MW-A	12/16/2010	3755.87	60.24	--	3695.63	7.27	225.7	18.00	--	--	<0.50	<0.43	<0.55	<1.7
MW-A	3/11/2011	3755.87	60.39	--	3695.48	7.31	556.5	19.40	--	--	< 2.0	< 2.0	< 2.0	< 6.0
MW-A	6/14/2011	3755.87	60.63	--	3695.24	6.93	582.3	21.00	--	--	<1.0	<1.0	<1.0	<3.0
MW-A	9/27/2011	3755.87	61.04	--	3694.83	7.65	538.6	20.80	--	--	<1.0	<1.0	<1.0	<3.0
MW-A	12/13/2011	3755.87	61.24	--	3694.63	7.50	574.1	17.5	--	--	<1.0	<1.0	<1.0	<3.0
MW-A	3/27/2012	3755.87	61.39	--	3694.48	7.79	515.8	19.7	--	--	<1.0	<1.0	<1.0	<3.0
MW-A	6/19/2012	3755.87	61.54	--	3694.33	7.53	518.1	20.2	--	--	<1.0	<1.0	<1.0	<3.0
MW-B	3/5/2008	3755.94	61.66	--	3694.28	6.67	836	16.99	2.49	-214.1	**550**	64	130	**730**
MW-B	6/2/2008	3755.94	61.69	--	3694.25	7.08	868	19.99	1.09	-150.1	**444**	86.5	155	**716**
MW-B	9/15/2008	3755.94	62.04	--	3693.90	6.60	902	19.63	0.56	-151.6	**398**	36.6	157	**947**
MW-B(d)	9/15/2008	3755.94	62.04	--	3693.90	6.60	902	19.63	0.56	-151.6	**488**	46.0	200	**1,210**
MW-B	12/3/2008	3755.94	61.93	--	3694.01	6.93	889	18.39	1.57	-161.4	**25.6**	0.56 J	7.1	29.2
MW-B	2/27/2009	3755.94	61.68	--	3694.26	6.87	921	18.83	0.96	-115.7	**592**	86.3	176	**1,230**
MW-B	6/25/2009	3755.94	61.63	--	3694.31	6.60	130	19.80	2.50	-131.0	**1,490**	270	411	**2,750**
MW-B	9/1/2009	3755.94	61.81	--	3694.13	6.60	130	20.36	1.92	-206.0	**1,420**	195	380	**2,930**
MW-B	11/17/2009	3755.94	61.85	--	3694.09	6.99	822	17.50	--	--	**199**	2.9	68.5	159
MW-B	3/25/2010	3755.94	61.70	--	3694.24	6.99	1007	20.80	--	--	**199**	7.8	112	375
MW-B	6/8/2010	3755.94	61.77	--	3694.17	6.98	866	21.56	--	--	**438**	20.2	161	**836**
MW-B(d)	6/8/2010	3755.94	61.77	--	3694.17	6.98	866	21.56	--	--	**631**	26.8	191	**1,230**
MW-B	9/21/2010	3755.94	61.58	--	3694.36	6.73	981.4	19.70	--	--	**572 a**	21.7	167	**885**
MW-B	12/16/2010	3755.94	61.61	--	3694.33	7.04	994.3	17.50	--	--	**154**	14.6	52.8	239
MW-B	3/11/2011	3755.94	61.74	--	3694.20	6.89	945.9	19.5	--	--	**360 a**	19.9	175	**742**
MW-B	6/14/2011	3755.94	61.95	--	3693.99	6.69	997.8	20.1	--	--	**295 a**	9.2	135	584
MW-B(d)	6/14/2011	3755.94	61.95	--	3693.99	6.69	997.8	20.1	--	--	**448 a**	11.0	162	**932 a**
MW-B	9/27/2011	3755.94	62.43	--	3693.51	7.3	872.7	20.8	--	--	**225 a**	0.8	147	464 a
MW-B	12/13/2011	3755.94	62.60	--	3705.19	7.07	1006	18.2	--	--	**357 a**	10	157	581 a
MW-B*	3/27/2012	3755.94	62.94	0.29	3693.23				LNAPL present					
MW-B*	6/19/2012	3755.94	64.10	1.65	3693.17				LNAPL present					

Table 2 **Historical Groundwater Analytical Results** - DCP Hobbs Gas Plant, Lea County, New Mexico

Well ID	Date	TOC (ft msl)	DTW (ft bgs)	LNAPL thickness feet	GWE (ft msl)	pH s.u.	Conductivitiy µS/cm	Temperature °C	DO mg/l	ORP mV	Benzene	Toluene	Ethyl-benzene	Total Xylenes
											Concentrations in µg/l			
NMWQCC Cleanup Levels											**10**	**750**	**750**	**620**
MW-C	3/5/2008	3755.59	61.18	--	3694.41	6.91	535	17.46	6.50	-104.1	**61**	5.3	19.0	78.0
MW-C(d)	3/5/2008	3755.59	61.18	--	3694.41	6.91	535	17.46	6.50	-104.1	**160**	< 25	160	140
MW-C	6/2/2008	3755.59	61.22	--	3694.37	6.90	781	20.00	2.64	-121.2	**75.4**	4.9	26.3	121
MW-C(d)	6/2/2008	3755.59	61.22	--	3694.37	6.90	781	20.00	2.64	-121.2	**103**	8.1	36.9	170
MW-C	9/15/2008	3755.59	61.54	--	3694.05	6.51	679	18.99	1.97	160.3	**130**	5.7	47.3	222
MW-C	12/3/2008	3755.59	61.48	--	3694.11	6.88	621	18.24	2.31	-17.8	**39.0**	< 0.48	10.5	33.3
MW-C(d)	12/3/2008	3755.59	61.48	--	3694.11	6.88	621	18.24	2.31	-17.8	**50.6**	< 0.48	13.6	44.5
MW-C	2/27/2009	3755.59	61.15	--	3694.44	6.90	614	18.56	1.96	-8.7	**69.9**	0.78 J	20.1	86.8
MW-C(d)	2/27/2009	3755.59	61.15	--	3694.44	6.90	614	18.56	1.96	-8.7	**36.6**	< 0.48	10.0	43.3
MW-C	6/25/2009	3755.59	61.16	--	3694.43	6.60	760	19.60	4.42	54.0	**54.3**	0.72 J	11.9	53.0
MW-C(d)	6/25/2009	3755.59	61.16	--	3694.43	6.60	760	19.60	4.42	54.0	**64.2**	0.87 J	19.0	82.4
MW-C	9/1/2009	3755.59	61.35	--	3694.24	6.78	990	19.27	2.66	40.0	**82.8**	1.3 J	23.1	132
MW-C(d)	9/1/2009	3755.59	61.35	--	3694.24	6.78	990	19.27	2.66	40.0	**71.5**	1.0 J	19.8	110
MW-C	11/17/2009	3755.59	61.37	--	3694.22	7.26	631	17.17	--	--	**30**	< 2.0	9.3	53
MW-C(d)	11/17/2009	3755.59	61.37	--	3694.22	7.26	631	17.17	--	--	**25.7**	< 2.0	7.7	44.3
MW-C	3/25/2010	3755.59	61.27	--	3694.32	7.13	686	19.20	--	--	**48.2**	3.0	16.9	141
MW-C(d)	3/25/2010	3755.59	61.27	--	3694.32	7.13	686	19.20	--	--	**52.2**	2.9	20.3	123
MW-C	6/8/2010	3755.59	61.33	--	3694.26	6.92	621	23.06	--	--	**20.4**	1.1	8.5	52.3
MW-C	9/21/2010	3755.59	61.10	--	3694.49	6.58	741.8	19.2	--	--	**124**	3.1	50.4	276
MW-C	12/16/2010	3755.59	61.15	--	3694.44	6.95	760.5	18.1	--	--	**10.7**	0.59	5.1	25.2
MW-C(d)	12/16/2010	3755.59	61.15	--	3694.44	6.95	760.5	18.1	--	--	5.4	<0.43	2.8	12.6
MW-C	3/11/2011	3755.59	61.28	--	3694.31	6.80	725.3	19.3	--	--	**95.8**	5.7	42.4	235
MW-C	6/14/2011	3755.59	61.52	--	3694.07	6.60	737.1	21.2	--	--	**66.0**	2.8	29.8	145
MW-C	9/27/2011	3755.59	62.00	--	3693.59	7.34	677.2	20.5	--	--	**40.3**	0.7	19.9	94.4
MW-C	12/13/2011	3755.59	62.20	--	3693.39	7.06	730.1	16.5	--	--	**112**	4.3	29.8	200
MW-C(d)	12/13/2011	3755.59	62.20	--	3693.39	7.06	730.1	16.5	--	--	**44.1**	1.9	14.4	97.7
MW-C	3/27/2012	3755.59	62.33	--	3693.26	7.26	652.3	19.2	--	--	**37.0**	1.2	11.4	75.8
MW-C(d)	3/27/2012	3755.59	62.33	--	3693.26	7.26	652.3	19.2	--	--	**52.0**	1.8	15.0	104
MW-C	6/19/2012	3755.59	62.45	--	3693.14	7.15	701.2	20.0	--	--	**66.8**	1.9	20.1	135

Table 2. Historical Groundwater Analytical Results - DCP Hobbs Gas Plant, Lea County, New Mexico

Well ID	Date	TOC	DTW	LNAPL thickness	GWE	pH	Conductivitiy	Temperature	DO	ORP	Benzene	Toluene	Ethyl-benzene	Total Xylenes
		(ft msl)	(ft bgs)	feet	(ft msl)	s.u.	µS/cm	°C	mg/l	mV	Concentrations in µg/l			
NMWQCC Cleanup Levels											**10**	**750**	**750**	**620**
MW-D	3/5/2008	3755.43	60.77	--	3694.66	6.85	507	17.23	9.66	22.5	< 1.0	< 5.0	< 1.0	< 3.0
MW-D	6/2/2008	3755.43	60.77	--	3694.66	7.13	668	19.99	5.39	29.2	< 0.46	< 0.48	< 0.45	< 1.4
MW-D	9/15/2008	3755.43	61.10	--	3694.33	6.64	646	19.42	3.65	233.1	< 0.46	< 0.48	< 0.45	< 1.4
MW-D	12/3/2008	3755.43	61.08	--	3694.35	7.09	587	17.95	5.46	175.5	< 0.46	< 0.48	< 0.45	< 1.4
MW-D	2/27/2009	3755.43	60.79	--	3694.64	7.01	589	19.59	7.22	77.1	< 0.46	< 0.48	< 0.45	< 1.4
MW-D	6/25/2009	3755.43	60.77	--	3694.66	6.70	820	20.10	6.38	177.0	< 2.0	< 2.0	< 2.0	< 6.0
MW-D	9/1/2009	3755.43	60.96	--	3694.47	6.81	860	19.90	6.11	118.0	< 2.0	< 2.0	< 2.0	< 6.0
MW-D	11/17/2009	3755.43	60.96	--	3694.47	7.67	658	16.67	--	--	< 2.0	< 2.0	< 2.0	< 6.0
MW-D	3/25/2010	3755.43	60.89	--	3694.54	7.18	706	19.50	--	--	< 2.0	< 2.0	< 2.0	< 6.0
MW-D	6/8/2010	3755.43	60.91	--	3694.52	7.09	636	22.28	--	--	< 2.0	< 2.0	< 2.0	< 6.0
MW-D	9/21/2010	3755.43	60.66	--	3694.77	6.84	730.5	19.30	--	--	<0.50	<0.43	<0.55	<1.7
MW-D	12/16/2010	3755.43	60.72	--	3694.71	7.03	794.7	18.70	--	--	<0.50	<0.43	<0.55	<1.7
MW-D	3/11/2011	3755.43	60.84	--	3694.59	6.82	760.7	19.40	--	--	<2.0	<2.0	<2.0	<6.0
MW-D	6/14/2011	3755.43	61.09	--	3694.34	6.65	842.4	20.00	--	--	<1.0	<1.0	<1.0	<3.0
MW-D	9/27/2011	3755.43	61.55	--	3693.88	7.21	708.7	20.60	--	--	<1.0	<1.0	<1.0	<3.0
MW-D	12/13/2011	3755.43	61.70	--	3693.73	7.28	771.7	16.7	--	--	<1.0	<1.0	<1.0	<3.0
MW-D	3/27/2012	3755.43	61.84	--	3693.59	7.18	659.7	20.5	--	--	<1.0	<1.0	<1.0	<3.0
MW-D	6/19/2012	3755.43	61.97	--	3693.46	7.26	706.4	21.1	--	--	<1.0	<1.0	<1.0	<3.0
MW-E	3/5/2008	3754.36	60.75	--	3693.61	6.89	487	17.29	8.99	38.4	**14**	< 5.0	3.9	14
MW-E	6/2/2008	3754.36	60.78	--	3693.58	7.07	633	19.91	3.72	9.4	< 0.46	< 0.48	< 0.45	< 1.4
MW-E	9/15/2008	3754.36	61.21	--	3693.15	6.74	601	19.27	4.02	228.3	< 0.46	< 0.48	< 0.45	< 1.4
MW-E	12/3/2008	3754.36	61.13	--	3693.23	7.03	592	18.58	5.25	186.2	< 0.46	< 0.48	< 0.45	< 1.4
MW-E	2/27/2009	3754.36	60.81	--	3693.55	7.01	590	19.10	6.29	91.2	< 0.46	< 0.48	< 0.45	< 1.4
MW-E	6/25/2009	3754.36	60.74	--	3693.62	6.80	270	20.10	5.19	60.0	< 2.0	< 2.0	< 2.0	< 6.0
MW-E	9/1/2009	3754.36	60.93	--	3693.43	6.84	780	20.94	5.95	16.0	< 2.0	< 2.0	< 2.0	< 6.0
MW-E	11/17/2009	3754.36	60.94	--	3693.42	7.32	610	17.06	--	--	< 2.0	< 2.0	< 2.0	< 6.0
MW-E	3/25/2010	3754.36	60.82	--	3693.54	7.14	654	19.50	--	--	< 2.0	< 2.0	< 2.0	< 6.0
MW-E	6/8/2010	3754.36	60.83	--	3693.53	7.00	612	22.50	--	--	< 2.0	< 2.0	< 2.0	< 6.0
MW-E	9/21/2010	3754.36	60.65	--	3693.71	6.72	730	19.40	--	--	<0.50	<0.43	<0.55	<1.7
MW-E(d)	9/21/2010	3754.36	60.65	--	3693.71	6.72	730	19.40	--	--	<0.50	<0.43	<0.55	<1.7
MW-E	12/16/2010	3754.36	60.65	--	3693.71	7.01	698.8	18.10	--	--	<0.50	<0.43	<0.55	<1.7
MW-E	3/11/2011	3754.36	60.75	--	3693.61	6.82	684.9	19.30	--	--	<2.0	<2.0	<2.0	<6.0
MW-E(d)	3/11/2011	3754.36	60.75	--	3693.61	6.82	684.9	19.30	--	--	<2.0	<2.0	<2.0	<6.0
MW-E	6/14/2011	3754.36	60.91	--	3693.45	6.63	727.9	21.00	--	--	<1.0	<1.0	<1.0	<3.0
MW-E	9/27/2011	3754.36	61.43	--	3692.93	7.42	607.3	20.90	--	--	<1.0	<1.0	<1.0	<3.0
MW-E(d)	9/27/2011	3754.36	61.43	--	3692.93	7.42	607.3	20.90	--	--	<1.0	<1.0	<1.0	<3.0
MW-E	12/13/2011	3754.36	61.59	--	3692.77	7.19	682.3	15.9	--	--	<1.0	<1.0	<1.0	<3.0
MW-E	3/27/2012	3754.36	61.66	--	3692.70	7.55	630.1	20.0	--	--	<1.0	<1.0	<1.0	<3.0
MW-E	6/19/2012	3754.36	61.81	--	3692.55	7.25	641.0	19.9	--	--	<1.0	<1.0	<1.0	<3.0

Table 2. Historical Groundwater Analytical Results - DCP Hobbs Gas Plant, Lea County, New Mexico

Well ID	Date	TOC	DTW	LNAPL thickness	GWE	pH	Conductivitiy	Temperature	DO	ORP	Benzene	Toluene	Ethyl - benzene	Total Xylenes
		(ft msl)	(ft bgs)	feet	(ft msl)	s.u.	µS/cm	°C	mg/l	mV	Concentrations in µg/l			
NMWQCC Cleanup Levels											**10**	**750**	**750**	**620**

* = Groundwater elevation corrected using a LNAPL specific gravity of 0.81

\\Den-s1\shared\Project Files\0590\059097-HOBBS\059097-REPORTS\059097-RPT11-3Q 2011 GWMR\[059097-11-T1 good.xls]Groundwater Analytical Results

Table 2. Historical Groundwater Analytical Results - DCP Hobbs Gas Plant, Lea County, New Mexico

Well ID	Date	TOC (ft msl)	DTW (ft bgs)	LNAPL thickness feet	GWE (ft msl)	pH s.u.	Conductivitiy µS/cm	Temperature °C	DO mg/l	ORP mV	Benzene	Toluene	Ethyl - benzene	Total Xylenes
											Concentrations in µg/l			
NMWQCC Cleanup Levels											**10**	**750**	**750**	**620**
MW-F	3/5/2008	3756.13	62.01	--	3694.12	6.76	657	17.01	9.71	3.6	1.9	< 5.0	< 1.0	3.8
MW-F	6/2/2008	3756.13	62.06	--	3694.07	6.76	879	19.00	3.08	21.4	< 0.46	< 0.48	< 0.45	< 1.4
MW-F	9/15/2008	3756.13	62.44	--	3693.69	6.43	876	19.17	2.52	234.3	< 0.46	< 0.48	< 0.45	< 1.4
MW-F	12/3/2008	3756.13	62.22	--	3693.91	6.76	917	17.79	3.79	188.4	< 0.46	< 0.48	< 0.45	< 1.4
MW-F	2/27/2009	3756.13	61.97	--	3694.16	6.77	857	18.61	3.85	93.4	< 0.46	< 0.48	< 0.45	< 1.4
MW-F	6/25/2009	3756.13	61.96	--	3694.17	6.20	100	19.80	5.56	221.0	< 2.0	< 2.0	< 2.0	< 6.0
MW-F	9/1/2009	3756.13	62.18	--	3693.95	6.51	110	19.25	5.27	108.0	< 2.0	< 2.0	< 2.0	< 6.0
MW-F	11/17/2009	3756.13	62.13	--	3694.00	6.93	1,030	18.67	--	--	< 2.0	< 2.0	< 2.0	< 6.0
MW-F	3/25/2010	3756.13	62.02	--	3694.11	6.94	1,053	19.00	--	--	< 2.0	< 2.0	< 2.0	< 6.0
MW-F	6/8/2010	3756.13	62.12	--	3694.01	7.03	900	22.06	--	--	< 2.0	< 2.0	< 2.0	< 6.0
MW-F	9/21/2010	3756.13	61.92	--	3694.21	6.67	1,003	19.10	--	--	<0.50	<0.43	<0.55	<1.7
MW-F	12/16/2010	3756.13	61.93	--	3694.20	6.90	1,058	17.60	--	--	<0.50	<0.43	<0.55	<1.7
MW-F	3/11/2011	3756.13	62.05	--	3694.08	6.84	1,017	19.00	--	--	<2.0	<2.0	<2.0	<6.0
MW-F	6/14/2011	3756.13	62.35	--	3693.78	6.53	1,053	20.10	--	--	<1.0	<1.0	<1.0	<3.0
MW-F	9/27/2011	3756.13	62.85	--	3693.28	7.05	890	20.40	--	--	<1.0	<1.0	<1.0	<3.0
MW-F	12/13/2011	3756.13	63.05	--	3693.08	7.12	922.0	16.7	--	--	<1.0	<1.0	<1.0	<3.0
MW-F	3/27/2012	3756.13	63.16	--	3692.97	7.20	754.8	20.6	--	--	<1.0	<1.0	<1.0	<3.0
MW-F	6/19/2012	3756.13	63.30	--	3692.83	7.23	776.1	19.7	--	--	<1.0	<1.0	<1.0	<3.0

Notes and Abbreviations:

ID = Identification

TOC = Top of casing

DTW = Depth to water

LNAPL = Light non-aqueous phase liquids

GWE = Groundwater elevation

DO = Dissolved oxygen

ORP = Oxidation reduction potential

BTEX = Benzene, toluene, ethylbenzene, and total xylenes by SW-846 8021 or 8260B

ft msl = Feet above mean sea level

ft bgs = Feet below ground surface

s.u. = Standard unit

µS/cm = Microsiemens per centimeter

°C = Degrees Celcius

mg/l = Milligrams per liter

mV = Millivolts

µg/l = Micrograms per liter

NMWQCC = New Mexico Water Quality Control Commission

a = Result is from run # 2

BOLD = Indicates concentration above the NMWQCC Cleanup Levels

<x = Not detected above x µg/l

-- = Not measured/not analyzed

(d) = Duplicate sample

Table 2. Historical Groundwater Analytical Results - DCP Hobbs Gas Plant, Lea County, New Mexico

Well ID	Date	TOC	DTW	LNAPL thickness	GWE	pH	Conductivitiy	Temperature	DO	ORP	Benzene	Toluene	Ethyl - benzene	Total Xylenes
		(ft msl)	(ft bgs)	feet	(ft msl)	s.u.	µS/cm	°C	mg/l	mV	Concentrations in µg/l			
NMWQCC Cleanup Levels											**10**	**750**	**750**	**620**

* = Groundwater elevation corrected using a LNAPL specific gravity of 0.81

\\Den-s1\shared\Project Files\0590\059097-HOBBS\059097-REPORTS\059097-RPT11-3Q 2011 GWMR\[059097-11-T1 good.xls]Groundwater Analytical Results

APPENDIX A

WELL SAMPLING FORMS

CRA

Groundwater Monitoring Field Sheet

Well ID	Time	DTP	DTW	Depth to Bottom	Product Thickness	Amount of Product Removed	Casing Diam.	Comments
MW-D		—	61.97	69.80	—	—	2	Good
MW-F		—	63.30	73.72	—	—	2	Good
MW-A		—	61.54	70.77	—	—	2	Good
MW-E		—	61.81	71.30	—	—	2	DUP-1
MW-C		—	62.45	73.85	—	—	2	Good
MW-B		62.45	64.10	70.80	1.65	0.50	2	Bailed Product

Project Name: Hobbs Gas Plant

Project Number/Task: 059097

Technician: J. Primeau | CL

Date: 6/19/2012

CONESTOGA-ROVERS & ASSOCIATES

WELL SAMPLING FORM
DISPOSABLE BAILER SAMPLING

Site ID: HOBBS GAS PLANT	CRA Mgr: J. RIGGS	Well ID: MW-A	
CRA Project No.: 059097	Date: 6/19/12	Field Staff: JP/CL	
Street Address:	City, State: LEA COUNTY, NM	Purging Device:	Teflon Disp. Bailer ○ POLY BAILER ●
		Sampling Method:	Teflon Disp. Bailer ○ POLY BAILER ●
Depth to Water: 61.54	Depth to Bottom: 70.77	Water Column Height: 9.23	
Volume/ft: 0.16	1 Casing Volume: 1.47	3 Casing Volumes: 4.43	
Well Diameter: 2"	Did Well Dewater?: NO	Total Gallons Purged: 4.50	
Start Purge Time: 1211	Stop Purge Time: 1219	Total Time: 8 mins	

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

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

NO PURGE APPROVED BY ADEC? ☐ **YES** ☐ **NO** *(If NO, please enter parameters below.)*

Time	Volume Purged (gallons)	Temp. (°C) ± 10%	DO ± 10%	pH ± 0.1	Cond. (mS) ± 3%	ORP (mv) ± 10	Comments
1217	4.00	22.4		7.75	524.60		
1218	4.25	21.7		7.61	538.2		
1219	4.50	20.2		7.53	518.1		

**** A minimum of three parameters must be monitored and recorded. ****
NOTE: If well is purged dry, DO NOT collect sample until it has recharged to approximately 80% of its pre-purge volume.

FIELD KIT RESULTS: Ferrous Iron _____ mg/L Nitrate _____ mg/L

Sample ID	Date	Time	Analytes / Analytical Method
MW-A	6/19/12	1220	○ DRO by AK102 ○ SVOCs by TCL8270 ○ PAHs by 8270 ○ RRO by AK103 ○ Lead by 6010 ○ PAHs by 8270SIM ○ Alkalinity by 2320B ○ Methane by 8015B ○ Nitrate/Nitrite by 353.2 ○ Sulfate by 300 ○ _____ ○ _____ ○ GRO by AK101 ○ BTEX by 8021B ● BTEX by 8260B ○ EDB by 8011 ○ HVOCs by 8260B ○ MtBE by 8260B ○ 1,2-DCA by 8260B

Additional Comments:

CONESTOGA-ROVERS & ASSOCIATES

WELL SAMPLING FORM
DISPOSABLE BAILER SAMPLING

Site ID: HOBBS GAS PLANT	CRA Mgr: J. RIGGS	Well ID: MW-C	
CRA Project No.: 059097	Date: 6/19/12	Field Staff: JP/CL	
Street Address:	City, State: LEA COUNTY, NM	Purging Device:	Teflon Disp. Bailer ○ POLY BAILER ◉
		Sampling Method:	Teflon Disp. Bailer ○ POLY BAILER ◉
Depth to Water: 62.45	Depth to Bottom: 73.85	Water Column Height: 11.4	
Volume/ft: 0.16	1 Casing Volume: 1.82	3 Casing Volumes: 5.47	
Well Diameter: 2"	Did Well Dewater?: NO	Total Gallons Purged: 5.75	
Start Purge Time: 1242	Stop Purge Time: 1251	Total Time: 9 MINS	

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

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

NO PURGE APPROVED BY ADEC? ☐ **YES** ☐ **NO** *(If NO, please enter parameters below.)*

Time	Volume Purged (gallons)	Temp. (°C) ± 10%	DO ± 10%	pH ± 0.1	Cond. (mS) ± 3%	ORP (mv) ± 10	Comments
1249	5.25	20.3		7.25	702.3		
1250	5.50	20.2		7.24	704.8		
1251	5.75	20.0		7.15	701.2		

**** A minimum of three parameters must be monitored and recorded. ****
NOTE: If well is purged dry, DO NOT collect sample until it has recharged to approximately 80% of its pre-purge volume.

FIELD KIT RESULTS: Ferrous Iron _____ mg/L Nitrate _____ mg/L

Sample ID	Date	Time	Analytes / Analytical Method
MW-C	6/19/12	1252	○ DRO by AK102 ○ SVOCs by TCL8270 ○ PAHs by 8270 ○ RRO by AK103 ○ Lead by 6010 ○ PAHs by 8270SIM ○ Alkalinity by 2320B ○ Methane by 8015B ○ Nitrate/Nitrite by 353.2 ○ Sulfate by 300 ○ _____ ○ _____ ○ GRO by AK101 ○ BTEX by 8021B ◉ BTEX by 8260B ○ EDB by 8011 ○ HVOCs by 8260B ○ MtBE by 8260B ○ 1,2-DCA by 8260B

Additional Comments:

CONESTOGA-ROVERS & ASSOCIATES

WELL SAMPLING FORM
DISPOSABLE BAILER SAMPLING

Site ID: HOBBS GAS PLANT	CRA Mgr: J. RIGGOL	Well ID: MW-D	
CRA Project No.: 059097	Date: 6/19/12	Field Staff: JP/CL	
Street Address:	City, State: LEA COUNTY, NM	Purging Device:	Teflon Disp. Bailer ○ Poly Bailer ◉
		Sampling Method:	Teflon Disp. Bailer ○ Poly Bailer ◉
Depth to Water: 61.97	Depth to Bottom: 69.80	Water Column Height: 7.83	
Volume/ft: 0.16	1 Casing Volume: 1.25	3 Casing Volumes: 3.75	
Well Diameter: 2"	Did Well Dewater?: NO	Total Gallons Purged: 4.00	
Start Purge Time: 1140	Stop Purge Time: 1147	Total Time: 7mins	

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

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

NO PURGE APPROVED BY ADEC? ☐ **YES** ☐ **NO** *(If NO, please enter parameters below.)*

Time	Volume Purged (gallons)	Temp. (°C) ± 10%	DO ± 10%	pH ± 0.1	Cond. (mS) ± 3%	ORP (mv) ± 10	Comments
1145	3.50	21.8		7.49	691.2		
1146	3.75	20.6		7.36	705.1		
1147	4.00	21.1		7.26	706.4		

**** A minimum of three parameters must be monitored and recorded. ****
NOTE: If well is purged dry, DO NOT collect sample until it has recharged to approximately 80% of its pre-purge volume.

FIELD KIT RESULTS: Ferrous Iron _____ mg/L Nitrate _____ mg/L

Sample ID	Date	Time	Analytes / Analytical Method
MW-D	6/19/12	1148	○ DRO by AK102 ○ SVOCs by TCL8270 ○ PAHs by 8270 ○ RRO by AK103 ○ Lead by 6010 ○ PAHs by 8270SIM ○ Alkalinity by 2320B ○ Methane by 8015B ○ Nitrate/Nitrite by 353.2 ○ Sulfate by 300 ○ _____ ○ _____ ○ GRO by AK101 ○ BTEX by 8021B ◉ BTEX by 8260B ○ EDB by 8011 ○ HVOCs by 8260B ○ MtBE by 8260B ○ 1,2-DCA by 8260B

Additional Comments:

CONESTOGA-ROVERS & ASSOCIATES

WELL SAMPLING FORM
DISPOSABLE BAILER SAMPLING

Site ID: HOBBS GAS PLANT	CRA Mgr: J. RIGGOL	Well ID: MW-E	
CRA Project No.: 059097	Date: 6/19/12	Field Staff: JP/CL	
Street Address:	City, State: LEA COUNTY, NM	Purging Device:	Teflon Disp. Bailer ○ POLY BAILER ◉
		Sampling Method:	Teflon Disp. Bailer ○ POLY BAILER ◉
Depth to Water: 61.81	Depth to Bottom: 71.30	Water Column Height: 9.49	
Volume/ft: 0.16	1 Casing Volume: 1.51	3 Casing Volumes: 4.55	
Well Diameter: 2"	Did Well Dewater?: NO	Total Gallons Purged: 4.75	
Start Purge Time: 1227	Stop Purge Time: 1234	Total Time: 7 MINS	

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

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

NO PURGE APPROVED BY ADEC? ☐ **YES** ☐ **NO** *(If NO, please enter parameters below.)*

Time	Volume Purged (gallons)	Temp. (°C) ± 10%	DO ± 10%	pH ± 0.1	Cond. (mS) ± 3%	ORP (mv) ± 10	Comments
1232	4.25	21.4		7.37	632.0		
1233	4.50	20.0		7.34	627.8		
1234	4.75	19.9		7.25	641.0		

**** A minimum of three parameters must be monitored and recorded. ****
NOTE: If well is purged dry, DO NOT collect sample until it has recharged to approximately 80% of its pre-purge volume.

FIELD KIT RESULTS: Ferrous Iron _____ mg/L Nitrate _____ mg/L

Sample ID	Date	Time	Analytes / Analytical Method
MW-E	6/19/12	1235	○ DRO by AK102 ○ SVOCs by TCL8270 ○ PAHs by 8270 ○ RRO by AK103 ○ Lead by 6010 ○ PAHs by 8270SIM ○ Alkalinity by 2320B ○ Methane by 8015B ○ Nitrate/Nitrite by 353.2 ○ Sulfate by 300 ○ _____ ○ _____ ○ GRO by AK101 ◉ BTEX by 8260B ○ EDB by 8011 ○ BTEX by 8021B ○ MtBE by 8260B ○ 1,2-DCA by 8260B ○ HVOCs by 8260B
DUP-1	—	—	

Additional Comments:

CONESTOGA-ROVERS & ASSOCIATES

WELL SAMPLING FORM
DISPOSABLE BAILER SAMPLING

Site ID: HOBBS GAS PLANT	CRA Mgr: J. RICCI	Well ID: MW-F	
CRA Project No.: 059097	Date: 6/19/12	Field Staff: JP/CL	
Street Address:	City, State: LEA COUNTY, NM	Purging Device:	Teflon Disp. Bailer ○ POLY BAILER ◉
		Sampling Method:	Teflon Disp. Bailer ○ POLY BAILER ◉
Depth to Water: 63.30	Depth to Bottom: 73.72	Water Column Height: 10.42	
Volume/ft: 0.16	1 Casing Volume: 1.66	3 Casing Volumes: 5.00	
Well Diameter: 2"	Did Well Dewater?: NO	Total Gallons Purged: 5.10	
Start Purge Time: 1155	Stop Purge Time: 1204	Total Time: 9 MINS	

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

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

NO PURGE APPROVED BY ADEC? ☐ **YES** ☐ **NO** *(If NO, please enter parameters below.)*

Time	Volume Purged (gallons)	Temp. (°C) ± 10%	DO ± 10%	pH ± 0.1	Cond. (mS) ± 3%	ORP (mv) ± 10	Comments
1202	4.50	20.3		7.38	750.2		
1203	4.75	19.0		7.27	775.2		
1204	5.10	19.7		7.23	776.1		

**** A minimum of three parameters must be monitored and recorded.****
NOTE: If well is purged dry, DO NOT collect sample until it has recharged to approximately 80% of its pre-purge volume.

FIELD KIT RESULTS: Ferrous Iron _____ mg/L Nitrate _____ mg/L

Sample ID	Date	Time	Analytes / Analytical Method
MW-F	6/19/12	1205	○ DRO by AK102 ○ SVOCs by TCL8270 ○ PAHs by 8270 ○ RRO by AK103 ○ Lead by 6010 ○ PAHs by 8270SIM ○ Alkalinity by 2320B ○ Methane by 8015B ○ Nitrate/Nitrite by 353.2 ○ Sulfate by 300 ○ _____ ○ _____ ○ GRO by AK101 ○ BTEX by 8021B ◉ BTEX by 8260B ○ EDB by 8011 ○ HVOCs by 8260B ○ MtBE by 8260B ○ 1,2-DCA by 8260B
Additional Comments:			

APPENDIX B

STANDARD OPERATING PROCEDURES FOR GROUNDWATER MONITORING AND SAMPLING

CONESTOGA-ROVERS
& ASSOCIATES

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

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.

CONESTOGA-ROVERS
& ASSOCIATES

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.

APPENDIX C

LABORATORY ANALYTICAL REPORT