

1R - 400

REPORTS

DATE:

7/12/2004

Remediacon Incorporated

Geological and Engineering Services
mstewart@remediacon.com

PO Box 302, Evergreen, Colorado 80437

Telephone: 303.674.4370

Facsimile: 720.528.8132

July 12, 2004

Mr. Stephen Weathers
Duke Energy Field Services, LP
370 Seventeenth Street, Suite 2500
Denver, Colorado 80202

Re: June 2004 Groundwater Monitoring Summary at the X-Line Pipeline Release,
Etcheverry Ranch, Lea County, New Mexico
(Unit B, Section 7, Township 15 South, Range 34 East:)

Dear Mr. Weathers:

This letter summarizes the results of the June 2004 groundwater monitoring activities completed for Duke Energy Field Services, LP (DEFS) at the X-Line Pipeline Release on the Etcheverry Ranch at coordinates latitude 33° 02' 11", longitude 103° 32' 48".

Seven groundwater-monitoring wells, MW-1 through MW-7, are sampled at the site. The well locations are shown on Figure 1. Monitoring well construction information is summarized in Table 1. An eighth well, MW-8, is used to recover free product, and it is not monitored.

The seven wells were sampled on June 25, 2004. The depths to water were first measured in each well. The data was used to calculate the casing volumes. The wells were then purged and sampled using disposable bailers. Well purging consisted of evacuating a minimum of three casing volumes of water and then continuing bailing until the field parameters temperature, pH and conductivity stabilized. The field sampling forms are attached.

Unfiltered samples were collected from each well upon stabilization. Each sample was analyzed for benzene, toluene, ethylbenzene and xylenes (BTEX). A field duplicate was collected from well MW-3. A matrix spike/matrix spike duplicate was collected from MW-4. The laboratory also provided a trip blank. The samples were placed in an ice-filled chest immediately upon collection. The samples were delivered directly to the analytical laboratory Environmental Labs of Texas in Midland Texas using standard chain-of-custody protocol. All development and purge water was disposed of at an approved OCD facility.

The groundwater elevation measurements for all sampling episodes are summarized in Table 2. Hydrographs for wells MW-1 through MW-7 are shown on Figure 2. Well MW-8 is not included because the elevation of the well is not known.

Figure 2 establishes that the relative water-table elevation differences between wells have remained essentially constant over the 2-year measurement period with the exception of MW-2 in June 2004. This consistency shows that the groundwater is continuous and acting in an equilibrated condition.

A water-table contour map based upon the June 2004 measurements was generated using the Surfer program with a kriging option. The map is reproduced as Figure 3. The water-table contours in Figure 3 indicate that groundwater gradient is shallow, approximately 0.008 feet per foot, with a predominately eastward groundwater flow direction. The Etcheverry Ranch residences lie approximately 1 mile south of the release location so they are cross-gradient from any impacted groundwater.

The free product thickness values measured in MW-8 during the monitoring program are summarized in Table 3. The values were generally measured when the system was not operating. The 0.03 foot thickness measured on June 25, 2004 was measured a minimum of two weeks after the system quit pumping. Active removal of free product continues through the use of the soil vapor extraction system that is attached to MW-8.

Table 4 summarizes the June 2004 sampling results. A copy of the laboratory report is attached. The laboratory quality control data included in the attached report indicated that the matrix spikes and the matrix spike duplicate were within the acceptable range. The duplicate samples from well MW-3 agree well as shown on Table 4. There were no BTEX constituents detected in the trip blank. Based upon this information, Remediacon concludes that the data is acceptable for its intended use.

The June 2004 benzene distribution is depicted on Figure 4. None of the down-gradient boundary wells (MW-4, MW-5, MW-6 and MW-7) contained detectable concentrations of the BTEX constituents.

The BTEX data collected for DEFS since the start of the project are summarized in Table 4. Examination of Table 4 indicates the following:

1. BTEX constituents have either never been detected or reported at the reporting limit in wells MW-1 (up-gradient), MW-4 and MW-7;
2. The trace hydrocarbon constituent concentrations initially detected in MW-5 and MW-6 have remained below the method detection limits since July 2003;
3. The BTEX concentrations in interior wells MW-2 and MW-3 have declined substantially from the pre-remediation concentrations. The benzene concentrations for these wells are graphed in Figure 5. This continued decline demonstrates that the remediation system has not only stabilized the plume but also continues to lower the dissolved BTEX concentrations.

Mr. Stephen Weathers
July 12, 2004
Page 3

Remediacom recommends that groundwater samples be collected from MW-1 through MW-7 in September 2004. The free product collection system will not operate but will remain onsite until at least the next sampling episode should it be needed again. The air sparge system and soil vapor extraction systems will continue to operate on a regular basis. The thickness of free product will be measured in MW-8 each time the air sparge system and soil vapor extraction systems are maintained.

Do not hesitate to contact me if you have any questions or comments on this report.

Respectfully Submitted,
REMEDIA COM INCORPORATED

Michael H. Stewart

Michael H. Stewart, P.E.
Principal Engineer

MHS:tbm

TABLES

Table 1 – Monitoring Well Completions

Well	Date Installed	Well Depth	Completion Interval	Top of Sand
MW-1	3/02	91	71-91	68
MW-2	3/02	88	68-88	62
MW-3	3/02	91	71-91	61
MW-4	4/02	91	71-91	68
MW-5	4/02	89	69-89	56
MW-6	4/02	90	70-90	68
MW-7	5/02	85	65-85	59

Notes: All units in Feet

Hydrocarbon extraction well (MW-8) completed between approximately 80 and 100 feet

Table 2- Measured Water Table Elevations

Well	5/1/2002	9/6/2002	4/28/2003	6/19/03	7/17/03	8/20/03	9/22/03	10/29/03	11/20/03	2/18/04	6/25/04
MW-1	4,088.54	4088.53	4,088.55	4,088.55	4,088.52	4,088.54	4,088.53	4,088.60	4,088.59	4,089.19	4,089.12
MW-2	4,089.02	4089.03	4,089.05	4,089.07	4,089.04	4,089.09	4,089.06	4,089.11	4,089.13	4,088.90	4,089.03
MW-3	4,088.83	4088.86	4,088.86	4,088.85	4,088.82	4,088.87	4,088.84	4,088.90	4,088.95	4,088.82	4,088.81
MW-4	4,088.63	4088.73	4,088.73	4,088.73	4,088.70	4,088.72	4,088.71	4,088.78	4,088.78	4,088.74	4,088.70
MW-5	4,088.60	4088.68	4,088.67	4,088.65	4,088.63	4,088.66	4,088.65	4,088.70	4,088.70	4,088.65	4,088.60
MW-6	4,088.69	4088.71	4,088.70	4,088.69	4,088.66	4,088.70	4,088.68	4,088.74	4,088.74	4,088.69	4,088.66
MW-7				4,088.04	4,088.01	4,088.04	4,088.03	4,088.08	4,088.08	4,087.66	4,087.63

All units in feet

Table 3 – Summary of Product Thickness in MW-8

Measurement Date	Product Thickness (feet)
9/6/02	5.20
4/28/03	5.65
6/19/03	4.01
7/17/03	3.93
8/20/03	PR
9/22/03	3.42
10/29/03	1.42
11/20/03	0.79
2/18/04	PR
6/25/04	0.03

PR product recovery system known to be running so measured value does not represent equilibrated condition

Table 4 – June 2004 Groundwater Monitoring Results

Well	Benzene	Toluene	Ethyl Benzene	Total Xylenes
MW-1	<0.001	<0.001	<0.001	<0.001
MW-2	0.00156	0.00108	0.0005J	0.00106J
MW-3	0.0164/ 0.0182	0.000163J/ <0.000153J	0.0136/ 0.0135	0.000114J/ 0.000121J
MW-4	<0.001	<0.001	<0.001	<0.001
MW-5	<0.001	<0.001	<0.001	<0.001
MW-6	<0.001	<0.001	<0.001	<0.001
MW-7	<0.001	<0.001	<0.001	<0.001
Trip blank	<0.001	<0.001	<0.001	<0.001

Notes: 1) All units in mg/l

2) The duplicate sample results for MW-3 are separated by a slash "/"

3) The toluene and xylenes concentrations from MW-3 are below the method detection limit and are qualified as estimates as denoted by the "J" in the result.

Table 5 – Summary of Laboratory Data

Benzene

Well	4/24/02	5/21/02	4/28/03	6/19/03	7/17/03	8/20/03	9/22/03	10/29/03	11/20/03	2/18/04	6/25/04
MW-1	<0.002	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
MW-2	0.0255	0.145	0.182	0.074	0.155	0.024	0.022	0.001	0.013	<0.001	0.00156
MW-3	0.061	0.176	0.099	0.047	0.063	0.017	0.049	0.044	0.048	0.0280	0.0173
MW-4	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
MW-5	<0.002	<0.002	0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
MW-6	<0.002	0.002	0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
MW-7	---	---	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	0.001	<0.001	<0.001

Toluene

Well	4/24/02	5/21/02	4/28/03	6/19/03	7/17/03	8/20/03	9/22/03	10/29/03	11/20/03	2/18/04	6/25/04
MW-1	<0.002	0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
MW-2	0.107	0.833	0.092	0.066	0.15	0.092	0.051	0.004	0.017	0.00652	0.00108
MW-3	<0.002	0.004	0.005	<0.001	0.002	<0.001	<0.001	<0.001	0.003	<0.001	0.000158
MW-4	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
MW-5	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
MW-6	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
MW-7	---	---	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	<0.001	<0.001

Notes: All units in mg/l. Duplicate sample results were averaged together
Indicators for estimated (J) values not shown

Table 5 – Summary of Laboratory Data (continued)

Ethylbenzene

Well	4/24/02	5/21/02	4/28/03	6/19/03	7/17/03	8/20/03	9/22/03	10/29/03	11/20/03	2/18/04	6/25/04
MW-1	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
MW-2	0.013	0.062	0.121	0.069	0.112	0.012	0.012	0.002	0.005	0.00301	0.0005
MW-3	0.023	0.023	0.03	0.02	0.023	0.006	0.02	0.018	0.017	0.0138	0.0136
MW-4	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
MW-5	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
MW-6	0.004	0.002	0.002	<0.001	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
MW-7	---	---	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	<0.001	<0.001

Total Xylenes

Well	4/24/02	5/21/02	4/28/03	6/19/03	7/17/03	8/20/03	9/22/03	10/29/03	11/20/03	2/18/04	6/25/04
MW-1	<0.006	<0.006	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0514	<0.001
MW-2	0.38	1.27	0.133	0.103	0.186	0.179	0.079	0.017	0.034	0.00067	0.00106
MW-3	0.189	0.451	0.039	0.006	0.007	0.001	0.001	0.001	0.004	<0.001	0.000118
MW-4	<0.006	<0.006	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
MW-5	0.011	<0.006	0.003	0.003	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
MW-6	0.123	0.047	0.01	<0.001	0.004	<0.001	<0.001	0.003	<0.001	<0.001	<0.001
MW-7	---	---	<0.001	<0.001	<0.001	<0.001	<0.001	0.006	0.001	<0.001	<0.001

Notes: All units in mg/l

Duplicate sample results were averaged together
Indicators for estimated (J) values not shown

FIGURES

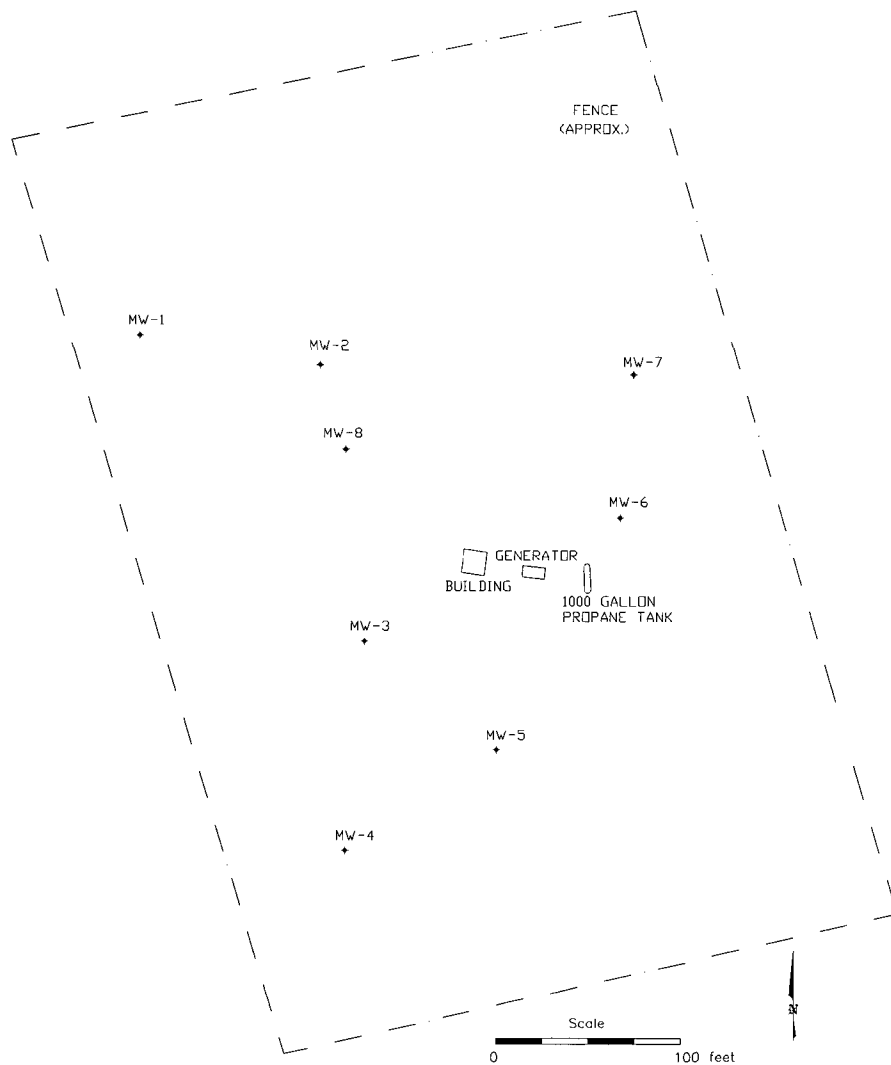


Figure 1 – Facility Configuration
X-Line Remediation



DRAWN BY: MHS

REVISED:

DATE: 6/04

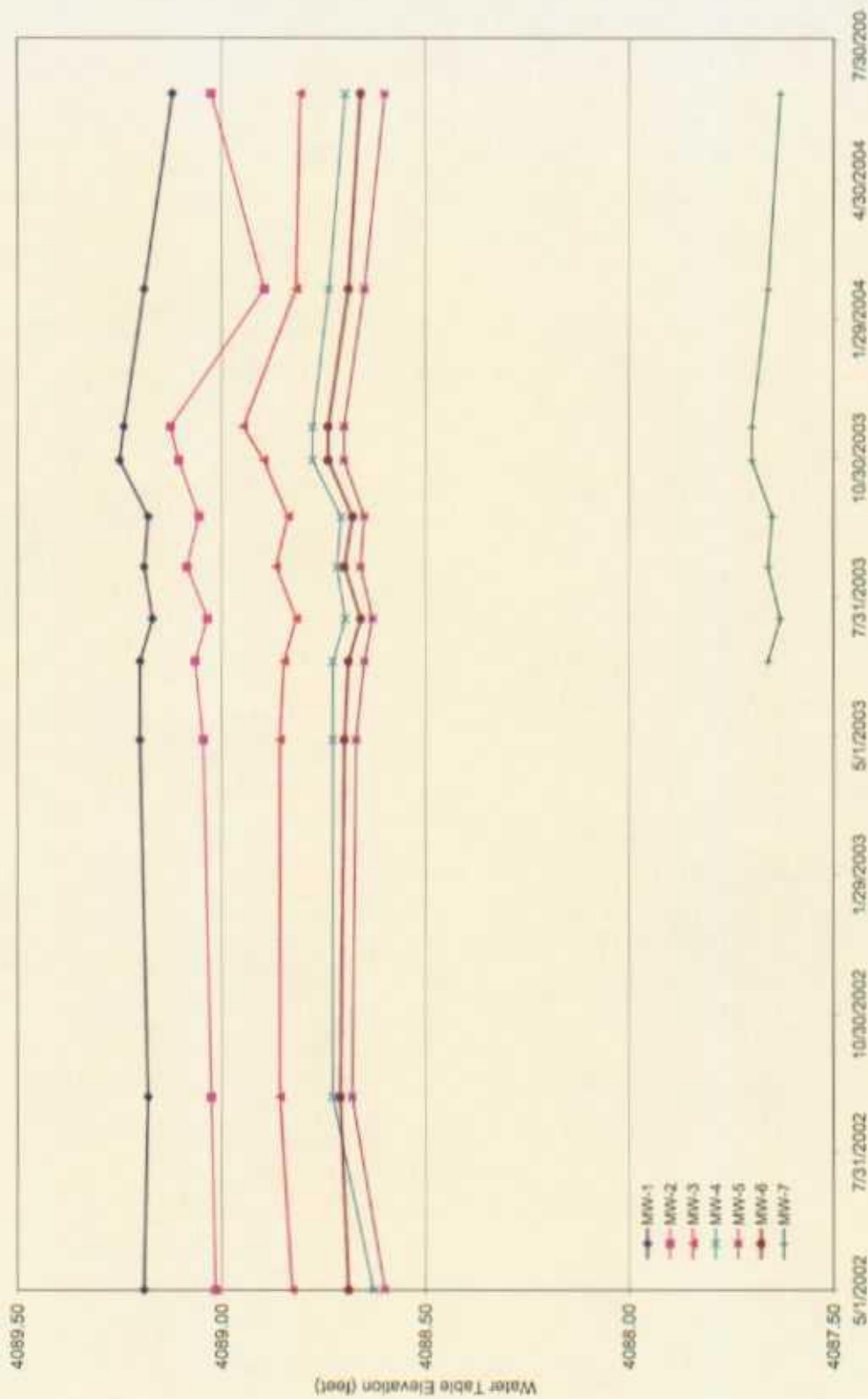


Figure 2 - Well Hydrographs

X-Line Remediation

Duke Energy
Field Services.

DRAWN BY: MHS

DATE: 6/04

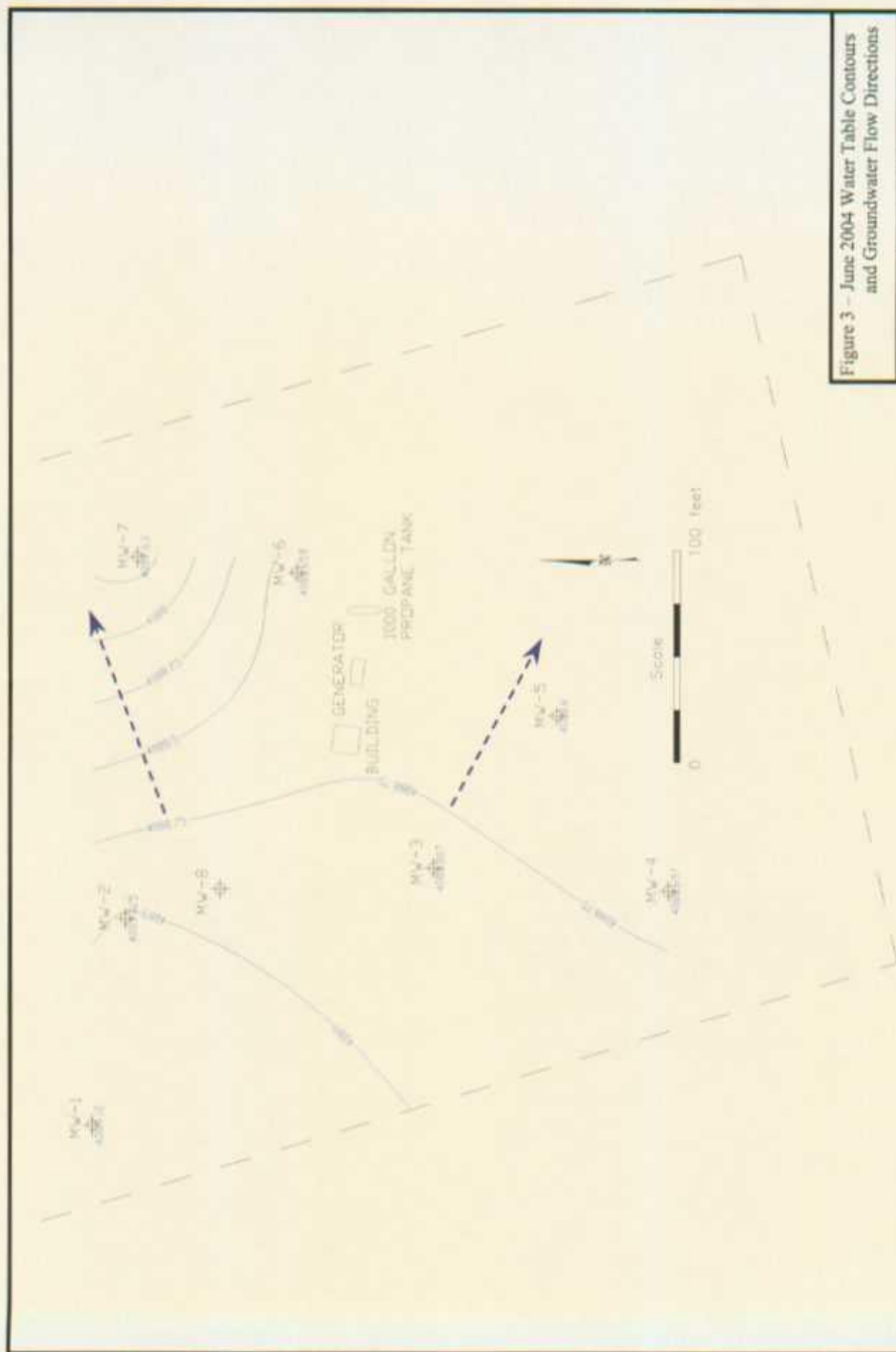


Figure 3 - June 2004 Water Table Contours
and Groundwater Flow Directions

X-Line Remediation

**Duke Energy
Field Services.**

DRAWN BY: MHS
DATE: 6/04

Note: Projected groundwater flow directions shown by dashed blue arrows.



Figure 4 - June 2004 Benzene Concentrations

X-Line Remediation

**Duke Energy
Field Services.**

DRAWN BY: MHS

DATE: 6/04

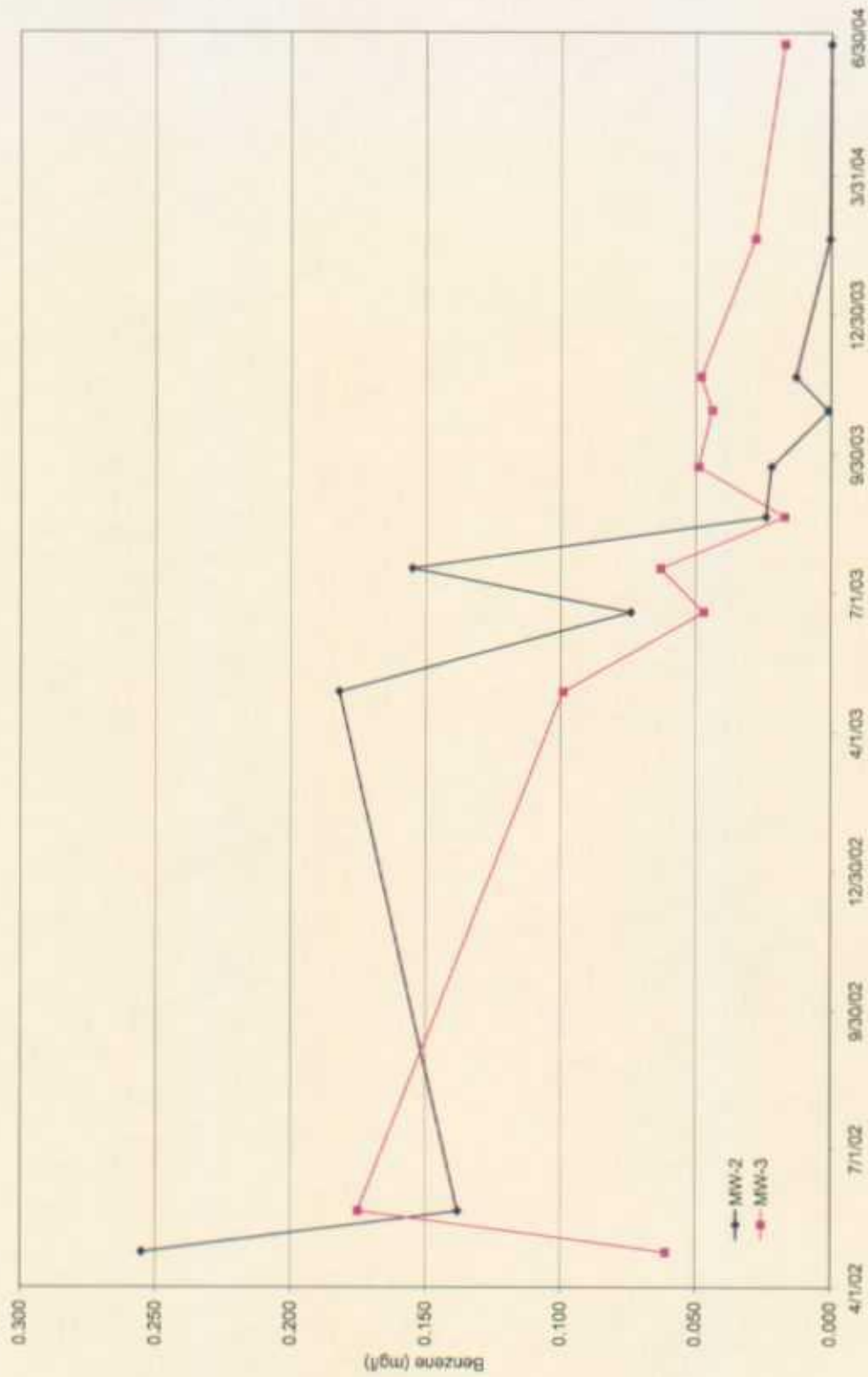


Figure 5 – Benzene Concentrations in MW-2 and MW-3

X-Line Remediation

Duke Energy
Field Services.

DRAWN BY: MHS

DATE: 6/3/04

FIELD SAMPLING FORMS
AND
LABORATORY ANALYTICAL REPORT

WELL SAMPLING DATA FORM

CLIENT: Duke Energy Field Services WELL ID: MW-1
 SITE NAME: X Line (Etchevery Ranch) DATE: 6/25/2004
 PROJECT NO. F-106 SAMPLER: J. Ferguson/D. Littlejohn

PURGING METHOD: ☒ Hand Bailed ☐ Pump If Pump, Type: _____

SAMPLING METHOD: ☒ Disposable Bailer ☐ Direct from Discharge Hose ☐ Other: _____

DESCRIBE EQUIPMENT DECONTAMINATION METHOD BEFORE SAMPLING THE WELL:

☒ Gloves ☒ Alconox ☒ Distilled Water Rinse ☐ Other: _____

DISPOSAL METHOD OF PURGE WATER: ☐ Surface Discharge ☐ Drums ☒ Disposal Facility

TOTAL DEPTH OF WELL: 94.30 Feet

DEPTH TO WATER: 77.57 Feet

HEIGHT OF WATER COLUMN: 16.73 Feet

WELL DIAMETER: 2.0 Inch

8.2 Minimum Gallons to
purge 3 well volumes
(Water Column Height x 0.49)

TIME	VOLUME PURGED	TEMP. °F	COND. mS/cm	pH	DO mg/L	Turb	PHYSICAL APPEARANCE AND REMARKS
8:18	0	-	-	-	-	-	Begin Hand Bailing
8:27	3	67.5	0.68	8.47	7.4	-	
8:36	6	66.8	0.67	8.46	7.4	-	
8:45	9	66.5	0.66	8.48	7.5	-	
0:27	:Total Time (hr:min)		9	:Total Vol (gal)		0.33	:Flow Rate (gal/min)

SAMPLE NO.: Collected Sample No.: 040625 0850

ANALYSES: BTEX (8021-B)

COMMENTS: _____

WELL SAMPLING DATA FORM

CLIENT: Duke Energy Field Services WELL ID: MW-2
 SITE NAME: X Line (Etcheverry Ranch) DATE: 6/25/2004
 PROJECT NO. F-106 SAMPLER: J. Ferguson/D. Littlejohn

PURGING METHOD: ☒ Hand Bailed ☐ Pump If Pump, Type: _____

SAMPLING METHOD: ☒ Disposable Bailer ☐ Direct from Discharge Hose ☐ Other: _____

DESCRIBE EQUIPMENT DECONTAMINATION METHOD BEFORE SAMPLING THE WELL:

☒ Gloves ☒ Alconox ☒ Distilled Water Rinse ☐ Other: _____

DISPOSAL METHOD OF PURGE WATER: ☐ Surface Discharge ☐ Drums ☒ Disposal Facility

TOTAL DEPTH OF WELL: 89.90 Feet

DEPTH TO WATER: 77.49 Feet

HEIGHT OF WATER COLUMN: 12.41 Feet

WELL DIAMETER: 2.0 Inch

6.1 Minimum Gallons to
purge 3 well volumes
(Water Column Height x 0.49)

TIME	VOLUME PURGED	TEMP. °F	COND. mS/cm	pH	DO mg/L	Turb	PHYSICAL APPEARANCE AND REMARKS
8:59	0	-	-	-	-	-	Begin Hand Bailing
9:06	3	66.8	0.71	8.36	2.6	-	
9:14	5	66.2	0.69	8.40	4.4	-	
9:23	7	66.2	0.66	8.48	6.6	-	
9:27	8	66.0	0.68	8.44	5.5	-	
0:28	:Total Time (hr:min)		8	:Total Vol (gal)		0.28	:Flow Rate (gal/min)

SAMPLE NO.: Collected Sample No.: 040625 0930

ANALYSES: BTEX (8021-B)

COMMENTS: _____

WELL SAMPLING DATA FORM

CLIENT: Duke Energy Field Services WELL ID: MW-3
 SITE NAME: X Line (Etchevery Ranch) DATE: 6/25/2004
 PROJECT NO. F-106 SAMPLER: J. Fergerson/D. Littlejohn

PURGING METHOD: ☒ Hand Bailed ☐ Pump If Pump, Type: _____

SAMPLING METHOD: ☒ Disposable Bailer ☐ Direct from Discharge Hose ☐ Other: _____

DESCRIBE EQUIPMENT DECONTAMINATION METHOD BEFORE SAMPLING THE WELL:

☒ Gloves ☒ Alconox ☒ Distilled Water Rinse ☐ Other: _____

DISPOSAL METHOD OF PURGE WATER: ☐ Surface Discharge ☐ Drums ☒ Disposal Facility

TOTAL DEPTH OF WELL: 92.80 Feet

DEPTH TO WATER: 77.52 Feet

HEIGHT OF WATER COLUMN: 15.28 Feet

WELL DIAMETER: 2.0 Inch

7.5 Minimum Gallons to
purge 3 well volumes
(Water Column Height x 0.49)

TIME	VOLUME PURGED	TEMP. °F	COND. mS/cm	pH	DO mg/L	Turb	PHYSICAL APPEARANCE AND REMARKS
12:22	0	-	-	-	-	-	Begin Hand Bailing
12:29	2	74.6	0.82	7.14	3.1	-	
12:36	4	76.2	0.81	7.16	3.1	-	
12:42	6	75.0	0.80	7.18	3.6	-	
12:50	8	74.7	0.78	7.22	4.1	-	
0:28	:Total Time (hr:min)		8	:Total Vol (gal)		0.28	:Flow Rate (gal/min)

SAMPLE NO.: Collected Sample No.: 040625 1250

ANALYSES: BTEX (8021-B)

COMMENTS: Collected Duplicate Sample No.: 0406252000 for BTEX (8021-B)

WELL SAMPLING DATA FORM

CLIENT: Duke Energy Field Services WELL ID: MW-4
 SITE NAME: X Line (Etcheverry Ranch) DATE: 6/25/2004
 PROJECT NO. F-106 SAMPLER: J. Fergerson/D. Littlejohn

PURGING METHOD: ☒ Hand Bailed ☐ Pump If Pump, Type: _____

SAMPLING METHOD: ☒ Disposable Bailer ☐ Direct from Discharge Hose ☐ Other: _____

DESCRIBE EQUIPMENT DECONTAMINATION METHOD BEFORE SAMPLING THE WELL:

☒ Gloves ☒ Alconox ☒ Distilled Water Rinse ☐ Other: _____

DISPOSAL METHOD OF PURGE WATER: ☐ Surface Discharge ☐ Drums ☒ Disposal Facility

TOTAL DEPTH OF WELL: 93.40 Feet

DEPTH TO WATER: 77.63 Feet

HEIGHT OF WATER COLUMN: 15.77 Feet

WELL DIAMETER: 2.0 Inch

7.7 Minimum Gallons to
purge 3 well volumes
(Water Column Height x 0.49)

TIME	VOLUME PURGED	TEMP. °F	COND. m S/cm	pH	DO mg/L	Turb	PHYSICAL APPEARANCE AND REMARKS
11:44	0	-	-	-	-	-	Begin Hand Bailing
11:49	2	75.1	0.72	7.37	7.0	-	
11:57	4	72.7	0.71	7.40	7.0	-	
12:04	6	73.2	0.71	7.41	7.1	-	
12:11	8	71.2	0.69	7.41	6.9	-	
0:27	:Total Time (hr:min)		8	:Total Vol (gal)		0.30	:Flow Rate (gal/min)

SAMPLE NO.: Collected Sample No.: 040625 1215

ANALYSES: BTEX (8021-B)

COMMENTS: Collected MS/MSD Sample

WELL SAMPLING DATA FORM

CLIENT: Duke Energy Field Services WELL ID: MW-5
 SITE NAME: X Line (Etchevery Ranch) DATE: 6/25/2004
 PROJECT NO. F-106 SAMPLER: J. Ferguson/D. Littlejohn

PURGING METHOD: ☒ Hand Bailed ☐ Pump If Pump, Type: _____

SAMPLING METHOD: ☒ Disposable Bailer ☐ Direct from Discharge Hose ☐ Other: _____

DESCRIBE EQUIPMENT DECONTAMINATION METHOD BEFORE SAMPLING THE WELL:

☒ Gloves ☒ Alconox ☒ Distilled Water Rinse ☐ Other: _____

DISPOSAL METHOD OF PURGE WATER: ☐ Surface Discharge ☐ Drums ☒ Disposal Facility

TOTAL DEPTH OF WELL: 91.10 Feet

DEPTH TO WATER: 77.30 Feet

HEIGHT OF WATER COLUMN: 13.80 Feet

WELL DIAMETER: 2.0 Inch

6.8 Minimum Gallons to
purge 3 well volumes
(Water Column Height x 0.49)

TIME	VOLUME PURGED	TEMP. °F	COND. mS/cm	pH	DO mg/L	Turb	PHYSICAL APPEARANCE AND REMARKS
11:06	0	-	-	-	-	-	Begin Hand Bailing
11:17	3	73.8	0.74	7.33	5.8	-	
11:23	5	72.9	0.72	7.41	6.6	-	
11:31	7	72.9	0.72	7.43	6.8	-	
0:25 :Total Time (hr:min)			7	:Total Vol (gal)		0.28	:Flow Rate (gal/min)

SAMPLE NO.: Collected Sample No.: 040625 1135

ANALYSES: BTEX (8021-B)

COMMENTS: _____

WELL SAMPLING DATA FORM

CLIENT: Duke Energy Field Services WELL ID: MW-6
 SITE NAME: X Line (Etchevery Ranch) DATE: 6/25/2004
 PROJECT NO. F-106 SAMPLER: J. Fergerson/D. Littlejohn

PURGING METHOD: ☒ Hand Bailed ☐ Pump If Pump, Type: _____

SAMPLING METHOD: ☒ Disposable Bailer ☐ Direct from Discharge Hose ☐ Other: _____

DESCRIBE EQUIPMENT DECONTAMINATION METHOD BEFORE SAMPLING THE WELL:

☒ Gloves ☒ Alconox ☒ Distilled Water Rinse ☐ Other: _____

DISPOSAL METHOD OF PURGE WATER: ☐ Surface Discharge ☐ Drums ☒ Disposal Facility

TOTAL DEPTH OF WELL: 92.90 Feet

DEPTH TO WATER: 77.23 Feet

HEIGHT OF WATER COLUMN: 15.67 Feet

WELL DIAMETER: 2.0 Inch

7.7 Minimum Gallons to
purge 3 well volumes
(Water Column Height x 0.49)

TIME	VOLUME PURGED	TEMP. °F	COND. mS/cm	pH	DO mg/L	Turb	PHYSICAL APPEARANCE AND REMARKS
10:23	0	-	-	-	-	-	Begin Hand Bailing
10:31	2	71.5	0.75	7.29	4.8	-	
10:39	4	71.9	0.75	7.29	4.8	-	
10:46	6	71.8	0.75	7.29	4.9	-	
10:52	8	71.5	0.75	7.29	5.0	-	
0:29	:Total Time (hr:min)		8	:Total Vol (gal)		0.27	:Flow Rate (gal/min)

SAMPLE NO.: Collected Sample No.: 040625 1055

ANALYSES: BTEX (8021-B)

COMMENTS: _____

WELL SAMPLING DATA FORM

CLIENT: Duke Energy Field Services WELL ID: MW-7
 SITE NAME: X Line (Etchevery Ranch) DATE: 6/25/2004
 PROJECT NO. F-106 SAMPLER: J. Fergerson/D. Littlejohn

PURGING METHOD: ☒ Hand Bailed ☐ Pump If Pump, Type: _____

SAMPLING METHOD: ☒ Disposable Bailer ☐ Direct from Discharge Hose ☐ Other: _____

DESCRIBE EQUIPMENT DECONTAMINATION METHOD BEFORE SAMPLING THE WELL:

☒ Gloves ☒ Alconox ☒ Distilled Water Rinse ☐ Other: _____

DISPOSAL METHOD OF PURGE WATER: ☐ Surface Discharge ☐ Drums ☒ Disposal Facility

TOTAL DEPTH OF WELL: 92.80 Feet

DEPTH TO WATER: 76.80 Feet

HEIGHT OF WATER COLUMN: 16.00 Feet

WELL DIAMETER: 2.0 Inch

7.8 Minimum Gallons to
purge 3 well volumes
(Water Column Height x 0.49)

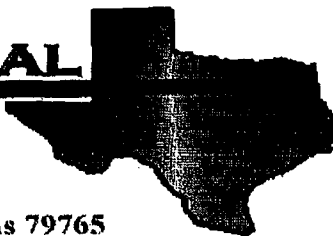
TIME	VOLUME PURGED	TEMP. °F	COND. m S/cm	pH	DO mg/L	Turb	PHYSICAL APPEARANCE AND REMARKS
9:42	0	-	-	-	-	-	Begin Hand Bailing
9:47	2	69.7	0.67	7.48	6.9	-	
9:55	4	68.2	0.65	7.50	6.8	-	
10:02	6	68.1	0.65	7.52	6.8	-	
10:12	8	70.9	0.66	7.53	6.8	-	
0:30 :Total Time (hr:min)			8 :Total Vol (gal)	0.27 :Flow Rate (gal/min)			

SAMPLE NO.: Collected Sample No.: 040625 1015

ANALYSES: BTEX (8021-B)

COMMENTS: _____

E **NVIRONMENTAL** **LAB OF**



12600 West I-20 East - Odessa, Texas 79765

Analytical Report

Prepared for:

Michael Stewart
REMEDIACON
P.O. Box 302
Evergreen, CO 80437

Project: DEFS-X-Line
Project Number: None Given
Location: Lea County, New Mexico

Lab Order Number: 4F28004

Report Date: 07/07/04

REMEDIACON
P.O. Box 302
Evergreen CO, 80437

Project: DEFS-X-Line
Project Number: None Given
Project Manager: Michael Stewart

Fax: 720-528-8132
Reported:
07/07/04 14:57

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
0406250850 (MW-1)	4F28004-01	Water	06/25/04 08:50	06/28/04 14:00
0406250930 (MW-2)	4F28004-02	Water	06/25/04 09:30	06/28/04 14:00
0406251015 (MW-7)	4F28004-03	Water	06/25/04 10:15	06/28/04 14:00
0406251055 (MW-6)	4F28004-04	Water	06/25/04 10:55	06/28/04 14:00
0406251135 (MW-5)	4F28004-05	Water	06/25/04 11:35	06/28/04 14:00
0406251215 (MW-4)	4F28004-06	Water	06/25/04 12:15	06/28/04 14:00
0406251250 (MW-3)	4F28004-08	Water	06/25/04 12:50	06/28/04 14:00
0406252000 (Duplicate)	4F28004-09	Water	06/25/04 12:50	06/28/04 14:00
Trip Blank	4F28004-10	Water	06/25/04 00:00	06/28/04 14:00

REMEDIACON
P.O. Box 302
Evergreen CO, 80437

Project: DEFS-X-Line
Project Number: None Given
Project Manager: Michael Stewart

Fax: 720-528-8132
Reported:
07/08/04 10:39

Organics by GC
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
0406250850 (MW-1) (4F28004-01) Water									
Benzene	ND	0.00100	mg/L	1	EG40205	07/02/04	07/02/04	EPA 8021B	
Toluene	ND	0.00100	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00100	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		118 %	80-120	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		81.5 %	80-120	"	"	"	"	"	
0406250930 (MW-2) (4F28004-02) Water									
Benzene	0.00156	0.00100	mg/L	1	EG40205	07/02/04	07/02/04	EPA 8021B	
Toluene	0.00108	0.00100	"	"	"	"	"	"	
Ethylbenzene	J [0.000500]	0.00100	"	"	"	"	"	"	J
Xylene (p/m)	J [0.000565]	0.00100	"	"	"	"	"	"	J
Xylene (o)	J [0.000495]	0.00100	"	"	"	"	"	"	J
Surrogate: a,a,a-Trifluorotoluene		106 %	80-120	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		86.0 %	80-120	"	"	"	"	"	
0406251015 (MW-7) (4F28004-03) Water									
Benzene	ND	0.00100	mg/L	1	EG40702	07/06/04	07/06/04	EPA 8021B	
Toluene	ND	0.00100	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00100	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		118 %	80-120	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		85.0 %	80-120	"	"	"	"	"	
0406251055 (MW-6) (4F28004-04) Water									
Benzene	ND	0.00100	mg/L	1	EG40702	07/06/04	07/06/04	EPA 8021B	
Toluene	ND	0.00100	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00100	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		115 %	80-120	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	80-120	"	"	"	"	"	

Environmental Lab of Texas

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Environmental Lab of Texas.

Page 2 of 9

REMEDIACON
P.O. Box 302
Evergreen CO, 80437

Project: DEFS-X-Line
Project Number: None Given
Project Manager: Michael Stewart

Fax: 720-528-8132
Reported:
07/08/04 10:39

Organics by GC
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
0406251135 (MW-5) (4F28004-05) Water									
Benzene	ND	0.00100	mg/L	1	EG40702	07/06/04	07/06/04	EPA 8021B	
Toluene	ND	0.00100	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00100	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		118 %	80-120	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		81.5 %	80-120	"	"	"	"	"	

0406251215 (MW-4) (4F28004-06) Water

Benzene	ND	0.00100	mg/L	1	EG40702	07/06/04	07/06/04	EPA 8021B	
Toluene	ND	0.00100	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00100	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		119 %	80-120	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.0 %	80-120	"	"	"	"	"	

0406251250 (MW-3) (4F28004-08) Water

Benzene	0.0164	0.00100	mg/L	1	EG40702	07/06/04	07/06/04	EPA 8021B	
Toluene	J [0.000163]	0.00100	"	"	"	"	"	"	J
Ethylbenzene	0.0136	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00100	"	"	"	"	"	"	
Xylene (o)	J [0.000114]	0.00100	"	"	"	"	"	"	J
Surrogate: a,a,a-Trifluorotoluene		116 %	80-120	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.5 %	80-120	"	"	"	"	"	

0406252000 (Duplicate) (4F28004-09) Water

Benzene	0.0182	0.00100	mg/L	1	EG40702	07/06/04	07/06/04	EPA 8021B	
Toluene	J [0.000153]	0.00100	"	"	"	"	"	"	J
Ethylbenzene	0.0135	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00100	"	"	"	"	"	"	
Xylene (o)	J [0.000121]	0.00100	"	"	"	"	"	"	J
Surrogate: a,a,a-Trifluorotoluene		106 %	80-120	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		82.0 %	80-120	"	"	"	"	"	

Environmental Lab of Texas

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Environmental Lab of Texas.

Page 3 of 9

REMEDIACON
P.O. Box 302
Evergreen CO, 80437

Project: DEFS-X-Line
Project Number: None Given
Project Manager: Michael Stewart

Fax: 720-528-8132
Reported:
07/07/04 14:57

Organics by GC
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Trip Blank (4F28004-10) Water									
Benzene	ND	0.00100	mg/L	1	EG40702	07/06/04	07/06/04	EPA 8021B	
Toluene	ND	0.00100	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00100	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
Surrogate: <i>α,α,α</i> -Trifluorotoluene		118 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		85.5 %	80-120		"	"	"	"	

REMEDIACON
P.O. Box 302
Evergreen CO, 80437

Project: DEFS-X-Line
Project Number: None Given
Project Manager: Michael Stewart

Fax: 720-528-8132
Reported:
07/07/04 14:57

Organics by GC - Quality Control
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch EG40205 - EPA 5030C (GC)

Blank (EG40205-BLK1)

Prepared & Analyzed: 07/02/04

Benzene	ND	0.00100	mg/L							
Toluene	ND	0.00100	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00100	"							
Xylene (o)	ND	0.00100	"							
Surrogate: a,a,a-Trifluorotoluene	23.4		ug/l	20.0		117	80-120			
Surrogate: 4-Bromofluorobenzene	17.7		"	20.0		88.5	80-120			

LCS (EG40205-BS1)

Prepared & Analyzed: 07/02/04

Benzene	87.9		ug/l	100		87.9	80-120			
Toluene	99.1		"	100		99.1	80-120			
Ethylbenzene	97.4		"	100		97.4	80-120			
Xylene (p/m)	208		"	200		104	80-120			
Xylene (o)	97.8		"	100		97.8	80-120			
Surrogate: a,a,a-Trifluorotoluene	21.2		"	20.0		106	80-120			
Surrogate: 4-Bromofluorobenzene	23.2		"	20.0		116	80-120			

Calibration Check (EG40205-CCV1)

Prepared & Analyzed: 07/02/04

Benzene	103		ug/l	100		103	80-120			
Toluene	111		"	100		111	80-120			
Ethylbenzene	111		"	100		111	80-120			
Xylene (p/m)	227		"	200		114	80-120			
Xylene (o)	105		"	100		105	80-120			
Surrogate: a,a,a-Trifluorotoluene	21.6		"	20.0		108	80-120			
Surrogate: 4-Bromofluorobenzene	22.0		"	20.0		110	80-120			

Duplicate (EG40205-DUP1)

Source: 4F28002-09

Prepared & Analyzed: 07/02/04

Benzene	0.156	0.00100	mg/L		0.135			14.4	20	
Toluene	ND	0.00100	"		ND				20	
Ethylbenzene	ND	0.00100	"		ND				20	
Xylene (p/m)	ND	0.00100	"		ND				20	
Xylene (o)	ND	0.00100	"		ND				20	
Surrogate: a,a,a-Trifluorotoluene	21.9		ug/l	20.0		110	80-120			
Surrogate: 4-Bromofluorobenzene	17.9		"	20.0		89.5	80-120			

Environmental Lab of Texas

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Environmental Lab of Texas.

Page 5 of 9

REMEDIACON
P.O. Box 302
Evergreen CO, 80437

Project: DEFS-X-Line
Project Number: None Given
Project Manager: Michael Stewart

Fax: 720-528-8132
Reported:
07/07/04 14:57

Organics by GC - Quality Control
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	-------

Batch EG40205 - EPA 5030C (GC)

Matrix Spike (EG40205-MS1)		Source: 4F28002-01		Prepared & Analyzed: 07/02/04						
Benzene	102		ug/l	100	ND	102	80-120			
Toluene	106		"	100	ND	106	80-120			
Ethylbenzene	104		"	100	ND	104	80-120			
Xylene (p/m)	215		"	200	ND	108	80-120			
Xylene (o)	98.4		"	100	ND	98.4	80-120			
Surrogate: <i>a,a,a</i> -Trifluorotoluene	22.4		"	20.0		112	80-120			
Surrogate: 4-Bromofluorobenzene	21.3		"	20.0		106	80-120			

Batch EG40702 - EPA 5030C (GC)

Blank (EG40702-BLK1)		Prepared & Analyzed: 07/06/04								
Benzene	ND	0.00100	mg/L							
Toluene	ND	0.00100	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00100	"							
Xylene (o)	ND	0.00100	"							
Surrogate: <i>a,a,a</i> -Trifluorotoluene	23.3		ug/l	20.0		116	80-120			
Surrogate: 4-Bromofluorobenzene	19.4		"	20.0		97.0	80-120			

LCS (EG40702-BS1)		Prepared & Analyzed: 07/06/04								
Benzene	94.2		ug/l	100		94.2	80-120			
Toluene	101		"	100		101	80-120			
Ethylbenzene	103		"	100		103	80-120			
Xylene (p/m)	216		"	200		108	80-120			
Xylene (o)	101		"	100		101	80-120			
Surrogate: <i>a,a,a</i> -Trifluorotoluene	21.1		"	20.0		106	80-120			
Surrogate: 4-Bromofluorobenzene	18.6		"	20.0		93.0	80-120			

Environmental Lab of Texas

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Environmental Lab of Texas.

Page 6 of 9

REMEDIACON
P.O. Box 302
Evergreen CO, 80437

Project: DEFS-X-Line
Project Number: None Given
Project Manager: Michael Stewart

Fax: 720-528-8132
Reported:
07/07/04 14:57

Organics by GC - Quality Control
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	-------

Batch EG40702 - EPA 5030C (GC)

Calibration Check (EG40702-CCV1)

Prepared & Analyzed: 07/06/04

Benzene	85.5		ug/l	100		85.5	80-120			
Toluene	93.4		"	100		93.4	80-120			
Ethylbenzene	87.9		"	100		87.9	80-120			
Xylene (p/m)	186		"	200		93.0	80-120			
Xylene (o)	87.1		"	100		87.1	80-120			
Surrogate: a,a,a-Trifluorotoluene	18.6		"	20.0		93.0	80-120			
Surrogate: 4-Bromofluorobenzene	17.8		"	20.0		89.0	80-120			

Matrix Spike (EG40702-MS1)

Source: 4F28004-06

Prepared & Analyzed: 07/06/04

Benzene	114		ug/l	100	ND	114	80-120			
Toluene	117		"	100	ND	117	80-120			
Ethylbenzene	118		"	100	ND	118	80-120			
Xylene (p/m)	239		"	200	ND	120	80-120			
Xylene (o)	116		"	100	ND	116	80-120			
Surrogate: a,a,a-Trifluorotoluene	23.0		"	20.0		115	80-120			
Surrogate: 4-Bromofluorobenzene	22.0		"	20.0		110	80-120			

Matrix Spike (EG40702-MS2)

Source: 4F28005-01

Prepared & Analyzed: 07/06/04

Benzene	112		ug/l	100	ND	112	80-120			
Toluene	114		"	100	ND	114	80-120			
Ethylbenzene	114		"	100	ND	114	80-120			
Xylene (p/m)	233		"	200	ND	116	80-120			
Xylene (o)	108		"	100	ND	108	80-120			
Surrogate: a,a,a-Trifluorotoluene	23.3		"	20.0		116	80-120			
Surrogate: 4-Bromofluorobenzene	19.6		"	20.0		98.0	80-120			

Matrix Spike Dup (EG40702-MSD1)

Source: 4F28004-06

Prepared & Analyzed: 07/06/04

Benzene	103		ug/l	100	ND	103	80-120	10.1	20	
Toluene	110		"	100	ND	110	80-120	6.17	20	
Ethylbenzene	106		"	100	ND	106	80-120	10.7	20	
Xylene (p/m)	216		"	200	ND	108	80-120	10.5	20	
Xylene (o)	102		"	100	ND	102	80-120	12.8	20	
Surrogate: a,a,a-Trifluorotoluene	22.5		"	20.0		112	80-120			
Surrogate: 4-Bromofluorobenzene	21.0		"	20.0		105	80-120			

Environmental Lab of Texas

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Environmental Lab of Texas.

Page 7 of 9

REMEDIACON
P.O. Box 302
Evergreen CO, 80437

Project: DEFS-X-Line
Project Number: None Given
Project Manager: Michael Stewart

Fax: 720-528-8132
Reported:
07/07/04 14:57

Organics by GC - Quality Control
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
---------	--------	--------------------	-------	----------------	------------------	----------------	-----	--------------	-------

Batch EG40702 - EPA 5030C (GC)

Matrix Spike Dup (EG40702-MSD2)

Source: 4F28005-01

Prepared & Analyzed: 07/06/04

Benzene	112		ug/l	100	ND	112	80-120	0.00	20
Toluene	117		"	100	ND	117	80-120	2.60	20
Ethylbenzene	116		"	100	ND	116	80-120	1.74	20
Xylene (p/m)	235		"	200	ND	118	80-120	1.71	20
Xylene (o)	114		"	100	ND	114	80-120	5.41	20
Surrogate: <i>a,a,a</i> -Trifluorotoluene	23.0		"	20.0		115	80-120		
Surrogate: 4-Bromofluorobenzene	23.6		"	20.0		118	80-120		

Environmental Lab of Texas

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Environmental Lab of Texas.

Page 8 of 9

REMEDIACON
P.O. Box 302
Evergreen CO, 80437

Project: DEFS-X-Line
Project Number: None Given
Project Manager: Michael Stewart

Fax: 720-528-8132
Reported:
07/07/04 14:57

Notes and Definitions

J Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).
DET Analyte DETECTED
ND Analyte NOT DETECTED at or above the reporting limit
NR Not Reported
dry Sample results reported on a dry weight basis
RPD Relative Percent Difference
LCS Laboratory Control Spike
MS Matrix Spike
Dup Duplicate

Report Approved By:

Raland K Tuttle

Date:

7-08-04

Raland K. Tuttle, QA Officer

Celey D. Keene, Lab Director, Org. Tech Director

Jeanne Mc Murrey, Inorg. Tech Director

James L. Hawkins, Chemist/Geologist

Sara Molina, Chemist

Sandra Biezugbe, Lab Tech.

This material is intended only for the use of the individual (s) or entity to whom it is addressed, and may contain information that is privileged and confidential.

If you have received this material in error, please notify us immediately at 432-563-1800.

Environmental Lab of Texas

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Environmental Lab of Texas.

Page 9 of 9

**12600 West I-20 East
Odessa, Texas 79765**

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Michael H. Stewart

Project Name: DEFS X-Line (Etchevery Ranch)

Company Name Remediacon, Inc.

Project #:

Company Address: P. O. Box 302

Project Loc: Lea County, New Mexico

City/State/Zip: Evergreen, Colorado 80437

我

Telephone No: (303) 674-4370

Fax No: (720) 528-8132

Sampler Signature:

18

LAB # (lab use only)	FIELD CODE	Date Sampled	Time Sampled	No. of Containers	Preservative							Matrix			TPH: 418.1 8015M 1005 1006 Cations (Ca, Mg, Na, K) Anions (Cl, SO4, CO3, HCO3) SAR / ESP / CEC Metals: As Ag Ba Cd Cr Pb Hg Se Volatiles Semivolatiles BTEX 8021B/5030 or BTEX 8260 ACI N.O.R.M.	Y	N																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
					HNO3	HCl	NaOH	H2SO4	None	Other (Specify)	Water	Sudge	Soil																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
47-2800-4	-01 0406250850 (RW-1)	6/25/04	0850	2	✓	✓						✓																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													