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2010 AGWMR

03/02/2011

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BUILDING A BETTER WORLD

March 2, 2011

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2011 MAR -4 P 12:24

Mr. Glenn von Gonten
New Mexico Oil Conservation Division (NMOCD)
1220 South St., Francis Drive
Santa Fe, New Mexico 87505

RE: El Paso Tennessee Pipeline Company Pit Groundwater Remediation Sites 2010 Annual Reports

Dear Mr. Von Gonten:

MWH Americas, Inc., on behalf of El Paso Tennessee Pipeline Company (EPTPC), is submitting the enclosed 2010 Annual Reports for each of EPTPC's 21 remaining San Juan River Basin pit groundwater remediation sites. The reports present the 2010 sampling and product recovery data and include recommendations for 2011 activities at these sites.

The 2010 Annual Reports are divided into three volumes based on location type. The volumes are as follows:

Volume	Location Type
1	Federal Land
2	Non-Federal Land (Excl. Navajo Nation)
3	Navajo Nation

If you have any questions concerning the enclosed reports, please call either Ian Yanagisawa of EPTPC (713-420-7361) or myself (303-291-2276).

Sincerely,

Jed Smith
Project Manager

encl.

cc: Bill Freeman – NNEPA, Shiprock, NM (Volume 3 Only)
Bill Liese – BLM, Farmington, NM (Volume 1 Only)
Brandon Powell – NMOCD, Aztec, NM (Volumes 1, 2, and 3)
Ian Yanagisawa – EPTPC (Volumes 1, 2, and 3 - Electronic)

1801 California Street
Suite 2900
Denver, Colorado 80202

TEL 303 291 2222
FAX 303 291 2221
www.mwhglobal.com

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El Paso Tennessee
Pipeline Company

San Juan Basin Pit Program
Groundwater Sites Project

Final 2010 Annual Report
Non-Federal Sites (Volume 2)

March 2011

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1801 California Street, Suite 2900
Denver, Colorado 80202

2010 ANNUAL GROUNDWATER REPORT
NON-FEDERAL SITES VOLUME II

EL PASO TENNESSEE PIPELINE COMPANY

TABLE OF CONTENTS

*The Horton #1E site was submitted for closure in 2009 and is pending approval from NMOCD. There were no monitoring activities for this site in 2010.

**The Lindrith B#24 site was submitted for closure in 2006 and is pending approval from NMOCD. There were no monitoring activities for this site in 2010.

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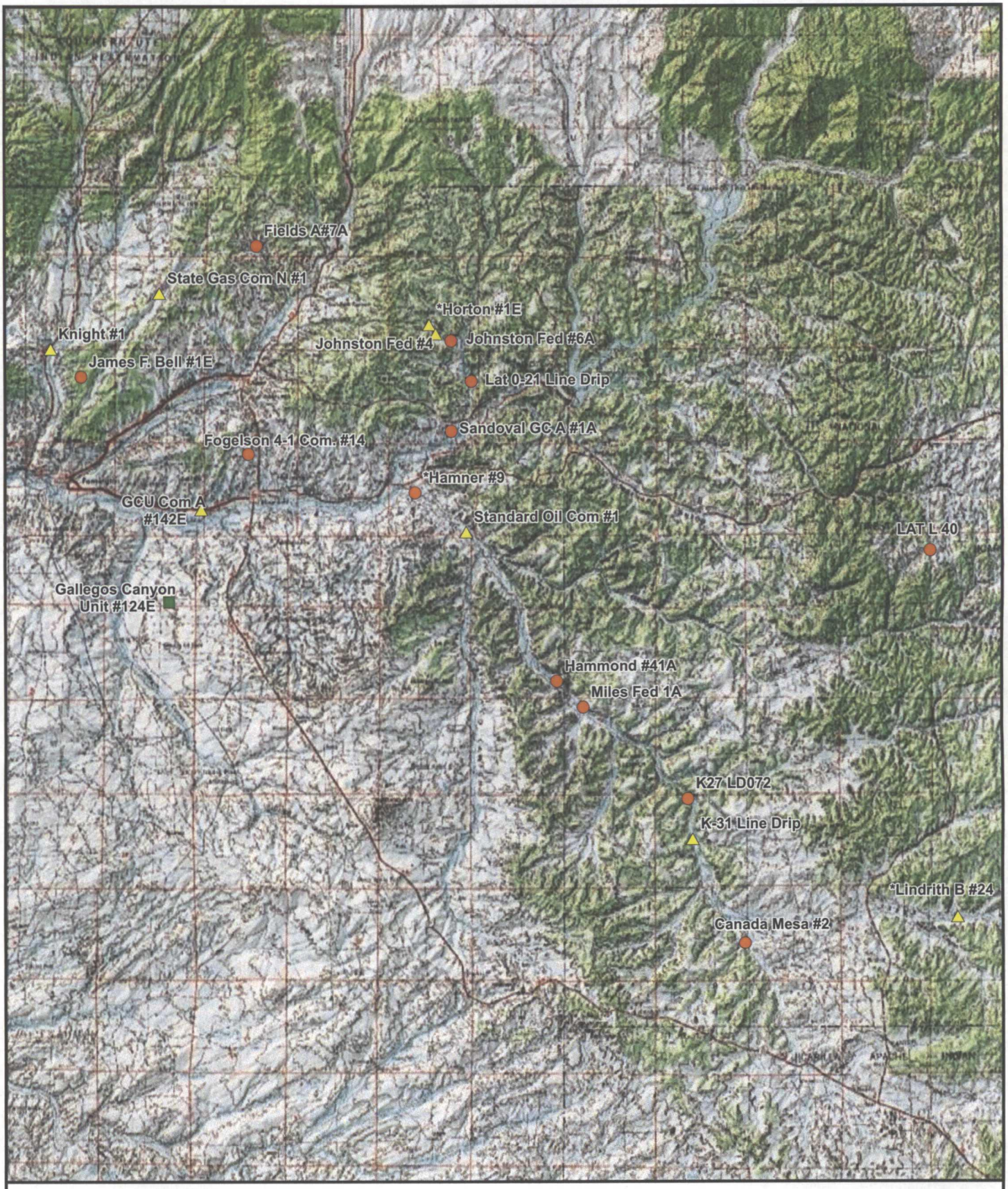
LIST OF ACRONYMS

AMSL	above mean sea level
B	benzene
btoc	below top of casing
E	ethylbenzene
EPTPC	El Paso Tennessee Pipeline Company
ft	foot/feet
GWEL	groundwater elevation
ID	identification
MW	monitor well
NMWQCC	New Mexico Water Quality Control Commission
T	toluene
TOC	top of casing
NA	not applicable
NMOCD	New Mexico Oil Conservation Division
NS	not sampled
ORC	oxygen-releasing compound
µg/L	micrograms per liter
X	total xylenes



LEGEND

- Sites on Federal Land
- Sites on Navajo Nation Land
- Sites on State/Fee "Non-Federal" Lands

*Closure Request Pending with the NMOCD.

0 2 4 6 8 Miles

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PROJECT: SAN JUAN RIVER BASIN

TITLE: Site Locations, February 2011

FIGURE: 1

EPTPC GROUNDWATER SITES
2010 ANNUAL GROUNDWATER REPORT

GCU Com A #142E
Meter Code: 03906

SITE DETAILS

Legal Description:		**Town:**	29N	**Range:**	12W	**Sec:** 25	**Unit:** G
NMOCD Haz Ranking:	10	**Land Type:**	Fee	**Operator:**	BP / Amoco Production Company		

PREVIOUS ACTIVITIES

Site Assessment:	4/94	**Excavation:**	4/94 (20 cy)	**Soil Boring:**	10/95
Monitor Well:	2/97	**Geoprobe:**	12/96	**Additional MWs:**	12/01
Downgradient MWs:	1/06	**Replace MW:**	NA	**Quarterly Initiated:**	8/97
ORC Nutrient Injection:	NA	**Re-Excavation:**	10/96 (882 cy)	**PSH Removal Initiated:**	6/09
Annual Initiated:	5/98	**Quarterly Resumed:**	NA	**PSH Removal in 2010?**	Yes

SUMMARY OF 2010 ACTIVITIES

MW-1: Annual groundwater sampling (November) and quarterly water level monitoring were performed in 2010.

MW-2: Annual groundwater sampling (November) and quarterly product recovery were performed in 2010.

TMW-1: Annual groundwater sampling (November) and quarterly product recovery were performed in 2010.

Site-Wide Activities: No other activities were performed at this Site during 2010.

SITE MAPS

A Site map (November) is attached as Figure 1.

SUMMARY TABLES AND GRAPHS

- Historic analytical and water level data are summarized in Table 1 and presented graphically in Figures 2 through 4. Where applicable, static water level elevations were corrected for measurable thicknesses of free-product (specific gravity of 0.8).
- Historic free-product recovery data are summarized in Table 2 and presented graphically in Figure 2 through 4.
- The 2010 laboratory report is presented in Attachment 1 (included on CD).
- The 2010 field documentation is presented in Attachment 2 (included on CD).

GEOLOGIC LOGS AND WELL COMPLETION DIAGRAMS

No subsurface activities were performed at this Site during 2010.

DISPOSITION OF GENERATED WASTES

All purge water was taken to the El Paso Natural Gas Rio Vista Compressor Station. Spent absorbent socks were managed as non-hazardous solid waste.

ISOCONCENTRATION MAPS

No isoconcentration maps were generated for this Site; however, the attached Site map presents the analytical data collected during 2010.

RESULTS

- The groundwater flow direction generally trends to the south-southeast.
- In the sample collected at MW-1, the concentrations of benzene (8,610 µg/L), toluene (2,770 µg/L), and total xylenes (2,810 µg/L) all exceeded their respective NMWQCC standards and increased from the previous year. Ethylbenzene was also detected, but at a concentration below its standard. The higher BTEX results appear related to the increased oil saturation near the well (droplets of product were observed on the groundwater during sampling).
- Approximately 0.23 gallons of free-product was recovered from MW-2 in 2010, bringing the cumulative total recovered to approximately 0.29 gallons since the product appeared in 2009. Groundwater concentrations of benzene, toluene and total xylenes remain elevated above the NMWQCC standards in MW-2. These results appear to reflect the increased oil saturation near the well starting in 2009.
- Temporary well TMW-01 was installed in January 2006 in order to determine the site hydraulic gradient. The hydraulic gradient was confirmed to be to the south/southeast. Beginning with the May 2010 low-groundwater period, measurable free-product was observed in TMW-01 at thicknesses of up to 0.90 feet. The occurrence of free-product in this well coincided with a dip of the static water table into a thick layer of gravel and cobbles that underlies the predominantly clayey soils found at this site. Groundwater and accumulated product were bailed quarterly for the remainder of 2010, resulting in a total 2010 recovery of 0.26 gallons.
- The December 2010 sample from TMW-1 was the second groundwater sample collected from this well, and droplets of free-product were present at the time of sampling. The concentrations of benzene (8,880 µg/L), toluene (14,400 µg/L), ethylbenzene (956 µg/L), and total xylenes (9,040 µg/L) all exceeded their respective NMWQCC standards. These results were an increase from the 2009 concentrations, reflecting the increased product presence.

REMAINING CLOSURE REQUIREMENTS

- This site is being managed per the procedures set forth in the document entitled, "Remediation Plan for Groundwater Encountered During Pit Closure Activities" (El Paso Natural Gas Company / El Paso Field Services Company, 1995). This remediation plan was conditionally approved by the New Mexico Oil Conservation Division (OCD) in correspondence dated November 30, 1995; and the OCD approval conditions were adopted into El Paso's program methods.

- In order to meet the remaining closure requirements at this site, the following conditions must be achieved:

    1. The extent of the contaminant plume must be delineated. Additional site delineation activities have not yet been conducted due to ongoing operations, which are believed to have contributed to the subsurface petroleum hydrocarbon impacts.

    2. Recoverable free-product must been removed from the subsurface. Generally, this corresponds with an absence of measurable free-product in the monitor wells. Currently, product recovery efforts are still required at MW-2 and TMW-1.

    3. Groundwater contaminant concentrations in the monitor wells must meet the NMWQCC standards for at least 4 consecutive quarters. Alternatively, concentrations must be reduced to below background levels; however, there are no established background concentrations for the remaining constituents of concern. Currently, all three wells require additional monitoring. The remaining applicable standards are:

Constituent	NMWQCC GW Standard (µg/L)
Benzene	10
Toluene	750
Ethylbenzene	750
Total Xylenes	620

RECOMMENDATIONS

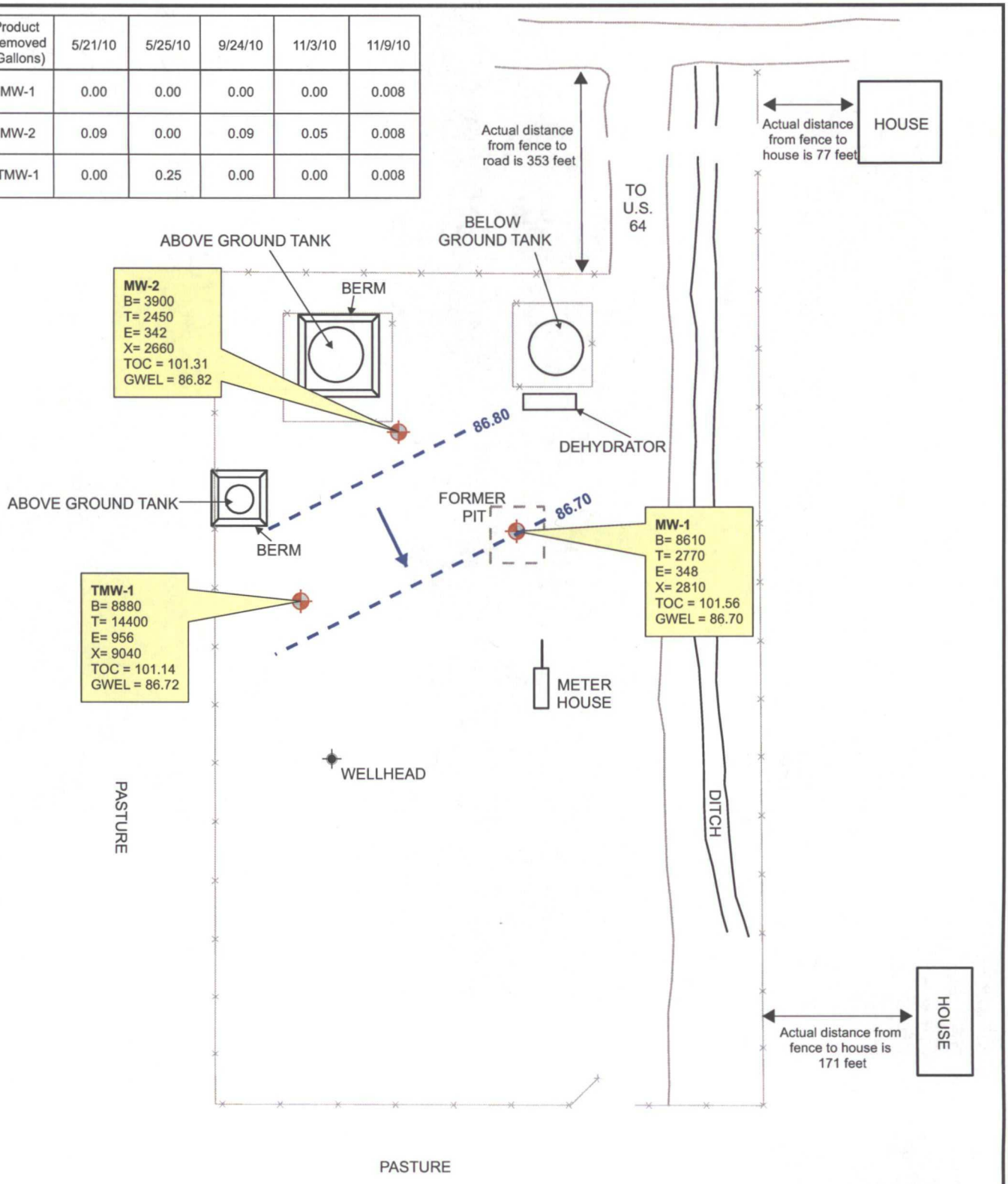
- EPTPC recommends that MW-1 continue to be sampled annually. Annual sampling will continue until BTEX concentrations approach NMWQCC standards, at which time quarterly sampling will be initiated.

- EPTPC recommends that quarterly product recovery via bailing continue at MW-2, which is located adjacent to production equipment. This well will continue to be sampled annually.

- EPTPC recommends that quarterly product recovery via bailing be continued at temporary monitor well TMW-1. This well will be sampled annually.

- EPTPC will further evaluate this site for a potential third party source, as the impacts in MW-2 and TMW-1 are either upgradient or crossgradient of the former El Paso pit and historic records suggest potential issues with the former production pit. Free-product had not been measured before 2009 in MW-2, even when the static water table was at comparable elevations.

Product Removed (Gallons)	5/21/10	5/25/10	9/24/10	11/3/10	11/9/10
MW-1	0.00	0.00	0.00	0.00	0.008
MW-2	0.09	0.00	0.09	0.05	0.008
TMW-1	0.00	0.25	0.00	0.00	0.008



LEGEND

MW-4	Existing Monitoring / Observation Well
PZ-01	Abandoned Monitoring Well
→	Groundwater Flow Direction
86	Potentiometric Surface Contour (Inferred Where Dashed)

B	Benzene (ug/L)
T	Toluene (ug/L)
E	Ethylbenzene (ug/L)
X	Total Xylenes (ug/L)
TOC	Top of Casing (ft. *)
GWEL	Groundwater Elevation (ft. *)

* = Elevations in feet relative to a 100 ft benchmark.

0 10 20 40 Feet

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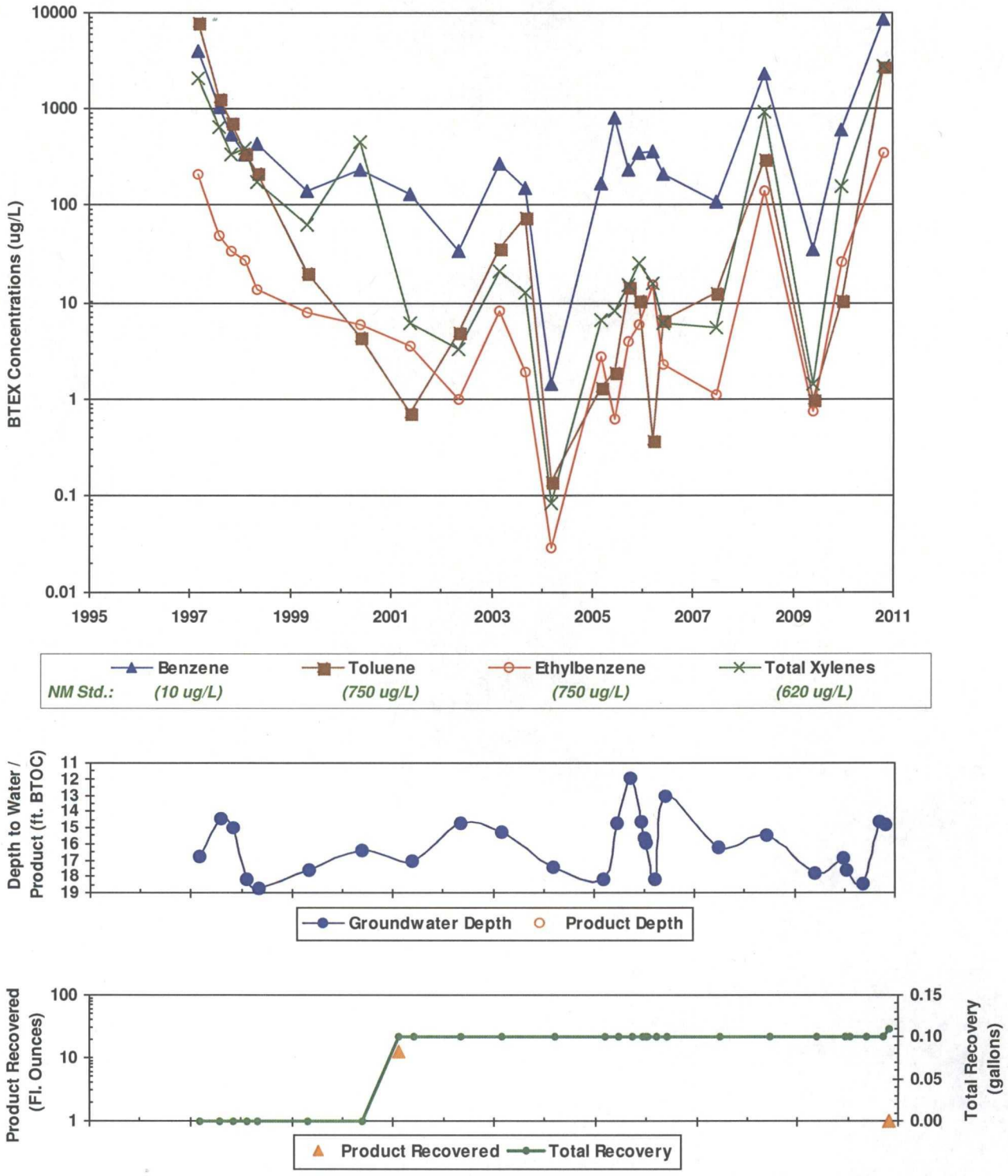
PROJECT: GALLEGOS CANYON UNIT COM A #142E

TITLE: Groundwater Potentiometric Surface Map, and BTEX Concentrations November 9, 2010

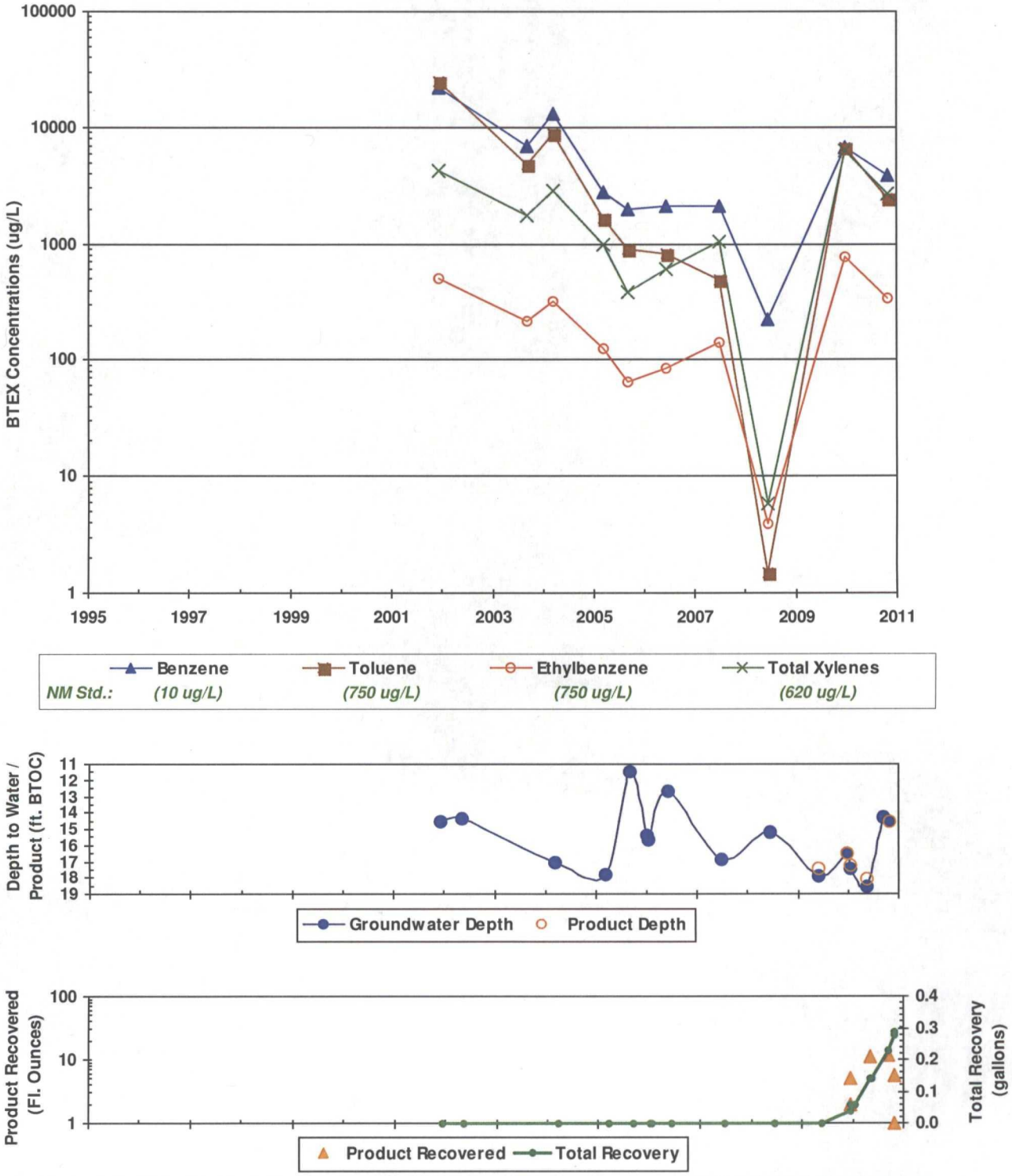
FIGURE: 1

FIGURE 2
SUMMARY OF GROUNDWATER BTEX CONCENTRATIONS, FLUID LEVELS, AND PRODUCT RECOVERY
GCU COM A #142E (METER #03906)
MW01



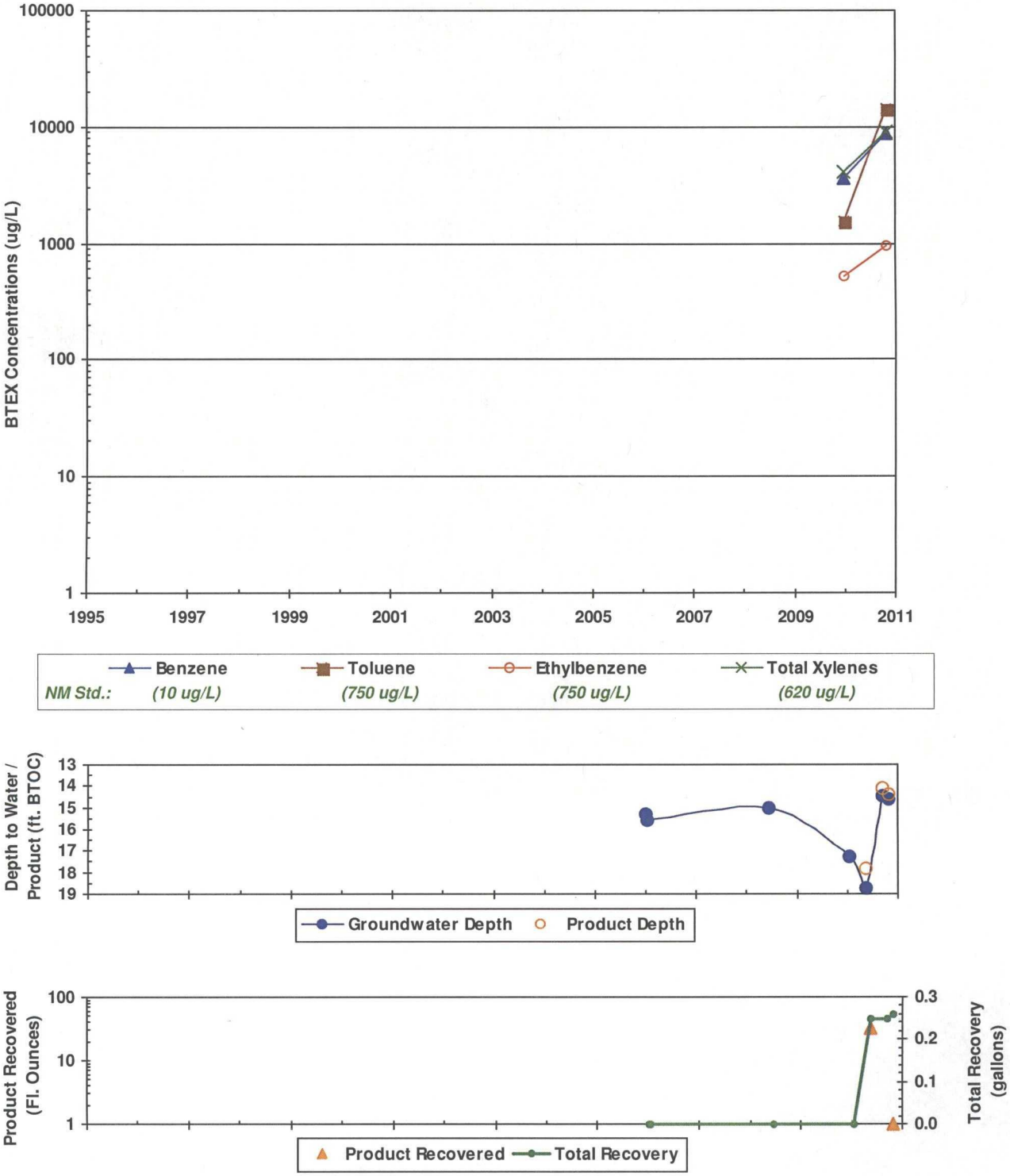
*In some cases, older recovery event data are not available. However, the cumulative totals still include all historic recovery.

FIGURE 3
SUMMARY OF GROUNDWATER BTEX CONCENTRATIONS, FLUID LEVELS, AND PRODUCT RECOVERY
GCU COM A #142E (METER #03906)
MW02



*In some cases, older recovery event data are not available. However, the cumulative totals still include all historic recovery.

FIGURE 4
SUMMARY OF GROUNDWATER BTEX CONCENTRATIONS, FLUID LEVELS, AND PRODUCT RECOVERY
GCU COM A #142E (METER #03906)
TMW01



*In some cases, older recovery event data are not available. However, the cumulative totals still include all historic recovery.

TABLE 1

SUMMARY OF BTEX COMPOUNDS IN GROUNDWATER SAMPLES
GCU COM A #142E (METER #03906)

Monitor Well	Sample Date	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	Depth to Water (ft BTOC)	Corrected GW Elevation (Feet*)
NMWQCC GW Std.:		10	750	750	620		
MW01	3/10/1997	**4010**	**7960**	213	**2050**	16.78	84.78
MW01	8/6/1997	**1040**	**1310**	49.4	**647**	14.46	87.10
MW01	11/5/1997	**543**	719	33.9	342	15.02	86.54
MW01	2/13/1998	**343**	354	27.6	394	18.18	83.38
MW01	5/6/1998	**429**	216	13.6	176	18.69	82.87
MW01	5/4/1999	**143**	20.4	7.78	63.3	17.61	83.95
MW01	5/25/2000	**230**	4.4	6	450	16.44	85.12
MW01	6/1/2001	**130**	0.7	3.5	6.1	17.08	84.48
MW01	5/14/2002	**34**	4.9	1.0	3.3	14.70	86.86
MW01	3/7/2003	**270**	36.8	8.3	21.1	15.31	86.24
MW01	3/22/2004	1.4	<0.1	<0.0	<0.1	17.38	84.18
MW01	3/17/2005	**169**	1.3	2.7	6.6	18.15	83.41
MW01	6/23/2005	**810**	1.9	0.62	8.1	14.72	86.84
MW01	9/26/2005	**232**	14.9	4.0	15.1	11.95	89.61
MW01	12/14/2005	**354**	10.6	5.9	25.6	14.67	86.89
MW01	3/28/2006	**362**	0.37J	15.0	15.7	18.16	83.40
MW01	6/14/2006	**210**	6.5	2.3	6.1	13.08	88.48
MW01	6/28/2007	**109**	12.6	1.1	5.5	16.18	85.38
MW01	6/23/2008	**2320**	305	140	**934**	15.45	86.11
MW01	6/2/2009	**35.3**	<1.0	0.75J	1.4J	17.80	83.76
MW01	12/30/2009	**597**	10.7J	26.5	159	16.82	84.74
MW01	11/9/2010	**8610**	**2770**	348	**2810**	14.86	86.70
MW02	12/13/2001	**22000**	**25000**	500	**4300**	14.52	86.79
MW02	3/22/2004	**13000**	**8880**	321	**2850**	17.06	84.25
MW02	3/17/2005	**2800**	**1640**	125	**978**	17.83	83.48
MW02	9/14/2005	**1980**	**915**	63.8	391	11.45	89.86
MW02	6/14/2006	**2140**	**811**	83.5	610	12.64	88.67
MW02	6/28/2007	**2100**	492	140	**1050**	16.86	84.45
MW02	6/23/2008	**221**	1.5J	3.9	5.8	15.15	86.16
MW02	12/30/2009	**6660**	**6750**	764	**6210**	16.48	84.85
MW02	11/9/2010	**3900**	**2450**	342	**2660**	14.50	86.82
TMW01	12/30/2009	**3660**	**1550**	520	**4110**	NA	NA
TMW01	11/9/2010	**8880**	**14400**	**956**	**9040**	14.62	86.72

TABLE 1

SUMMARY OF BTEX COMPOUNDS IN GROUNDWATER SAMPLES
GCU COM A #142E (METER #03906)

Monitor Well	Sample Date	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	Depth to Water (ft BTOC)	Corrected GW Elevation (Feet*)
NMWQCC GW Std.:		**10**	**750**	**750**	**620**		

Notes:

Results shown in bold typeface exceed their respective New Mexico Water Quality Control Commission standards.

"J" = result is qualified as estimated. See laboratory report and/or supplemental data validation report for further detail.
"<" = analyte was not detected at the indicated reporting limit.
Static groundwater elevations have been corrected for product thickness where applicable. Specific gravity of 0.8 used.

TABLE 2

SUMMARY OF FREE-PRODUCT REMOVAL
GCU COM A #142E (METER #03906)

Monitor Well	Removal Date	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Product Thickness (feet)	Volume Removed (gallons)	Cumulative Removal (gallons)	Corrected GW Elevation (Feet*)
MW01	2/20/2001	NA	NA	NA	0.10	0.10	NA
MW01	11/9/2010	--	14.86	0.00	0.01	0.11	86.70
MW02	6/2/2009	17.42	17.84	0.42	--	0.00	83.81
MW02	12/23/2009	NA	NA	NA	0.04	0.04	NA
MW02	12/30/2009	16.45	16.48	0.03	0.02	0.06	84.85
MW02	1/25/2010	17.27	17.45	0.18	--	0.06	84.00
MW02	5/21/2010	NA	NA	NA	0.09	0.14	NA
MW02	5/25/2010	18.05	18.55	0.50	--	0.14	83.16
MW02	9/24/2010	--	14.25	0.00	0.09	0.23	87.06
MW02	11/3/2010	NA	NA	NA	0.04	0.28	NA
MW02	11/9/2010	14.49	14.50	0.01	0.01	0.29	86.82
TMW01	5/25/2010	17.80	18.70	0.90	0.25	0.25	83.16
TMW01	9/24/2010	14.10	14.45	0.35	--	0.25	86.97
TMW01	11/9/2010	14.37	14.62	0.25	0.01	0.26	86.72

Notes:

"--" indicates either that product was not measurably detected or that product was not recovered.

"NA" indicates that the respective data point is not available.

Groundwater elevations may not be static due to removal of equipment. Corrections for product thickness utilize SG of 0.8.

*This site has a benchmark elevation of 100 feet rather than mean sea level.