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El Paso Tennessee
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San Juan Basin Pit Program
Groundwater Sites Project

Final 2006 Annual Report
Federal Sites (Volume 1)

March 2007

MWH

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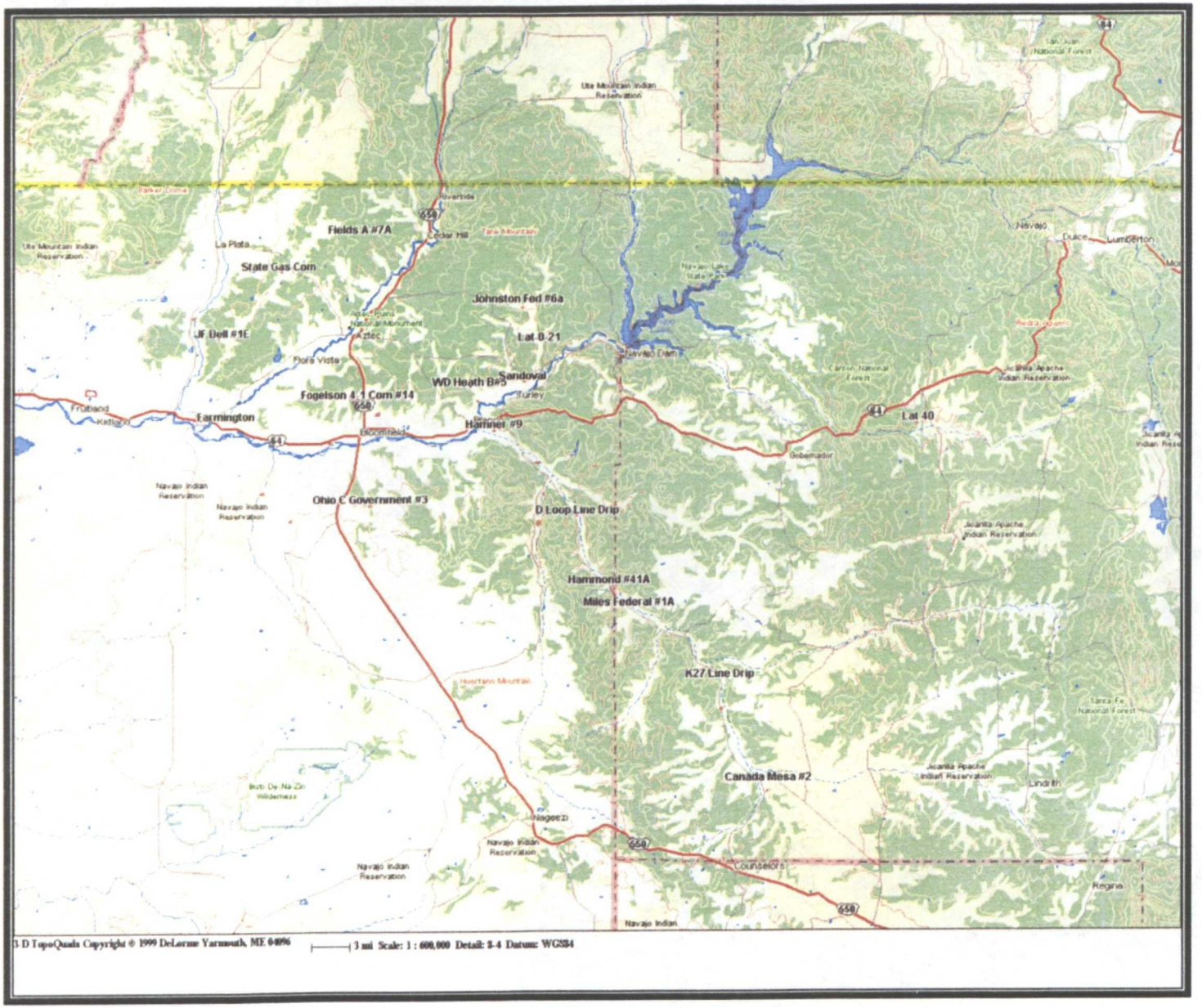
2006 ANNUAL GROUNDWATER REPORT
FEDERAL SITES VOLUME I
EL PASO TENNESSEE PIPELINE COMPANY

TABLE OF CONTENTS

METER or LINE ID	SITE NAME	TOWNSHIP	RANGE	SECTION	UNIT
89961	Fields A#7A	32N	11W	34	E
89232	Johnston Fed #6A	31N	09W	35	F
94715	James F. Bell #1E	30N	13W	10	P
89620	Sandoval GC A #1A	30N	09W	35	C
LD151	Lat 0-21 Line Drip	30N	09W	12	O
73220	Fogelson 4-1 Com. #14	29N	11W	4	P
97213	Hamner #9	29N	09W	20	A
LD174	LAT L 40	28N	04W	13	H
89894	Hammond #41A	27N	08W	25	O
94810	Miles Fed 1A	26N	07W	5	F
LD072	K27 LD072	25N	06W	4	E
87640	Canada Mesa #2	24N	06W	24	I
70194	Johnston Fed #4	31N	09W	33	H

elpaso MWH

Federal Groundwater Site Map



LIST OF ACRONYMS

B	benzene
btoc	below top of casing
E	ethylbenzene
EPTPC	El Paso Tennessee Pipeline Company
ft	foot/feet
GWEL	groundwater elevation
ID	identification
MW	monitoring well
PSH	phase-separated hydrocarbons
NMWQCC	New Mexico Water Quality Control Commission
T	toluene
TOC	top of casing
NA	not applicable
NE	not established
NM	not measured
NMOCD	New Mexico Oil Conservation Division
NS	not sampled
ORC	oxygen-releasing compound
ppb	parts per billion
µg/L	micrograms per liter
X	total xylenes

EPTPC GROUNDWATER SITES
2006 ANNUAL GROUNDWATER REPORT

K27
Meter Code: LD072

SITE DETAILS

Legal Description:	**Town:**	25N	**Range:**	6W	**Sec:**	4	**Unit:** E
NMOCD Haz Ranking:	40	**Land Type:**	Federal	**Operator:**	Enterprise		

PREVIOUS ACTIVITIES

Site Assessment:	7/94	**Excavation:**	8/94	**Soil Boring:**	9/99
Monitor Well:	9/95	**Geoprobe:**	9/95	**Additional MWs:**	12/99
Downgradient MWs:	12/99	**Replace MW:**	7/00	**Quarterly Initiated:**	NA
ORC Nutrient Injection:	NA	**Re-Excavation:**	NA	**PSH Removal Initiated:**	2/98
Annual Initiated:	NA	**Quarterly Resumed:**	NA		

SUMMARY OF 2006 ACTIVITIES

MW-1: Quarterly free-product recovery activities and water level monitoring were performed in 2006.

MW-2: Quarterly free-product recovery activities and water level monitoring were performed in 2006. This well was damaged during the installation of TMW-5 in November 2006, and repaired later in the month.

MW-3: Quarterly water level monitoring and annual groundwater sampling (November) were performed in 2006.

TMW-5: This well was installed and sampled in November 2006.

Site-Wide Activities: Geoprobe soil and groundwater sampling activities were performed in January 2006, and TMW-5 was installed in November 2006. A right of way permit and access grant for additional monitoring well installation were acquired in 2006. All wells at the site were surveyed in January 2007.

SITE MAPS

Site maps (November and showing the location of new well TMW-5) are attached in Figures 1 and 2.

SUMMARY TABLES AND GRAPHS

- Historic BTEX concentrations and groundwater elevations for MW-1, MW-2 and MW-3 are presented graphically in Figures 3 through 5.
- Analytical data from 2006 are included in Table 1.
- Free-product removal data for 2006 are included in Table 2, and historic data are presented graphically in Figures 6 and 7.
- Laboratory reports are presented in Attachment 1 (included on CD).
- Field documentation is presented in Attachment 2 (included on CD).

GEOLOGIC LOGS AND WELL COMPLETION DIAGRAMS

Geoprobe logs, soil boring logs, and well completion diagrams are presented in Attachment 3.

DISPOSITION OF GENERATED WASTES

All purge water was taken to the El Paso Natural Gas Rio Vista Compressor Station. Recovered free-product is stored in a 55 gallon drum and periodically picked up by Mesa Oil for recycling. Soil cuttings from drilling and geoprobe activities were collected and subsequently disposed at the Envirotech land farm.

ISOCONCENTRATION MAPS

No isoconcentration maps were prepared for this site, however, the attached site maps present water level data collected during 2006.

CONCLUSIONS

- The groundwater flow direction is approximately to the north (varies between northeast to northwest) at this site.
- Until July 2005, thin accumulations of free-product had historically been detected in MW-1. From July 2005 until November 2006, free-product was not present, and quarterly recovery activities were suspended in 2006. In November 2006, approximately 0.07 feet of product was observed in the well. The cumulative total of recovered free-product from MW-1 is approximately 2.34 gallons since 2001.
- Approximately 0.29 gallons of free-product were removed from MW-2 during 2006, bringing the cumulative total recovery from this well to 7.50 gallons since 2001. Approximately 1.55 gallons were removed in 2005.

- Oil absorbent socks were installed in MW-2 during the January, April, July, and November 2006 monitoring events. Oil absorbent socks were installed in MW-1 during the November 2006 monitoring event.

- Geoprobe groundwater sampling was conducted at this site in January 2006 to investigate potential sources of contamination and to enhance the delineation of the plume edge. GP-5 and GP-6, located upgradient of MW-1, and GP-3 near the proposed TMW-4 were dry. GP-1, GP-2, and GP-4, all located to the northwest of MW-1, were below NMOCD standards.

- Based on the results of the January Geoprobe investigation, monitoring well TMW-5 was installed north of MW-2 in October 2006 to enhance downgradient delineation of the plume edge.

- New well TMW-5 was sampled in November 2006. BTEX concentrations were either below laboratory reporting limits or not detected.

- EPTPC attempted to install proposed downgradient monitoring well TMW-4; however conditions at the site prevented access of the drilling rig. Therefore, TMW-4 was not installed.

RECOMMENDATIONS

- EPTPC will continue quarterly free-product recovery efforts at MW-1 and MW-2; however, the frequency of monitoring may be adjusted based on the amount of product recovered during the monitoring visits.

- EPTPC will continue to monitor groundwater levels on a quarterly basis and sample annually at MW-3.

- EPTPC will monitor groundwater levels at new well TMW-5 on a quarterly basis and sample annually in conjunction with activities at MW-3.

- Once free-product recovery efforts are completed at this site, each well will be sampled on an annual basis until sample results approach closure criteria. The wells will then be scheduled for quarterly sampling until closure criteria are met.

TABLE 1

SUMMARY OF BTEX COMPOUNDS IN GOUNDWATER SAMPLES
K27 LD072 (METER #LD072)

Site Name	Sample Date	MW#	Benzene	Toluene	Ethylbenzene	Total Xylenes	Depth to Water
K27 LD072	11/4/1996	MW-1	996	2170	204	1520	37.44
K27 LD072	2/5/1997	MW-1	207	613	168	1010	36.89
K27 LD072	5/7/1997	MW-1	41.8	114	97.8	500	36.73
K27 LD072	8/8/1997	MW-1	1690	2980	298	1930	37.61
K27 LD072	11/7/1997	MW-1	533	1210	267	1720	37.33
K27 LD072	8/19/1999	MW-1	179	379	79.1	777	36.48
K27 LD072	11/10/1999	MW-1	39	95	56	390	36.17
K27 LD072	8/31/2000	MW-2	5500	14000	670	5800	35.81
K27 LD072	9/5/2000	MW-3	1	1	1	1	37.40
K27 LD072	7/3/2001	MW-3	1	1	1	1	37.69
K27 LD072	10/21/2005	MW-3	1	1	1	1	38.48
K27 LD072	11/7/2006	MW-3	1.1	1.6	0.42	2.3	36.5
K27 LD072	11/8/2006	TMW-5	1	1	1	2	32.95

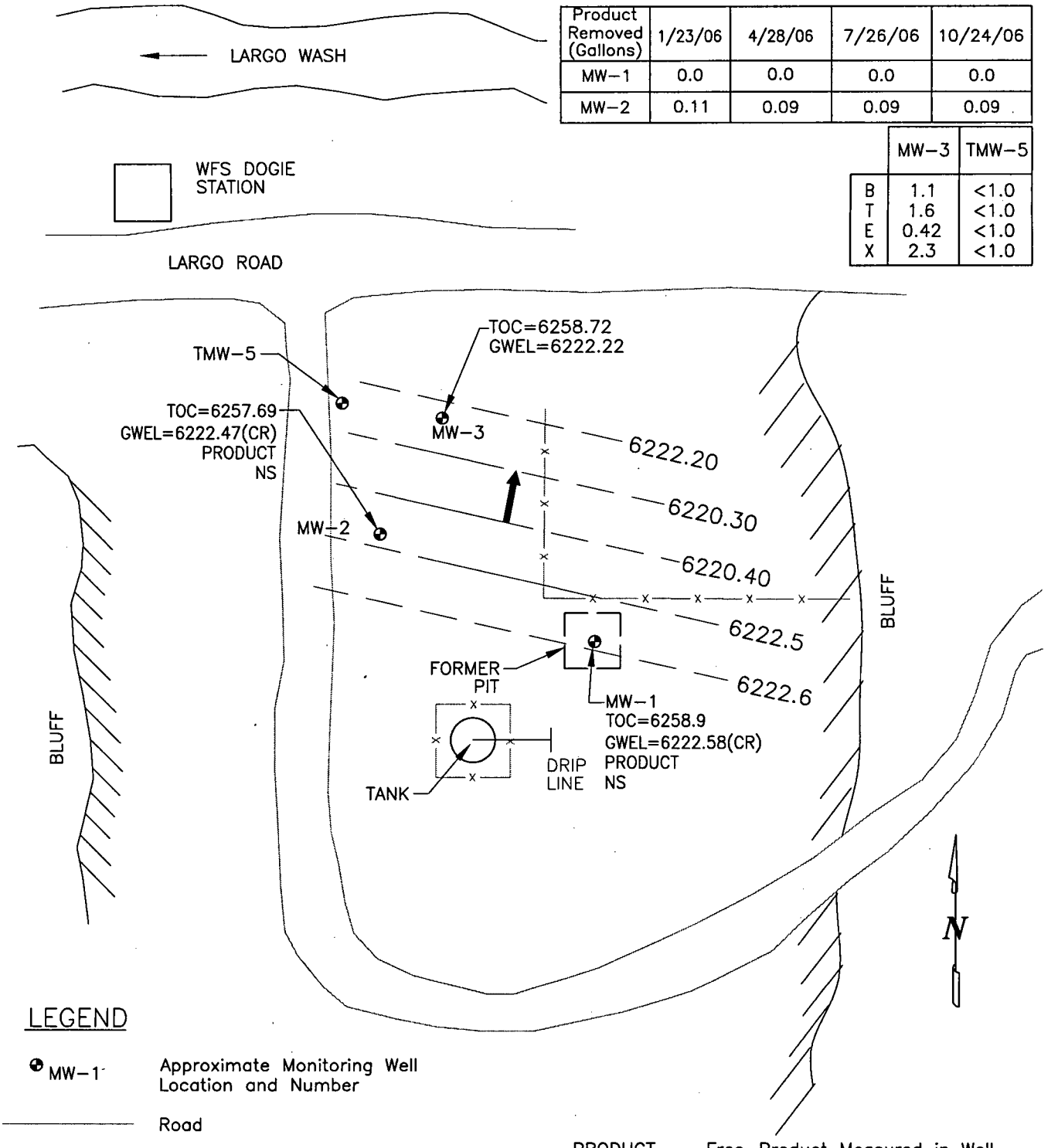
1 = Not Detected

TABLE 2
SUMMARY OF FREE-PRODUCT REMOVAL
K27 LD072 (METER #LD072)

Site Name	Monitoring Well	Removal Date	Depth to Product (feet btoc)	Depth to Water (feet btoc)	Product Thickness (feet)	Volume of Product Removed (gallons)	Cumulative Volume of Product Removed (gallons)
K27 LD072	MW-1	4/1/02		37.01	0.00	0.00	1.25
K27 LD072	MW-1	7/15/02	37.85	38.02	0.17	0.50	1.75
K27 LD072	MW-1	10/8/02	38.00	38.01	0.01	0.02	1.77
K27 LD072	MW-1	1/27/03		37.42	0.00	0.00	1.77
K27 LD072	MW-1	4/26/03		37.15	sheen	0.01	1.78
K27 LD072	MW-1	7/17/03	38.18	38.36	0.18	0.10	1.88
K27 LD072	MW-1	10/13/03		38.29	0.00	0.00	1.88
K27 LD072	MW-1	1/19/04	37.68	37.69	0.01	0.01	1.89
K27 LD072	MW-1	4/20/04		37.29	0.00	0.00	1.89
K27 LD072	MW-1	7/27/04	38.28	38.45	0.17	0.10	1.99
K27 LD072	MW-1	10/20/04	38.68	38.71	0.03	0.02	2.02
K27 LD072	MW-1	1/25/05	38.16	38.18	0.03	0.03	2.05
K27 LD072	MW-1	4/14/05	37.84	37.75	0.09	0.09	2.14
K27 LD072	MW-1	7/19/05		38.84	0.00	0.20	2.34
	MW-1	10/21/05		38.46	0.00	0.00	2.34
K27 LD072	MW-1	1/23/06		37.89	0.00	0.00	2.34
K27 LD072	MW-1	4/28/06		37.57	0.00	0.00	2.34
K27 LD072	MW-1	7/26/06		38.61	0.00	0.00	2.34
K27 LD072	MW-1	11/7/06	36.31	36.37	0.06	0.00	2.34
K27 LD072	MW-2	1/2/02	35.87	36.97	1.10	0.75	2.10
K27 LD072	MW-2	4/1/02	35.67	36.61	0.94	0.50	2.60
K27 LD072	MW-2	10/8/02	36.94	37.01	0.07	0.08	2.68
K27 LD072	MW-2	1/27/03	36.31	36.47	0.16	0.05	2.73
K27 LD072	MW-2	4/26/03	36.88	35.85	1.03	0.21	2.94
K27 LD072	MW-2	7/17/03	36.75	38.20	1.45	1.00	3.94
K27 LD072	MW-2	10/13/03	37.07	37.64	0.57	0.25	4.19
K27 LD072	MW-2	1/19/04	36.51	36.72	0.21	0.06	4.25
K27 LD072	MW-2	4/20/04	35.91	36.93	1.02	0.58	4.83
K27 LD072	MW-2	7/27/04	36.88	38.30	1.42	0.63	5.46
K27 LD072	MW-2	10/20/04	37.37	38.23	0.87	0.38	5.83
K27 LD072	MW-2	1/25/05	36.77	37.90	1.16	0.61	6.44
K27 LD072	MW-2	4/14/05	36.55	37.88	0.33	0.08	6.52
K27 LD072	MW-2	7/19/05	37.55	38.16	0.61	0.12	6.64
K27 LD072	MW-2	10/21/05	37.06	38.31	1.25	0.75	7.39
K27 LD072	MW-2	1/23/06	36.69	37.31	0.62	0.11	7.50
K27 LD072	MW-2	4/28/06	36.33	37.01	0.68	0.09	7.59
K27 LD072	MW-2	7/26/06	37.42	38.37	0.95	0.09	7.68
K27 LD072	MW-2	11/7/06	35.21	35.28	0.07	0.00	7.68
K27 LD072	MW-3	4/1/02		37.08	0.00	0.00	0.00
K27 LD072	MW-3	7/15/02		37.13	0.00	0.75	0.75
K27 LD072	MW-3	10/8/02		38.09	0.00	0.00	0.75

Product Removed (Gallons)	1/23/06	4/28/06	7/26/06	10/24/06
MW-1	0.0	0.0	0.0	0.0
MW-2	0.11	0.09	0.09	0.09

	MW-3	TMW-5
B	1.1	<1.0
T	1.6	<1.0
E	0.42	<1.0
X	2.3	<1.0



LEGEND

MW-1	Approximate Monitoring Well Location and Number
	Road
	Pipe Line
NS	Not Sampled
6221.40	Potentiometric Surface (Approximate & Assumed Where Dashed)
	Direction of Groundwater Flow (Estimated)

PRODUCT	Free-Product Measured in Well
GWEL	Groundwater Elevation (FT Above Mean Sea Level Unless Noted Otherwise)
CR	Water Level Has Been Corrected for Free-Product
TOC	Top of Casing

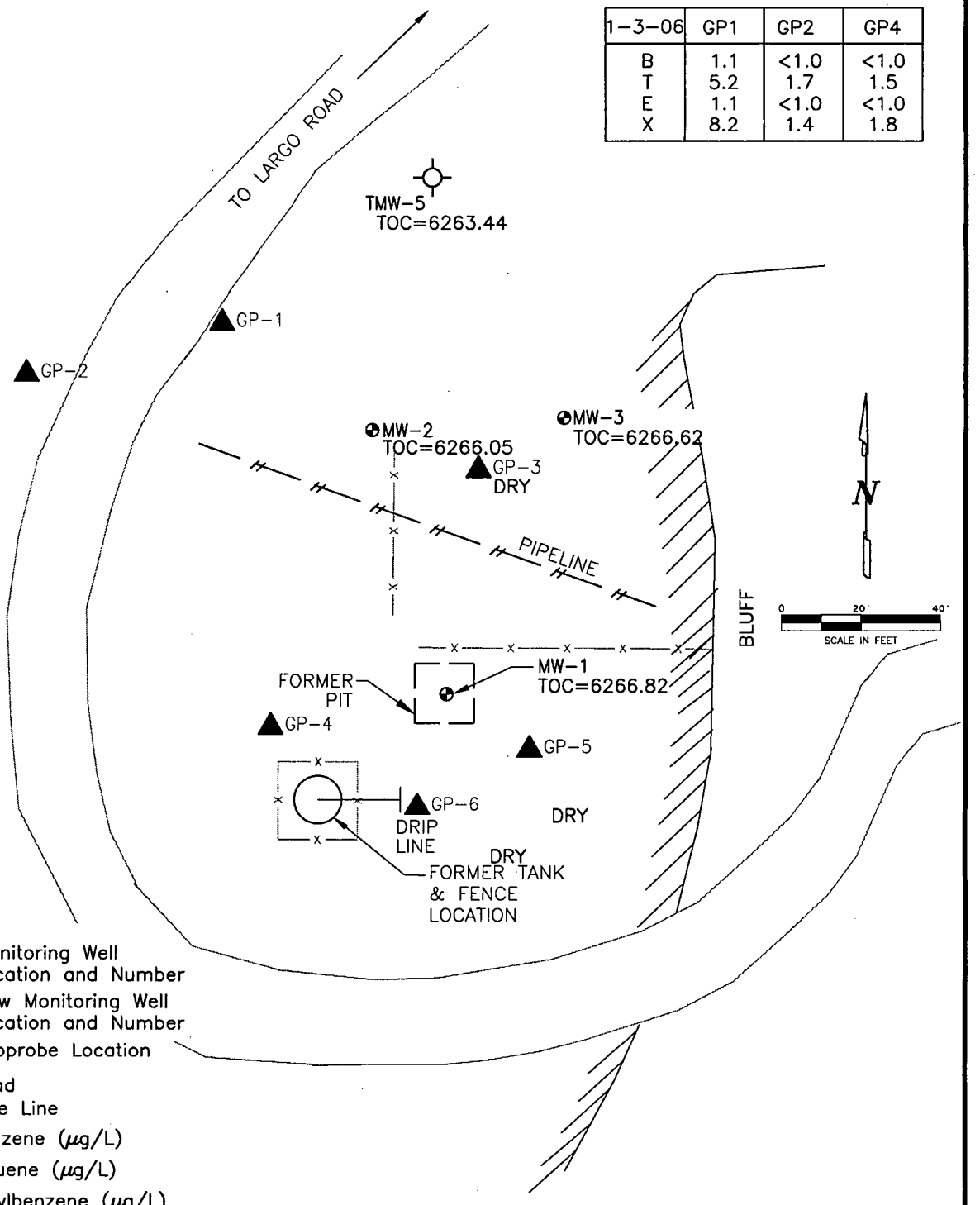
Fig1_k27ld_November2006.dwg

K-27 LINE DRIP, METER LD072
NOVEMBER 2006

GROUNDWATER SITES
EL PASO FIELD SERVICES

FIGURE 1

1-3-06	GP1	GP2	GP4
B	1.1	<1.0	<1.0
T	5.2	1.7	1.5
E	1.1	<1.0	<1.0
X	8.2	1.4	1.8



LEGEND

MW-1	Monitoring Well Location and Number
TMW-4	New Monitoring Well Location and Number
GP-1	Geoprobe Location
	Road
	Pipe Line
B	Benzene (µg/L)
T	Toluene (µg/L)
E	Ethylbenzene (µg/L)
X	Total Xylenes (µg/L)

Fig2_k27lo_2006.dwg

K27 LINE DRIP, METER LD072 GEOPROBE AND NEW MONITORING WELL LOCATIONS

GROUNDWATER SITES
EL PASO TENNESSEE PIPELINE COMPANY

FIGURE 2

FIGURE 3
HISTORIC BTEX CONCENTRATIONS AND GROUNDWATER ELEVATIONS
K27 LD072
MW-1

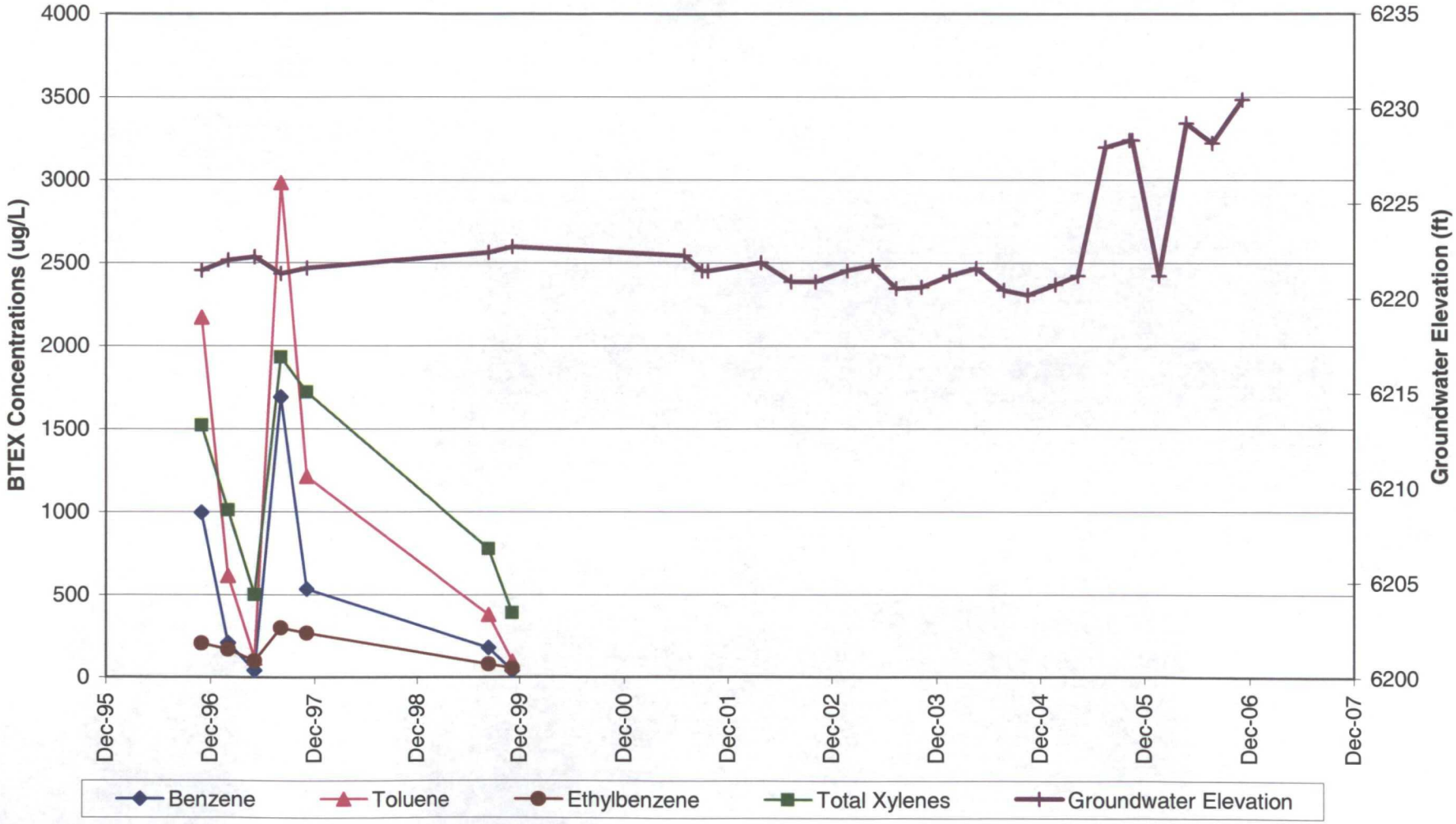


FIGURE 4
HISTORIC BTEX CONCENTRATIONS AND GROUNDWATER ELEVATIONS
K27 LD072
MW-2

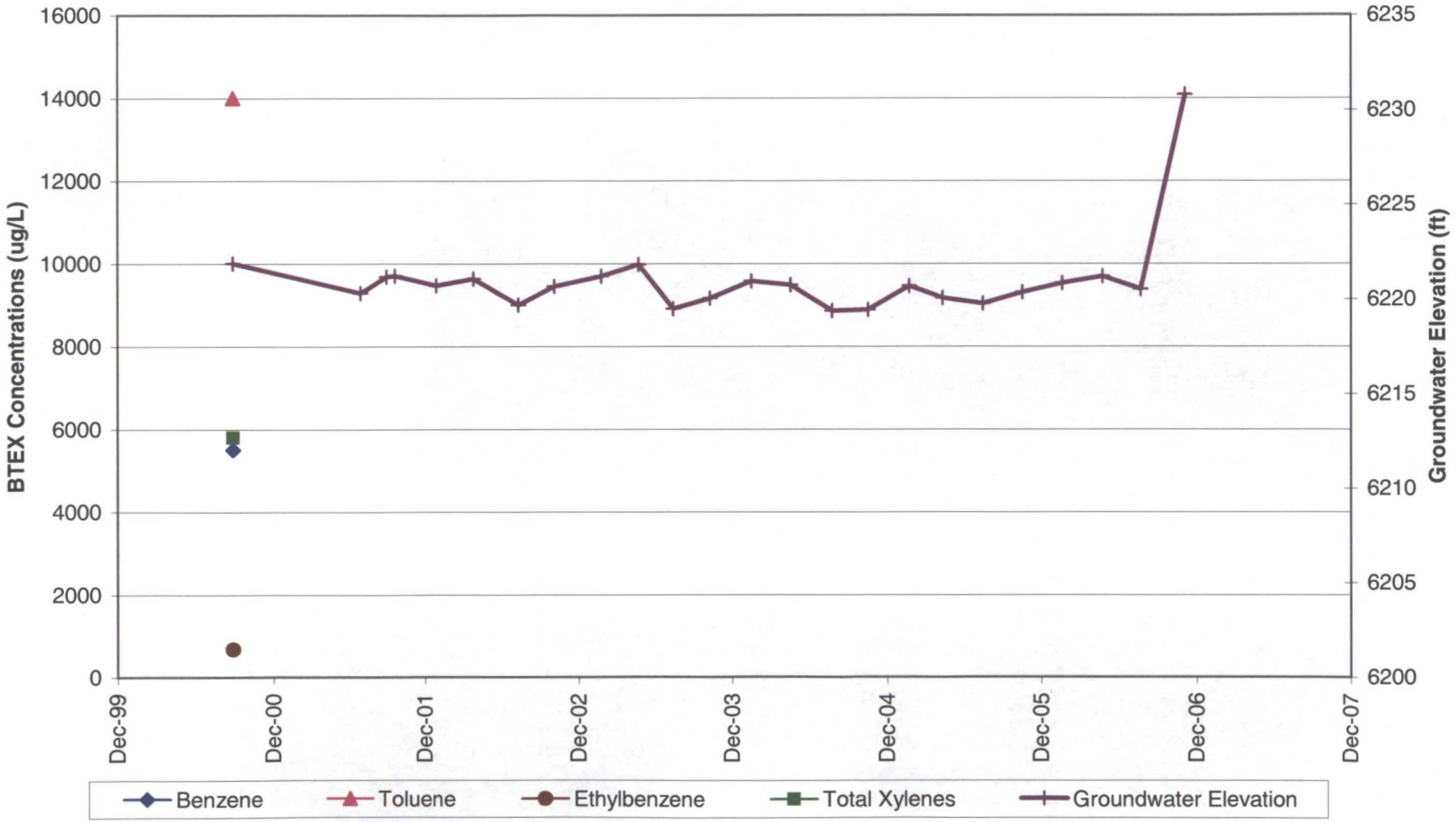
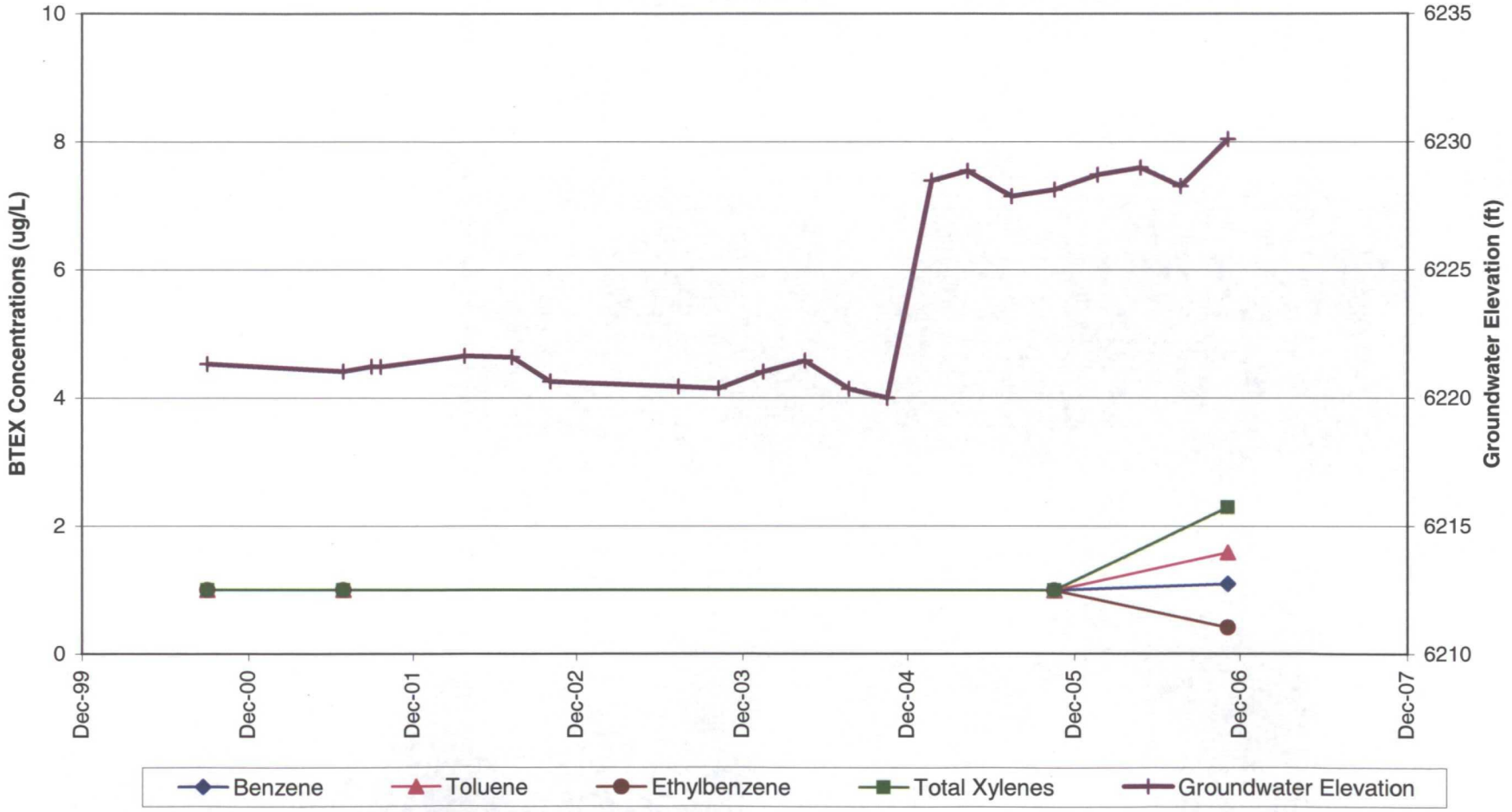


FIGURE 5
HISTORIC BTEX CONCENTRATIONS AND GROUNDWATER ELEVATIONS
K27 LD072
MW-3



Note: A value of 1 indicates parameter not detected.

FIGURE 6
HISTORIC FREE-PRODUCT RECOVERY
K27 LD072
MW-1

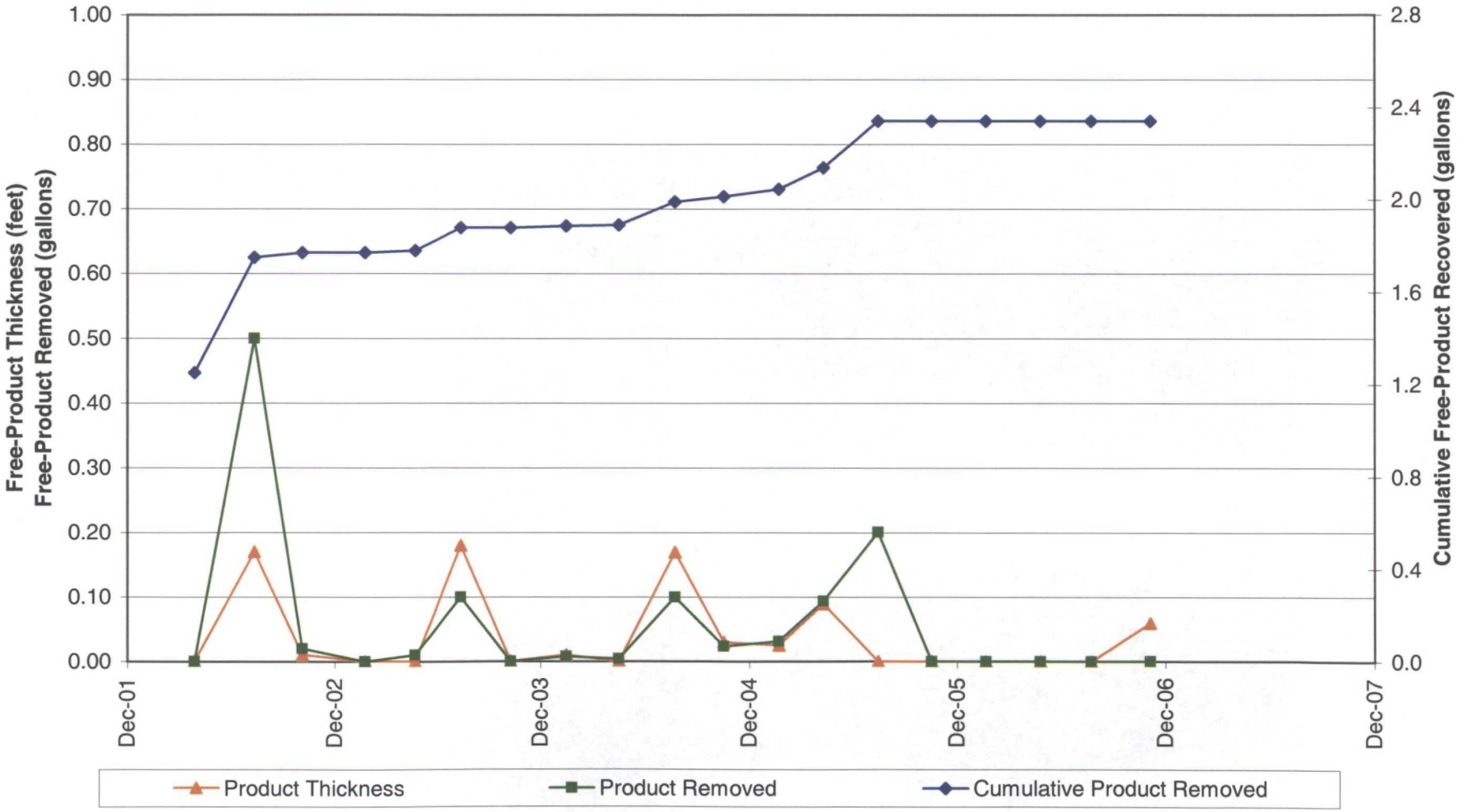


FIGURE 7
HISTORIC FREE-PRODUCT RECOVERY
K27 LD072
MW-2