

3R - 2007

**ANNUAL  
MONITORING  
REPORTS  
DATE:**

3/2006

**2005 ANNUAL GROUNDWATER REPORT RECEIVED**  
**NON-FEDERAL SITES VOLUME II**

**EL PASO TENNESSEE PIPELINE COMPANY** MAR 17 2006

Oil Conservation Division  
**TABLE OF CONTENTS** Environmental Bureau

METER or LINE ID	SITE NAME	TOWNSHIP	RANGE	SECTION	UNIT	
71669	State Gas Com N #1	31N	12W	16	H	3R 239
70194	Johnston Fed #4	31N	09W	33	H	3R 201
93388	Horton #1E	31N	09W	28	H	3R 192
72556	Knight #1	30N	13W	5	A	3R 207
03906	GCU Com A #142E	29N	12W	25	G	3R 197
70445	Standard Oil Com #1	29N	09W	36	N	3R 238
LD087	K-31 Line Drip	25N	06W	16	N	3R 205
94967	*Lindrith B #24	24N	03W	9	N	3R 214

\* Lindrith B#24 Site has been submitted for closure, and is pending approval from NMOCD.

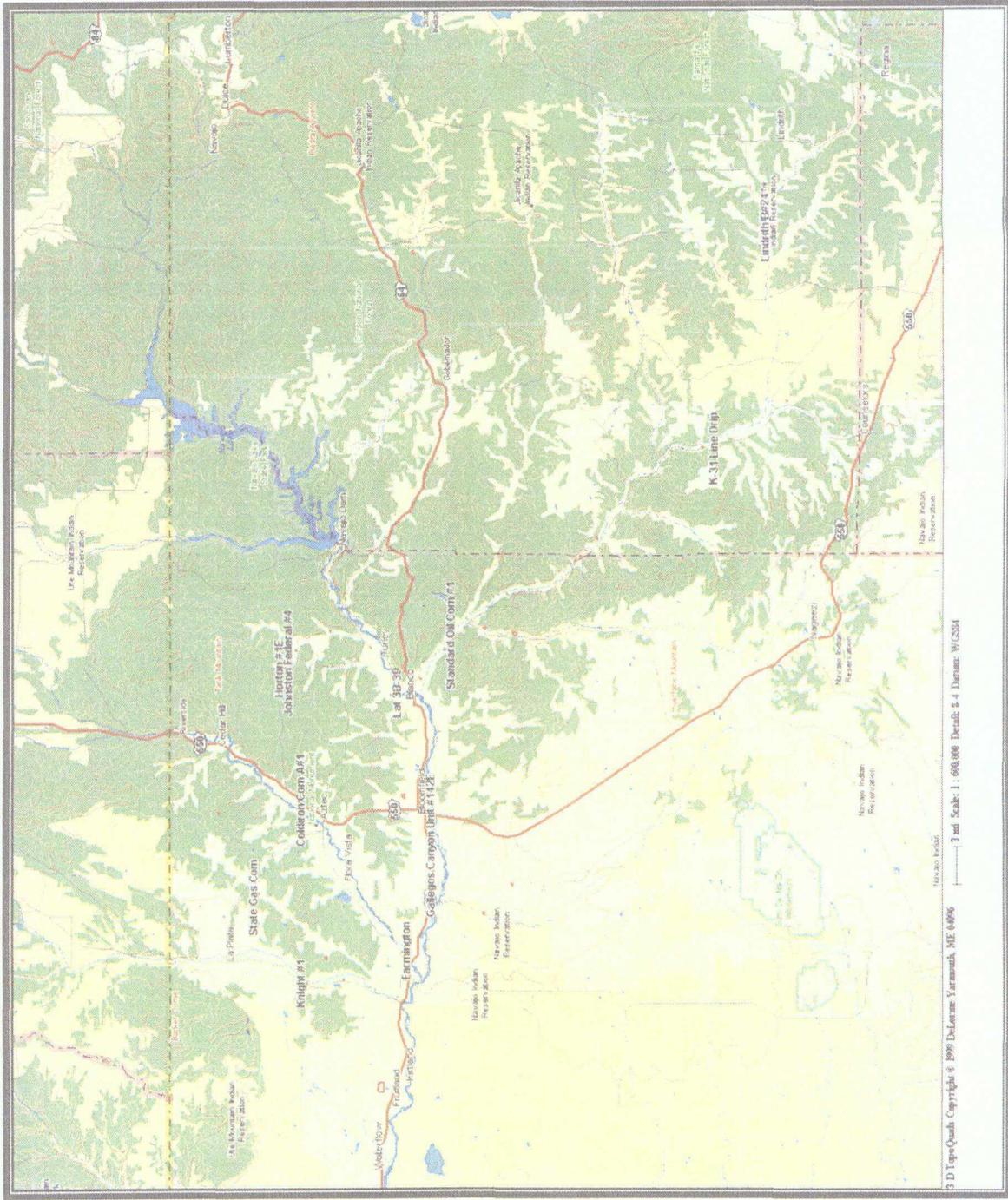


**MWH**  
 MONTGOMERY WATSON HARZA

## LIST OF ACRONYMS

B	benzene
btoc	below top of casing
E	ethylbenzene
EPFS	El Paso Field Services
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

# Non - Federal Groundwater Site Map



EPTPC GROUNDWATER SITES  
2005 ANNUAL GROUNDWATER REPORT

3R207

Knight #1  
Meter Code: 72556

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**SITE DETAILS**

Legal Description:                      Town: 30N                      Range: 13W                      Sec: 5                      Unit: A  
NMOCD Haz Ranking: 30                      Land Type: Fee                      Operator: Fuller Petroleum Inc.

**PREVIOUS ACTIVITIES**

Site Assessment:	1/95	Excavation:	1/95 (60 cy)	Soil Boring:	10/95
Monitor Well:	10/95	Geoprobe:	1/97	Additional MWs:	11/00
Downgradient MWs:	12/95	Replace MW:	NA	Quarterly Initiated:	4/96
ORC Nutrient Injection:	11/96	Re-Excavation:	NA	PSH Removal Initiated:	9/01
Annual Initiated:	NA	Quarterly Resumed:	NA		

**SUMMARY OF 2005 ACTIVITIES**

**MW-1:** Annual groundwater sampling (September) and semi-annual free-product recovery and water level measurements were performed in March and September 2005.

**MW-2:** Annual groundwater sampling (September) and semi-annual water level measurements were performed during 2005.

**MW-3:** Annual groundwater sampling (September) and semi-annual free-product recovery and water level measurements were performed in 2005.

**MW-4:** Annual groundwater sampling (September) and semi-annual water level measurements were performed during 2005.

**MW-5:** Semi-annual water level measurements were performed during 2005.

**Site-Wide Activities:** A technology review and data assessment to evaluate free-product removal was performed in 2005.

**SITE MAP**

A site map (September) is attached in Figure 1.

**EPTPC GROUNDWATER SITES  
2005 ANNUAL GROUNDWATER REPORT**

**Knight #1  
Meter Code: 72556**

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**SUMMARY TABLES AND GRAPHS**

- Analytical data from 2005 are summarized on Table 1, and historic data are presented graphically in Figures 2 through 6.
- Free-product recovery data for 2005 are summarized on Table 2, and historic data are presented graphically in Figures 7 and 8.
- 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**

No subsurface activities were performed at this site during 2005.

**DISPOSITION OF GENERATED WASTES**

All purge water was taken to the El Paso Natural Gas Rio Vista Compressor Station. Phase separated hydrocarbons are stored in a 55 gallon drum and are periodically picked up by Mesa Oil for recycling.

**ISOCONCENTRATION MAPS**

No isoconcentration maps were prepared for this site, however, the attached site maps present the potentiometric surface and analytical data collected during 2005.

**CONCLUSIONS**

- The groundwater flow direction trends to the south-southeast.
- Free-product recovery efforts at MW-1 resulted in removal of approximately 0.01 gallons of free-phase hydrocarbons during 2005 bringing the cumulative total volume recovered to date to 0.36 gallons. Free-product removal in 2004 totaled 0.02 gallons, compared to 0.01 gallons in 2005, demonstrating that product accumulation is decreasing.
- An oil absorbant sock was installed in March 2005 in MW-1 based on the 2004 technology review and free-product removal data for this site. The sock was subsequently removed in September 2005 because it did not accumulate a significant amount of free product.
- Based on the technology review and free-product removal data for this site, it was concluded that oil absorbent socks were not the most efficient and cost-effective product removal technique for MW-1 at this time.

**EPTPC GROUNDWATER SITES  
2005 ANNUAL GROUNDWATER REPORT**

**Knight #1  
Meter Code: 72556**

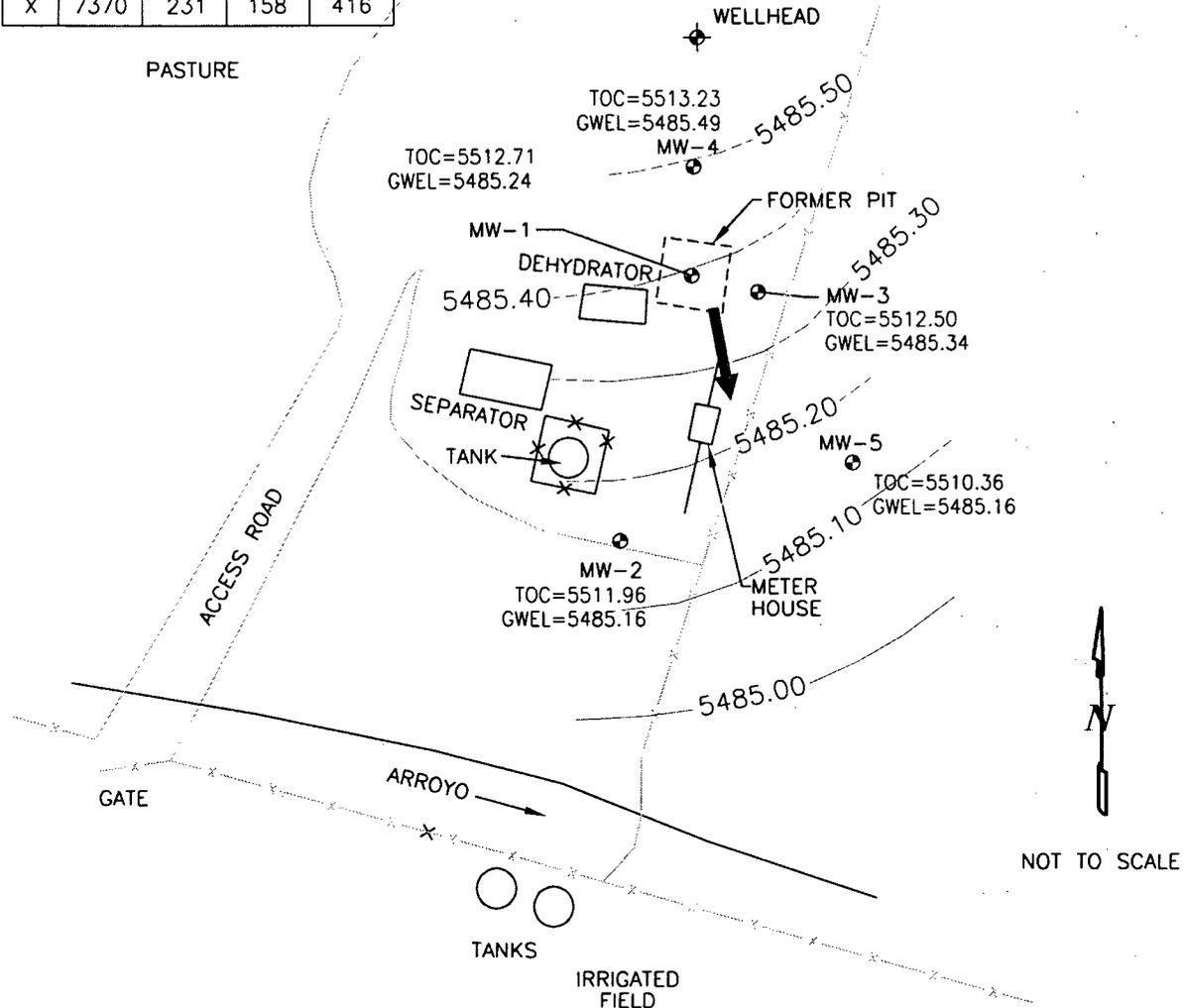
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- The annual sample collected from MW-2 during September 2005 had a benzene concentration of 126 µg/L, which indicates a decrease in concentration since 2002, 2003, and 2004.
- Free-product recovery efforts at MW-3 resulted in removal of no free-phase hydrocarbons during 2005; however, some trace product was detected in the bailer during purging in March 2005.
- Laboratory results from the annual sample collected at upgradient well MW-4 during 2005 indicated a very slight increase in benzene concentration from 182 µg/L in 2004 to 199 µg/L in 2005. This well is located upgradient of EPTPC' former pit, indicating a potential secondary source of contamination.

**RECOMMENDATIONS**

- EPTPC will continue semi-annual free-product recovery efforts at MW-1; however, the frequency of monitoring will be adjusted based on the amount of product recovered during the monitoring visits. If only minimal free-product is present during the monitoring visits, MW-1 will be sampled.
- If free-product continues to be absent from MW-3, EPTPC recommends that an annual sample be collected from this well during September 2006, as well as semi-annual water level measurements.
- EPTPC will continue annual groundwater sampling and semi-annual water level monitoring at MW-2 and MW-4 until concentrations of BTEX constituents approach closure criteria. These wells will then be scheduled for quarterly sample collection until closure criteria have been met.
- Because historical analytical data have indicated that BTEX concentrations are below or near detection limits at MW-5, EPTPC recommends that this well not be sampled until closure. Water level monitoring at this well will continue on a semi-annual basis.

	MW-1	MW-2	MW-3	MW-4
B	4430	126	73.8	199
T	23.7	<1.0	<1.0	<1.0
E	487	9.5	5.2	53.8
X	7370	231	158	416



NOT TO SCALE

**LEGEND**

- MW-1 Approximate Monitoring Well Location and Number
- Centerline of Road
- //---// Pipe Line
- B Benzene ( $\mu\text{g/L}$ )
- T Toluene ( $\mu\text{g/L}$ )
- E Ethylbenzene ( $\mu\text{g/L}$ )
- X Total Xylenes ( $\mu\text{g/L}$ )
- NS Not Sampled
- < Not Detected. Value Shown is Detection Limit.
- 5483.70 Potentiometric Surface (Assumed Where Dashed)
- Direction of Groundwater Flow (Estimated)
- GWEL Groundwater Elevation (FT Above Mean Sea Level Unless Noted Otherwise)
- PRODUCT Free-Product Measured in Well
- TOC Top of Casing
- CR Water Level Has Been Corrected for Free-Product

**KNIGHT #1, METER 72556**  
**SEPTEMBER 2005**

**GROUNDWATER SITES**  
**EL PASO TENNESSEE PIPELINE COMPANY**

**FIGURE 1**

TABLE 1

SUMMARY OF BTEX COMPOUNDS IN 2005 GROUNDWATER SAMPLES  
KNIGHT #1 (METER #72556)

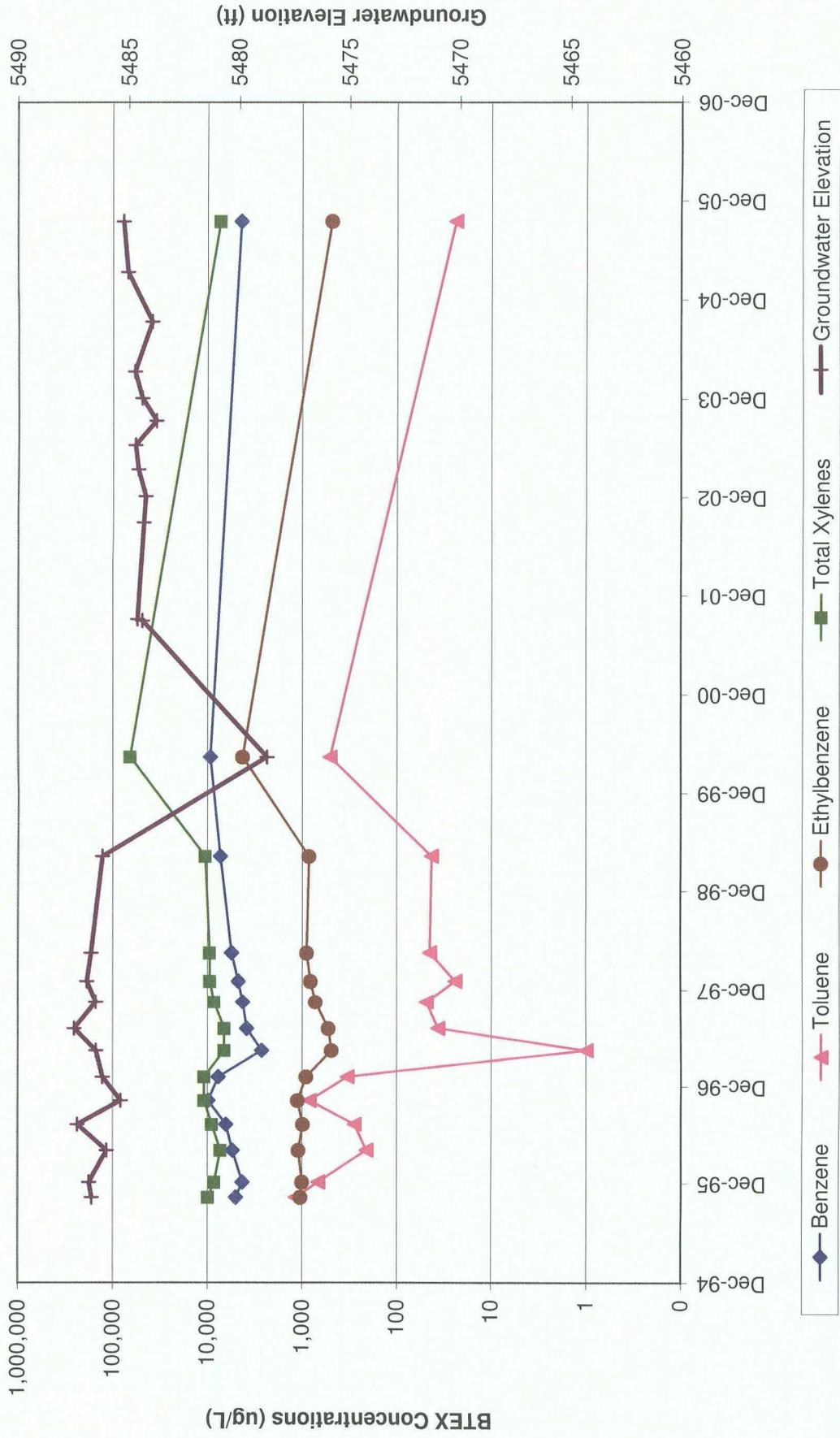
Site Name	Sample Date	Monitoring Well	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	Depth to Water (feet)
Knight #1	9/19/2005	MW-1	4430	23.7	487	7370	27.47
Knight #1	9/19/2005	MW-2	126	1	9.5	231	26.80
Knight #1	9/16/2005	MW-3	73.8	1	5.2	158	27.16
Knight #1	9/19/2005	MW-4	199	1	53.8	416	27.74

TABLE 2

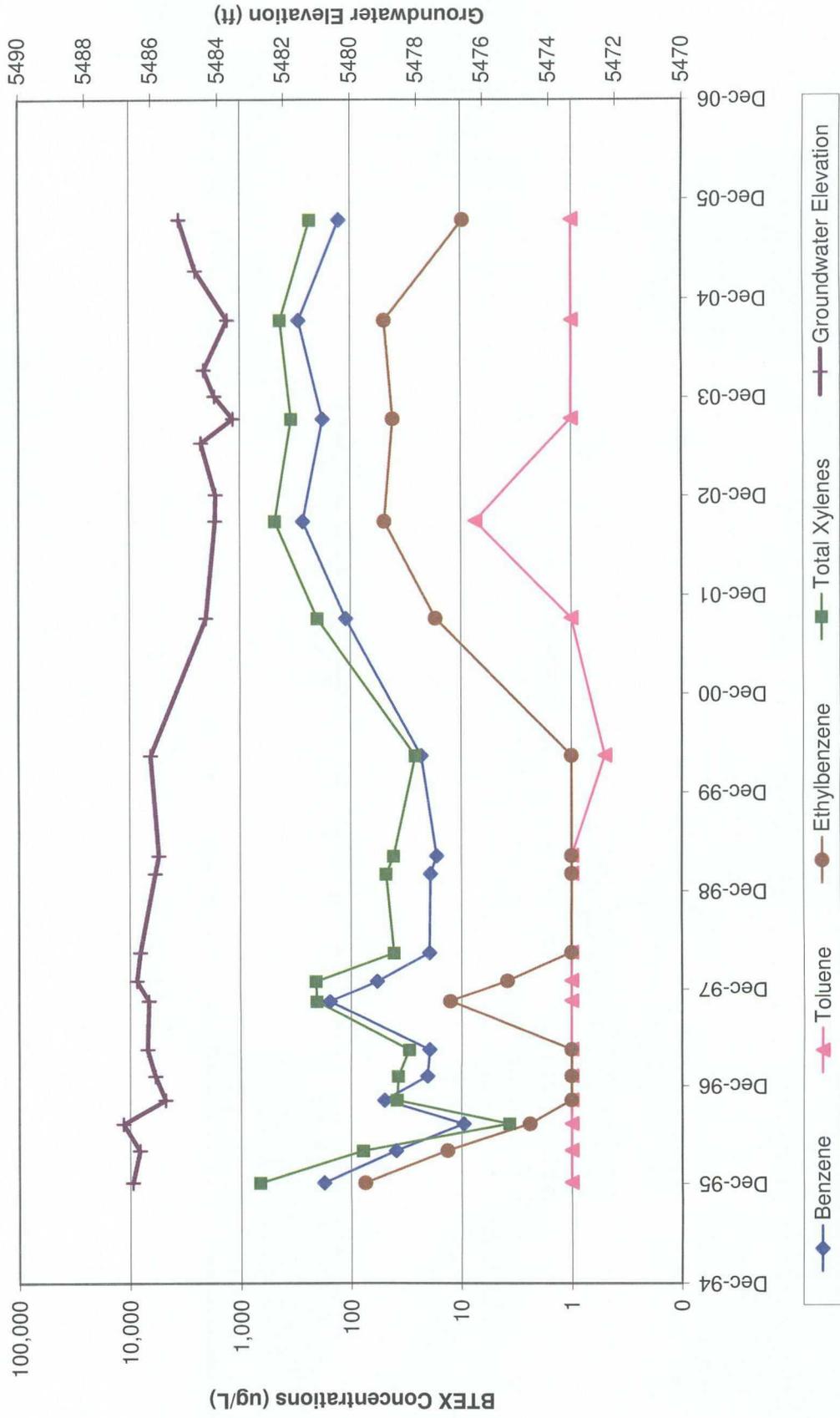
SUMMARY OF FREE-PRODUCT REMOVAL DURING 2005  
 KNIGHT #1 (METER #72556)

Site Name	Monitoring Well	Removal Date	Depth to Product (feet btoc)	Depth to Water (feet btoc)	Product Thickness (feet)	Volume of Product Removed (gallons)	Cummulative Volume of Product Removed (gallons)
Knight #1	MW-1	3/16/05	27.67	27.675	0.005	0.01	0.36

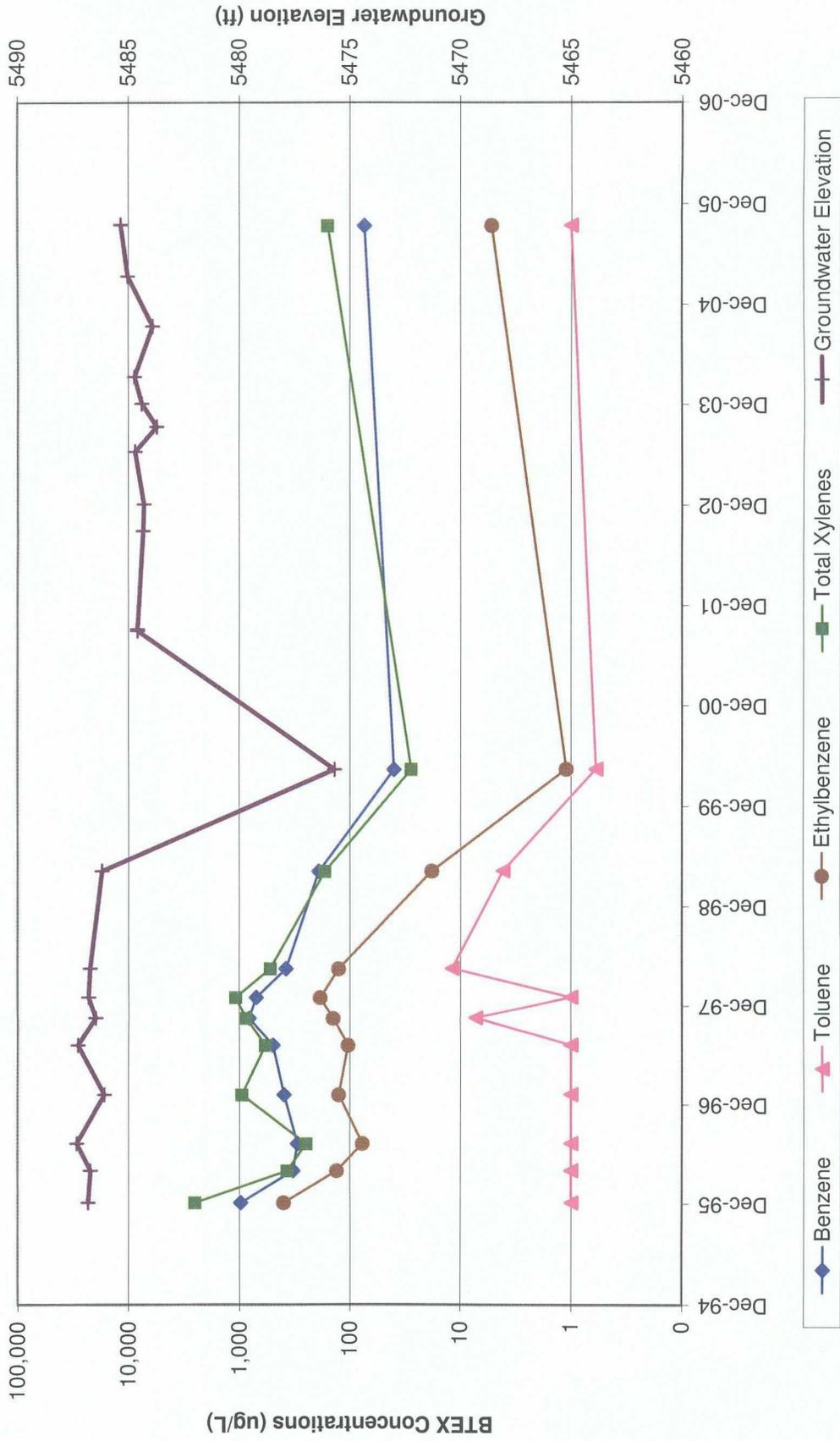
**FIGURE 2**  
**HISTORIC BTEX CONCENTRATIONS AND GROUNDWATER ELEVATIONS**  
**KNIGHT #1**  
**MW-1**



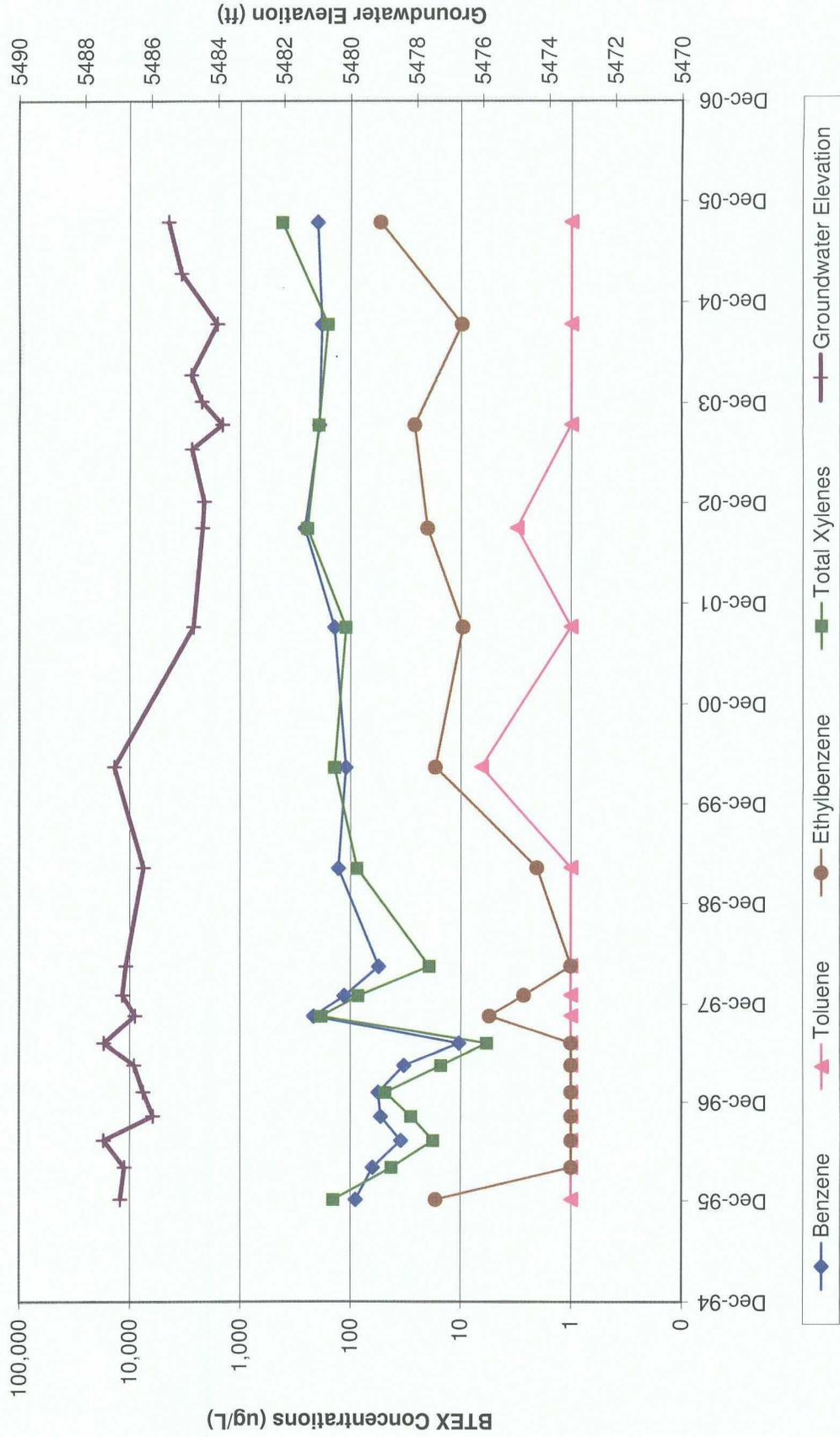
**FIGURE 3**  
**HISTORIC BTEX CONCENTRATIONS AND GROUNDWATER ELEVATIONS**  
**KNIGHT #1**  
**MW-2**



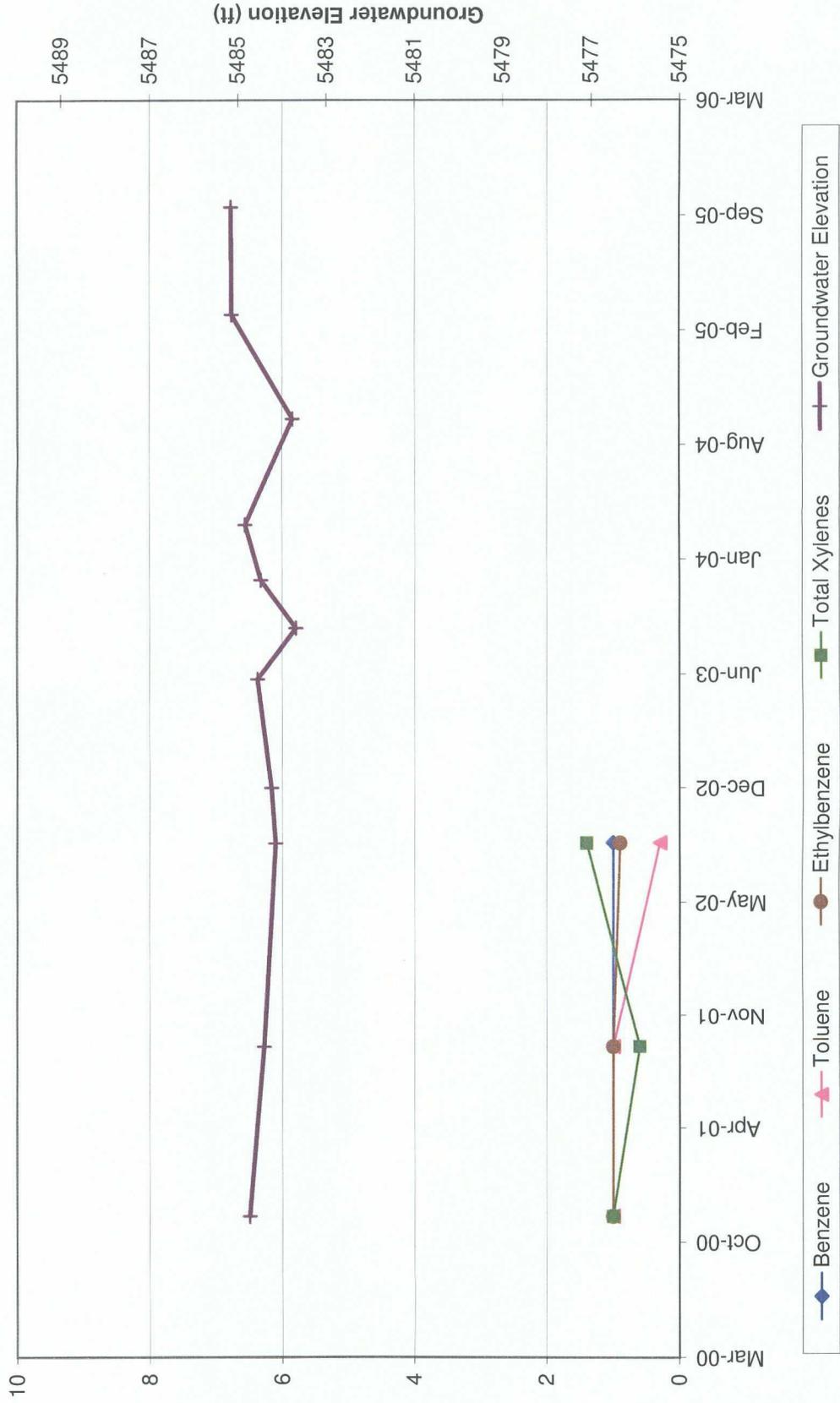
**FIGURE 4**  
**HISTORIC BTEX CONCENTRATIONS AND GROUNDWATER ELEVATIONS**  
**KNIGHT #1**  
**MW-3**



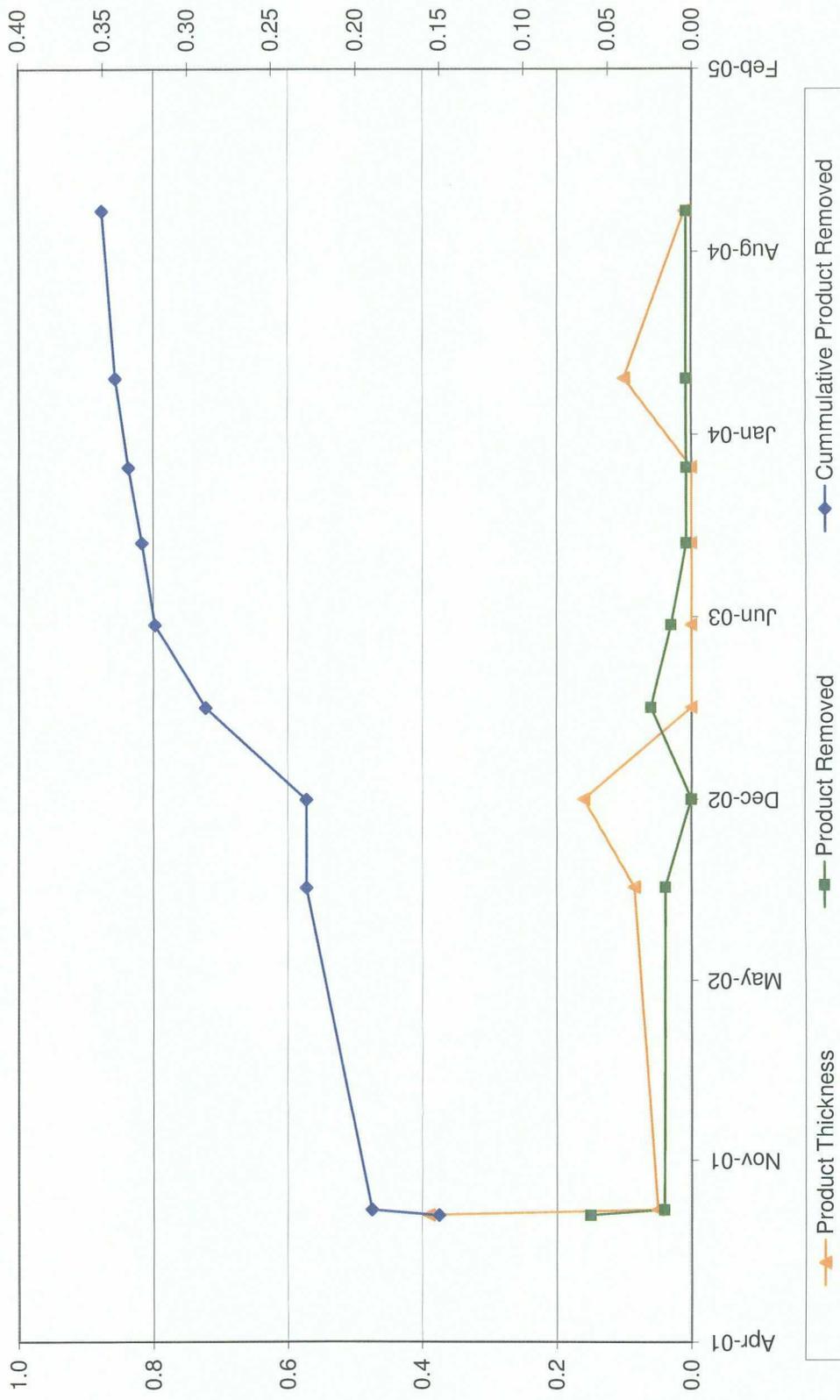
**FIGURE 5**  
**HISTORIC BTEX CONCENTRATIONS AND GROUNDWATER ELEVATIONS**  
**KNIGHT #1**  
**MW-4**



**FIGURE 6**  
**HISTORIC BTEX CONCENTRATIONS AND GROUNDWATER ELEVATIONS**  
**KNIGHT #1**  
**MW-5**



**FIGURE 7**  
**HISTORIC FREE-PRODUCT RECOVERY**  
**KNIGHT #1**  
**MW-1**



**FIGURE 8**  
**HISTORIC FREE-PRODUCT RECOVERY**  
**KNIGHT #1**  
**MW-3**

