3R - 207

ANNUAL MONITORING REPORTS

DATE: 2/2005

2004 ANNUAL GROUNDWATER REPORT
NON-FEDERAL SITES VOLUME II

EL PASO FIELD SERVICES

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* Coldiron A#1 Site was closed by NMOCD in October 2004.

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

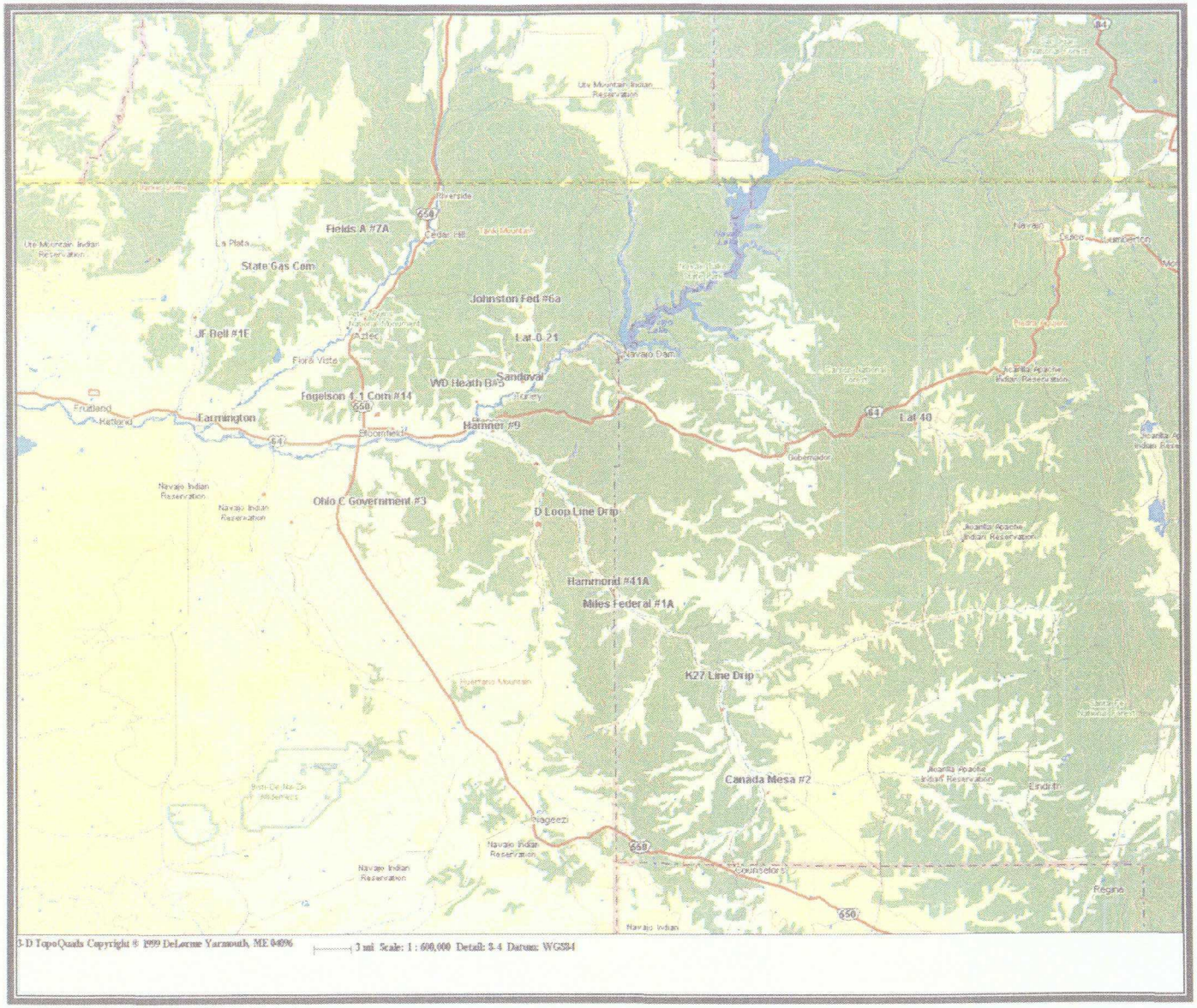
elpaso

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

Federal Groundwater Site Map



EPFS GROUNDWATER SITES
2004 ANNUAL GROUNDWATER REPORT

3R207

Knight #1
Meter Code: 72556

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 2004 ACTIVITIES

MW-1: Semi-annual free-product recovery and water level measurements were performed in 2004.

MW-2: Annual groundwater sampling (September) and semi-annual water level measurements were performed during 2004.

MW-3: Semi-annual free-product recovery and water level measurements were performed in 2004.

MW-4: Annual groundwater sampling (September) and semi-annual water level measurements were performed during 2004.

MW-5: Semi-annual water level measurements were performed during 2004.

Site-Wide Activities: A technology review and data assessment were performed to evaluate free-product removal protocol and methodologies for sites with free-product.

SITE MAP

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

SUMMARY TABLES AND GRAPHS

- Analytical data from 2004 are summarized on Table 1, and historic data are presented graphically in Figures 2 through 6.
- Free-product recovery data for 2004 are summarized on Table 2, and historic data are presented graphically in Figures 7 and 8.
- Laboratory reports are presented in Attachment 1.
- Field documentation is presented in Attachment 2.

GEOLOGIC LOGS AND WELL COMPLETION DIAGRAMS

No subsurface activities were performed at this site during 2004.

DISPOSITION OF GENERATED WASTES

All phase-separated hydrocarbons were disposed of at the EPFS Kutz Separator located in Bloomfield, New Mexico.

ISOCONCENTRATION MAPS

No isoconcentration maps were prepared for this site, however, the attached site maps present the potentiometric surface and analytical data collected during 2004.

CONCLUSIONS

- The groundwater flow direction trends to the south-southeast.
- Free-product recovery efforts at MW-1 resulted in removal of approximately 0.02 gallons of free-phase hydrocarbons during 2004 bringing the cumulative total volume recovered to date to 0.35 gallons. Free-product removal in 2003 totaled 0.11 gallons, compared to 0.02 gallons in 2004, demonstrating that product accumulation is decreasing.
- Based on the technology review and free-product removal data for this site, it was concluded that oil-absorbent socks would be the most efficient and cost-effective product removal technique for MW-1 at this time.
- The annual sample collected from MW-2 during September 2004 had a benzene concentration of 291 µg/L, which indicates no significant change since 2002 and 2003.

- Free-product recovery efforts at MW-3 resulted in removal of no free-phase hydrocarbons during 2004; however, some trace product was detected in the bailer during purging in September 2004.

- Laboratory results from the annual sample collected at upgradient well MW-4 during 2004 indicated a very slight decrease in benzene concentration from 192 µg/L in 2003 to 182 µg/L in 2004. This well is located upgradient of EPFS' former pit, indicating a potential secondary source of contamination.

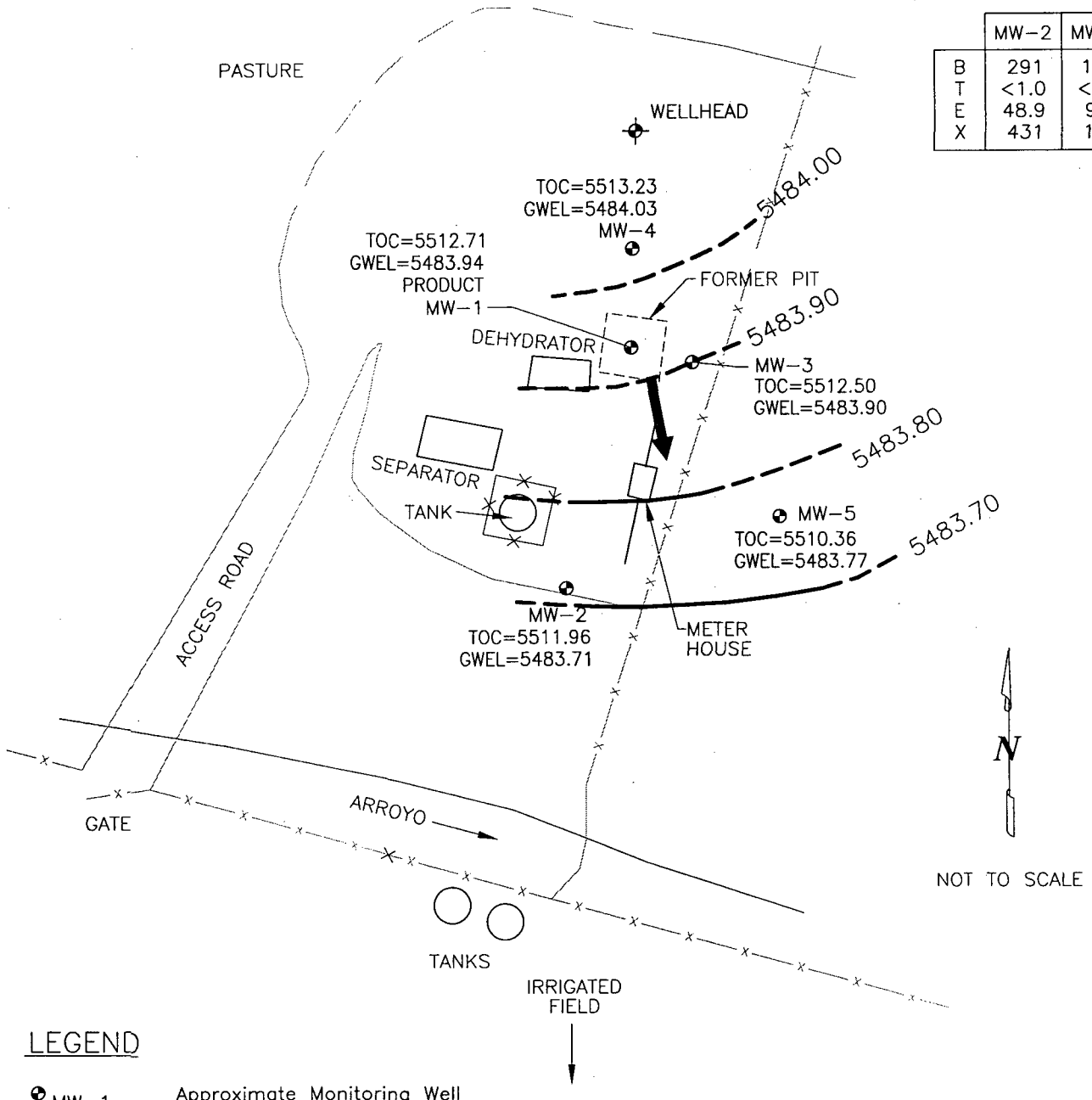
RECOMMENDATIONS

- EPFS recommends installation of oil-absorbent socks into MW-1 to facilitate free-product removal during 2005. EPFS 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, EPFS recommends that an annual sample be collected from this well during September 2005, as well as semi-annual water level measurements.

- EPFS 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, EPFS recommends that this well not be sampled until closure. Water level monitoring at this well will continue on a semi-annual basis.



	MW-2	MW-4
B	291	182
T	<1.0	<1.0
E	48.9	9.8
X	431	161

LEGEND

MW-1	Approximate Monitoring Well Location and Number
——— – ———	Centerline of Road
——//——//——	Pipe Line
B	Benzene (μg/L)
T	Toluene (μg/L)
E	Ethylbenzene (μg/L)
X	Total Xylenes (μg/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 2004

GROUNDWATER SITES
EL PASO FIELD SERVICES

FIGURE 1

TABLE 1

SUMMARY OF BTEX COMPOUNDS IN 2004 GROUNDWATER SAMPLES
KNIGHT #1 (METER #72556)

Site Name	Monitoring Well	Sample Date	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	Depth to Water (ft btoc)
Knight #1	MW-2	9/15/2004	291	< 1.0	48.9	431	28.25
Knight #1	MW-4	9/15/2004	182	< 1.0	9.8	161	29.20

< = Analyte not detected at Method Detection Limit (MDL). Value shown is MDL.

J = Value estimated

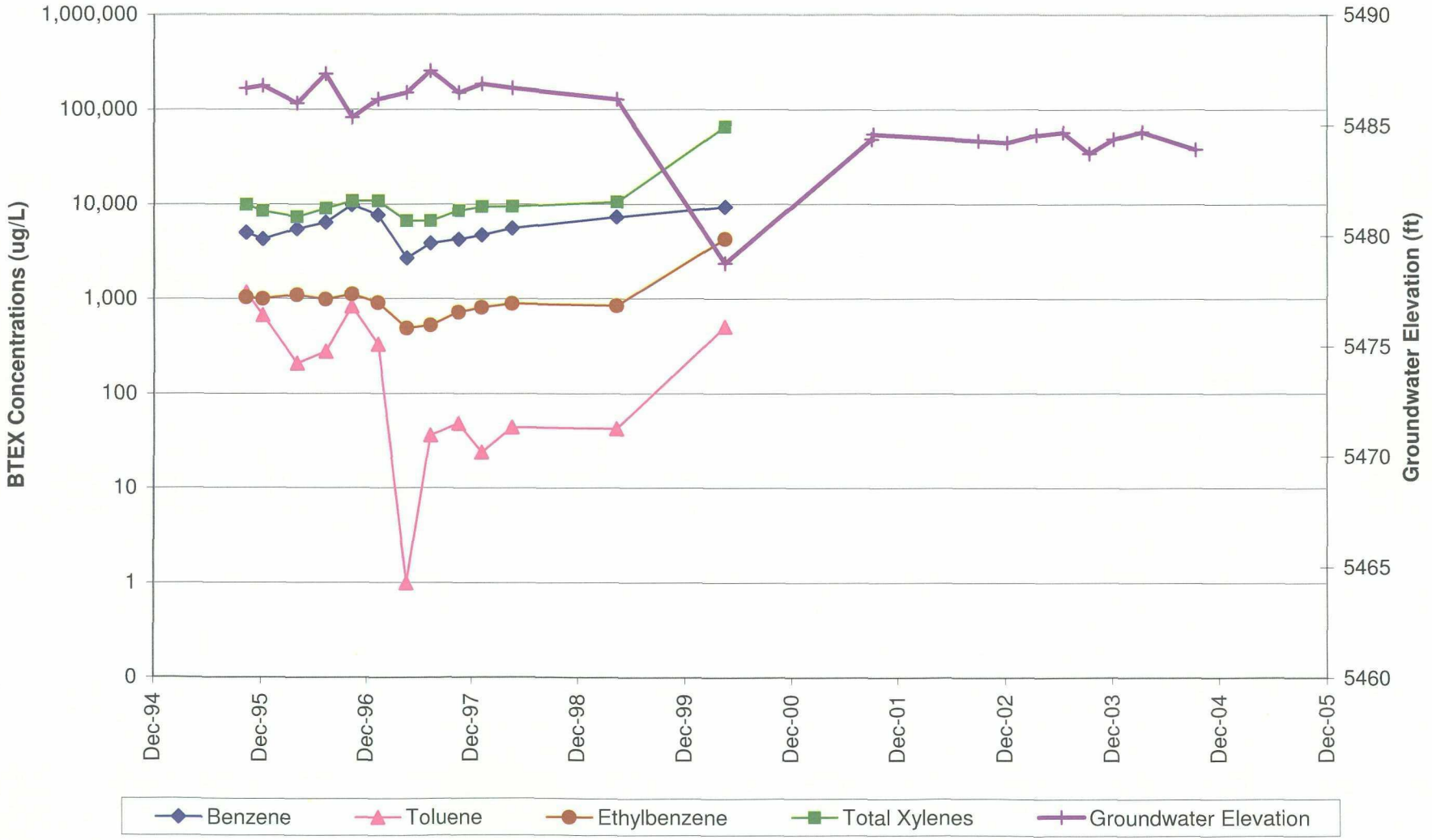
TABLE 2

SUMMARY OF FREE-PRODUCT REMOVAL DURING 2004
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	3/15/04	27.89	27.99	0.10	0.01	0.34
Knight #1	MW-1	9/15/04	28.77	28.78	0.01	0.01	0.35
Knight #1	MW-3	3/15/04	NA	27.78	0.00	0.00	0.62
Knight #1	MW-3	9/15/04	NA	28.60	0.00	0.00	0.62

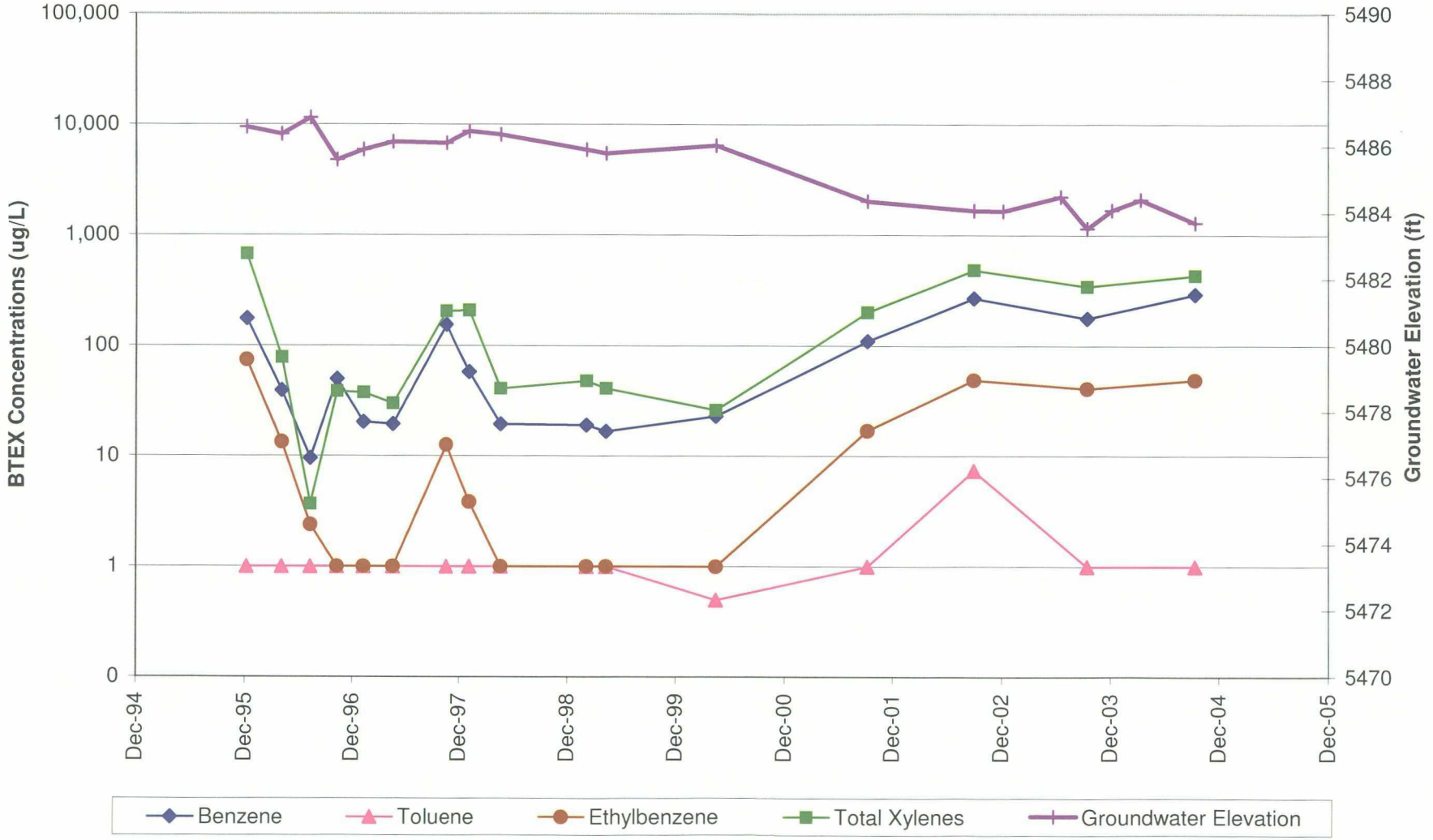
Some trace product detected in bailer from MW-3 in September; however, there was no measureable product thickness.

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



2004 Knight.xls,Knight MW1

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

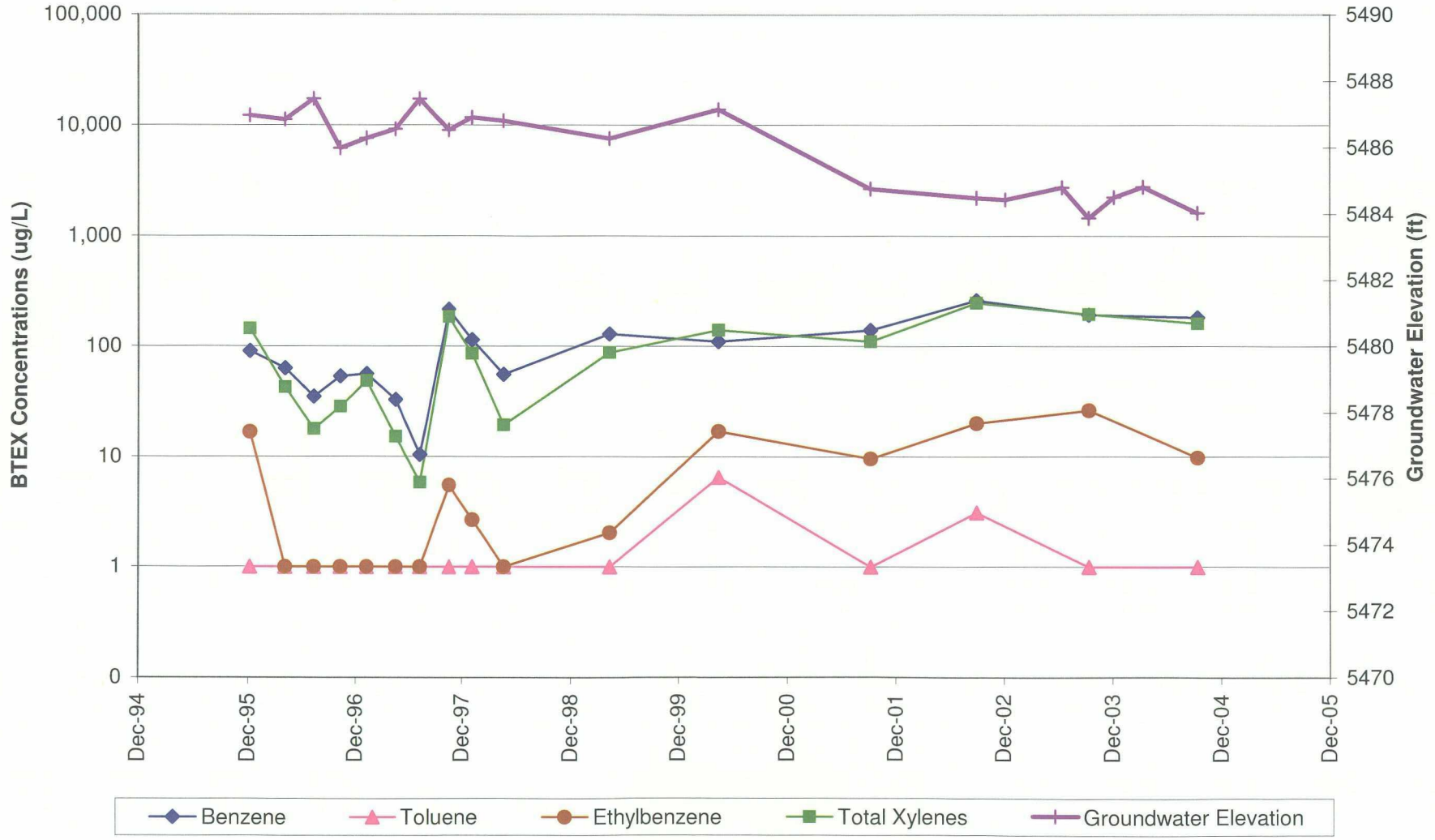


2004 Knight.xls,Knight MW2

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

2004 Knight.xls,Knight MW3

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

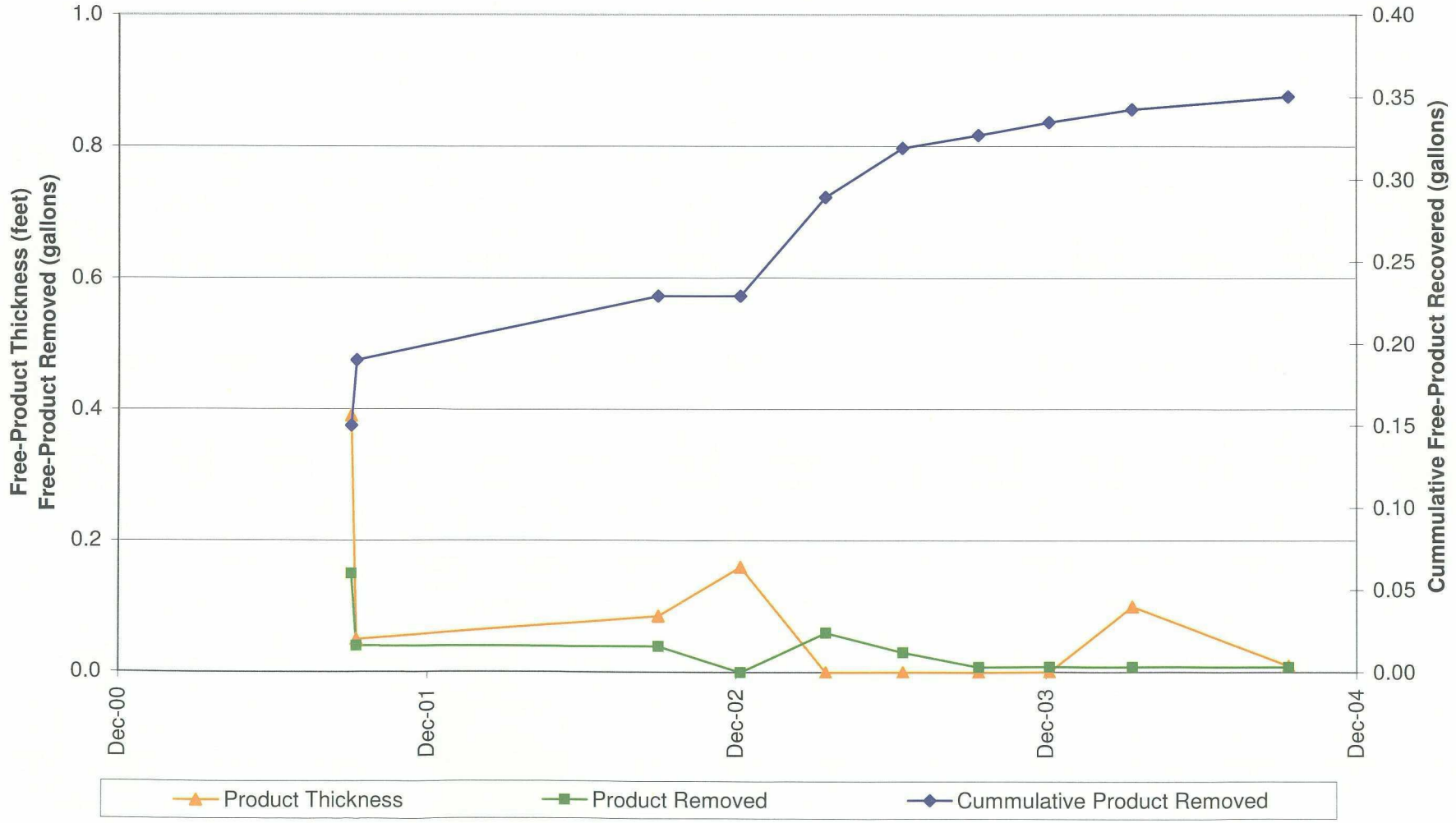


2004 Knight.xls,Knight MW4

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

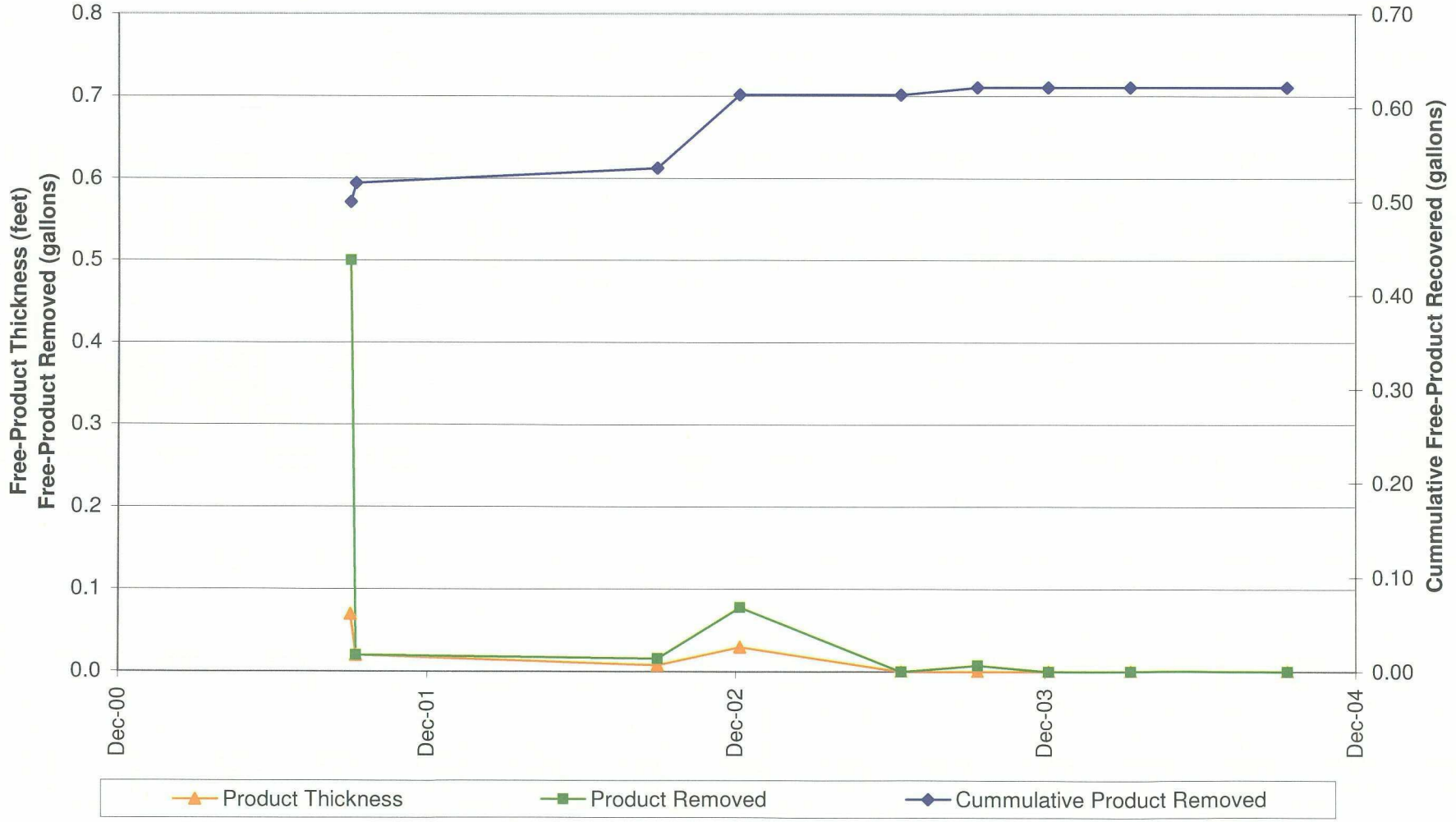
2004 Knight.xls,Knight MW5

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



2004 Knight.xls, Knight PR1

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



2004 Knight.xlsm Knight PR3