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ANNUAL MONITORING REPORTS

DATE:

3/2006

2005 ANNUAL GROUNDWATER REPORT
FEDERAL SITES VOLUME I

RECEIVED
MAR 17 2006
Oil Conservation Division
Environmental Bureau

EL PASO TENNESSEE PIPELINE COMPANY

TABLE OF CONTENTS

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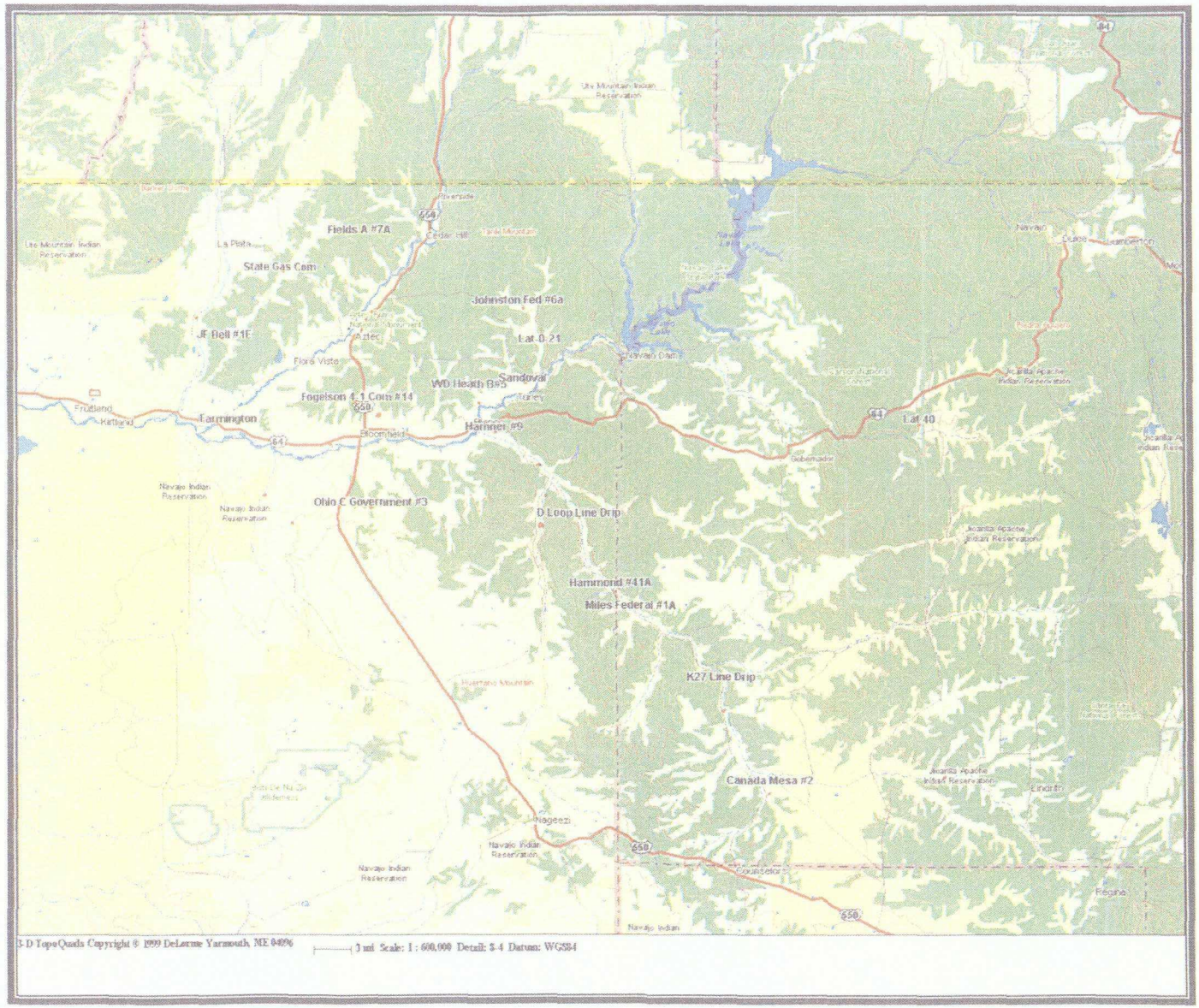
MWH
MONTGOMERY WATSON HARZA

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



EPTPC GROUNDWATER SITES
2005 ANNUAL GROUNDWATER REPORT

Johnston Fed #6A
Meter Code: 89232

SITE DETAILS

Legal Description:	**Town:**	31N	**Range:**	9W	**Sec:**	35	**Unit:** F
NMOCD Haz Ranking:	40	**Land Type:**	Federal	**Operator:**	Burlington Resources		

PREVIOUS ACTIVITIES

Site Assessment:	8/94	**Excavation:**	9/94 (80cy)	**Soil Boring:**	8/95
Monitor Well:	8/95	**Geoprobe:**	NA	**Additional MWs:**	12/95
Downgradient MWs:	6/00	**Replace MW:**	NA	**Quarterly Initiated:**	4/96
ORC Nutrient Injection:	NA	**Re-Excavation:**	NA	**PSH Removal Initiated:**	7/97
Annual Initiated:	NA	**Quarterly Resumed:**	NA		

SUMMARY OF 2005 ACTIVITIES

MW-1: Quarterly free-product recovery and water level monitoring were performed during 2005.

MW-2: Quarterly water level monitoring was performed during 2005.

MW-3: Quarterly free-product recovery and water level monitoring were performed during 2005.

MW-4: Annual groundwater sampling (March) and quarterly water level monitoring were performed during 2005.

MW-5: Quarterly free-product recovery and water level monitoring were performed during 2005.

Site-Wide Activities: A technology review and data assessment were performed to evaluate free-product removal protocol and methodologies for sites with free product. The need for additional investigation was evaluated. A plan was developed to gather additional information to include potential upgradient sources, geoprobing, natural attenuation potential, and downgradient delineation in 2005. Right of way and access grants from BLM for geoprobe investigation were procured in 2005; right of way permit and access grant applications for additional monitoring well installation were prepared for submittal in 2006.

Johnston Fed #6A
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SITE MAP

Site maps (March and depicting proposed new monitoring wells) are attached in Figures 1 and 2.

SUMMARY TABLES AND GRAPHS

- Analytical data for 2005 are summarized in Table 1, and historic data are presented graphically in Figures 3 through 7.
- Product recovery data for 2005 are summarized in Table 2, and historic data are presented graphically in Figures 8 through 10.
- 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 both the water level and analytical data collected during 2005.

CONCLUSIONS

- The groundwater flow gradient is generally to the north-northeast.
- Free-product recovery efforts at MW-1 resulted in removal of approximately 1.12 gallons of free-phase hydrocarbons bringing the cumulative total recovered to date to 6.77 gallons.
- The annual groundwater sample from MW-4 indicated BTEX concentrations at or near the detection limits. BTEX levels in MW-4 have been near or below standards since 2002, representing a significant decrease since 1997 (benzene concentration of 899 µg/L).

- Oil absorbent socks were installed in MW-1, MW-3, and MW-5 during the March 2005 monitoring event.

- The absorbent sock in MW-1 was replaced in June, September, and December 2005.

- Free product has not been detected in MW-5 since the socks were installed in the March 2005 event.

- Based on the technology review and free-product removal data for this site, it was concluded that oil absorbent socks were the most efficient and cost-effective product removal technique for MW-1, MW-3, and MW-5 at this time.

- High sulfate concentrations in the December natural attenuation sampling at MW-2 (1,650 mg/L) indicate that conditions at the site are favorable for natural attenuation mechanisms.

RECOMMENDATIONS

- EPTPC will continue quarterly free-product recovery efforts at wells MW-1 and MW-3; however, the frequency of monitoring will be adjusted based on the amount of product recovered during the monitoring visits.

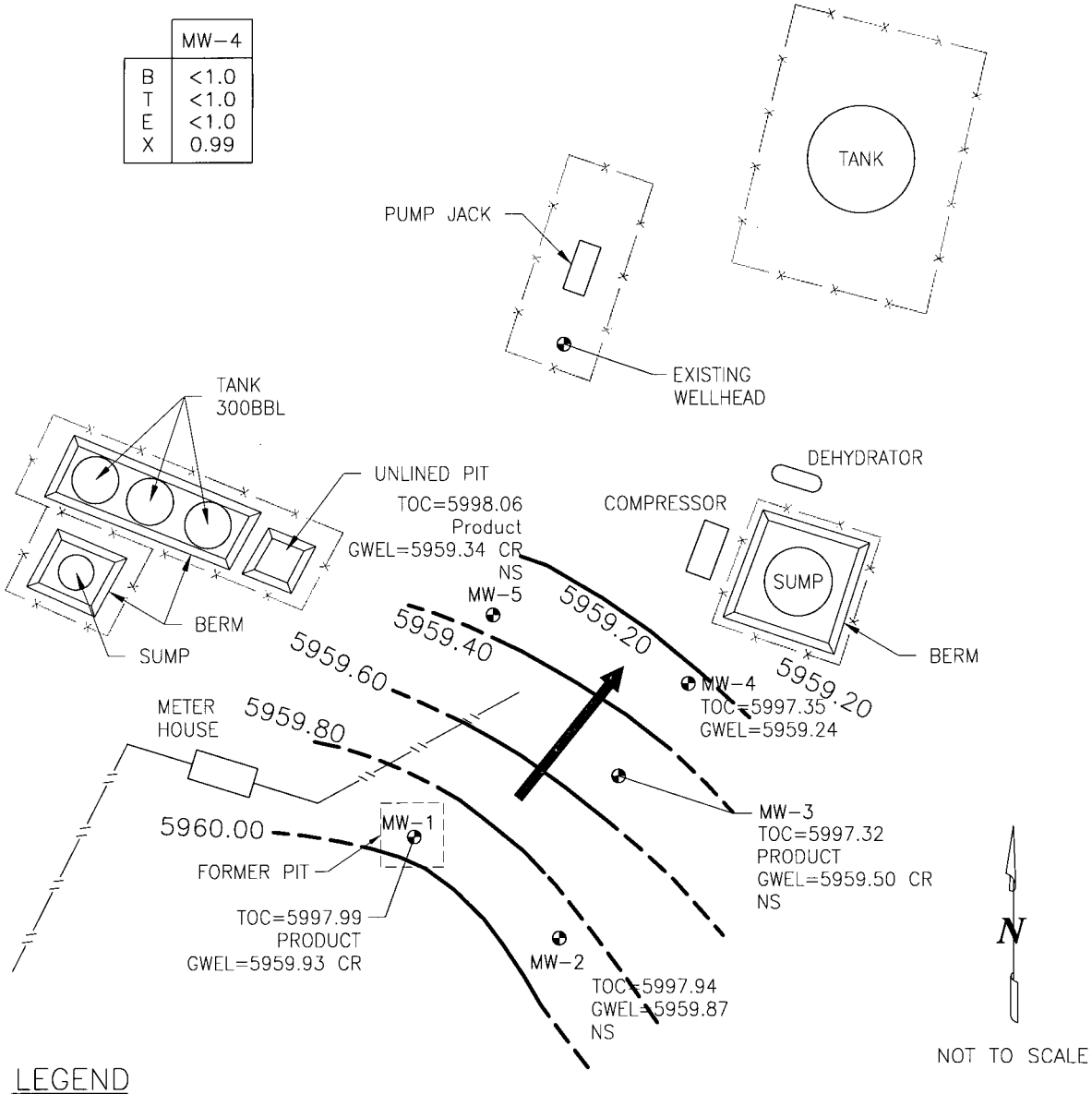
- BTEX concentrations in MW-2 have been below closure standards for four sampling events (1997 – 2002); therefore, EPTPC will sample MW-2 at closure.

- EPTPC will continue annual groundwater sampling at MW-4. Groundwater level measurements will also be collected from MW-4, in conjunction with product removal activities.

- In order to assess locations for additional monitoring wells, EPTPC will conduct a geoprobe investigation at this site in January 2006.

- Depending on the results of this investigation, EPTPC will attempt to install MW-6 north of MW-5, and MW-7 west of MW-5 (shown in Figure 2) in order to assess the extent of contamination in March 2006.

- EPTPC will conduct slug testing at MW-2 in March 2006 to assess hydraulic conductivity at the site.



LEGEND

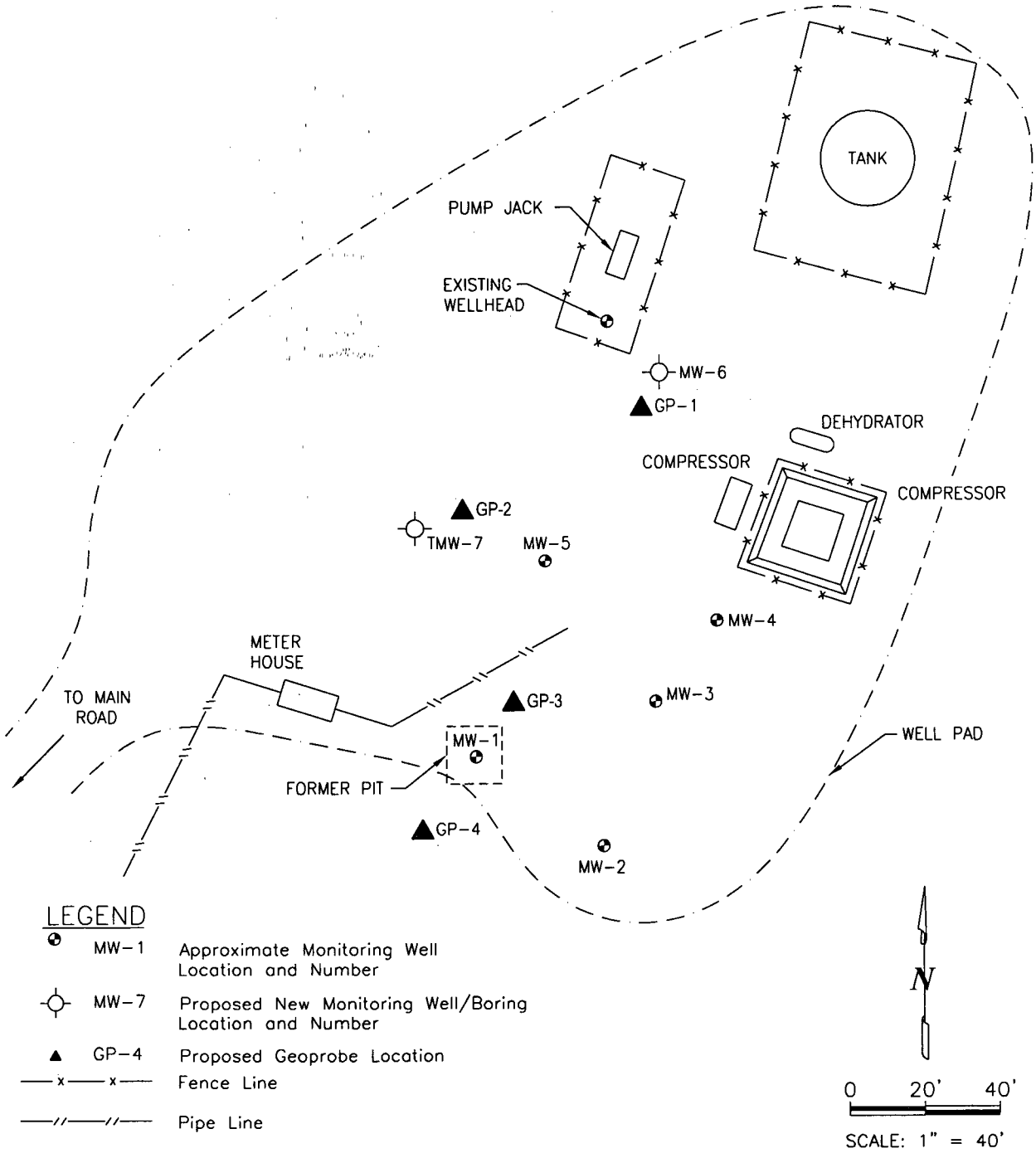
MW-1	Approximate Monitoring Well Location and Number
x x	Fence Line
// //	Pipe Line
B	Benzene (μg/L)
T	Toluene (μg/L)
E	Ethylbenzene (μg/L)
X	Total Xylenes (μg/L)
NS	Not Sampled
Product	Free-Product Present
CR	Water Level Corrected for Product
<	Not Detected. Value Shown is Detection Limit.
GWEL	Groundwater Elevation (FT Above Mean Sea Level Unless Noted Otherwise)
TOC	Top of Casing
5960	Potentiometric Surface (Approximate & Assumed Where Dashed)
→	Direction of Groundwater Flow (Estimated)

JOHNSTON FEDERAL #6A, METER 70194
MARCH 2005

GROUNDWATER SITES
EL PASO TENNESSEE PIPELINE COMPANY

FIGURE 1

johnsonfed 3_05.dwg



johnsonfed6_02.dwg

JOHNSTON FEDERAL #6A, METER 89232
PROPOSED NEW MONITORING WELL LOCATIONS

GROUNDWATER SITES
EL PASO TENNESSEE PIPELINE COMPANY

FIGURE 2

TABLE 1

SUMMARY OF BTEX COMPOUNDS IN 2005 GROUNDWATER SAMPLES
JOHNSTON FED #6A (METER #89232)

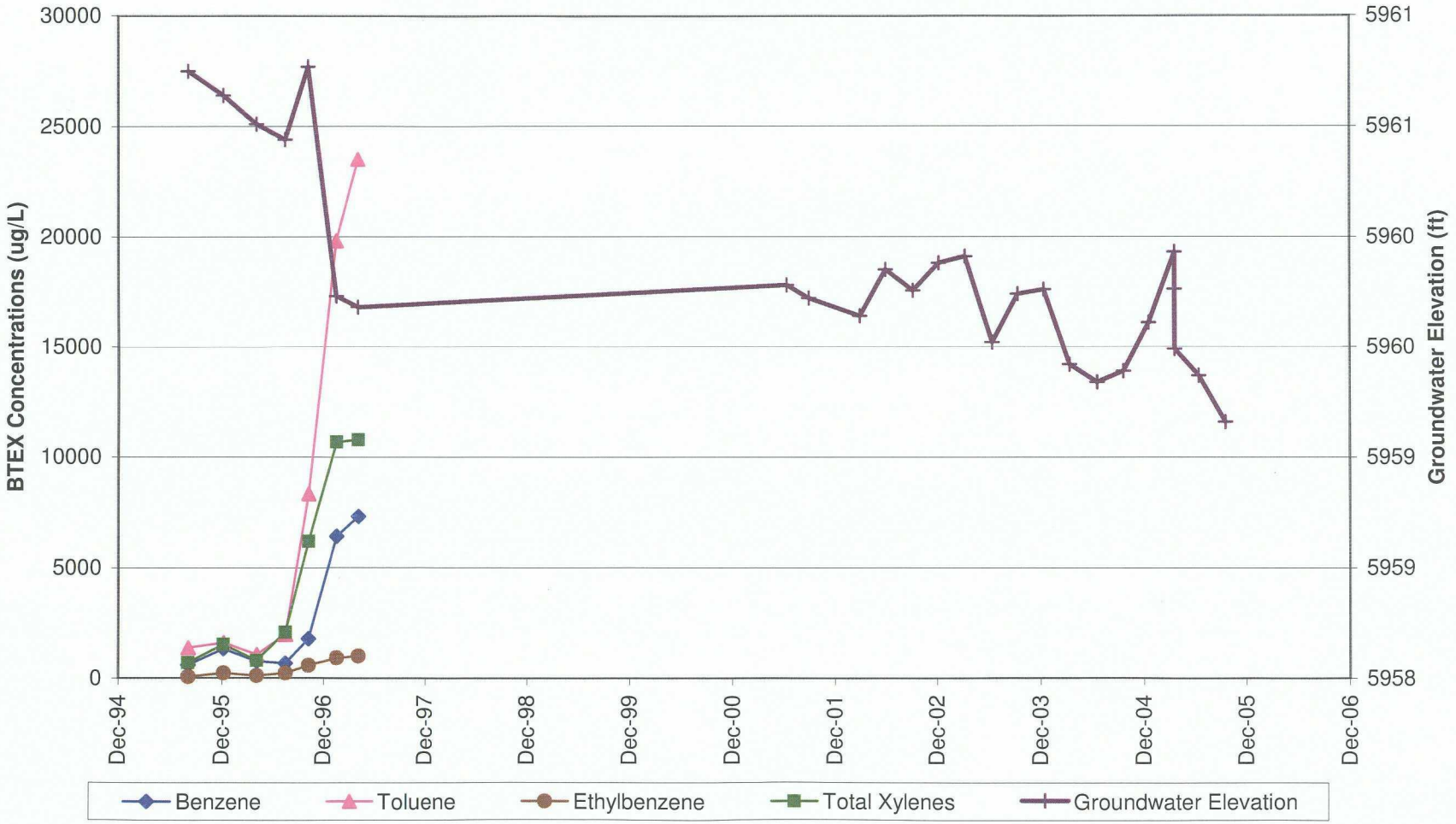
Site Name	Sample Date	Monitoring Well	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	Depth to Water (ft btoc)	TOC Elevation	GW Elevation (ft
Johnston Fed #6A	3/23/2005	MW-4	1	1	1	0.99	38.11	5998.35	5960.24

TABLE 2

SUMMARY OF FREE-PRODUCT REMOVAL DURING 2005
JOHNSTON FED #6A (METER #89232)

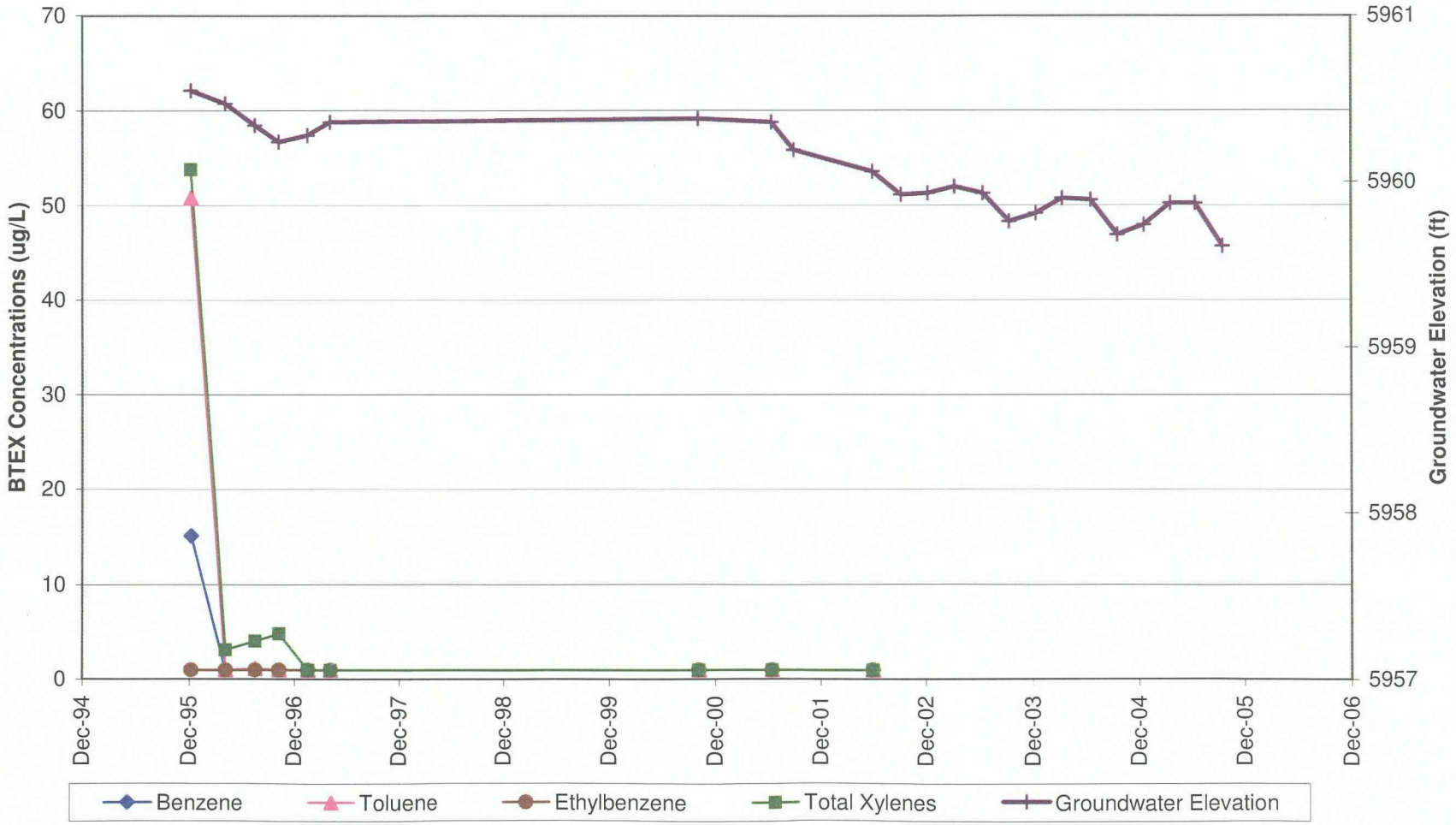
Site Name	Monitoring Well	Removal Date	Depth to Product (feet btoc)	Depth to Water (feet btoc)	Product Thickenss (feet)	Volume of Product Removed (gallons)	Cumulative Volume of Product Removed (gallons)
Johnston Fed #6A	MW-1	6/17/05	38.13	38.62	0.49	0.25	6.54
Johnston Fed #6A	MW-1	9/20/05	38.4	38.83	0.43	0.25	7.02
Johnston Fed #6A	MW-1	12/14/05	38.31	38.72	0.41	0.23	6.77
Johnston Fed #6A	MW-3	3/23/05	37.8	37.88	0.08	0.06	0.48

FIGURE 3
HISTORIC BTEX CONCENTRATIONS AND GROUNDWATER ELEVATIONS
JOHNSTON FEDERAL #6A
MW-1



2005 Johnston Fed 6A.xls,JFed 6A MW1

FIGURE 4
HISTORIC BTEX CONCENTRATIONS AND GROUNDWATER ELEVATIONS
JOHNSTON FEDERAL #6A
MW-2

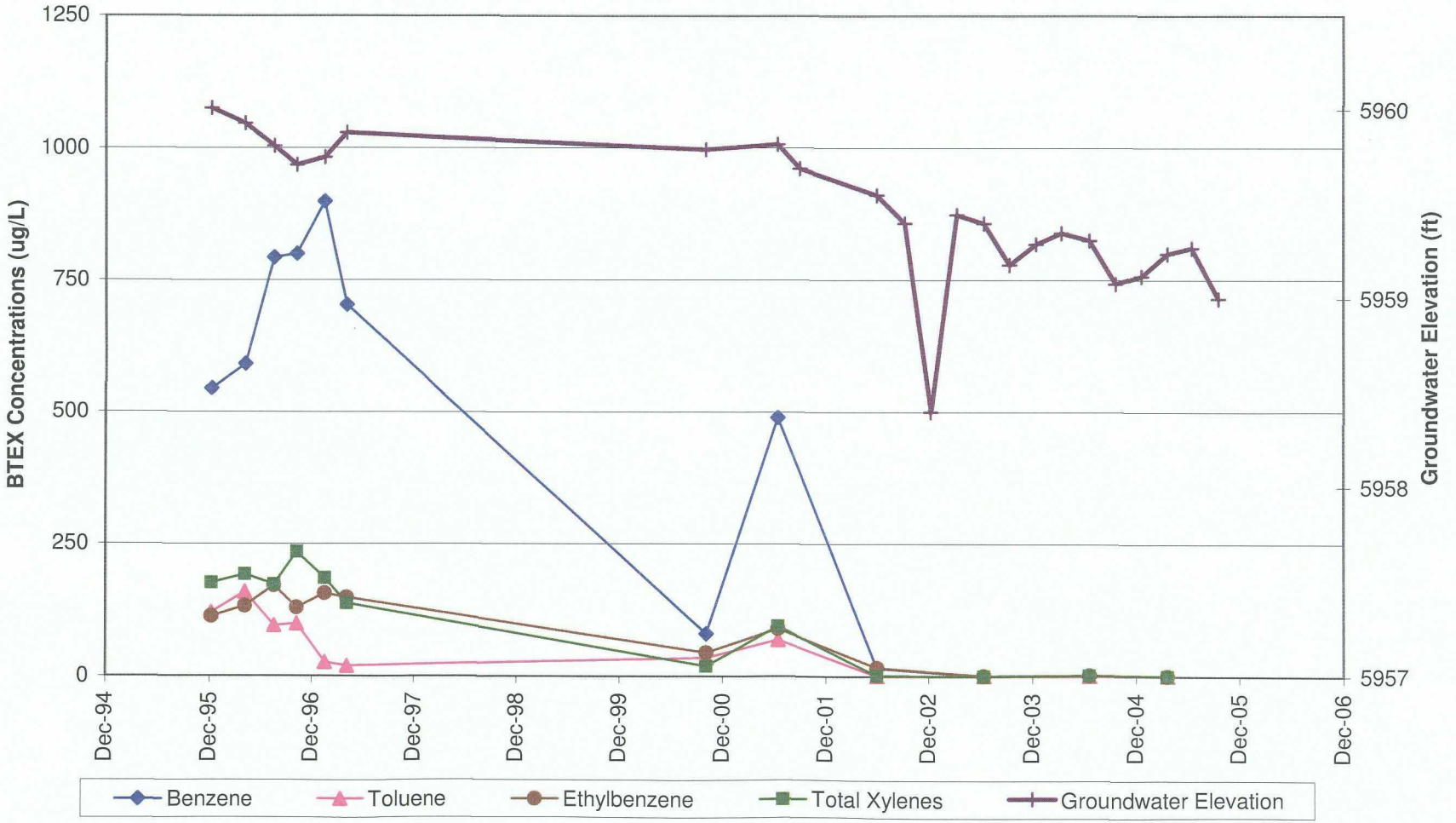


2005 Johnston Fed 6A.xls,JFed 6A MW2

FIGURE 5
HISTORIC BTEX CONCENTRATIONS AND GROUNDWATER ELEVATIONS
JOHNSTON FEDERAL #6A
MW-3

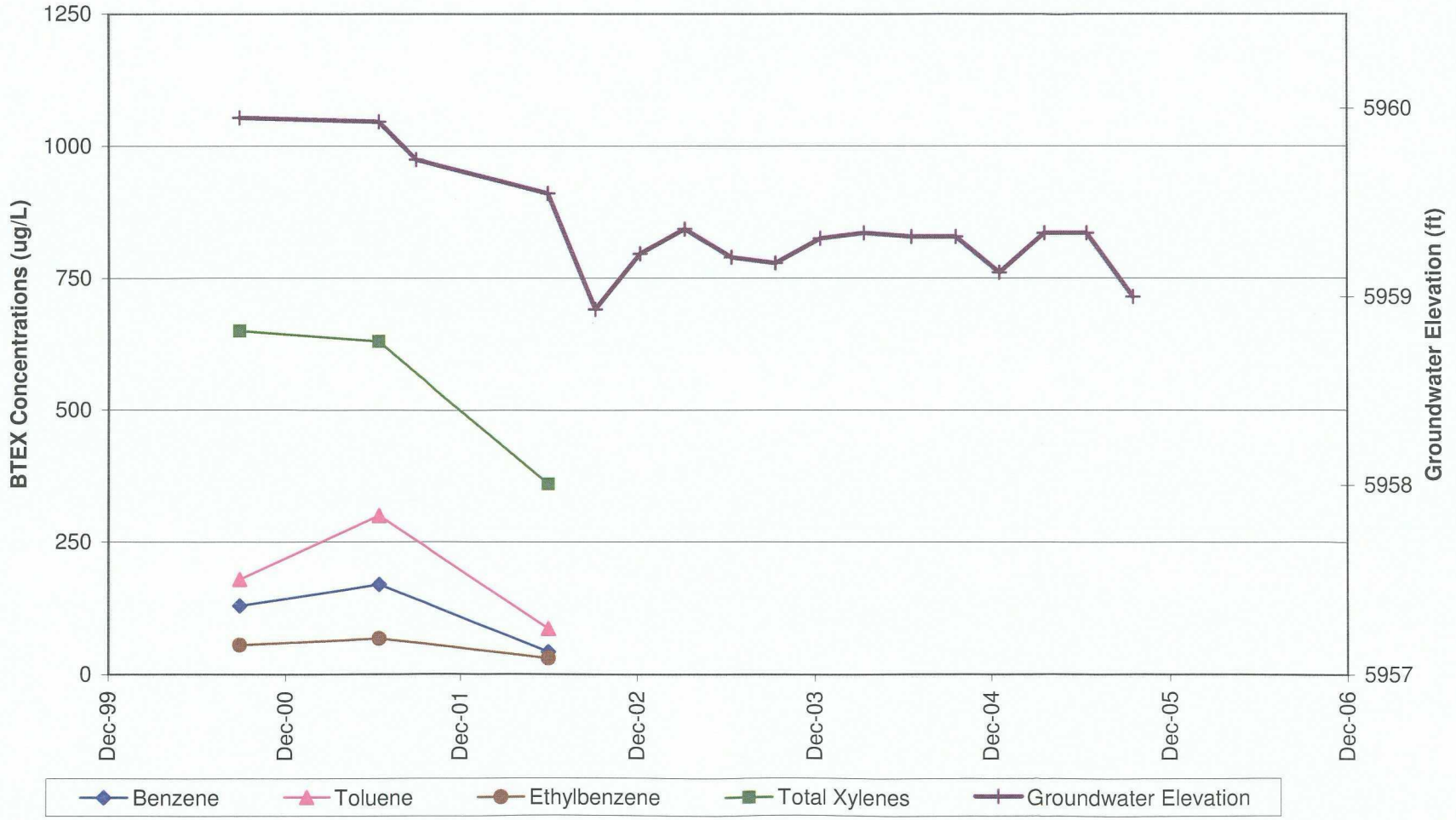
2005 Johnston Fed 6A.xls,JFed 6A MW3

FIGURE 6
HISTORIC BTEX CONCENTRATIONS AND GROUNDWATER ELEVATIONS
JOHNSTON FEDERAL #6A
MW-4



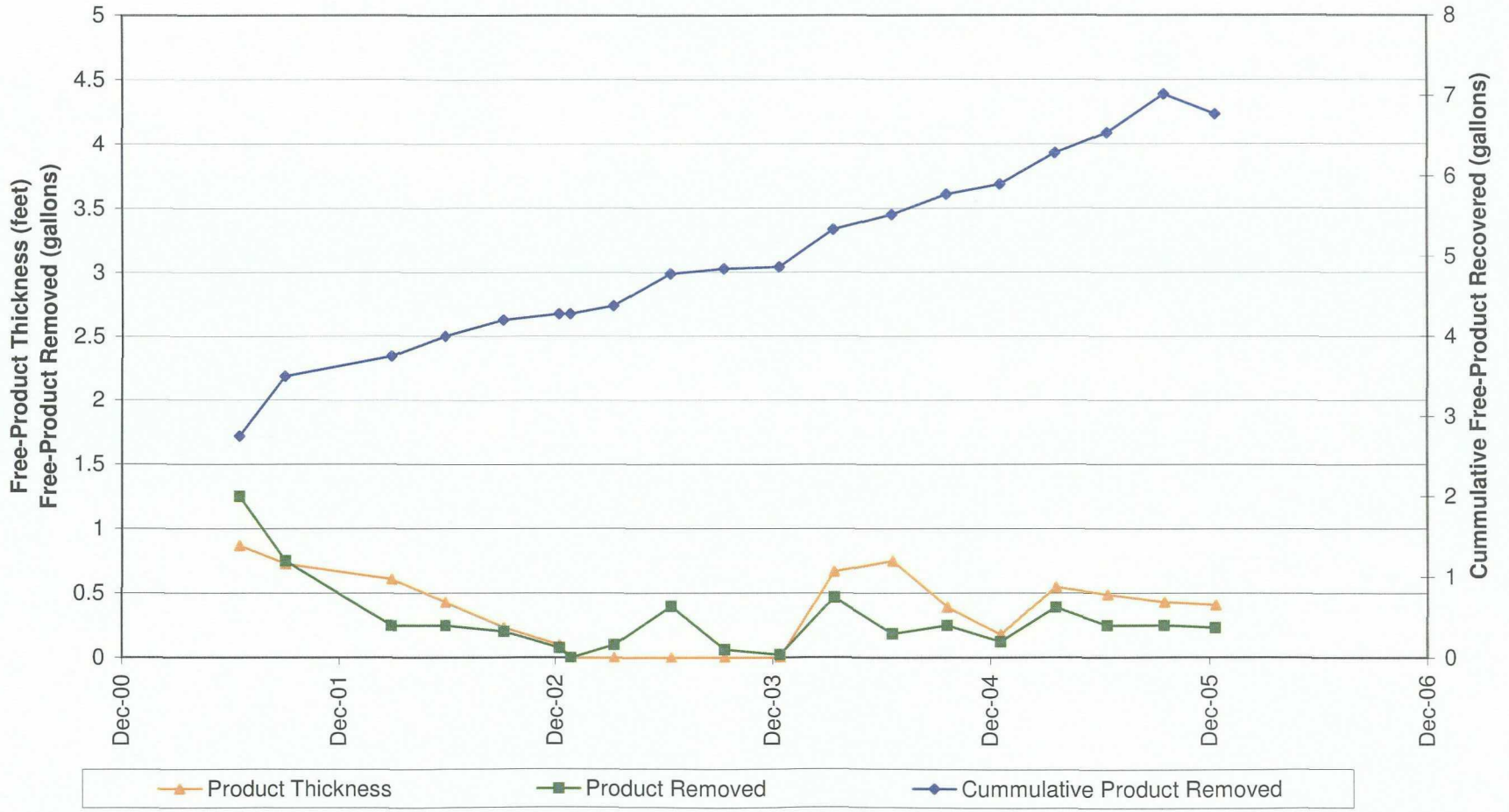
2005 Johnston Fed 6A.xls,JFed 6A MW4

FIGURE 7
HISTORIC BTEX CONCENTRATIONS AND GROUNDWATER ELEVATIONS
JOHNSTON FEDERAL #6A
MW-5



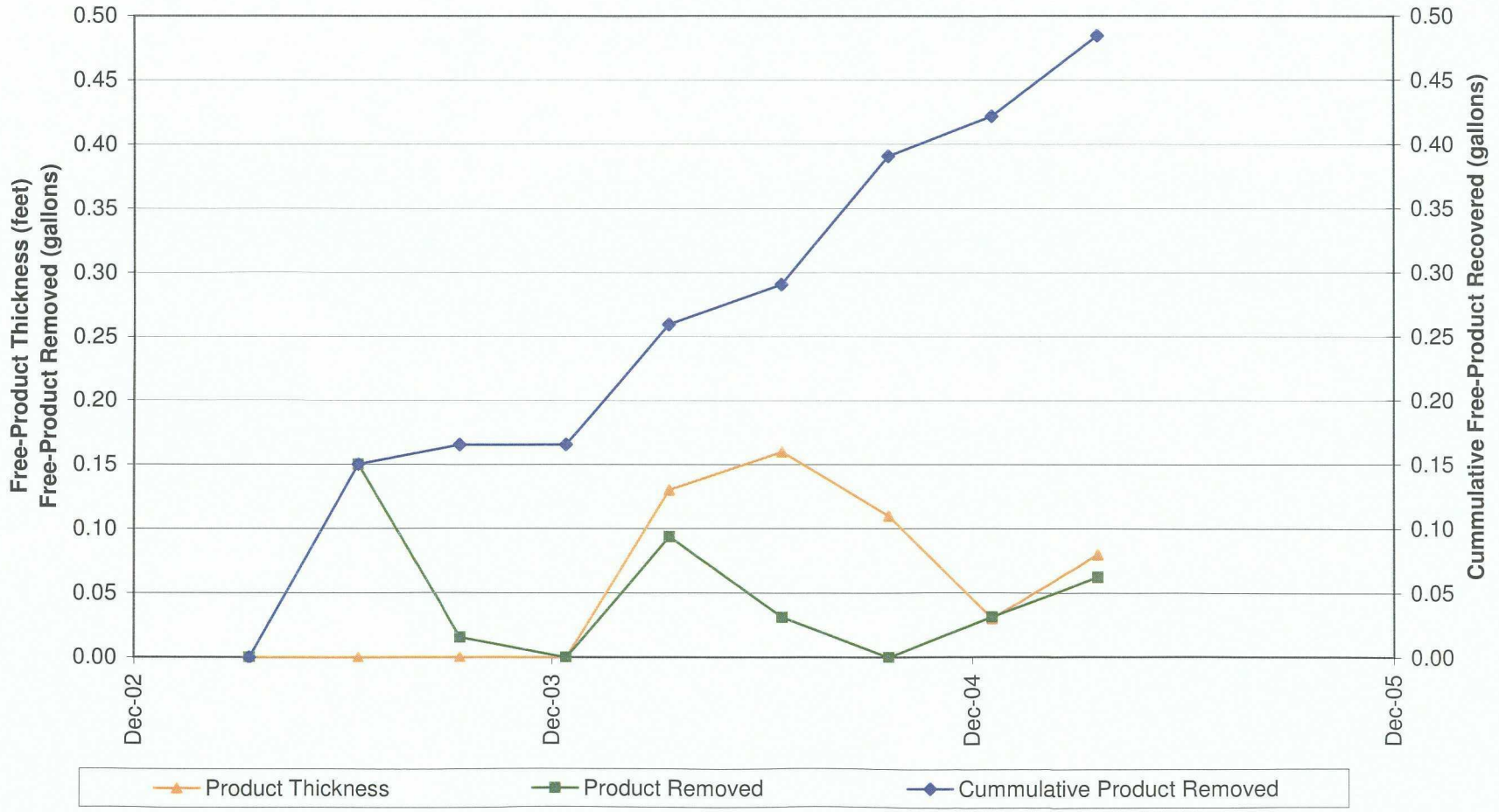
2005 Johnston Fed 6A.xls,JFed 6A MW5

FIGURE 8
HISTORIC FREE-PRODUCT RECOVERY
JOHNSTON FEDERAL #6A
MW-1



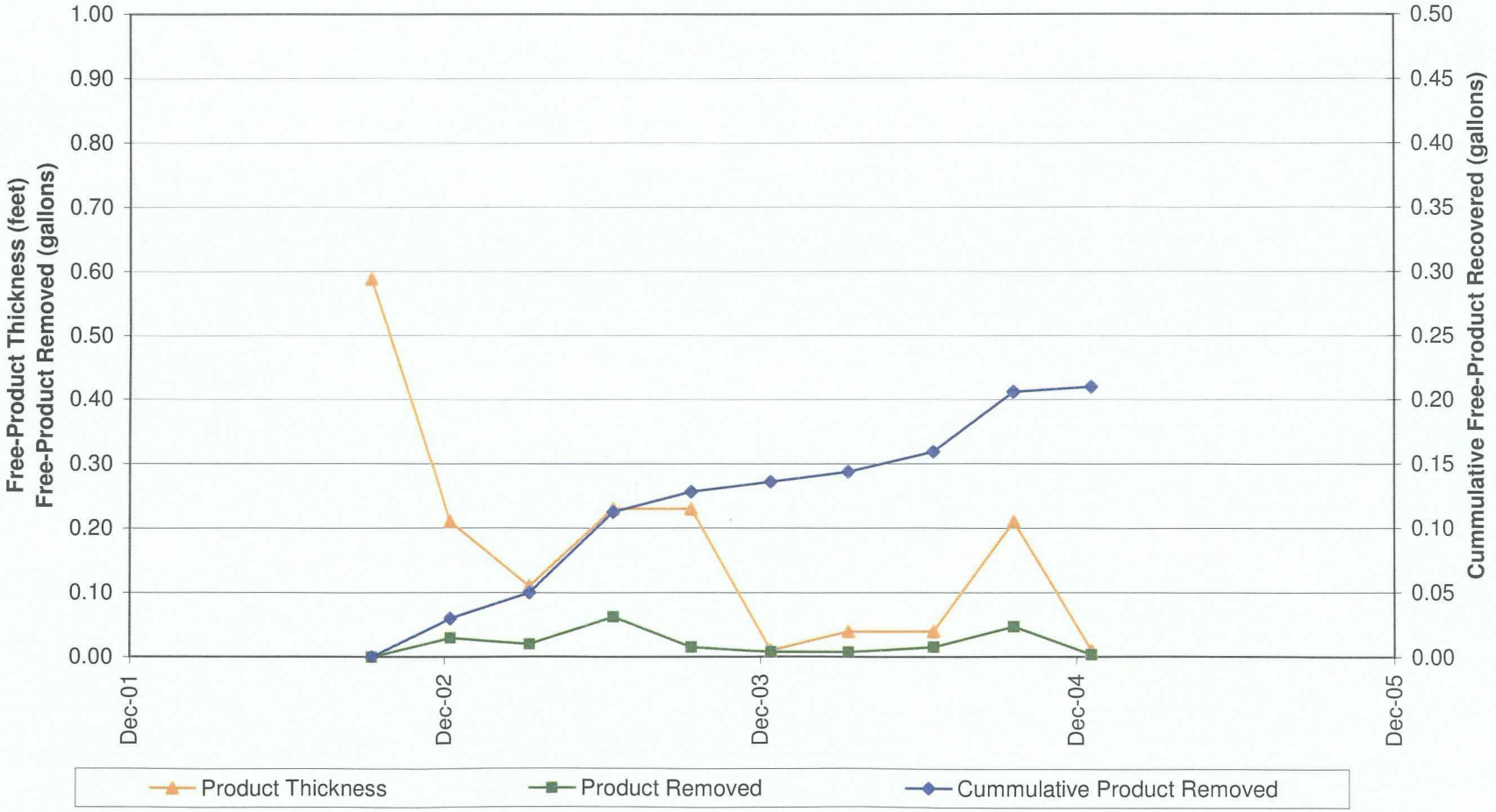
2005 Johnston Fed 6A.xls, JFed6A PR1

FIGURE 9
HISTORIC FREE-PRODUCT RECOVERY
JOHNSTON FEDERAL #6A
MW-3



2005 Johnston Fed 6A.xls, JFed6A PR3

FIGURE 10
HISTORIC FREE-PRODUCT RECOVERY
JOHNSTON FEDERAL #6A
MW-5



2005 Johnston Fed 6A.xls, JFed6A PR5