3R - 201

ANNUAL MONITORING REPORTS DATE:

3/2006

2005 ANNUAL GROUNDWATER REPORT
NON-FEDERAL SITES VOLUME II

RECEIVED
MAR 17 2006
Oil Conservation Division
Environmental Bureau

EL PASO TENNESSEE PIPELINE COMPANY

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

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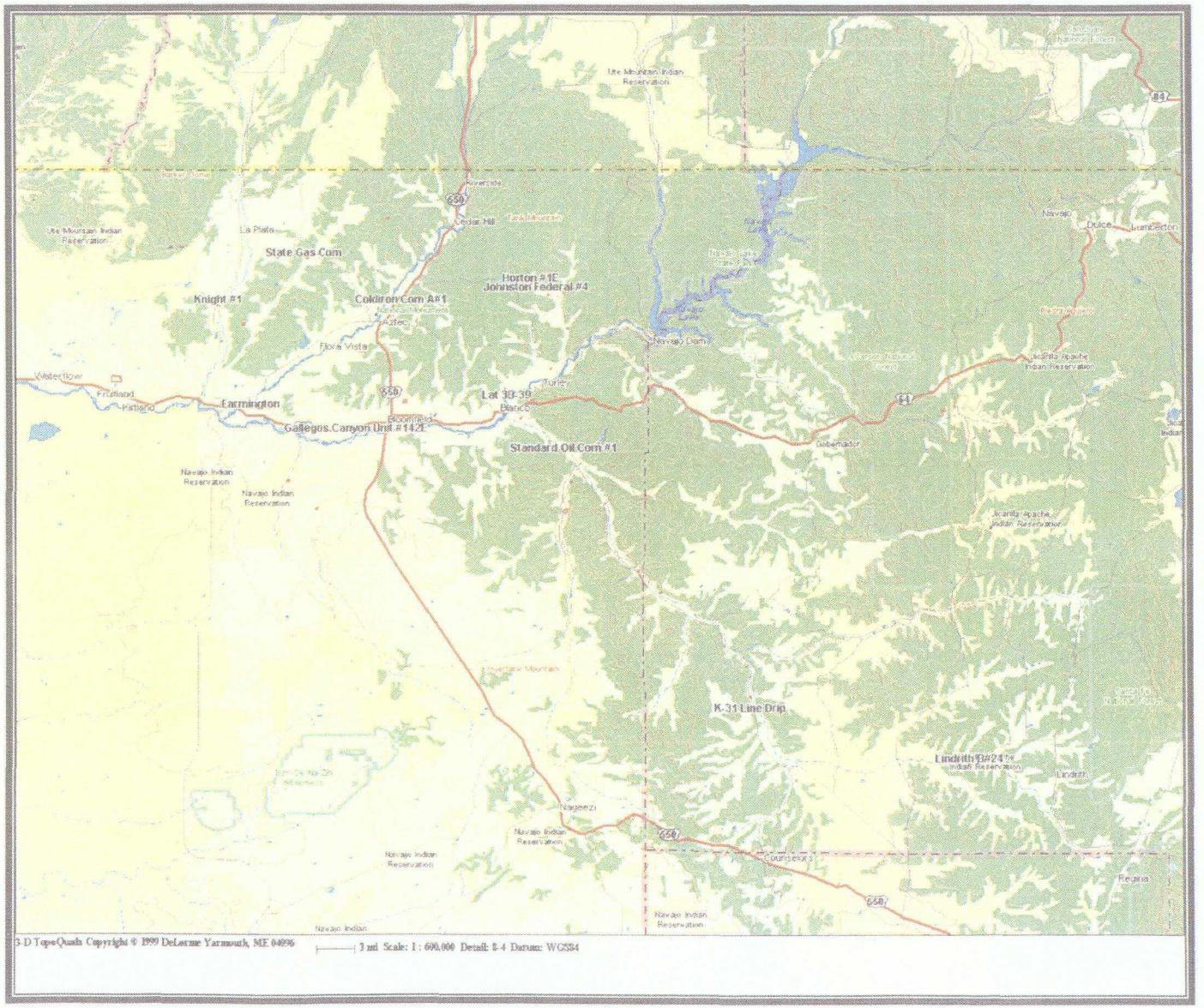
MWH
MONTGOMERY WATSON HARZA

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

Non - Federal Groundwater Site Map



EPTPC GROUNDWATER SITES
2005 ANNUAL GROUNDWATER REPORT

3R201

Johnston Fed #4
Meter Code: 70194

SITE DETAILS

Legal Description: **Town:** 31N **Range:** 09W **Sec:** 33 **Unit:** H

NMOCD Haz Ranking: 40 **Land Type:** Fee **Operator:** Burlington Resources

PREVIOUS ACTIVITIES

Site Assessment:	8/94	**Excavation:**	9/94 (60 cy)	**Soil Boring:**	8/95
Monitor Well:	8/95	**Geoprobe:**	9/97	**Additional MWs:**	12/95
Downgradient MWs:	12/95	**Replace MW:**	NA	**Quarterly Initiated:**	NA
ORC Nutrient Injection:	NA	**Re-Excavation:**	NA	**PSH Removal Initiated:**	9/97
Annual Initiated:	6/01	**Quarterly Resumed:**	NA		

SUMMARY OF 2005 ACTIVITIES

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

MW-2: Annual groundwater sampling (June) and quarterly water level monitoring were performed during 2005.

MW-3: 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 and natural attenuation potential. Right of way clearances and permitting for geoprobe investigation were procured in 2005; right of way permit and access grant applications for additional monitoring wells were also prepared for submittal in 2006.

SITE MAPS

Site maps (June and showing the location of MW-4 and MW-5) are attached in Figures 1 and 2.

Johnston Fed #4
Meter Code: 70194

SUMMARY TABLES AND GRAPHS

- Analytical data from 2005 are summarized in Table 1, and historic data are presented graphically in Figures 3 through 5.
- Free-product recovery data from 2005 are summarized 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

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 water level and analytical data collected during 2005.

CONCLUSIONS

- The groundwater flow direction at this site trends toward the northeast.
- Monitoring wells MW-2 and MW-3 are located cross-gradient of the former pit. The presence of hydrocarbon contamination in MW-2 suggests an alternative source of contamination at the site. In 1997, a temporary monitoring well, PH-2, shown on Figure 1, contained BTEX concentrations well above that at MW-1 and NMWQCC standards with benzene at 9,620 µg/L, toluene at 21,900 µg/L, ethylbenzene at 1,290 µg/L, and total xylenes at 15,000 µg/L.
- Free-product recovery efforts at MW-1 resulted in the removal of approximately 0.12 gallons of free-phase hydrocarbons during 2005 bringing the cumulative total volume recovered to date to approximately 10.60 gallons.
- The benzene concentration in the annual groundwater sample collected at MW-2 increased from 88.9 µg/L (June 2004) to 283 µg/L in June 2005. Supporting the possibility of an alternative source of contamination at the site.

- Free-product recovery efforts at MW-3 resulted in the removal of approximately 0.61 gallons of free-phase hydrocarbons during 2005, bringing the cumulative total volume recovered to 7.82 gallons. Free-product removal in 2004 totaled 1.5 gallons, compared to 0.61 gallons in 2005, demonstrating that product accumulation is decreasing.

- An oil absorbent sock in MW-1 was installed during the March 2005 monitoring event.

- A passive skimmer was installed in MW-3 during the March 2005 monitoring event. An absorbent sock was later installed in place of the passive skimmer during the December 2005 monitoring event.

- Based on the technology review and free-product removal data for this site, it was concluded that an oil absorbent sock at MW-1 and a passive skimmer at MW-3 would be the most efficient and cost-effective product removal techniques at this time.

RECOMMENDATIONS

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

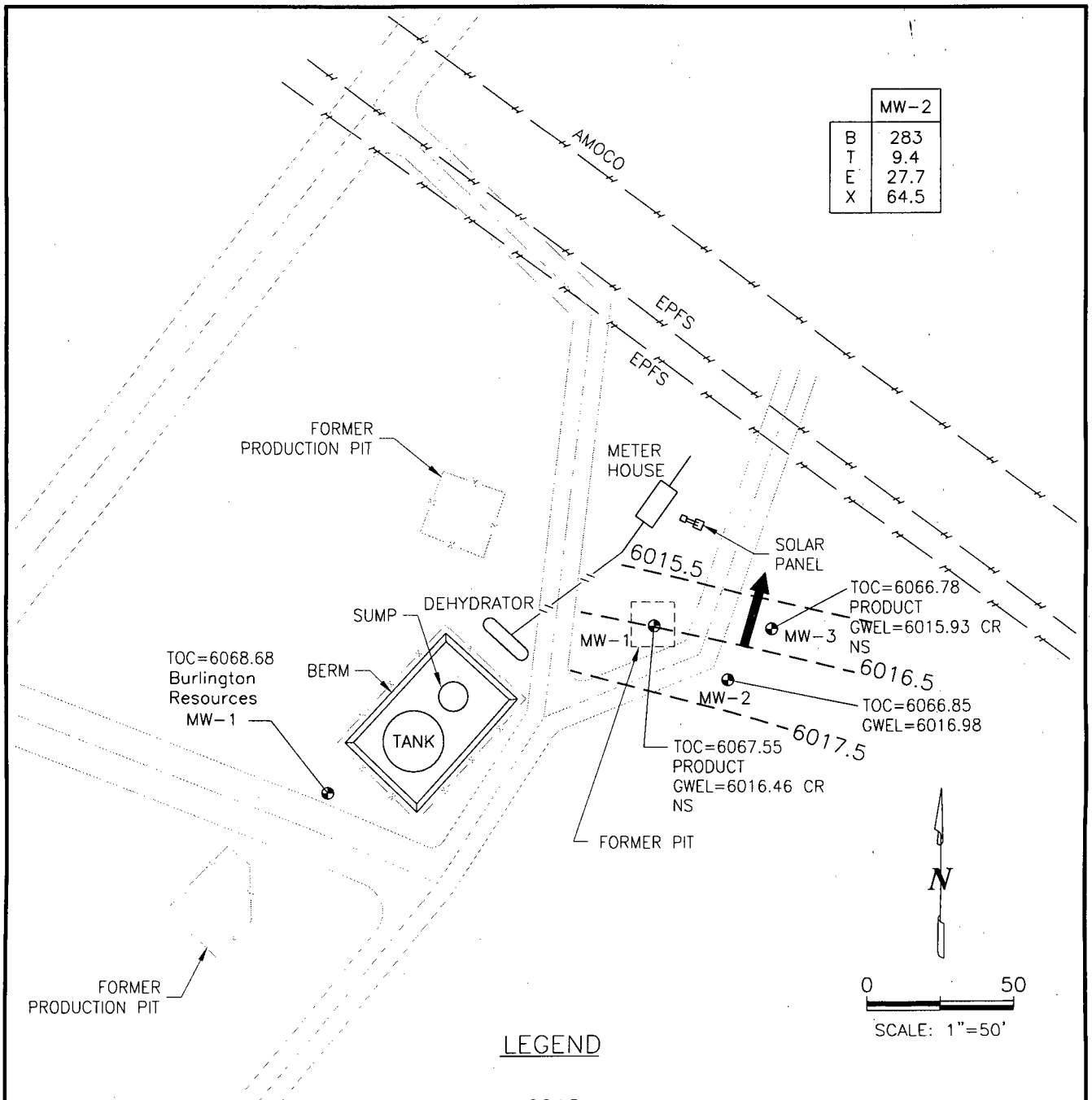
- EPTPC will continue annual sampling and quarterly water level monitoring at MW-2 until analytical results indicate that BTEX concentrations are approaching closure criteria. This well will then be scheduled for quarterly sampling until closure criteria have been met.

- EPTPC recommends the installation of a new passive skimmer in MW-3 during the March 2006 monitoring event whose intake floats with the product level. The oil absorbent sock in MW-1 appears to be the most efficient product recovery method for this well, and EPTPC recommends that it remain as is.

- In order to assess possible upgradient sources and the extent of contamination at this site, EPTPC will perform a geoprobe investigation (shown on Figure 2) in January 2006.

- Based on results from the geoprobe investigation, EPTPC will attempt to install monitoring well MW-4 north of MW-1 (shown on Figure 2) in order to assess the extent of contamination at the site. If successful, EPTPC will sample MW-4 for parameters to assess natural attenuation potential at this site in March 2006.

- EPTPC will attempt to install monitoring well MW-5, upgradient and to the east of MW-1, in order to assess possible upgradient sources, in March 2006.



LEGEND

MW-1	Approximate Monitoring Well Location and Number	6018	Potentiometric Surface (Approximate & Assumed Where Dashed)
	Centerline of Road	→	Direction of Groundwater Flow (Estimated)
	Fence Line	GWEL	Groundwater Elevation (FT Above Mean Level Unless Otherwise Noted)
	Pipeline		
B	Benzene (µg/L)	TOC	Top of Casing
T	Toluene (µg/L)	NS	Not Sampled
E	Ethylbenzene (µg/L)	<	Not Detected. Value Shown is Detection Limit.
X	Total Xylenes (µg/L)	Product	Free-Product Present
		CR	Water Level Corrected for Product

JOHNSTON FEDERAL #4, METER 70194
JUNE 2005

GROUNDWATER SITES
EL PASO TENNESSEE PIPELINE COMPANY

FIGURE 1

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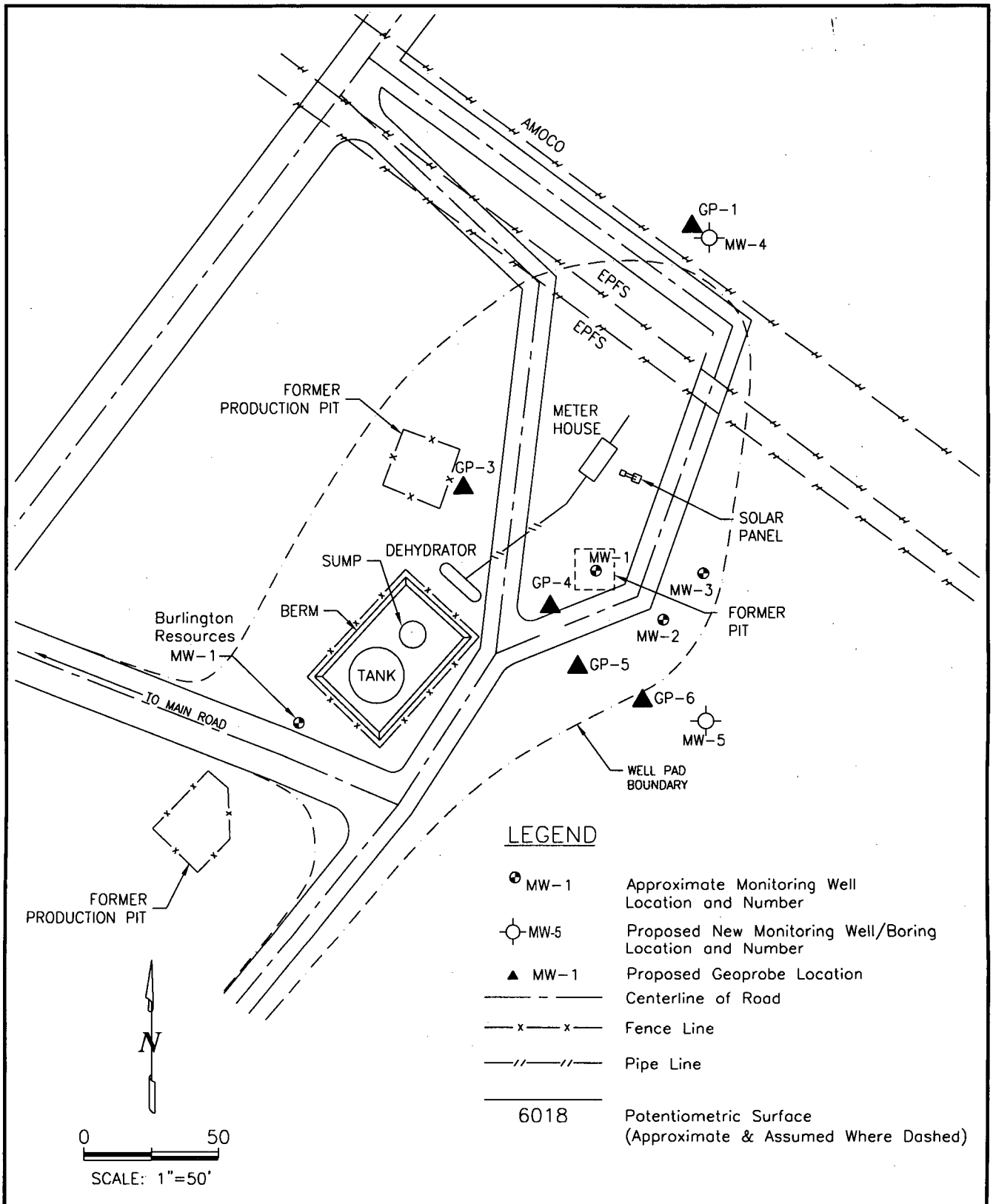

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JOHNSTON FEDERAL NO.4, METER 700194
PROPOSED NEW MONITORING WELL LOCATION

GROUNDWATER SITES
EL PASO TENNESSEE PIPELINE COMPANY

FIGURE 2

TABLE 1

SUMMARY OF BTEX COMPOUNDS IN 2005 GROUNDWATER SAMPLES
JOHNSTON FED #4 (METER #70194)

Site Name	Sample Date	Monitoring Well	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	Depth to Water (feet)
Johnston Fed #4	6/23/2005	MW-2	283	9.4	27.7	64.5	49.87

TABLE 2

SUMMARY OF FREE-PRODUCT REMOVAL DURING 2005
JOHNSTON FED #4 (METER #70194)

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)
Johnston Fed #4	MW-1	3/23/05	51.13	51.15	0.02	0.02	10.50
Johnston Fed #4	MW-1	6/23/05	0.00	51.09	0.00	0.00	10.50
Johnston Fed #4	MW-1	12/15/05	0.00	51.02	0.00	0.10	10.60
Johnston Fed #4	MW-3	3/23/05	50.76	51.31	0.55	0.61	7.82
Johnston Fed #4	MW-3	6/23/05	50.76	51.20	0.44	0.00	7.82
Johnston Fed #4	MW-3	12/15/05	50.92	51.32	0.40	0.00	7.82

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

2005 Johnston Fed4.xls,JohnFed4 MW1

FIGURE 4
HISTORIC BTEX CONCENTRATIONS AND GROUNDWATER ELEVATIONS
JOHNSTON FED #4
MW-2

2005 Johnston Fed4.xls,JohnFed4 MW2

FIGURE 5
HISTORIC BTEX CONCENTRATIONS AND GROUNDWATER ELEVATIONS
JOHNSTON FED #4
MW-3

2005 Johnston Fed4.xls,JohnFed4 MW3

FIGURE 6
HISTORIC FREE-PRODUCT RECOVERY
JOHNSTON FED #4
MW-1

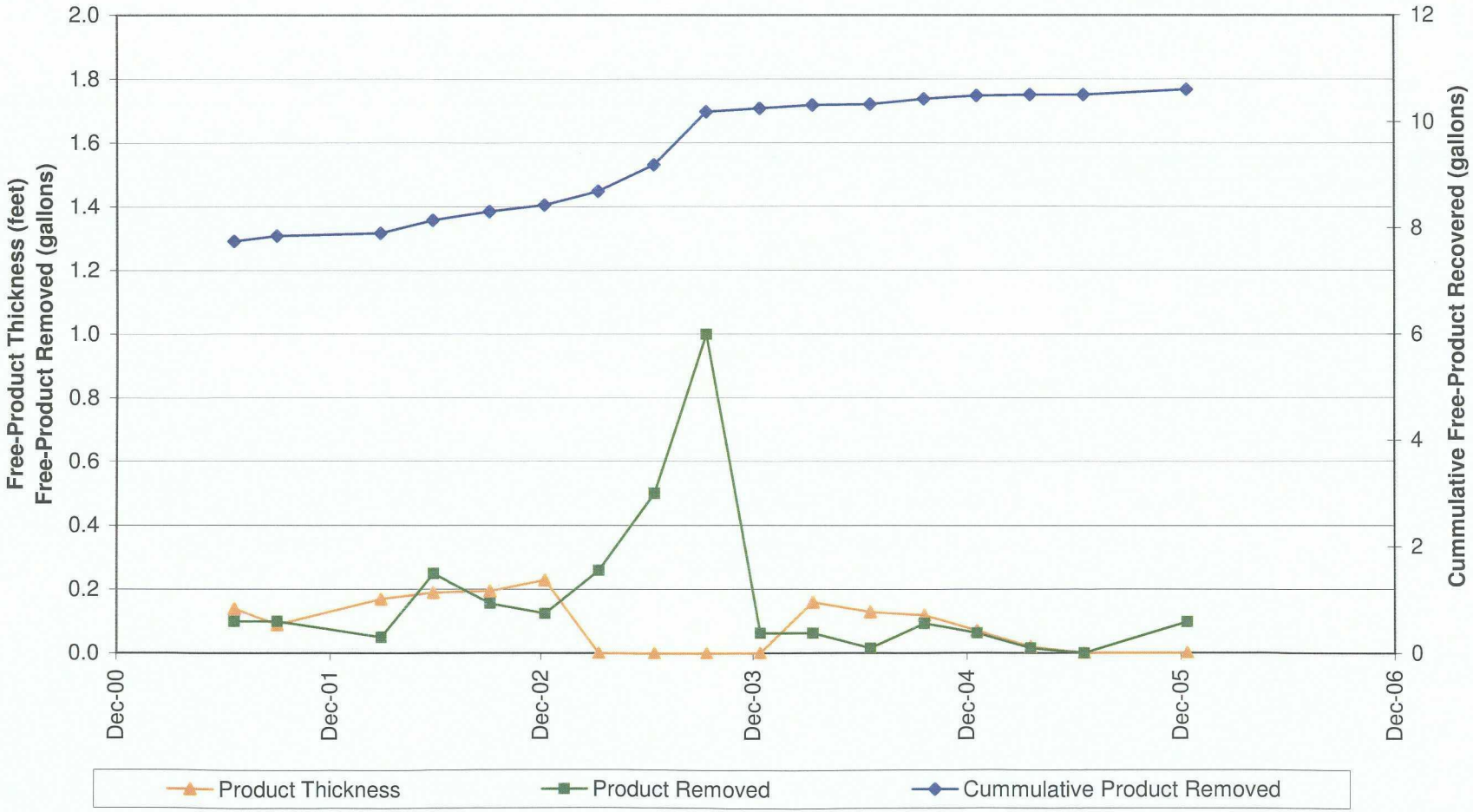

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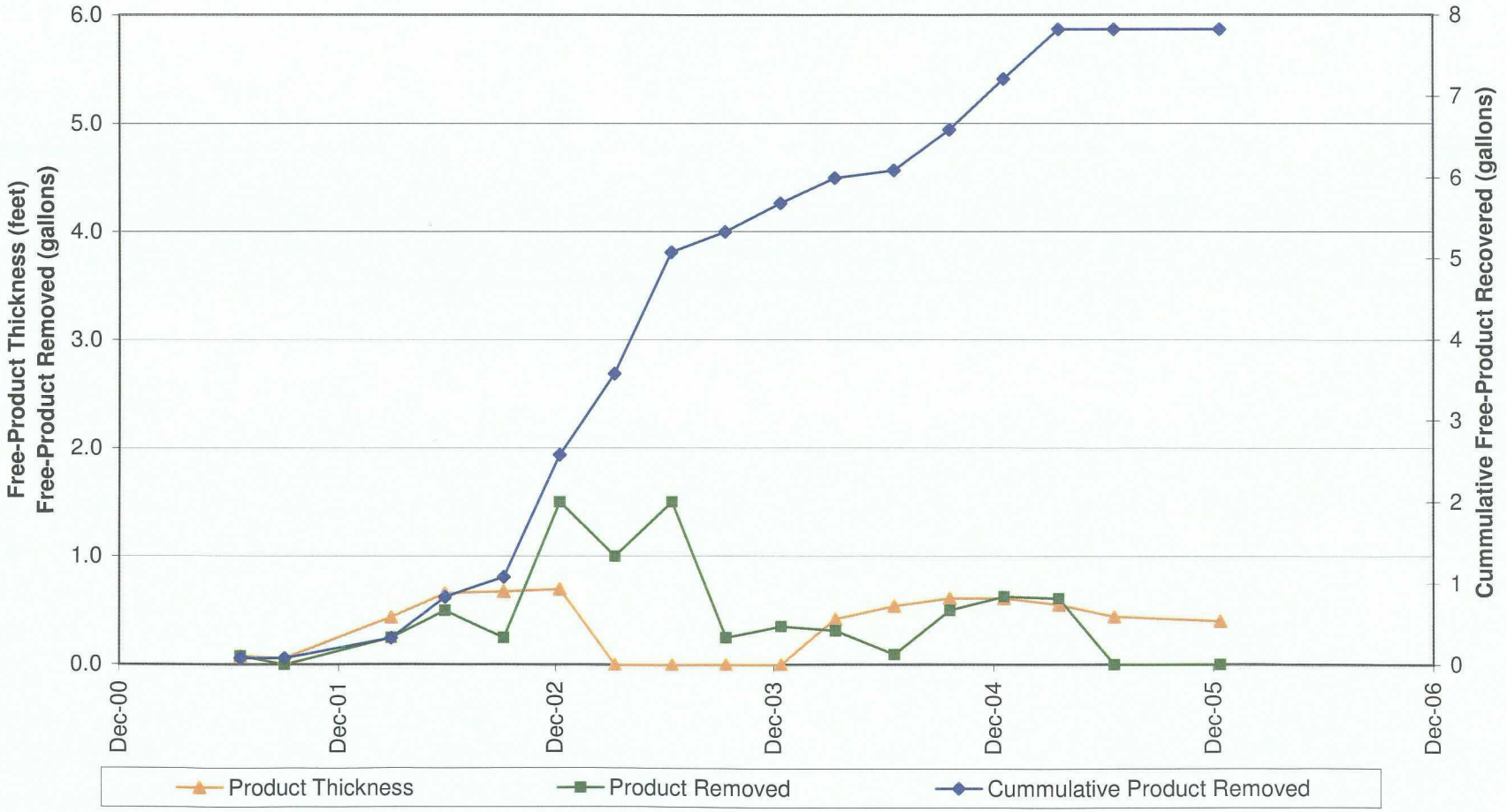
FIGURE 7
HISTORIC FREE-PRODUCT RECOVERY
JOHNSTON FED #4
MW-3



2005 Johnston Fed4.xlsm JohnFed4 PR3