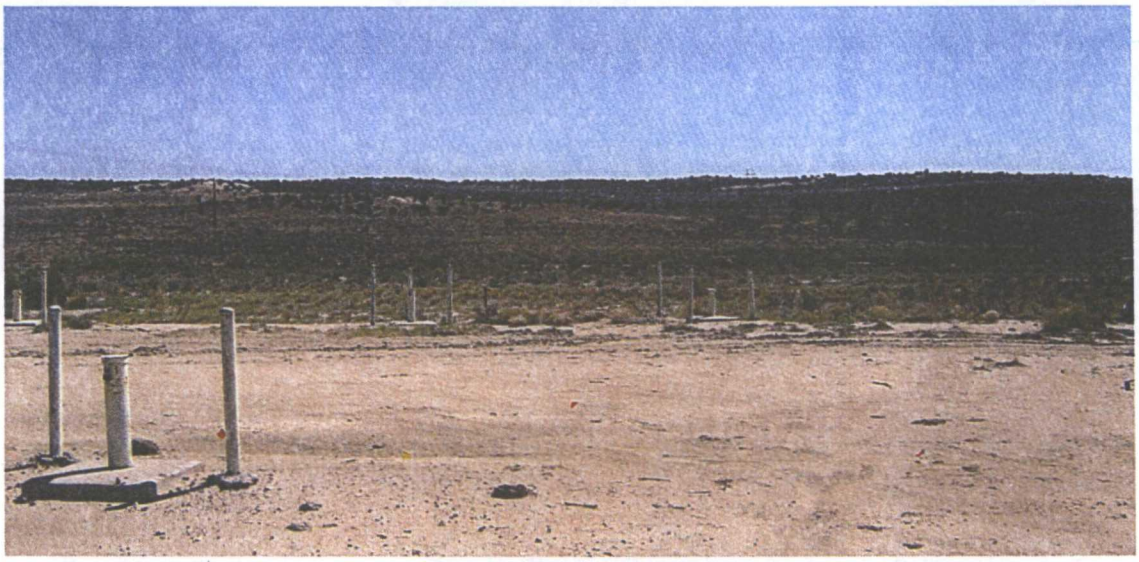
3R - 074

2011 AGWMR

08/20/2012



EL PASO CGP COMPANY

1001 LOUISIANA STREET
HOUSTON, TX 77002

2011 ANNUAL REPORT
PIT GROUNDWATER REMEDIATION
VOLUME 2: FEE/STATE LANDS

AUGUST 2012

MWH

1801 California Street
Suite 2900
Denver, Colorado 80202
303 291 2222

2011 ANNUAL GROUNDWATER REPORT
NON-FEDERAL SITES VOLUME II

EL PASO CGP COMPANY

TABLE OF CONTENTS

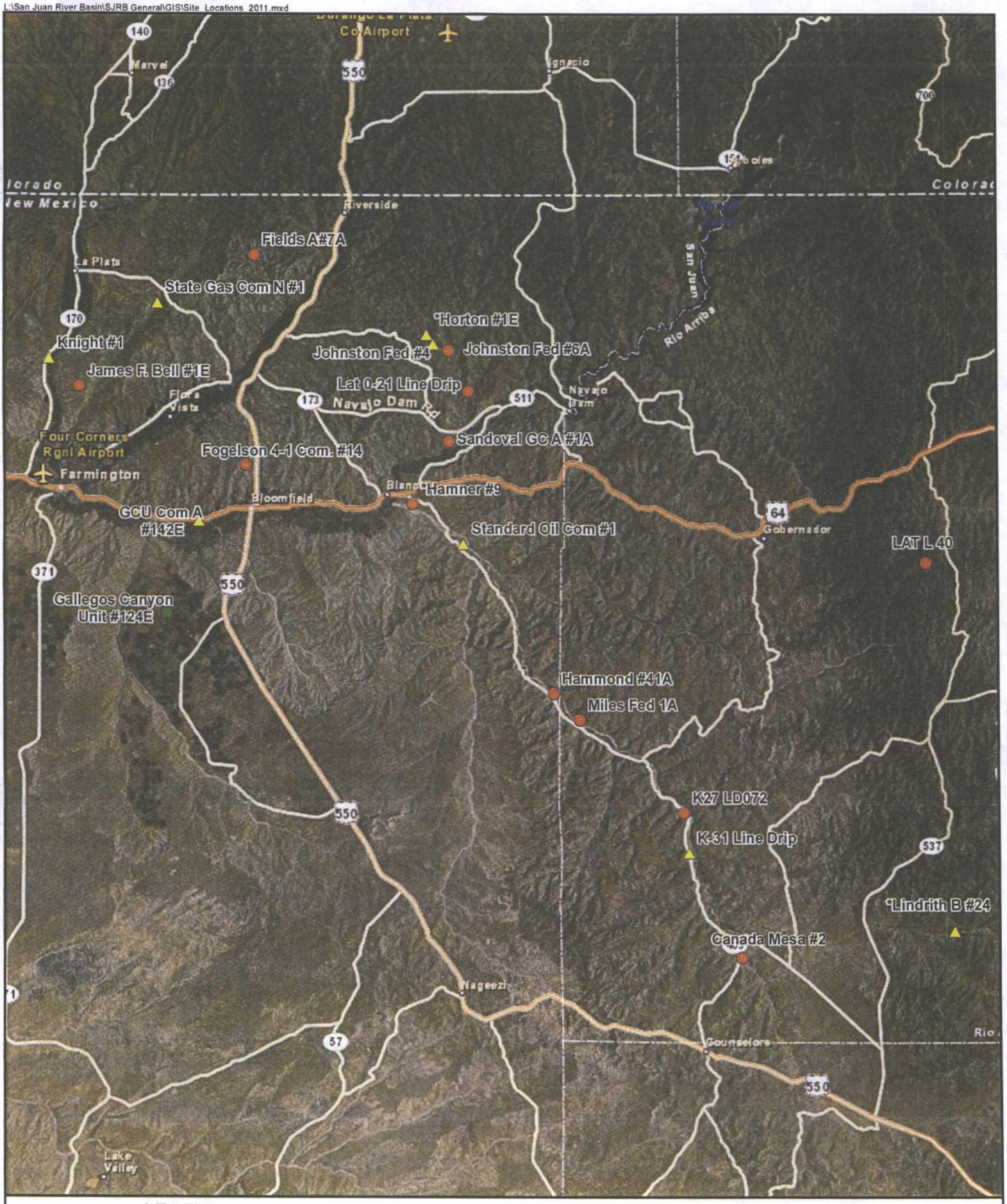
METER or LINE ID	NMOCD CASE NO	SITE NAME	TOWNSHIP	RANGE	SECTION	UNIT
03906	3RP-179-0	GCU Com A #142E	29N	12W	25	G
93388	3RP-192-0	*Horton #1E	31N	09W	28	H
70194	3RP-201-0	Johnston Fed #4	31N	09W	33	H
LD087	3RP-205-0	K-31 Line Drip	25N	06W	16	N
72556	3RP-207-0	Knight #1	30N	13W	5	A
94967	3RP-214-0	**Lindrith B #24	24N	03W	9	N
70445	3RP-074-0	Standard Oil Com #1	29N	09W	36	N
71669	3RP-239-0	State Gas Com N #1	31N	12W	16	H

*The Horton #1E site was submitted for closure in 2009 and is pending approval from NMOCD. There were no monitoring activities for this site in 2011.

**The Lindrith B#24 site was submitted for closure in 2006 and is pending approval from NMOCD. There were no monitoring activities for this site in 2011.

MWH

L:\San Juan River Basin\SJRB General\GIS\Site_Locations_2011.mxd



LEGEND

- Sites on Federal Land
- Sites on Navajo Nation Land
- Sites on State/Fee "Non-Federal" Lands

*Closure Request Pending with the NMOCD.

0 2 4 6 8 Miles

MWH

PROJECT: SAN JUAN RIVER BASIN	FIGURE: 1
TITLE: Site Locations	

LIST OF ACRONYMS

AMSL	above mean sea level
BTEX	benzene, toluene, ethylbenzene, xylenes
btoc	below top of casing
EPCGP	El Paso CGP Company
ft	foot/feet
GWEL	groundwater elevation
ID	identification
MW	monitoring well
NMWQCC	New Mexico Water Quality Control Commission
TOC	top of casing
NA	not applicable
NMOCD	New Mexico Oil Conservation Division
NS	not sampled
ORC	oxygen-releasing compound
µg/L	micrograms per liter

EPCGP GROUNDWATER SITES
2011 ANNUAL GROUNDWATER REPORT

Standard Oil Com #1
Meter Code: 70445

SITE DETAILS

Legal Description:		**Town:**	29N	**Range:**	9W	**Sec:** 36	**Unit:** N
NMOCD Haz Ranking:	30	**Land Type:**	State	**Operator:**	Burlington Resources		

PREVIOUS ACTIVITIES

Site Assessment:	5/94	**Excavation:**	5/94 (60 cy)	**Soil Boring:**	9/95
Monitor Well:	9/95	**Geoprobe:**	7/97	**Additional MWs:**	12/01
Downgradient MWs:	12/01	**Replace MW:**	NA	**Quarterly Initiated:**	11/96
ORC Nutrient Injection:	NA	**Re-Excavation:**	NA	**PSH Removal Initiated:**	NA
Annual Initiated:	NA	**Quarterly Resumed:**	NA	**PSH Removal in 2011?**	No

SUMMARY OF 2011 ACTIVITIES

MW-1: Annual groundwater sampling (May) was performed in 2011.

MW-2: Annual groundwater sampling (May) was performed in 2011.

MW-3: Annual water level monitoring (May) was performed in 2011.

MW-4: Annual groundwater sampling (May) was performed in 2011.

MW-5: Annual water level monitoring (May) was performed in 2011.

Site-Wide Activities: No other activities were conducted at this Site during 2011.

SITE MAPS

A Site map (May 2011) is attached as Figure 1.

Standard Oil Com #1
Meter Code: 70445

SUMMARY TABLES AND GRAPHS

- Historic analytical and water level data are summarized in Table 1 and presented graphically in Figures 2 through 6.
- The 2011 laboratory report is presented in Attachment 1 (included on CD).
- The 2011 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 2011.

DISPOSITION OF GENERATED WASTES

All purge water was taken to the El Paso Natural Gas Rio Vista Compressor Station.

ISOCONCENTRATION MAPS

No isoconcentration maps were generated for this Site; however, the attached Site map presents the analytical data collected during 2011.

RESULTS

- The groundwater flow direction at this Site is generally toward the west.
- Neither benzene nor toluene were detected this year in MW-1 (however, the laboratory diluted these samples and elevated the reporting limits to 50 µg/L). The remaining BTEX constituents were detected but were below their respective standards. As a long-term trend, concentrations have attenuated significantly in this well.
- The benzene concentration in the sample collected from MW-2 was 354 µg/L, exceeding the NMWQCC standard. The remaining BTEX constituents were below their respective standards. As a long-term trend, BTEX concentrations have attenuated significantly in this well.
- In 1997, temporary piezometer data were collected that indicated other potential sources of contamination at the Site. Piezometer locations are shown on Figure 1. PZ-1, PZ-5, and PZ-6 had benzene concentrations ranging from 1,420 µg/L to 10,400 µg/L; juxtaposed against a benzene concentration of 91.4 µg/L in monitor well MW-1, located in the former El Paso pit.
- Monitor wells MW-3 and MW-4 were installed concurrent with MW-2 in 2001. The two wells exhibited high levels of BTEX constituents that were not believed to be sourced from the former EPCGP pit, based on the 1997 piezometer sampling

results. MW-3 and MW-4 were sampled again in 2011 in order to provide current data upon which to develop additional delineation recommendations. MW-3 exhibited concentrations of benzene (2,370 µg/L) and total xylenes (836 µg/L) above their respective standards, with benzene appearing to be stable in comparison to the 2001 result. Toluene (15.2 µg/L) had decreased two orders of magnitude; and ethylbenzene (429 µg/L) showed a slight level of attenuation. The MW-4 results were very similar but with a high degree of benzene attenuation exhibited (i.e., falling from 380 µg/L in 2001 to 1.6 µg/L in 2011.

REMAINING CLOSURE REQUIREMENTS

- This site is being managed per the procedures set forth in the document entitled, "Remediation Plan for Groundwater Encountered During Pit Closure Activities" (El Paso Natural Gas Company / El Paso Field Services Company, 1995). This remediation plan was conditionally approved by the New Mexico Oil Conservation Division (OCD) in correspondence dated November 30, 1995; and the OCD approval conditions were adopted into El Paso's program methods.

- In order to meet the remaining closure requirements at this site, the following conditions must be achieved:

    1. The extent of the contaminant plume must be delineated. Additional site delineation activities have not yet been conducted due to ongoing operations, which were believed to have contributed to the subsurface petroleum hydrocarbon impacts.

    2. Groundwater contaminant concentrations in the monitor wells must meet the NMWQCC standards for at least 4 consecutive quarters. Alternatively, concentrations must be reduced to below background levels; however, there are no established background concentrations for the remaining constituents of concern. Currently, MW-1 and MW-2 require additional monitoring. The remaining applicable standards are:

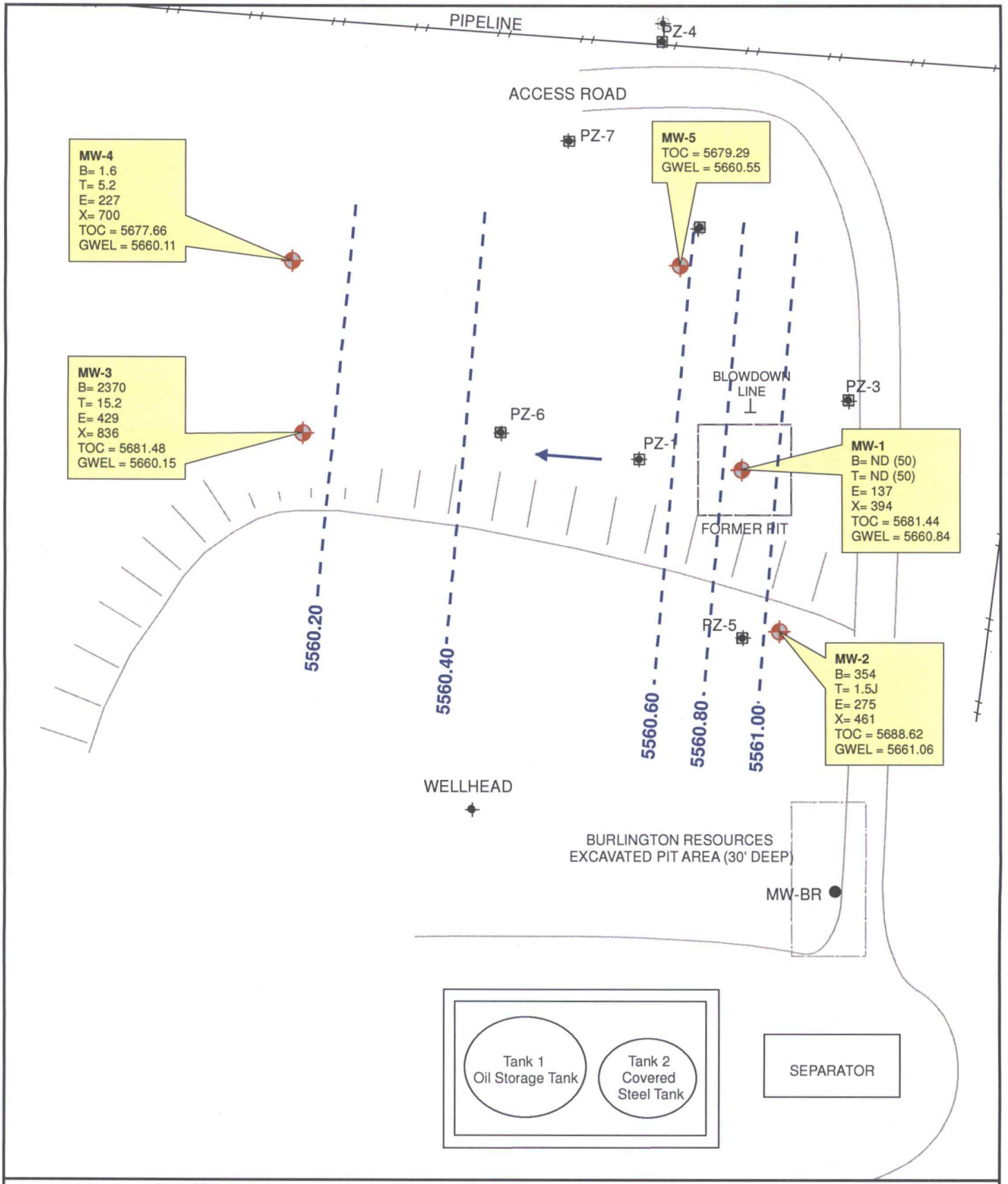
Constituent	NMWQCC GW Standard (µg/L)
Benzene	10
Toluene	750
Ethylbenzene	750
Total Xylenes	620

RECOMMENDATIONS

- EPCGP recommends that sampling at MW-1, MW-2, MW-3, and MW-4 be performed on an annual basis until BTEX concentrations meet the closure criteria. These wells will then be scheduled for quarterly sampling until four consecutive samples are below closure standards.

- New well MW-5 helped to clarify the gradient direction at the Site. This well was clean over four annual sampling events. However, EPCGP will sample this well annually in conjunction with the other wells.

- EPCGP will prepare a brief investigation work plan for this site with the goals of enhancing plume delineation and gaining understanding of the possible contributions to the plume by the former Burlington production pit. This pit was excavated in 1999, and groundwater in the immediate pit area was monitored with a single well, which showed significant attenuation of BTEX by 2001. Additional groundwater delineation was not apparently undertaken by Burlington.



LEGEND

MW-1	Existing Monitoring / Observation Well
PZ-01	Abandoned Temporary Piezometer
→	Groundwater Flow Direction
—5561—	Potentiometric Surface Contour (Inferred Where Dashed)
ND	Not Detected; Reporting Limit Shown in Parenthesis

B	Benzene (ug/L)
T	Toluene (ug/L)
E	Ethylbenzene (ug/L)
X	Total Xylenes (ug/L)
TOC	Top of Casing (ft. AMSL)
GWEL	Groundwater Elevation (ft. AMSL)
J	Result Flagged as Estimated

N

0 15 30 Feet

MWH

PROJECT: STANDARD OIL COM #1

TITLE: Groundwater Potentiometric Surface Map, and BTEX Concentrations - May 9, 2011

FIGURE: 1

FIGURE 2
SUMMARY OF GROUNDWATER BTEX CONCENTRATIONS AND FLUID LEVELS
STANDARD OIL COM #1 (METER #70445)
MW-1

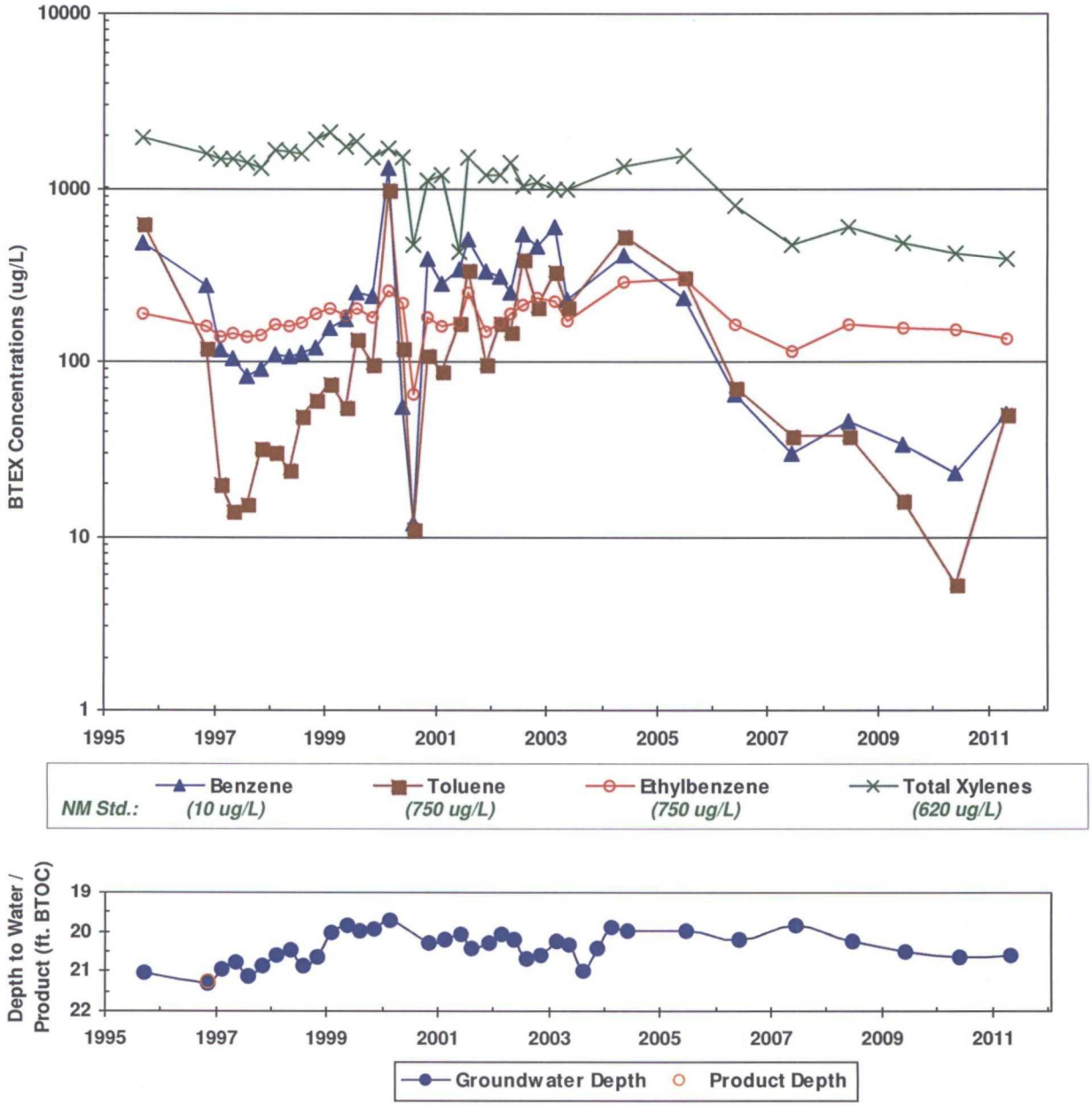


FIGURE 3
SUMMARY OF GROUNDWATER BTEX CONCENTRATIONS AND FLUID LEVELS
STANDARD OIL COM #1 (METER #70445)
MW-2

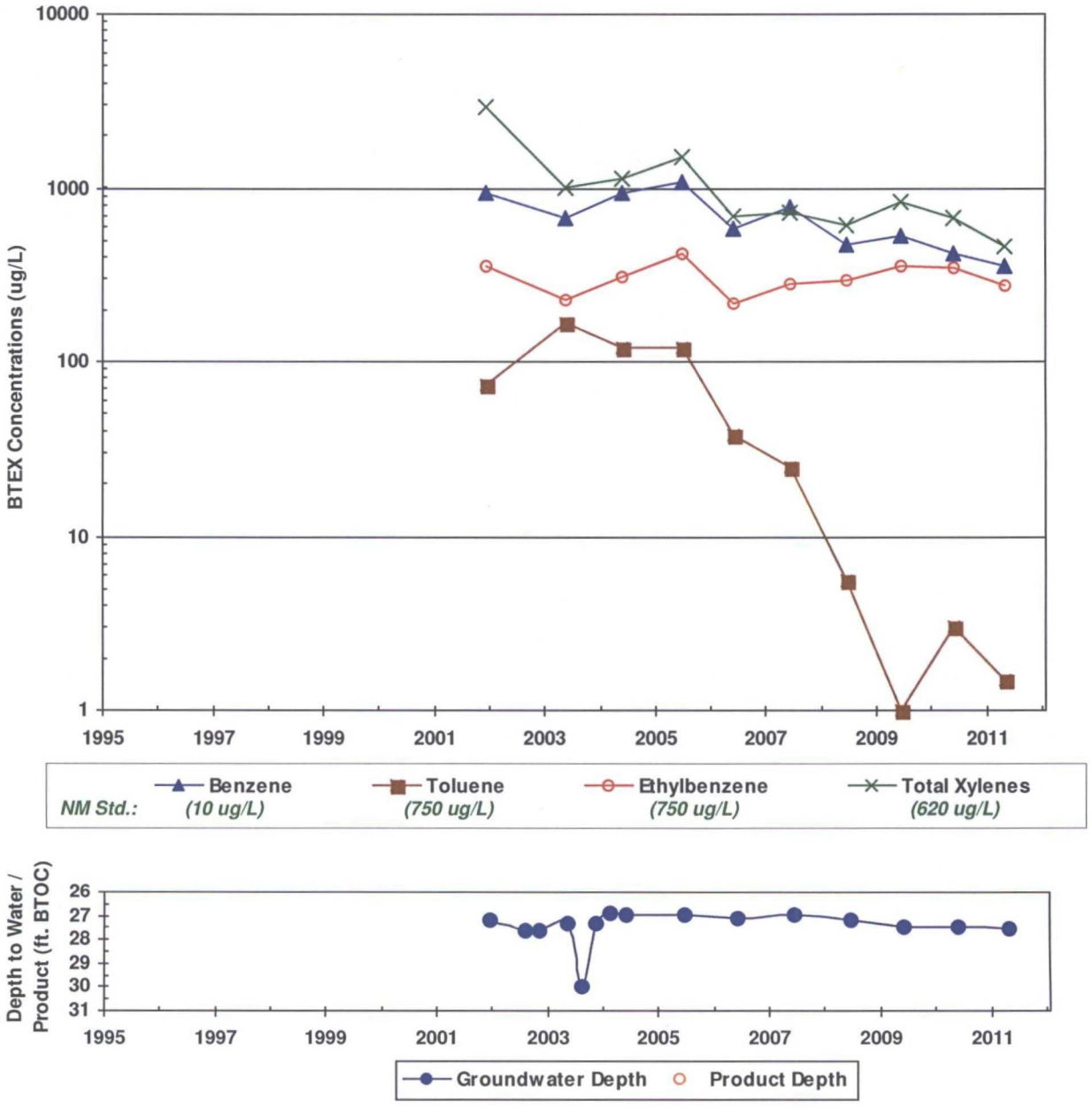


FIGURE 4
SUMMARY OF GROUNDWATER BTEX CONCENTRATIONS AND FLUID LEVELS
STANDARD OIL COM #1 (METER #70445)
MW-3

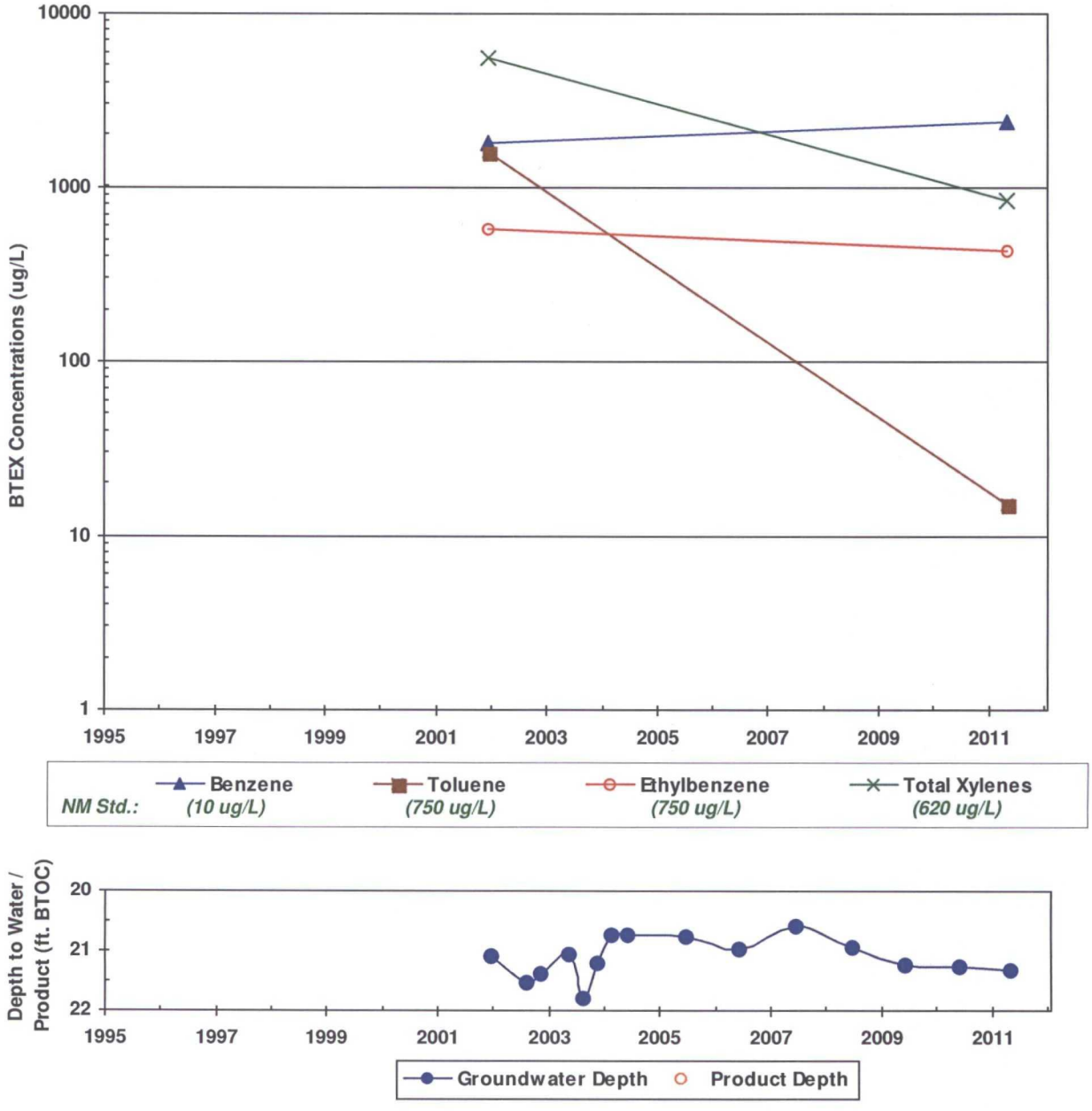


FIGURE 5
SUMMARY OF GROUNDWATER BTEX CONCENTRATIONS AND FLUID LEVELS
STANDARD OIL COM #1 (METER #70445)
MW-4

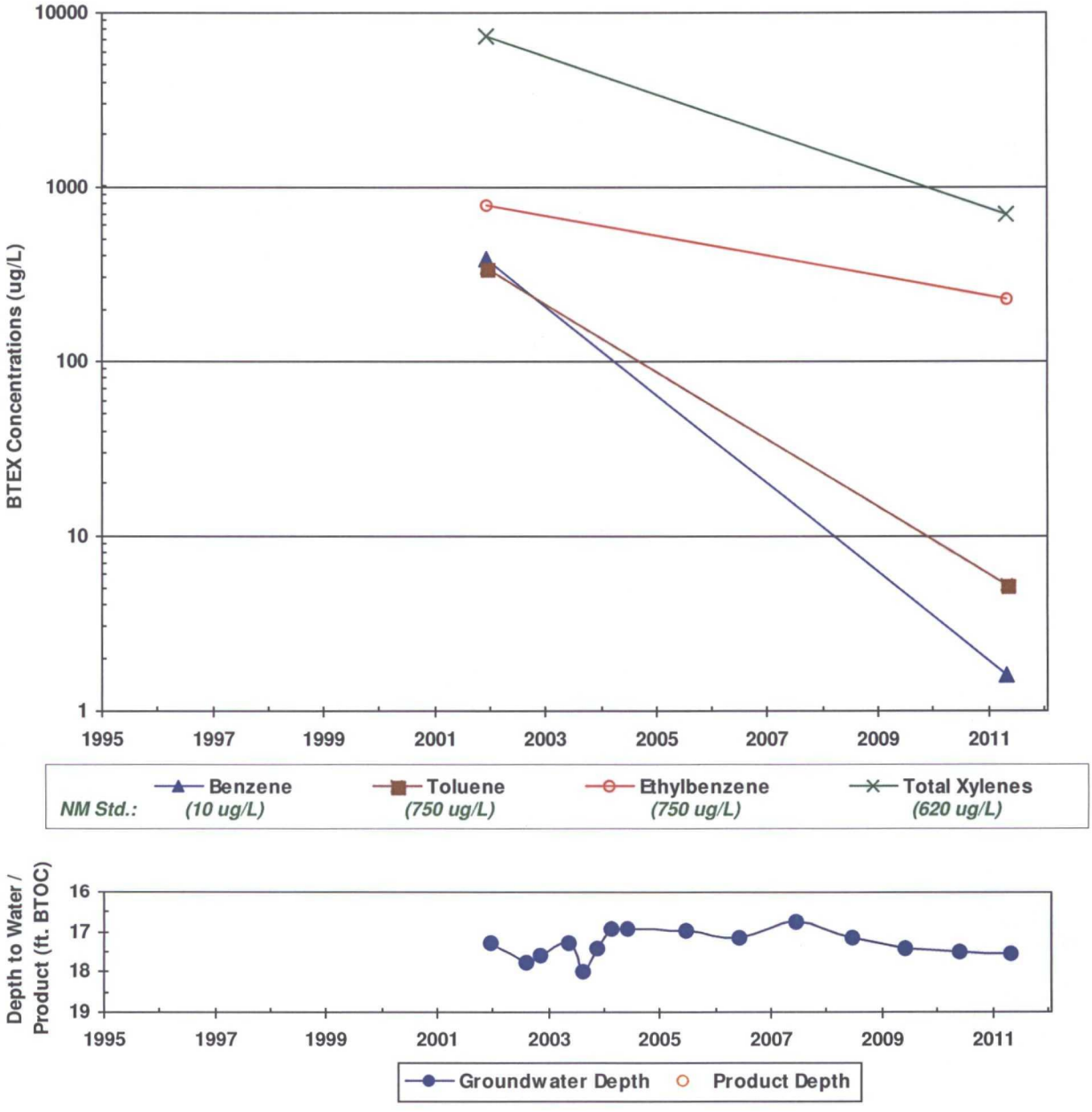


FIGURE 6
SUMMARY OF GROUNDWATER BTEX CONCENTRATIONS AND FLUID LEVELS
STANDARD OIL COM #1 (METER #70445)
MW-5

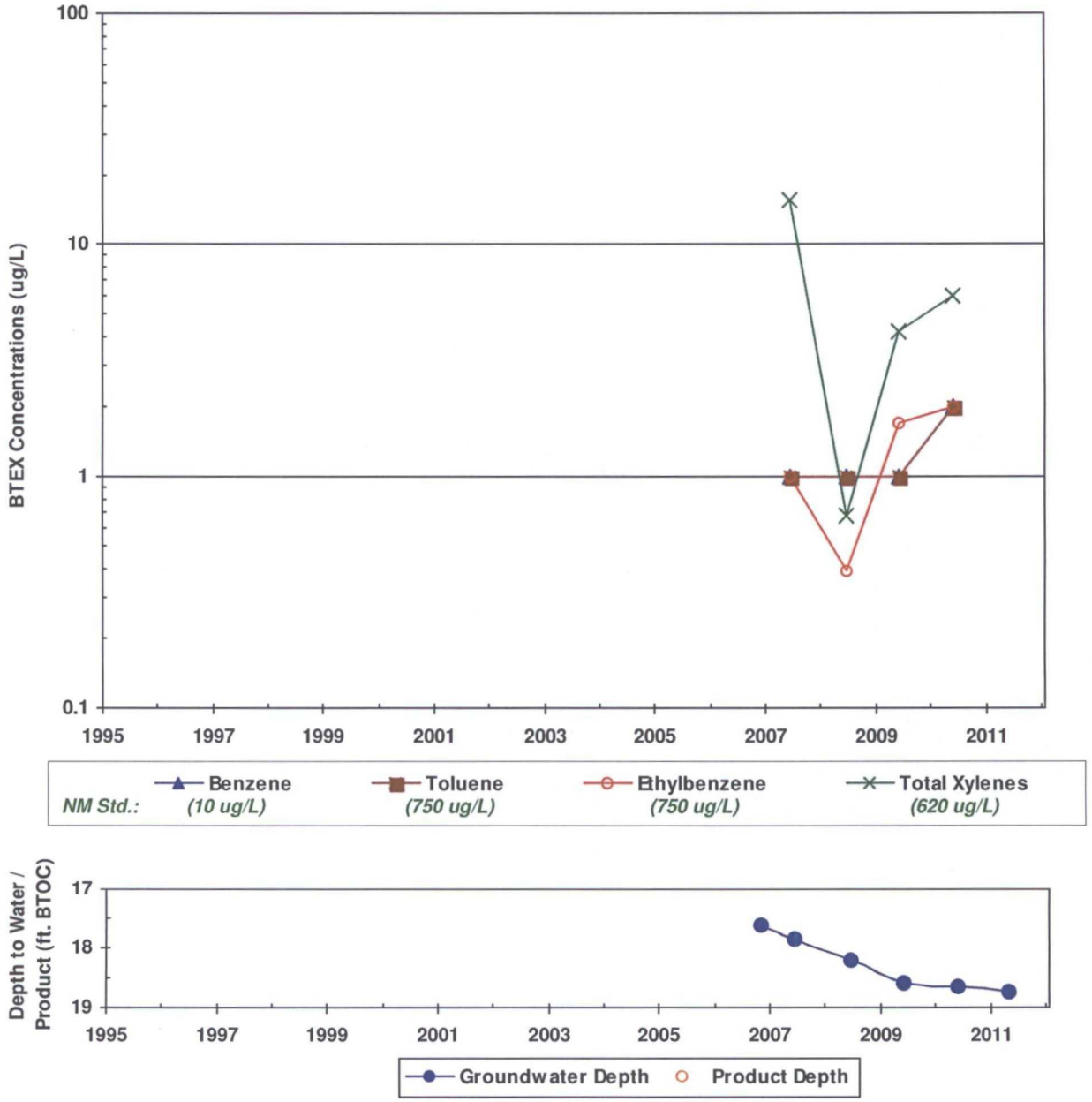


TABLE 1

SUMMARY OF BTEX COMPOUNDS IN GROUNDWATER
STANDARD OIL COM #1 (METER #70445)

Monitor Well	Sample Date	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes	Depth to Water (ft BTOC)	Corr. GW Elevation (ft AMSL)
NMWQCC GW Std.:		10	750	750	620		
MW-1	9/12/1995	482	629	188	1980	21.03	5660.41
MW-1	11/7/1996	277	121	161	1590	21.30	5660.19
MW-1	2/7/1997	119	20.2	139	1490	20.96	5660.48
MW-1	5/9/1997	105	14.2	145	1480	20.78	5660.66
MW-1	8/8/1997	82.6	15.6	140	1400	21.13	5660.31
MW-1	11/4/1997	91.4	32.4	141	1320	20.86	5660.58
MW-1	2/3/1998	109	31	163	1680	20.61	5660.83
MW-1	5/7/1998	107	24.2	161	1640	20.47	5660.97
MW-1	8/4/1998	113	48.7	167	1580	20.85	5660.59
MW-1	11/3/1998	122	61.3	190	1930	20.62	5660.82
MW-1	2/2/1999	157	75.8	204	2100	20.02	5661.42
MW-1	5/19/1999	178	55.2	184	1730	19.86	5661.58
MW-1	8/4/1999	252	136	203	1890	19.98	5661.46
MW-1	11/9/1999	240	98	180	1500	19.91	5661.53
MW-1	2/25/2000	1300	1000	260	1700	19.69	5661.75
MW-1	5/24/2000	56	120	220	1500	NA	NA
MW-1	8/8/2000	12	11	66	470	NA	NA
MW-1	11/6/2000	390	110	180	1100	20.29	5661.15
MW-1	2/15/2001	280	88	160	1200	20.18	5661.26
MW-1	6/4/2001	340	170	170	430	20.05	5661.39
MW-1	8/7/2001	510	340	250	1500	20.41	5661.03
MW-1	12/4/2001	330	98	150	1200	20.26	5661.18
MW-1	2/25/2002	310	170	170	1200	20.06	5661.38
MW-1	5/14/2002	250	150	190	1400	20.17	5661.27
MW-1	8/6/2002	551	398	214	1041	20.69	5660.75
MW-1	11/4/2002	464	207	235	1085	20.60	5660.83
MW-1	2/27/2003	600	330	225	993	20.24	5661.20
MW-1	5/19/2003	230	206	172	977	20.31	5661.13
MW-1	6/2/2004	416	534	287	1330	19.99	5661.46
MW-1	6/24/2005	234	310	305	1530	19.98	5661.46
MW-1	6/7/2006	66.0	71.9	165	804	20.18	5661.26
MW-1	6/12/2007	29.8	38.2	116	477	19.85	5661.59
MW-1	6/16/2008	45.4	37.7	164	598	20.24	5661.20
MW-1	6/10/2009	33.7	16.4	156	484	20.52	5660.92

TABLE 1

SUMMARY OF BTEX COMPOUNDS IN GROUNDWATER
STANDARD OIL COM #1 (METER #70445)

Monitor Well	Sample Date	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes	Depth to Water (ft BTOC)	Corr. GW Elevation (ft AMSL)
NMWQCC GW Std.:		10	750	750	620		
MW-1	6/2/2010	**23.1**	5.4	152	421	20.63	5660.81
MW-1	5/9/2011	<50	<50	137	394	20.60	5660.84
MW-2	12/13/2001	**940**	74	360	**2900**	27.15	5661.47
MW-2	5/19/2003	**673**	167	228	**1010**	27.29	5661.33
MW-2	6/2/2004	**943**	120	309	**1130**	26.94	5661.68
MW-2	6/24/2005	**1090**	120	418	**1510**	26.92	5661.70
MW-2	6/7/2006	**592**	37.7	216	**692**	27.12	5661.50
MW-2	6/12/2007	**781**	<25	286	**733**	26.96	5661.66
MW-2	6/16/2008	**480**	5.6J	299	614	27.17	5661.45
MW-2	6/10/2009	**532**	<1.0	356	**836**	27.45	5661.17
MW-2	6/2/2010	**421**	3.0	348	**670**	27.50	5661.12
MW-2	5/9/2011	**354**	1.5J	275	461	27.56	5661.06
MW-3	12/13/2001	**1800**	**1600**	570	**5600**	21.10	5660.38
MW-3	5/9/2011	**2370**	15.2	429	**836**	21.33	5660.15
MW-4	12/13/2001	**380**	340	**780**	**7300**	17.30	5660.36
MW-4	5/9/2011	1.6	5.2	227	**700**	17.55	5660.11
MW-5	6/12/2007	<1.0	<1.0	<1.0	15.6	17.85	5661.44
MW-5	6/16/2008	<1.0	<1.0	0.39J	0.68J	18.20	5661.09
MW-5	6/10/2009	<1.0	<1.0	1.7	4.2	18.58	5660.71
MW-5	6/2/2010	<2.0	<2.0	<2.0	<6.0	18.65	5660.64

Notes:

Results shown in bold typeface exceed their respective New Mexico Water Quality Control Commission standards.

"J" = result is qualified as estimated. See laboratory report and/or supplemental data validation report for further detail.
"<" = analyte was not detected at the indicated reporting limit (some historic data were reported at the detection limit)..
Static groundwater elevations have been corrected for product thickness where applicable. Specific gravity of 0.8 used.