

3R - 238

2010 AGWMR

03/02/2011



BUILDING A BETTER WORLD

3R 238

March 2, 2011

Mr. Glenn von Gonten
New Mexico Oil Conservation Division (NMOCD)
1220 South St., Francis Drive
Santa Fe, New Mexico 87505

2011 MAR - 4 P 12:24
RECEIVED OGD

**RE: El Paso Tennessee Pipeline Company Pit Groundwater Remediation Sites
2010 Annual Reports**

Dear Mr. Von Gonten:

MWH Americas, Inc., on behalf of El Paso Tennessee Pipeline Company (EPTPC), is submitting the enclosed 2010 Annual Reports for each of EPTPC's 21 remaining San Juan River Basin pit groundwater remediation sites. The reports present the 2010 sampling and product recovery data and include recommendations for 2011 activities at these sites.

The 2010 Annual Reports are divided into three volumes based on location type. The volumes are as follows:

| <u>Volume</u> | <u>Location Type</u> |
|---------------|--|
| 1 | Federal Land |
| 2 | Non-Federal Land (Excl. Navajo Nation) |
| 3 | Navajo Nation |

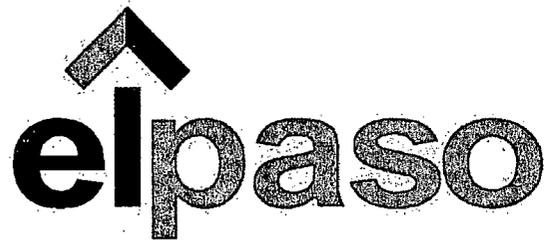
If you have any questions concerning the enclosed reports, please call either Ian Yanagisawa of EPTPC (713-420-7361) or myself (303-291-2276).

Sincerely,

Jed Smith
Project Manager

encl.

- cc: Bill Freeman – NNEPA, Shiprock, NM (Volume 3 Only)
- Bill Liese – BLM, Farmington, NM (Volume 1 Only)
- Brandon Powell – NMOCD, Aztec, NM (Volumes 1, 2, and 3)
- Ian Yanagisawa – EPTPC (Volumes 1, 2, and 3 - Electronic)



El Paso Tennessee
Pipeline Company

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San Juan Basin Pit Program
Groundwater Sites Project

Final 2010 Annual Report
Non-Federal Sites (Volume 2)

March 2011



MWH

1801 California Street, Suite 2900
Denver, Colorado 80202

**2010 ANNUAL GROUNDWATER REPORT
NON-FEDERAL SITES VOLUME II
EL PASO TENNESSEE PIPELINE 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 2010.

**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 2010.



MWH

LIST OF ACRONYMS

| | |
|--------|---|
| AMSL | above mean sea level |
| B | benzene |
| btoc | below top of casing |
| E | ethylbenzene |
| EPTPC | El Paso Tennessee Pipeline Company |
| ft | foot/feet |
| GWEL | groundwater elevation |
| ID | identification |
| MW | monitor well |
| NMWQCC | New Mexico Water Quality Control Commission |
| T | toluene |
| 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 |
| X | total xylenes |

**EPTPC GROUNDWATER SITES
2010 ANNUAL GROUNDWATER REPORT**

**Standard Oil Com #1
Meter Code: 70445**

SITE DETAILS

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

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 2010? No |

SUMMARY OF 2010 ACTIVITIES

MW-1: Annual groundwater sampling (June) was performed in 2010.

MW-2: Annual groundwater sampling (June) was performed in 2010.

MW-3: Annual water level monitoring (June) was performed in 2010.

MW-4: Annual water level monitoring (June) was performed in 2010.

MW-5: Annual groundwater sampling (June) was performed in 2010.

Site-Wide Activities: No other activities were conducted at this Site during 2010.

SITE MAPS

A Site map (June 2010) is attached as Figure 1.

**EPTPC GROUNDWATER SITES
2010 ANNUAL GROUNDWATER REPORT**

**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 2010 laboratory report is presented in Attachment 1 (included on CD).
- The 2010 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 2010.

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 2010.

RESULTS

- The groundwater flow direction at this Site is generally toward the west.
- Benzene in the sample collected from MW-1 was above the NMWQCC standard, at 23.1 µg/L. The remaining BTEX constituents were below their respective standards. As a long-term trend, concentrations have attenuated significantly in this well.
- The benzene and total xylenes concentrations in the sample collected from MW-2 were 421 µg/L and 670 µg/L, respectively, exceeding their NMWQCC standards. 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.
- Monitoring wells MW-3 and MW-4 have historically had high levels of BTEX constituents that are not believed to be from the former EPTPC pit, based on the 1997 piezometer sampling results. These wells have therefore only been used for water level monitoring.

**EPTPC GROUNDWATER SITES
2010 ANNUAL GROUNDWATER REPORT**

**Standard Oil Com #1
Meter Code: 70445**

- The annual samples collected from new monitor well MW-5 in 2007, 2008, 2009, and 2010 have appeared clean with respect to BTEX.

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 are 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 |

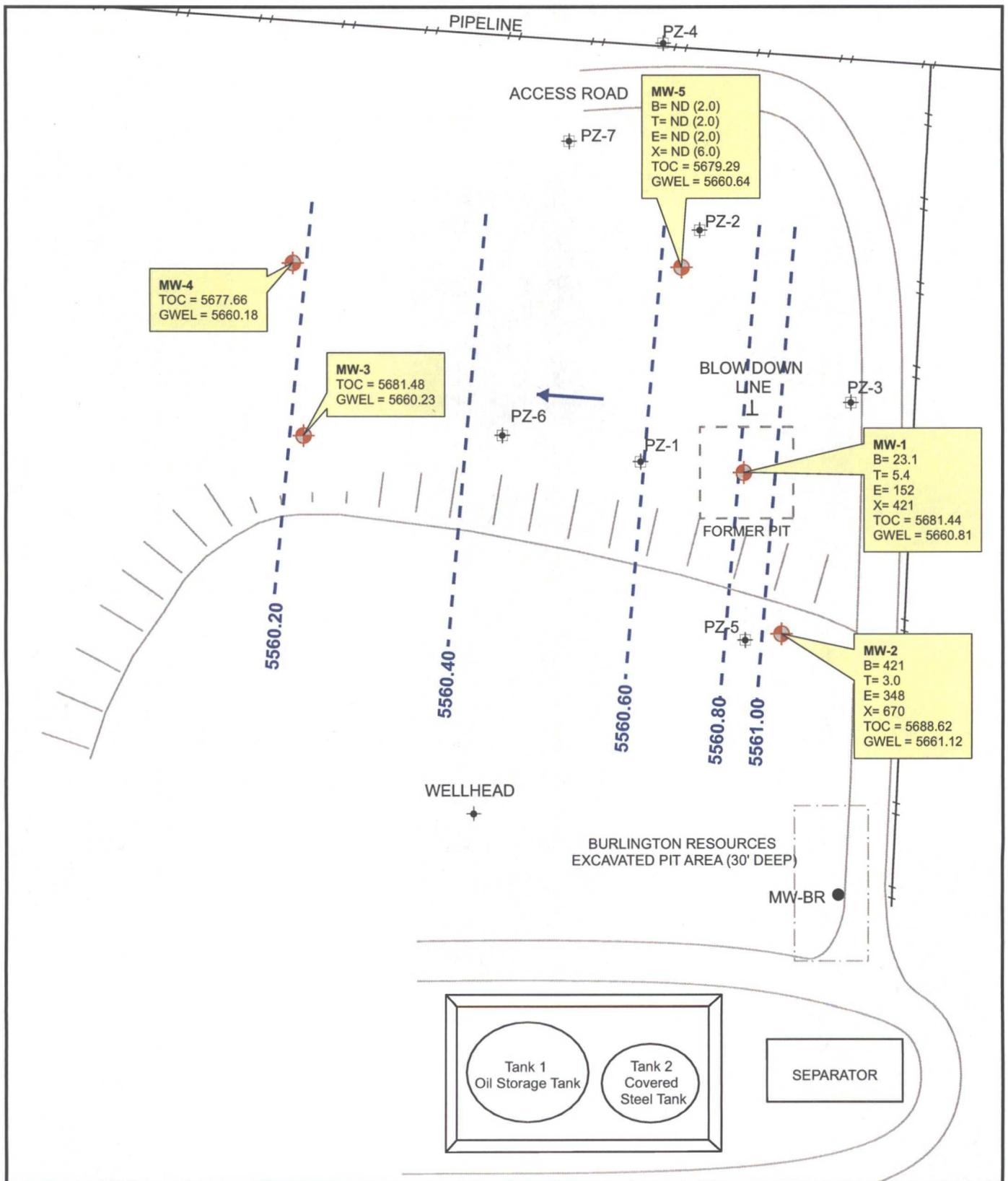
RECOMMENDATIONS

- EPTPC recommends that sampling at MW-1 and MW-2 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.
- EPTPC recommends sampling monitoring wells MW-3 and MW-4 during the 2011 annual sampling event. These wells have not been sampled since 2001. While EPTPC does not hold that these wells were impacted by its pit, the sampling results will be helpful in further evaluation of this site and in development of future recommendations regarding either potential delineation or Site remediation.

**EPTPC GROUNDWATER SITES
2010 ANNUAL GROUNDWATER REPORT**

**Standard Oil Com #1
Meter Code: 70445**

- New well MW-5 helped to clarify the gradient direction at the Site. This well has been clean over four annual sampling events. EPTPC recommends not sampling this well again until closure samples are collected.
- EPTPC will evaluate this Site further, and particularly the impacts observed in monitoring wells MW-3 and MW-4, and present any additional recommendations in future annual reports.



LEGEND

- MW-4 Existing Monitoring / Observation Well
- PZ-01 Abandoned Temporary Piezometer
- Groundwater Flow Direction
- Potentiometric Surface Contour (Inferred Where Dashed)

- 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)

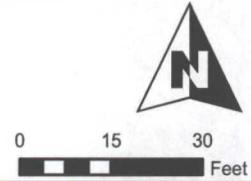
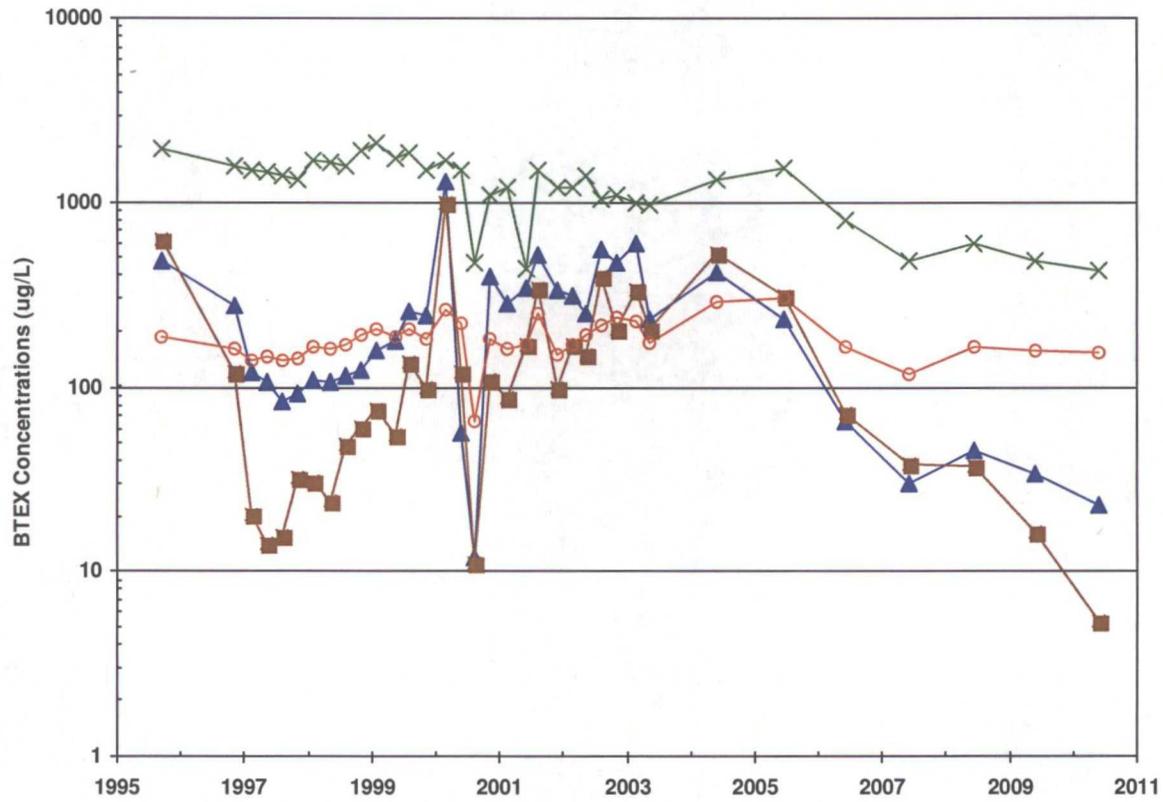
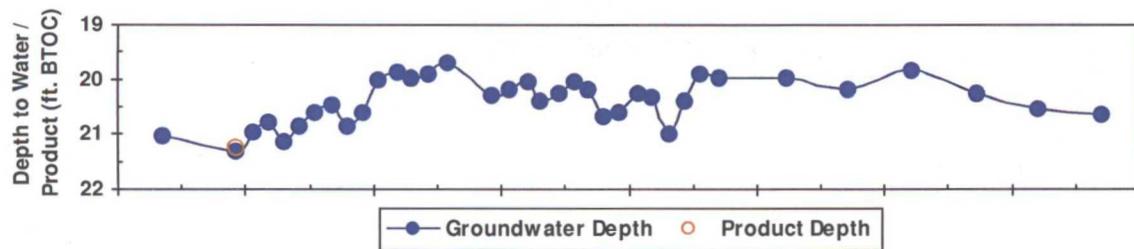


FIGURE 2
SUMMARY OF GROUNDWATER BTEX CONCENTRATIONS AND FLUID LEVELS
STANDARD OIL COM #1 (METER #70445)
MW01



| | | | |
|---------------------------------|-------------------------|------------------------------|-------------------------------|
| ▲ Benzene NM Std.: (10 ug/L) | ■ Toluene (750 ug/L) | ○ Ethylbenzene (750 ug/L) | × Total Xylenes (620 ug/L) |
|---------------------------------|-------------------------|------------------------------|-------------------------------|



| | |
|---------------------|-----------------|
| ● Groundwater Depth | ○ Product Depth |
|---------------------|-----------------|

FIGURE 3
SUMMARY OF GROUNDWATER BTEX CONCENTRATIONS AND FLUID LEVELS
STANDARD OIL COM #1 (METER #70445)
MW02

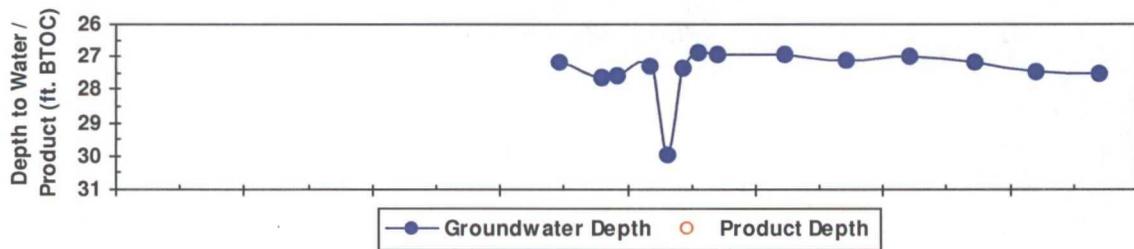
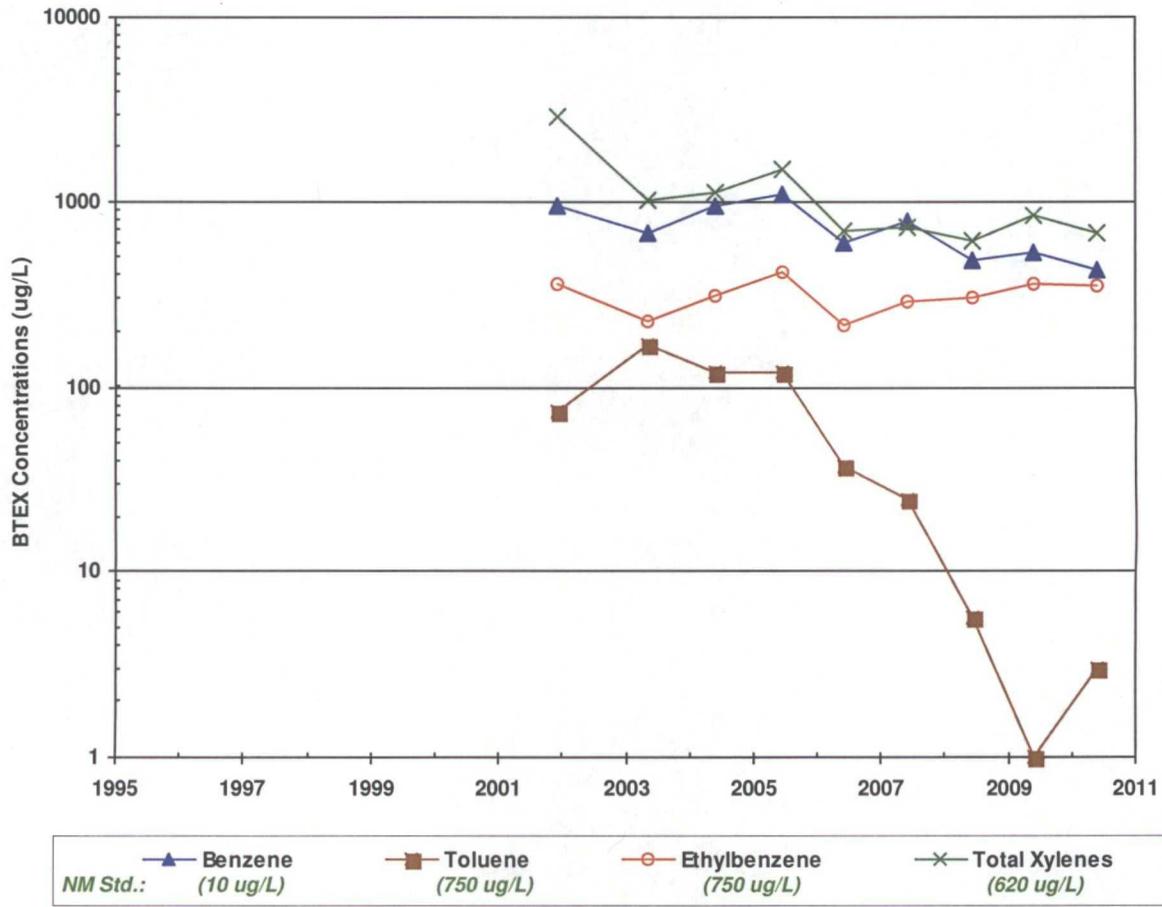
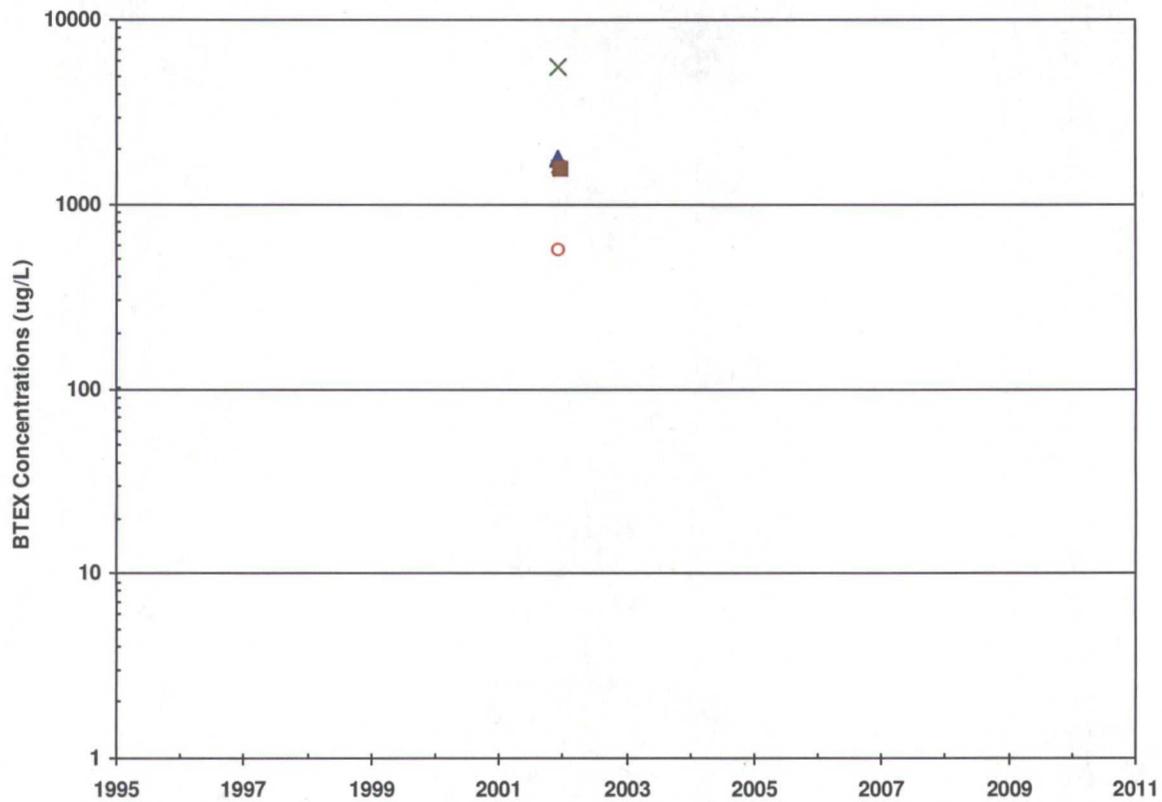
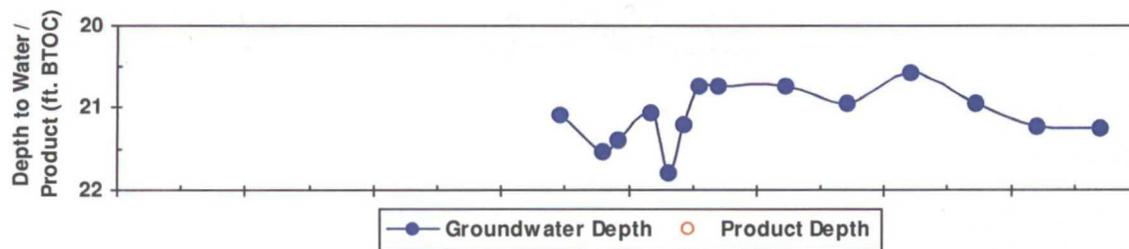


FIGURE 4
SUMMARY OF GROUNDWATER BTEX CONCENTRATIONS AND FLUID LEVELS
STANDARD OIL COM #1 (METER #70445)
MW03

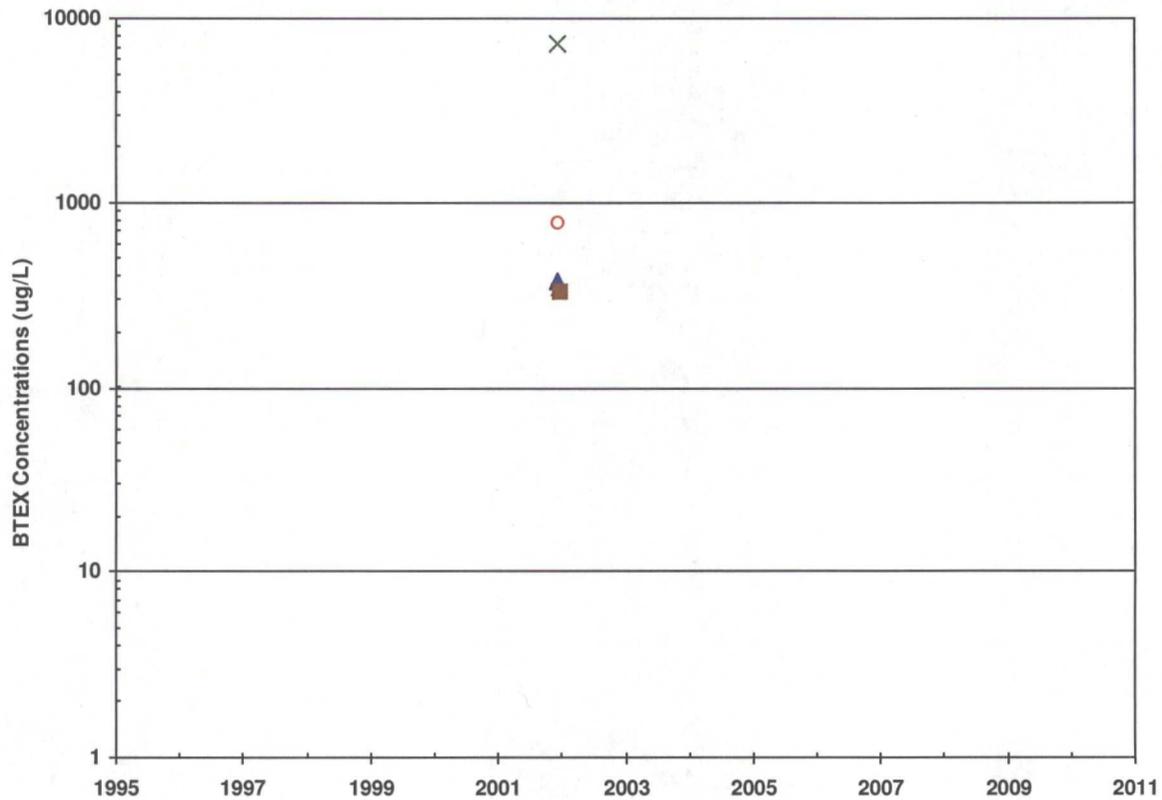


| | | | |
|-------------------------------|-----------------------|----------------------------|-----------------------------|
| Benzene NM Std.: (10 ug/L) | Toluene (750 ug/L) | Ethylbenzene (750 ug/L) | Total Xylenes (620 ug/L) |
|-------------------------------|-----------------------|----------------------------|-----------------------------|

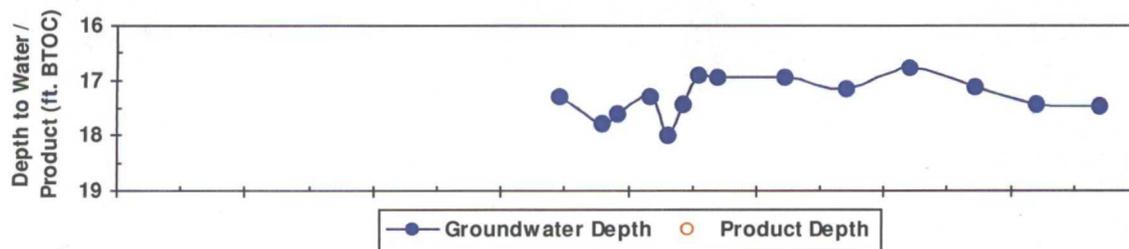


| | |
|-------------------|---------------|
| Groundwater Depth | Product Depth |
|-------------------|---------------|

FIGURE 5
SUMMARY OF GROUNDWATER BTEX CONCENTRATIONS AND FLUID LEVELS
STANDARD OIL COM #1 (METER #70445)
MW04



| | | | |
|-------------------------------|-----------------------|----------------------------|-----------------------------|
| Benzene NM Std.: (10 ug/L) | Toluene (750 ug/L) | Ethylbenzene (750 ug/L) | Total Xylenes (620 ug/L) |
|-------------------------------|-----------------------|----------------------------|-----------------------------|



| | |
|-------------------|---------------|
| Groundwater Depth | Product Depth |
|-------------------|---------------|

FIGURE 6
SUMMARY OF GROUNDWATER BTEX CONCENTRATIONS AND FLUID LEVELS
STANDARD OIL COM #1 (METER #70445)
MW05

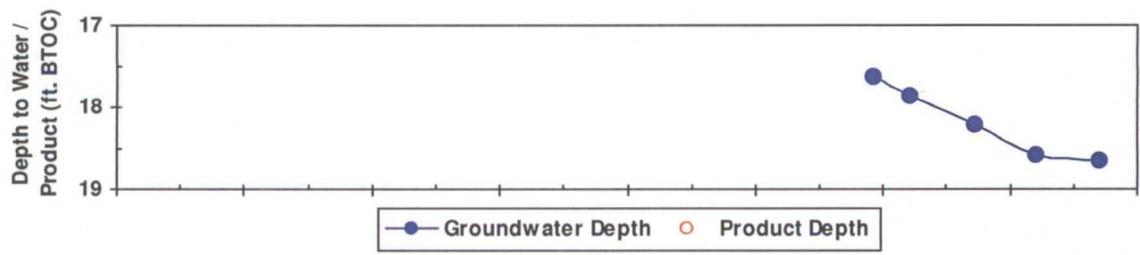
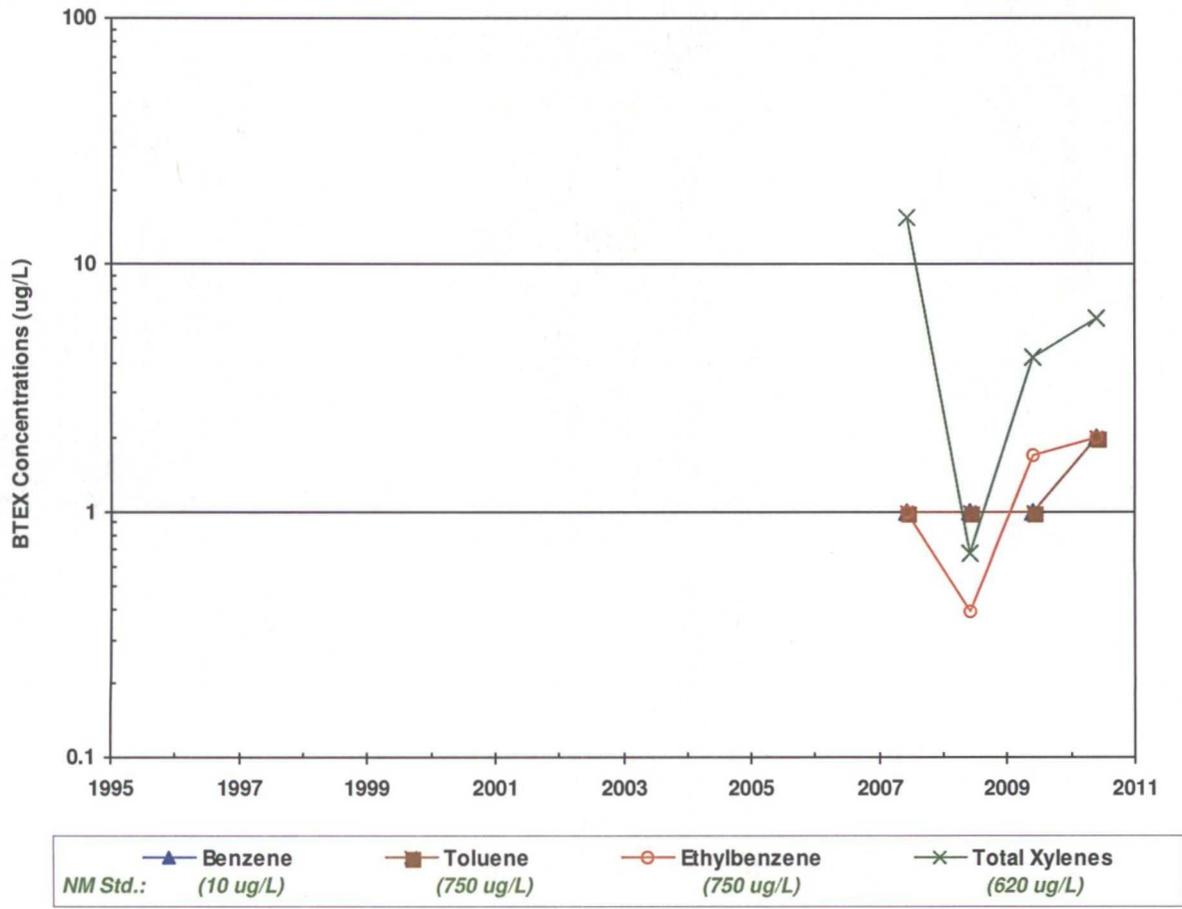


TABLE 1

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

| Monitor Well | Sample Date | Benzene (ug/L) | Toluene (ug/L) | Ethylbenzene (ug/L) | Total Xylenes (ug/L) | Depth to Water (ft BTOC) | Corrected GW Elevation (ft AMSL) |
|-----------------|-------------|----------------|----------------|---------------------|----------------------|--------------------------|----------------------------------|
| NMWQCC GW Std.: | | 10 | 750 | 750 | 620 | | |
| MW01 | 9/12/1995 | 482 | 629 | 188 | 1980 | 21.03 | 5660.41 |
| MW01 | 11/7/1996 | 277 | 121 | 161 | 1590 | 21.30 | 5660.19 |
| MW01 | 2/7/1997 | 119 | 20.2 | 139 | 1490 | 20.96 | 5660.48 |
| MW01 | 5/9/1997 | 105 | 14.2 | 145 | 1480 | 20.78 | 5660.66 |
| MW01 | 8/8/1997 | 82.6 | 15.6 | 140 | 1400 | 21.13 | 5660.31 |
| MW01 | 11/4/1997 | 91.4 | 32.4 | 141 | 1320 | 20.86 | 5660.58 |
| MW01 | 2/3/1998 | 109 | 31 | 163 | 1680 | 20.61 | 5660.83 |
| MW01 | 5/7/1998 | 107 | 24.2 | 161 | 1640 | 20.47 | 5660.97 |
| MW01 | 8/4/1998 | 113 | 48.7 | 167 | 1580 | 20.85 | 5660.59 |
| MW01 | 11/3/1998 | 122 | 61.3 | 190 | 1930 | 20.62 | 5660.82 |
| MW01 | 2/2/1999 | 157 | 75.8 | 204 | 2100 | 20.02 | 5661.42 |
| MW01 | 5/19/1999 | 178 | 55.2 | 184 | 1730 | 19.86 | 5661.58 |
| MW01 | 8/4/1999 | 252 | 136 | 203 | 1890 | 19.98 | 5661.46 |
| MW01 | 11/9/1999 | 240 | 98 | 180 | 1500 | 19.91 | 5661.53 |
| MW01 | 2/25/2000 | 1300 | 1000 | 260 | 1700 | 19.69 | 5661.75 |
| MW01 | 5/24/2000 | 56 | 120 | 220 | 1500 | NA | NA |
| MW01 | 8/8/2000 | 12 | 11 | 66 | 470 | NA | NA |
| MW01 | 11/6/2000 | 390 | 110 | 180 | 1100 | 20.29 | 5661.15 |
| MW01 | 2/15/2001 | 280 | 88 | 160 | 1200 | 20.18 | 5661.26 |
| MW01 | 6/4/2001 | 340 | 170 | 170 | 430 | 20.05 | 5661.39 |
| MW01 | 8/7/2001 | 510 | 340 | 250 | 1500 | 20.41 | 5661.03 |
| MW01 | 12/4/2001 | 330 | 98 | 150 | 1200 | 20.26 | 5661.18 |
| MW01 | 2/25/2002 | 310 | 170 | 170 | 1200 | 20.06 | 5661.38 |
| MW01 | 5/14/2002 | 250 | 150 | 190 | 1400 | 20.17 | 5661.27 |
| MW01 | 8/6/2002 | 551 | 398 | 214 | 1041 | 20.69 | 5660.75 |
| MW01 | 11/4/2002 | 464 | 207 | 235 | 1085 | 20.60 | 5660.83 |
| MW01 | 2/27/2003 | 600 | 330 | 225 | 993 | 20.24 | 5661.20 |
| MW01 | 5/19/2003 | 230 | 206 | 172 | 977 | 20.31 | 5661.13 |
| MW01 | 6/2/2004 | 416 | 534 | 287 | 1330 | 19.99 | 5661.46 |
| MW01 | 6/24/2005 | 234 | 310 | 305 | 1530 | 19.98 | 5661.46 |
| MW01 | 6/7/2006 | 66.0 | 71.9 | 165 | 804 | 20.18 | 5661.26 |
| MW01 | 6/12/2007 | 29.8 | 38.2 | 116 | 477 | 19.85 | 5661.59 |
| MW01 | 6/16/2008 | 45.4 | 37.7 | 164 | 598 | 20.24 | 5661.20 |
| MW01 | 6/10/2009 | 33.7 | 16.4 | 156 | 484 | 20.52 | 5660.92 |

TABLE 1

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

| Monitor Well | Sample Date | Benzene (ug/L) | Toluene (ug/L) | Ethylbenzene (ug/L) | Total Xylenes (ug/L) | Depth to Water (ft BTOC) | Corrected GW Elevation (ft AMSL) |
|-----------------|-------------|----------------|----------------|---------------------|----------------------|--------------------------|----------------------------------|
| NMWQCC GW Std.: | | 10 | 750 | 750 | 620 | | |
| MW01 | 6/2/2010 | 23.1 | 5.4 | 152 | 421 | 20.63 | 5660.81 |
| MW02 | 12/13/2001 | 940 | 74 | 360 | 2900 | 27.15 | 5661.47 |
| MW02 | 5/19/2003 | 673 | 167 | 228 | 1010 | 27.29 | 5661.33 |
| MW02 | 6/2/2004 | 943 | 120 | 309 | 1130 | 26.94 | 5661.68 |
| MW02 | 6/24/2005 | 1090 | 120 | 418 | 1510 | 26.92 | 5661.70 |
| MW02 | 6/7/2006 | 592 | 37.7 | 216 | 692 | 27.12 | 5661.50 |
| MW02 | 6/12/2007 | 781 | <25 | 286 | 733 | 26.96 | 5661.66 |
| MW02 | 6/16/2008 | 480 | 5.6J | 299 | 614 | 27.17 | 5661.45 |
| MW02 | 6/10/2009 | 532 | <1.0 | 356 | 836 | 27.45 | 5661.17 |
| MW02 | 6/2/2010 | 421 | 3.0 | 348 | 670 | 27.50 | 5661.12 |
| MW03 | 12/13/2001 | 1800 | 1600 | 570 | 5600 | 21.10 | 5660.38 |
| MW04 | 12/13/2001 | 380 | 340 | 780 | 7300 | 17.30 | 5660.36 |
| MW05 | 6/12/2007 | <1.0 | <1.0 | <1.0 | 15.6 | 17.85 | 5661.44 |
| MW05 | 6/16/2008 | <1.0 | <1.0 | 0.39J | 0.68J | 18.20 | 5661.09 |
| MW05 | 6/10/2009 | <1.0 | <1.0 | 1.7 | 4.2 | 18.58 | 5660.71 |
| MW05 | 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.

Static groundwater elevations have been corrected for product thickness where applicable. Specific gravity of 0.8 used.

TABLE 2

SUMMARY OF FREE-PRODUCT REMOVAL
STANDARD OIL COM #1 (METER #70445)

| Monitor Well | Removal Date | Depth to Product (ft BTOC) | Depth to Water (ft BTOC) | Product Thickness (feet) | Volume Removed (gallons) | Cumulative Removal (gallons) | Corrected GW Elevation (ft AMSL) |
|--------------|--------------|----------------------------|--------------------------|--------------------------|--------------------------|------------------------------|----------------------------------|
| MW01 | 11/7/1996 | 21.24 | 21.30 | 0.06 | -- | 0.00 | 5660.19 |

Notes:

"--" indicates either that product was not measurably detected or that product was not recovered.

"NA" indicates that the respective data point is not available.

Groundwater elevations may not be static due to removal of equipment. Corrections for product thickness utilize SG of 0.8.