AP - 011

ANNUAL MONITORING REPORT

YEAR(S):

2003

March 29, 2004

Bertha Barber Tank Battery
2003 Annual Report

Prepared for:

Marathon Oil Company
Southern Business Unit
PO Box 3487
Houston, Texas 77253-3487

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1.0 EXECUTIVE SUMMARY

Localized ground water quality impairment was caused by past releases to disposal pits associated with the former Bertha Barber Tank Battery. Periodic releases saturated the sediments above the water table and facilitated transport of produced water (brine) and entrained hydrocarbons to the underlying alluvial aquifer. Under current conditions, measurable transport of constituents from the soil and unsaturated zone into ground water is highly unlikely.

Phase separate hydrocarbons (PSH) are entrained in pore spaces of the capillary fringe and in the saturated zone at the Bertha Barber site. As the water table rises and falls, these entrained hydrocarbons can cause a sheen on ground water or a relatively thin layer of PSH in several monitoring wells. The PSH within the matrix of the saturated zone and capillary fringe have not caused a significant area of the aquifer to display dissolved hydrocarbons above Water Quality Control Commission (WQCC) Standards. The zone of the aquifer affected by dissolved phase hydrocarbons (currently about 500 feet by 400 feet) is decreasing in extent and magnitude over time. Natural restoration will cause ground water to meet WQCC Standards for hydrocarbons in 2-5 years. The sheen or thin layer of PSH, which might be observed in ground water monitoring wells for decades, represents no material threat to human health or the environment.

A zone of saline ground water exists below the Bertha Barber site. Beneath the former evaporation pit, a layer of dense brine might exist on the clay-rich red beds (Dockum Group) which form the base of the alluvial aquifer. Natural restoration is mitigating the effect of the saline water and ground water should be at background concentrations for Total Dissolved Solids (TDS) and chloride within ten years. The zone of high TDS and chloride is about 1200 feet by 200 feet and is not expanding.

A Dynergy pipeline release has caused localized impairment of ground water quality up gradient from the Bertha Barber site.

Removal of surface soils and near-surface material that exhibits hydrocarbons or salt will cause no acceleration of the natural restoration of ground water that is on-going at the site. Simulation modeling using HYDRUS-1D would show that the flux of these constituents from the unsaturated zone to ground water is not large enough to cause a measurable difference in ground water quality, especially where natural surface restoration has re-established vegetation. In fact, removal of

surface soil may cause more environmental damage without creating a commensurate environmental benefit.

We recommend continued monitoring of natural restoration of ground water at the site because a mechanical ground water remedy is not warranted. We recommend the plugging and abandonment of five monitoring wells that provide no material benefit to the monitoring of the natural restoration of ground water. We recommend release of three up-gradient monitoring wells to Dynergy to assist them with their own environmental program associated with their past pipeline release.

Because HYDRUS-1D simulations will show that the constituents released to the vadose zone pose no threat to ground water, inclusion of a soil restoration plan in the Abatement Plan is outside the scope of Rule 19. Restoration of the ground surface is clearly an issue that involves the surface owner and Marathon Oil Company.

2.0 INTRODUCTION

On behalf of Marathon Oil Company, R.T. Hicks Consultants, Ltd. (Hicks Consultants) prepared this annual report that summarizes the results of ground water monitoring, as required by the New Mexico Oil Conservation Division (OCD), conducted during 2003. Plate 1 shows the location of the site and nearby monitoring wells, which are currently being placed into a GIS mapping system at the Petroleum Research and Recovery Center in Socorro. The Bertha Barber site is situated in Section 5, Township 20 South, Range 37 East (latitude 32° 36' 37.32" longitude 103° 17' 34.47"). Quarterly groundwater monitoring was conducted on March 5th, June 16th, September 24th, and December 22nd, 2003.

3.0 HYDROGEOLOGIC SETTING

Sixteen monitor wells are currently located at the former Bertha Barber Tank Battery facility (Plate 2). Three monitoring wells (MW-14, MW-15 and MW-16) were installed in December 2002 and thirteen monitoring wells were installed during the course of a site-wide assessment performed in 1998-1999 by ARCADIS (formerly AG&M). Boring logs from the wells indicate that the site is underlain by sand of varying colors, grain sizes and sorting to a depth of at least 50 feet. At most locations, the sand is mixed with some gravel, the presence of which tends to increase with depth. In the northern and eastern portions of the site, the surficial sands and gravel are underlain by caliche at depths ranging from 4 to 9 feet below land surface. The work of Nicholson and Clebsch (1961) and information from nearby water well logs show that the top of the Dockum Group is at an elevation of about 3,490 above sea level (about 70 feet below land surface) The red clay that characterizes the Dockum Group is an aquitard and establishes the base of the alluvial aquifer.

Ground water at the site is generally found between 35 and 40 feet below ground level. Plate 3 shows that the ground water in the alluvium and adjacent Ogallala aquifer flows southwest. In the area of Bertha Barber, the water table is nearly flat. Ground water flows southeast at a gradient of 0.003. The elevation of the water table at the Bertha Barber site suggests that the saturated thickness of the alluvial aquifer is about 35 feet.

The hydraulic conductivity of the underlying ground water zone is relatively low. Monitoring wells often "bail dry" during sampling. This low hydraulic conductivity may also explain why the nearby livestock well has been unused for the past several years.

4.0 FIELD METHODS

BBC International Inc. conducted quarterly ground water monitoring events on March 5th, June 16th, September 24th, and December 22nd, 2003. During each monitoring event, a site-wide gauging event was completed prior to sampling.

A standard sampling protocol was followed. BBC International bailed three wetted casing volumes of water were removed from each well prior to sample collection. The fluid was removed from each well using a submersible pump and dedicated tubing or a dedicated disposable bailer. In some cases, the wells were pumped (or bailed) dry and allowed to recover prior to sampling. When a submersible pump was utilized, it was decontaminated by washing and pumping with water and laboratory-grade detergent. The washing was followed by a clean water rinse. Only one sample was collected from any monitor well that contained measurable amounts of PSH, MW-1 showed a negligible amount of product during 2003. Because MW-10 measures the effects of the Dynergy pipeline release, BBC International did not sample this well (See OCD letter to MOC Dated March 6, 2003).

During each quarterly monitoring event, ground water samples were collected and analyzed for BTEX (benzene, toluene, ethylbenzene and total xylene) using EPA Method 8021B. During the September 24th sampling event, ground water samples were collected and analyzed for chloride using EPA Method 325.2. During the September 24th event, ground water samples were also collected and analyzed for TDS using EPA Method 160.1, three dissolved metals (iron, manganese and barium) using EPA Method 6010B, and polynuclear aromatic hydrocarbons (PAHs) using EPA Method 8310. In addition to the above samples, one rinsate sample (field blank) and one replicate sample were submitted during each sampling event, and a trip blank sample was included in each cooler utilized to transport samples for BTEX analysis to the laboratory.

Fluid levels were gauged in all monitor wells during each quarterly ground water monitoring event.

5.0 RESULTS OF 2003 FIELD PROGRAMS

Table 1 contains historical fluid level data for all monitor wells at the site. Plate 4 is a water table elevation map for the Bertha Barber wells for June 16, 2003. Our interpretation is consistent with the regional data, showing a southeast gradient of 0.0004.

In 2003, BBC International observed phase separate hydrocarbons in MW-1. As shown in Figure 1, PSH in MW-1 is not uncommon. No other wells exhibited PSH in 2003. As Table 1 shows, before 2003 PSH occurred more than once in wells MW-2, MW-4, MW-5, MW-7, MW-9 and MW-10. Generally, the PSH thickness in these other wells was less than 0.01 foot from 2001-2003.

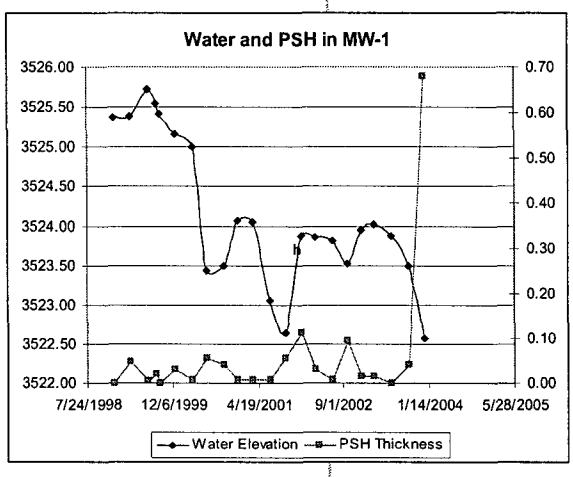

Figure 1. Water and PSH in MW-1.

Examination of the geologist's logs of MW-1 and other nearby wells show hydrocarbon stained material at depths exceeding 25 feet and some wells (e.g. MW-3) show hydrocarbon stained material within the saturated zone. We hypothesize that these hydrocarbons in the capillary fringe and in the saturated zone periodically release hydrocarbons to ground water in the form of PSH in monitoring wells.

The chemical analyses are summarized in Tables 2, 3, and 4 along with historical results from each well. In 2003, only MW-5 exhibited benzene above laboratory detection limits. Figure 2 shows the chemical trend in this well over time. Figure 3 compares the benzene concentrations in MW-5 with those observed in MW-4. Benzene has not been detected in samples from MW-4 since March 5, 2003. Forecasting the benzene concentration decline suggests that MW-5 will meet WQCC standards by 2008. We hypothesize that benzene concentrations in MW-5 will now decline at a faster rate because recent benzene concentrations are relatively low. If we observe a decline similar to that observed in MW-4, we may witness MW-5 at or below 10 ppb benzene by 2006.

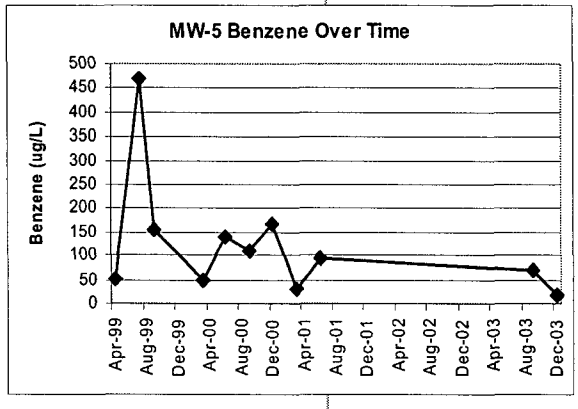

Figure 2. Benzne over time in MW-5.

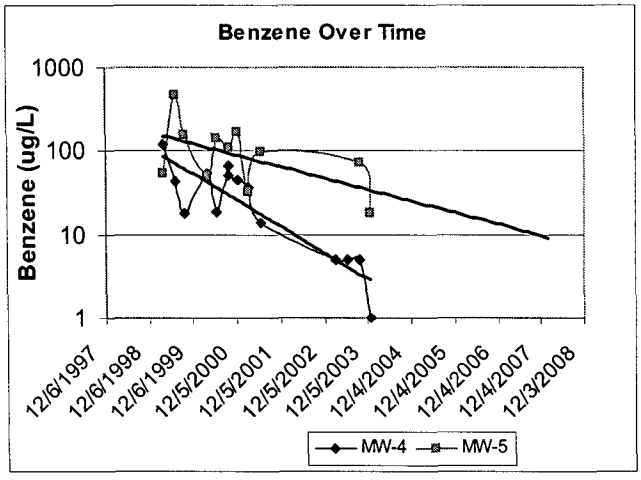

Figure 3. Benzene in MW-4 and MW-5 over time.

In 2003, all other organic constituents, such as toluene and PAHs, were below laboratory detection limits.

TDS and chloride are above WQCC standards in several wells, including the up gradient livestock well. The regional background TDS concentration in the area of the Bertha Barber site appears to be about 1600 ppm (see livestock well analyses in Table 3) and background chloride is about 650 ppm. Several monitoring wells exhibit chloride concentrations materially higher than background (see Plate 5). Figure 4 shows chloride concentration over time for MW-5. Like several other wells, chloride is decreasing with time due to natural dilution and dispersion. The most recent analysis (2003) suggests that MW-5 is very close to background conditions. Some wells show chloride and TDS concentrations increasing over time.

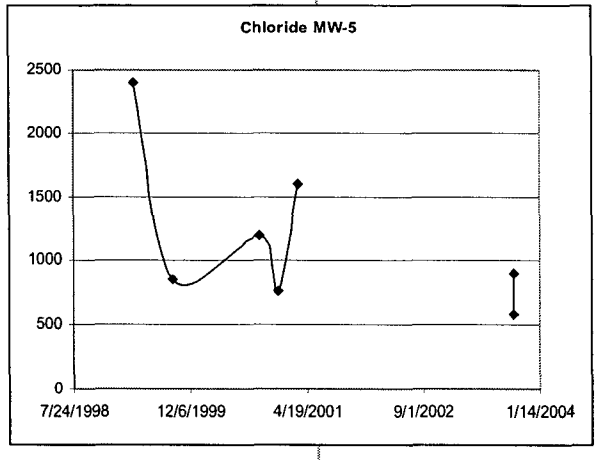

Figure 4. Chloride in MW-5 over time.

Plate 6 presents chloride versus time graphs for eight wells. Wells on the northern portion of the site are probably affected by the release from the Dynergy pipeline, as discussed in earlier reports. For example, MW-10 and MW-6 show chloride concentrations generally above 2000 ppm.

On the south side of the site, MW-12 showed the highest chloride concentration (4400 ppm on 9/22/99). MW-11, which is essentially directly down gradient from MW-12 also shows relatively high chloride concen-

trations, now exceeding 1500 ppm. The recently installed MW-16 shows TDS and chloride concentrations similar to MW-12 and MW-11. These wells, which are down gradient from the former evaporation pit, show decreasing TDS and chloride concentrations over time at MW-12 and relatively stable concentrations over time at MW-11 (Plate 7). More data are required to accurately predict the concentration trend at MW-11.

We hypothesize that past discharges to the former evaporation pit caused localized impairment of ground water quality. Dilution and dispersion are mitigating the effect of these past releases and causing the TDS and chloride concentrations at MW-12 to decrease over time. Simple forecasting of the concentration decline at MW-12 suggests that this area will be at background concentrations in less than 10 years. We hypothesize that the zone of ground water impairment is not expanding but has reached a "dynamic equilibrium" and the relatively stable TDS and chloride concentrations at MW-11 support this hypothesis. Examination of the chloride and TDS data from MW-12, MW-16 and MW-11 suggest that background water quality exists about 1200 feet down gradient from MW-12 (Figure 5). Continued monitoring of MW-11 should show a decline of TDS and choride over the next 10 years. Aerial photographic evidence shows that discharges to this pit have not occurred since 1975 or earlier. Therefore, an equilibrium condition as hypothesized above appears valid.

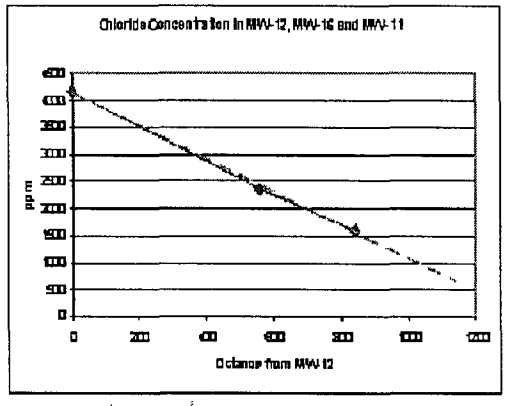

Figure 5. Chloride in MW-12, MW-16, MW-11.

In the area of the former tank bottoms pit, chloride concentrations are at background levels (MW-2, MW-3 and MW-4). Down gradient from the former release sites, TDS and chloride concentrations are rising slightly after an initial decline in MW-8 and are steadily declining to background levels at MW-7. We hypothesize that MW-8, like other wells on the northern portion of the Bertha Barber site, might be affected by the Dynergy pipeline release. We cannot explain why MW-4, which is closer to the pipeline than MW-8 exhibits background TDS and chloride concentrations. More likely, however, MW-8 and MW-15 may be relict impairment from past discharges to the tank bottoms pits. With the cessation of discharges to the tank bottoms pits, wells MW-2, MW-4, MW-3 and others have been naturally restored. Over time, we hypothesize that the relict impairment will disperse and dilute to background conditions.

We anticipate that ground water beneath the tank bottoms pits, which are now at background levels, will soon become impaired from the Dynergy pipeline release.

6.0 CONCULSIONS

1. The Bertha Barber Tank Battery, which released produced water and entrained hydrocarbons in the past, created a highly localized area of ground water quality impairment.

2. Natural processes have effectively mitigated the impact caused by the Bertha Barber site's release of hydrocarbons in all wells except MW-5, which remains above WQCC Standards.

3. Natural processes will reduce benzene concentrations in MW-5 to acceptable levels within 2-5 years.

4. PSH will continue to appear in certain monitor wells for a few years in the form of a sheen or very thin layer. Fluctuating water levels cause hydrocarbons that are entrained within the saturated zone matrix to appear in monitoring wells.

5. Natural processes have reduced TDS and chloride concentrations in the area where past actions released produced water to the former tank bottom pits.

6. Down gradient from Bertha Barber tank bottom pits, MW-7 also exhibits TDS and chloride concentrations approaching background. However, high TDS and chloride in MW-8 and MW-15 might represent relict impairment from past discharges. If the source of high TDS and chloride in MW-8 and MW-15 is the former tank bottoms pits, natural processes will mitigate this impairment over time.

7. MW-12, MW-16, and MW-11 are within a zone of ground water impairment caused by past discharges to an evaporation pit (closed before 1975). The extent of this localized zone is about 1200 feet by 500 feet.

8. Natural processes have limited the extent of the zone of impairment identified by MW-12, MW-16 and MW-11 and these processes will cause this zone to reach background water quality in about 10 years.

9. Residual hydrocarbons and brine in the unsaturated zone do not represent a threat to human health or the environment. HYDRUS 1D simulation modeling will show that the flux of these constituents to ground water is so slow that water quality would not be materially affected.

10. If modeling shows that the unsaturated zone does not pose a threat to ground water, then a soil restoration plan is not within the scope of a Rule 19 Abatement Plan. Marathon should then withdraw the soil restoration plan from NMOCD oversight.

11. A release associated with the Dynergy pipeline caused elevated TDS, chloride and benzene concentrations in ground water (see MW-6 and MW-10 analyses). The effects of this release will soon impact down gradient monitoring wells.

12. Defining the magnitude, extent and effects of the Dynergy pipeline release is also beyond the scope of this report and is not the responsibility of Marathon Oil Company.

Our recommendations for disposition of monitoring wells at the Bertha Barber site follows this section.

7.0 RECOMMENDATIONS

Well Name	Proposed Action	Rationale
MW-1	Plug and abandon	This well has not been sampled routinely and offers no unique data to assist in further site characterization or natural restoration monitoring
MW-2, MW-3, MW-9	Plug and abandon	These wells have not exhibited dissolved hydrocarbons for several years. TDS and chloride are at background concentrations. These wells offer no unique data to assist in further site characterization or natural restoration monitoring
MW-4, MW-7, MW-8, MW-11, MW-12, MW-15, MW-16,	Sample annually using no purge methods until water quality is at background levels or until the Dynergy release affects the results. Analyze only for BTEXN, TDS, Chloride	These wells exhibited constituents above standards in the past but recent samples have not detected hydrocarbons. TDS and chloride are near background concentrations at MW-4 MW-7, MW-8 and MW-15. More data from these wells would assist in the monitoring of a natural attenuation remedy for this site. Continued analysis for SVOCs and metals is not warranted.
MW-5	Sample semi annually using no purge methods for BTEXN, TDS and Chloride	Benzene concentrations in this well exceed WQCC Standards. Semi annual sampling is necessary to accurately predict the benzene concentration natural decline.
MW-6, MW-10, MW-13	Relinquish wells to Dynergy	These wells are suitably located for on-going monitoring of the Dynergy pipeline release
MW-14	Plug and abandon	This well does not show concentrations above standards and is not down gradient from the former Bertha Barber Tank Battery. It offers no unique data to assist in further site characterization or remedy monitoring

TABLES

BBC International, Inc.
World-Wide Environmental Specialists
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Table 1.
Historical Fluid Level Data, December 1998 - December 2003
Marathon Oil Company, Former Bertha Barber Tank Battery, Lea County, New Mexico

Well ID	Date	Measuring Point Elevation (feet amsl)	Depth to Water (feet bmp)	Depth to Product (feet)	Product Thickness (feet)	Corrected Water-Level Elevation (feet amsl)
MW-1	12/22/03	3561.57	39.00	38.15	0.68	3523.25
	09/24/03	3561.57	38.08	38.03	0.04	3523.53
	06/16/03	3561.57	37.70	Sheen	0	3523.87
	03/05/03	3561.57	37.55	37.53	0.02	3524.04
	*12/18/2002	3561.57	37.62	37.60	0.02	3523.97
	09/25/02	3561.20	37.67	37.55	0.10	3523.63
	06/28/02	3561.20	37.38	37.37	0.01	3523.83
	03/22/02	3561.20	37.34	37.30	0.03	3523.89
	12/26/01	3561.20	37.33	37.19	0.11	3523.98
	09/27/01	3561.20	38.55	38.48	0.06	3522.71
	06/28/01	3561.20	38.15	38.14	0.01	3523.06
	03/19/01	3561.20	37.15	37.14	0.01	3524.06
	12/21/00	3561.20	37.14	37.13	0.01	3524.07
	09/27/00	3561.20	37.70	37.65	0.04	3523.54
	06/20/00	3561.20	37.77	37.70	0.06	3523.49
	03/30/00	3561.20	36.20	36.19	0.01	3525.01
	12/14/99	3561.20	36.03		0.03	3525.19
	09/22/99	3561.20	35.79		sheen	3525.41
	08/27/99	3561.20	35.66		0.02	3525.55
	07/16/99	3561.20	35.48		0.005	3525.72
	03/31/99	3561.20	35.82		0.05	3525.42
	12/30/98	3561.20	35.83		0	3525.37
MW-2	12/22/03	3562.10	38.58		0	3523.52
	09/24/03	3562.10	38.36		0	3523.74
	06/16/03	3562.10	38.19		0	3523.91
	03/05/03	3562.10	38.05		0	3524.05
	*12/18/2002	3562.10	38.15	38.14	0.01	3523.96
	09/25/02	3561.69	38.10	38.06	0.03	3523.62
	06/28/02	3561.69	37.85		0	3523.84
	03/22/02	3561.69	38.78		0	3522.91
	12/26/01	3561.69	37.70	37.69	0.01	3524.00
	09/27/01	3561.69	37.49	37.48	0.01	3524.21
	06/28/01	3561.69	37.16	37.15	0.01	3524.54
	03/19/01	3561.69	37.61	37.60	0.01	3524.09
	12/21/00	3561.69	37.60	37.59	0.01	3524.10
	09/27/00	3561.69	38.12	38.11	0.01	3523.58
	06/20/00	3561.69	38.12	38.10	0.02	3523.59
	03/30/00	3561.69	36.60	36.59	0.01	3525.10
	12/14/99	3561.69	36.62		0	3525.07
	09/22/99	3561.69	36.27		0	3525.42
	08/27/99	3561.69	36.13		0.01	3525.57
	07/16/99	3561.69	35.95		0	3525.74
	03/31/99	3561.69	36.33		0	3525.36
	12/30/98	3561.69	36.34		0	3525.35

***New survey data**
Water level elevations corrected for condensate using a SG of 0.80
**Water level elevations corrected for condensate using a SG of 0.75.
feet amsl=Ft above mean sea level
feet bmp=Ft below measuring point

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BBC International, Inc.

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Table 1.
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Marathon Oil Company, Former Bertha Barber Tank Battery, Lea County, New Mexico

Well ID	Date	Measuring Point Elevation (feet amsl)	Depth to Water (feet bmp)	Depth to Product (feet)	Product Thickness (feet)	Corrected Water-Level Elevation (feet amsl)
MW-3	12/22/03	3563.40	40.07		0	3523.33
	09/24/03	3563.40	39.88		0	3523.52
	06/16/03	3563.40	39.53		0	3523.87
	03/05/03	3563.40	39.39		0	3524.01
	*12/18/2002	3563.40	39.49		0	3523.91
	09/25/02	3563.00	39.42	39.41	0.01	3523.59
	06/28/02	3563.00	39.19		0	3523.81
	03/22/02	3563.00	39.11		0	3523.89
	12/26/01	3563.00	39.05		0	3523.95
	09/27/01	3563.00	38.95		0	3524.05
	06/28/01	3563.00	38.63		0	3524.37
	03/19/01	3563.00	38.19		0	3524.81
	12/21/00	3563.00	38.11		0	3524.89
	09/27/00	3563.00	37.88		0	3525.12
	06/20/00	3563.00	38.56		0	3524.44
	03/30/00	3563.00	38.10		0	3524.90
	12/14/99	3563.00	38.10		0	3524.90
	09/22/99	3563.00	37.59		0	3525.41
	08/27/99	3563.00	37.48		0	3525.52
	07/16/99	3563.00	37.31		0	3525.69
	03/31/99	3563.00	37.67		0	3525.33
	12/30/98	3563.00	37.65		0	3525.35
MW-4	12/22/03	3563.43	39.95		0	3523.48
	09/24/03	3563.43	39.73		0	3523.70
	06/16/03	3563.43	39.52		0	3523.91
	03/05/03	3563.43	39.39		0	3524.04
	*12/18/2002	3563.43	39.45		0	3523.98
	09/25/02	3563.01	38.65	38.61	0.03	3524.39
	06/28/02	3563.01	38.66	38.63	0.02	3524.37
	03/22/02	3563.01	39.11	39.10	0.01	3523.91
	12/26/01	3563.01	39.05	39.03	0.02	3523.98
	09/27/01	3563.01	38.92	38.82	0.08	3524.17
	06/28/01	3563.01	38.60		0	3524.41
	03/19/01	3563.01	38.16		0	3524.85
	12/21/00	3563.01	38.10		0	3524.91
	09/27/00	3563.01	37.86		0	3525.15
	06/20/00	3563.01	38.26		0	3524.75
	03/30/00	3563.01	38.10		0	3524.91
	12/14/99	3563.01	37.85		0	3525.16
	09/22/99	3563.01	37.57		0	3525.44
	08/27/99	3563.01	37.46		0	3525.55
	07/16/99	3563.01	37.28		0	3525.73
	03/31/99	3563.01	37.66		0	3525.35
	12/30/98	3563.01	37.66		0	3525.35

***New survey data**
Water level elevations corrected for condensate using a SG of 0.80
**Water level elevations corrected for condensate using a SG of 0.75.
feet amsl=Ft above mean sea level
feet bmp=Ft below measuring point

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Well ID	Date	Measuring Point Elevation (feet amsl)	Depth to Water (feet bmp)	Depth to Product (feet)	Product Thickness (feet)	Corrected Water-Level Elevation (feet amsl)
MW-5	12/22/03	3561.49	38.12		0	3523.37
	09/24/03	3561.49	37.95		0	3523.54
	06/16/03	3561.49	37.60	Sheen	0	3523.89
	03/05/03	3561.49	37.46	Sheen	0	3524.03
	*12/18/2002	3561.49	37.56	37.54	0.02	3523.95
	09/25/02	3561.10	37.52	37.48	0.03	3523.61
	06/28/02	3561.10	37.31	37.29	0.02	3523.81
	03/22/02	3561.10	37.20		0	3523.90
	12/26/01	3561.10	37.21	37.10	0.09	3523.98
	09/27/01	3561.10	36.98	36.47	0.41	3524.53
	06/28/01	3561.10	36.69		0	3524.41
	03/19/01	3561.10	36.13		0	3524.97
	12/21/00	3561.10	36.15		0	3524.95
	09/27/00	3561.10	35.98		0	3525.12
	06/20/00	3561.10	36.34		0	3524.76
	03/30/00	3561.10	36.10		0	3525.00
	12/14/99	3561.10	35.95		0	3525.15
	09/22/99	3561.10	35.68		0	3525.42
	08/27/99	3561.10	35.56		0	3525.54
	07/16/99	3561.10	35.38		0	3525.72
	03/31/99	3561.10	35.75		0	3525.35
	12/30/98	3561.10	35.73		0	3525.37
MW-6	12/22/03	3561.65	38.29		0	3523.36
	09/24/03	3561.65	38.10		0	3523.55
	06/16/03	3561.65	37.76		0	3523.89
	03/05/03	3561.65	37.61		0	3524.04
	*12/18/2002	3561.65	37.70		0	3523.95
	09/25/02	3561.25	37.63		0	3523.62
	06/28/02	3561.25	37.40		0	3523.85
	03/22/02	3561.25	37.32		0	3523.93
	12/26/01	3561.25	37.25		0	3524.00
	09/27/01	3561.25	37.02		0	3524.23
	06/28/01	3561.25	36.54		0	3524.71
	03/19/01	3561.25	36.80		0	3524.45
	12/21/00	3561.25	36.13		0	3525.12
	09/27/00	3561.25	36.06		0	3525.19
	06/20/00	3561.25	36.39		0	3524.86
	03/30/00	3561.25	36.29		0	3524.96
	12/14/99	3561.25	36.10		0	3525.15
	09/22/99	3561.25	35.75		0	3525.50
	08/27/99	3561.25	35.69		0	3525.56

***New survey data**
Water level elevations corrected for condensate using a SG of 0.80
**Water level elevations corrected for condensate using a SG of 0.75.
feet amsl=Ft above mean sea level
feet bmp=Ft below measuring point

BBC International, Inc.
World-Wide Environmental Specialists
Phone: (505) 397-6388 * **Fax**: (505) 397-0397 * 1324 W. Marland * PO Box 805 * Hobbs, NM 88241

Table 1.
Historical Fluid Level Data, December 1998 - December 2003
Marathon Oil Company, Former Bertha Barber Tank Battery, Lea County, New Mexico

Well ID	Date	Measuring Point Elevation (feet amsl)	Depth to Water (feet bmp)	Depth to Product (feet)	Product Thickness (feet)	Corrected Water-Level Elevation (feet amsl)
MW-7	12/22/03	3562.70	39.75		0	3522.95
	09/24/03	3562.70	39.60		0	3523.10
	06/16/03	3562.70	39.16		0	3523.54
	03/05/03	3562.70	38.97		0	3523.73
	*12/18/2002	3562.70	39.07		0	3523.63
	09/25/02	3562.44	39.01	38.99	0.02	3523.45
	06/28/02	3562.44	38.76		0	3523.68
	03/22/02	3562.44	38.65	38.64	0.01	3523.80
	12/26/01	3562.44	38.62	38.61	0.01	3523.83
	09/27/01	3562.44	38.43	38.42	0.01	3524.02
	06/28/01	3562.44	37.90	37.89	0.01	3524.55
	03/19/01	3562.44	37.58	37.57	0.01	3524.87
	12/21/00	3562.44	37.70	37.65	0.04	3524.79
	09/27/00	3562.44	37.76	37.75	0.01	3524.69
	06/20/00	3562.44	37.91	37.73	0.14	3524.67
	03/30/00	3562.44	37.60	37.55	0.04	3524.88
	12/14/99	3562.44	37.51		0	3524.93
	09/22/99	3562.44	38.20		0	3524.24
	08/27/99	3562.44	38.15		0	3524.29
MW-8	12/22/03	3561.82	38.92		0	3522.90
	09/24/03	3561.82	38.71		0	3523.11
	06/16/03	3561.82	38.30		0	3523.52
	03/05/03	3561.82	38.10		0	3523.72
	*12/18/2002	3561.82	38.20		0	3523.62
	09/25/02	3561.39	38.15		0	3523.24
	06/28/02	3561.39	37.87		0	3523.52
	03/22/02	3561.39	37.80		0	3523.59
	12/26/01	3561.39	37.74		0	3523.65
	09/27/01	3561.39	37.51		0	3523.88
	06/28/01	3561.39	36.98		0	3524.41
	03/19/01	3561.39	36.51		0	3524.88
	12/21/00	3561.39	36.50		0	3524.89
	09/27/00	3561.39	36.61		0	3524.78
	06/20/00	3561.39	36.88		0	3524.51
	03/30/00	3561.39	36.65		0	3524.74
	12/14/99	3561.39	36.44		0	3524.95
	09/22/99	3561.39	37.26		0	3524.13
	08/27/99	3561.39	37.21		0	3524.18
MW-9	12/22/03	3563.95	40.84		0	3523.11
	09/24/03	3563.95	40.62		0	3523.33
	06/16/03	3563.95	40.22		0	3523.73
	03/05/03	3563.95	40.04		0	3523.91
	*12/18/2002	3563.95	40.15		0	3523.80
	09/25/02	3561.59	41.11	41.09	0.02	3520.50
	06/28/02	3561.59	39.87	39.85	0.02	3521.74
	03/22/02	3563.59	39.39	39.37	0.02	3524.22
	12/26/01	3563.59	39.82	39.65	0.14	3523.91
	09/27/01	3563.59	39.62	39.40	0.18	3524.15
	06/28/01	3563.59	38.99		0	3524.60
	03/19/01	3563.59	38.65		0	3524.94
	12/21/00	3563.59	38.60		0	3524.99
	09/27/00	3563.59	38.60		0	3524.99
	06/20/00	3563.59	38.89		0	3524.70
	03/30/00	3563.59	38.70		0	3524.89
	12/14/99	3563.59	38.48		0	3525.11
	09/22/99	3563.59	36.23		0	3527.36
	08/27/99	3563.59	36.14		0	3527.45

***New survey data**
Water level elevations corrected for condensate using a SG of 0.80
**Water level elevations corrected for condensate using a SG of 0.75.
feet amsl=Ft above mean sea level
feet bmp=Ft below measuring point

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Table 1.
Historical Fluid Level Data, December 1998 - December 2003
Marathon Oil Company, Former Bertha Barber Tank Battery, Lea County, New Mexico

Well ID	Date	Measuring Point Elevation (feet amsl)	Depth to Water (feet bmp)	Depth to Product (feet)	Product Thickness (feet)	Corrected Water-Level Elevation (feet amsl)
****MW-10**	12/22/03	3560.88				
	09/24/03	3560.88				
	06/16/03	3560.88				
	03/05/03	3560.88	36.83	36.82	0.01	3524.06
	*12/18/2002	3560.88	36.92	36.91	0.01	3523.97
	09/25/02	3560.51	36.84	36.82	0.02	3523.69
	06/28/02	3560.51	36.61	36.60	0.01	3523.91
	03/22/02	3560.51	36.55	36.53	0.01	3523.98
	12/26/01	3560.51	36.98	36.34	0.48	3524.01
	09/27/01	3560.51	36.75	36.12	0.47	3524.23
	06/28/01	3560.51	36.26	35.63	0.47	3524.72
	03/19/01	3560.51	35.52	35.48	0.03	3525.02
	12/21/00	3560.51	35.53	35.52	0.01	3524.99
	09/27/00	3560.51	35.56	35.55	0.01	3524.96
	06/20/00	3560.51	35.55	35.54	0.01	3524.97
	03/30/00	3560.51	35.50	35.49	0.01	3525.02
	12/14/99	3560.51	35.33		0	3525.18
	09/22/99	3560.51	34.96		0	3525.55
	08/27/99	3560.51	34.87		0	3525.64
MW-11	12/22/03	3565.81	43.08		0	3522.73
	09/24/03	3565.81	42.90		0	3522.91
	06/16/03	3565.81	42.47		0	3523.34
	03/05/03	3565.81	42.26		0	3523.55
	*12/18/2002	3565.81	42.34		0	3523.47
	09/25/02	3565.44	42.32		0	3523.12
	06/28/02	3565.44	42.04		0	3523.40
	03/22/02	3565.44	41.95		0	3523.49
	12/26/01	3565.44	41.91		0	3523.53
	09/27/01	3565.44	41.71		0	3523.73
	06/28/01	3565.44	41.16		0	3524.28
	03/19/01	3565.44	39.76		0	3525.68
	12/21/00	3565.44	40.01		0	3525.43
	09/27/00	3565.44	39.82		0	3525.62
	06/20/00	3565.44	40.10		0	3525.34
	03/30/00	3565.44	39.80		0	3525.64
	12/14/99	3565.44	40.61		0	3524.83
	09/22/99	3565.44	40.37		0	3525.07
	08/27/99	3565.44	40.34		0	3525.10
MW-12 (PZ-2)	12/22/03	3562.46	39.22		0	3523.24
	09/24/03	3562.46	39.03		0	3523.43
	06/16/03	3562.46	38.68		0	3523.78
	03/05/03	3562.46	38.54		0	3523.92
	*12/18/2002	3562.46	38.62		0	3523.84
	09/25/02	3562.11	38.53		0	3523.58
	06/28/02	3562.11	38.30		0	3523.81
	03/22/02	3562.11	38.22		0	3523.89
	12/26/01	3562.11	37.15		0	3524.96
	09/27/01	3562.11	37.90		0	3524.21
	06/28/01	3562.11	37.45		0	3524.66
	03/19/01	3562.11	37.26		0	3524.85
	12/21/00	3562.11	37.23		0	3524.88
	09/27/00	3562.11	37.09		0	3525.02
	06/20/00	3562.11	37.34		0	3524.77
	03/30/00	3562.11	37.23		0	3524.88
	12/14/99	3562.11	36.95		0	3525.16
	09/22/99	3562.11	36.69		0	3525.42
	08/27/99	3562.11	36.65		0	3525.46

***New survey data**
Water level elevations corrected for condensate using a SG of 0.80
**Water level elevations corrected for condensate using a SG of 0.75.
feet amsl=Ft above mean sea level
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Table 1.
Historical Fluid Level Data, December 1998 - December 2003
Marathon Oil Company, Former Bertha Barber Tank Battery, Lea County, New Mexico

Well ID	Date	Measuring Point Elevation (feet amsl)	Depth to Water (feet bmp)	Depth to Product (feet)	Product Thickness (feet)	Corrected Water-Level Elevation (feet amsl)
MW-13 (PZ-1)	12/22/03	3560.05	36.72		0	3523.33
	09/24/03	3560.05	36.51		0	3523.54
	06/16/03	3560.05	36.17		0	3523.88
	03/05/03	3560.05	36.03		0	3524.02
	*12/18/2002	3560.05	36.12		0	3523.93
	09/25/02	3559.67	36.05		0	3523.62
	06/28/02	3559.67	35.82		0	3523.85
	03/22/02	3559.67	35.76		0	3523.91
	12/26/01	3559.67	35.67		0	3524.00
	09/27/01	3559.67	35.52		0	3524.15
	06/28/01	3559.67	34.95		0	3524.72
	03/19/01	3559.67	34.84		0	3524.83
	12/21/00	3559.67	34.75		0	3524.92
	09/27/00	3559.67	34.49		0	3525.18
	06/20/00	3559.67	34.90		0	3524.77
	03/30/00	3559.67	34.80		0	3524.87
	12/14/99	3559.67	34.96		0	3524.71
	09/22/99	3559.67	34.20		0	3525.47
	08/27/99	3559.67	34.09		0	3525.58
MW-14	12/22/03	3562.15	39.20		0	3522.95
	09/24/03	3562.15	39.00		0	3523.15
	06/16/03	3562.15	38.58		0	3523.57
	03/05/03	3562.15	38.38		0	3523.77
	*12/18/2002	3562.15	38.47		0	3523.68
MW-15	12/22/03	3562.19	39.39		0	3522.80
	09/24/03	3562.19	39.19		0	3523.00
	06/16/03	3562.19	38.78		0	3523.41
	03/05/03	3562.19	38.55		0	3523.64
	*12/18/2002	3562.19	38.65		0	3523.54
MW-16	12/22/03	3566.51	43.58		0	3522.93
	09/24/03	3566.51	43.38		0	3523.13
	06/16/03	3566.51	42.99		0	3523.52
	03/05/03	3566.51	42.80		0	3523.71
	*12/18/2002	3566.51	42.87		0	3523.64

***New survey data**
Water level elevations corrected for condensate using a SG of 0.80
**Water level elevations corrected for condensate using a SG of 0.75.
feet amsl=Ft above mean sea level
feet bmp=Ft below measuring point

Table 2. Historical BTEX Analytical Data
Former Bertha Barber Tank Battery, Lea County, New Mexico

WELL ID	Sample Date	Benzene (ug/L)	Ethylbenzene (ug/L)	Toluene (ug/L)	o-Xylene (ug/L)	m&p-Xylenes (ug/L)	Total Xylenes (ug/L)
WQCC	-----	**10**	**750**	**750**	-----	-----	**620**
MW-1	4/9/1999	**5**	<5	<5	NS	NS	<10
	7/15/1999	<500	<500	<500	NS	NS	<1000
MW-2	4/9/1999	<5	<5	<5	NS	NS	<10
	7/15/1999	<5	<5	<5	NS	NS	<10
	9/23/1999	<5	<5	<5	NS	NS	<10
	6/28/2002	<5	<5	<5	NS	NS	<5
	3/5/2003	<5	<5	<5			<5
(Duplicate)	3/5/2003	<5	<5	<5			<5
	6/16/2003	<1	<1	<1			<1
(Duplicate)	6/16/2003	<1	<1	<1			<1
	9/24/2003	<5	<5	<5			<5
	12/22/2003	<1	<1	<1			<1
MW-3	4/9/1999	**100**	**14**	<5	NS	NS	<10
	7/15/1999	<5	<5	<5	NS	NS	<10
	9/23/1999	<5	<5	<5	NS	NS	<10
	3/30/2000	<5	<5	**11**	<5	<10	ND
(Duplicate)**	3/30/2000	**54**	**8.6**	<5	<5	<10	ND
	6/20/2000	<5	<5	<5	<5	<10	<10
	9/28/2000	<5	<5.0	<5	<5	<10	<10
	12/21/2000	<5	<5	<5	NS	NS	**10**
	3/19/2001	<5	<5	<5	<5	<10	<10
	6/28/2001	<5	<5	<5	NS	NS	<10
	9/27/2001	<5	<5	<5	NS	NS	<10
	12/26/2001	<5	<5	<5	NS	NS	<10
	3/22/2002	<5	<5	<5	NS	NS	<10
	6/28/2002	<5	<5	<5	NS	NS	<5
	9/25/2002	<5	<5	<5	NS	NS	<5
	12/18/2002	<1	<1	<1	NS	NS	<1
	3/5/2003	<5	<5	<5			<5
	6/16/2003	<1	<1	<1			<1
	9/24/2003	<5	<5	<5			<5
	12/22/2003	<1	<1	<1			<1

Table 2. Historical BTEX Analytical Data
Former Bertha Barber Tank Battery, Lea County, New Mexico

WELL ID	Sample Date	Benzene (ug/L)	Ethylbenzene (ug/L)	Toluene (ug/L)	o-Xylene (ug/L)	m&p-Xylenes (ug/L)	Total Xylenes (ug/L)
WQCC	-----	**10**	**750**	**750**	-----	-----	**620**
MW-4	4/9/1999	**121**	**77**	**43**	NS	NS	**60**
	7/15/1999	**43**	**28**	<5	NS	NS	<10
	9/23/1999	**18**	**12**	<5	NS	NS	<10
	3/30/2000	**54**	**7.5**	**8.7**	<5	<10	ND
	6/20/2000	**19**	<5.0	<5	<5	<10	<10
	9/28/2000	**66**	**13**	<5	<5	<10	<10
(Duplicate)	9/28/2000	**51**	<5.0	<5	<5	<10	11
	12/21/2000	**46**	**10**	<5	NS	NS	20
	3/19/2001	**37**	<5	**5.2**	<5	<10	<10
	6/28/2001	**14**	<5	<5	NS	NS	<10
	3/5/2003	5	<5	<5			<5
	6/16/2003	5	<5	<5			<5
	9/24/2003	5	<5	<5			<5
	12/22/2003	1	<1	<1			<1
MW-5	4/9/1999	**53**	<5	<5	NS	NS	<10
	7/15/1999	**470**	**43**	<5	NS	NS	10
	9/22/1999	**156**	**6**	<5	NS	NS	<10
	3/30/2000	**50**	<5	**9.7**	<5	<10	ND
	6/20/2000	**140**	<5	<5	<5	<10	<10
	9/28/2000	**110**	<5	<5	<5	<10	<10
	12/21/2000	**169**	**5**	<5	NS	NS	**20**
	3/19/2001	**32**	<5	<5	<5	<10	<10
	6/28/2001	**96**	<5	<5	NS	NS	<10
	9/24/2003	**71**	<5	<5			<5
	12/22/2003	**17.9**	<5	<5			<5
(Duplicate)	12/22/2003	**19.8**	<5	<5			<5

Table 2. Historical BTEX Analytical Data
Former Bertha Barber Tank Battery, Lea County, New Mexico

WELL ID	Sample Date	Benzene (ug/L)	Ethylbenzene (ug/L)	Toluene (ug/L)	o-Xylene (ug/L)	m&p-Xylenes (ug/L)	Total Xylenes (ug/L)
WQCC	-----	**10**	**750**	**750**	-----	-----	**620**
MW-6	8/17/1999	<5	<5	<5	NS	NS	<10
	9/22/1999	<5	<5	<5	NS	NS	<10
	3/30/2000	<5	<5	<5	<5	<10	ND
	6/20/2000	<5	<5	<5	<5	<10	<10
	9/28/2000	**11**	<5	<5	<5	<10	<10
	12/21/2000	**14**	<5	<5	NS	NS	**10**
	3/19/2001	<5	<5	<5	<5	<10	<10
	6/28/2001	<5	<5	<5	NS	NS	<10
Duplicate	6/28/2001	<5	<5	<5	NS	NS	<10
	9/27/2001	<5	<5	<5	NS	NS	<10
	12/26/2001	<5	<5	<5	NS	NS	<10
	3/22/2002	<5	<5	<5	NS	NS	<10
	6/28/2002	<5	<5	<5	NS	NS	<5
Duplicate	6/28/2002	<5	<5	<5	NS	NS	<5
	9/25/2002	<1	<1	<1	NS	NS	<1
	12/18/2002	<1	<1	<1	NS	NS	<1
	3/5/2003	<1	<1	<1			<1
	6/16/2003	<1	<1	<1			<1
	9/24/2003	<5	<5	<5			<5
	12/22/2003	<1	<1	<1			<1

Table 2. Historical BTEX Analytical Data
Former Bertha Barber Tank Battery, Lea County, New Mexico

WELL ID	Sample Date	Benzene (ug/L)	Ethylbenzene (ug/L)	Toluene (ug/L)	o-Xylene (ug/L)	m&p-Xylenes (ug/L)	Total Xylenes (ug/L)
WQCC	-----	**10**	**750**	**750**	-----	-----	**620**
MW-7	8/17/1999	<5	<5	<5	NS	NS	<10
	9/22/1999	<5	<5	<5	NS	NS	<10
	12/18/2002	<1	<1	<1	NS	NS	<1
	6/28/2002	<5	<5	<5	NS	NS	<5
	3/5/2003	<5	<5	<5			<5
	6/16/2003	<1	<1	<1			<1
	9/24/2003	<5	<5	<5			<5
	12/22/2003	<1	<1	<1			<1
MW-8	8/17/1999	<5	<5	<5	NS	NS	<10
	9/23/1999	<5	<5	<5	NS	NS	<10
	3/30/2000	<5	<5	**11**	<5	<10	ND
	6/20/2000	<5	<5	<5	<5	<10	<10
	9/28/2000	<5	<5	<5	<5	<10	<10
	12/21/2000	<5	<5	<5	NS	NS	<10
	3/19/2001	<5	<5	<5	<5	<10	<10
	6/28/2001	<5	<5	<5	NS	NS	<10
	9/27/2001	<5	<5	<5	NS	NS	<10
	12/26/2001	<5	<5	<5	NS	NS	<10
	3/22/2002	<5	<5	<5	NS	NS	<10
	6/28/2002	<5	<5	<5	NS	NS	<5
	9/25/2002	<5	<5	<5	NS	NS	<5
	12/18/2002	<1	<1	<1	NS	NS	<1
	3/5/2003	<5	<5	<5			<5
	6/16/2003	<5	<5	<5			<5
	9/24/2003	<5	<5	<5			<5
	12/22/2003	<1	<1	<1			<1
MW-9	8/17/1999	**20**	<5	<5	NS	NS	<10
	9/23/1999	**8**	<5	<5	NS	NS	<10
	3/30/2000	<5	<5	9.3	<5	<5	ND
	6/20/00*	<5	<5	<5	<5	<10	<10
	9/28/00*	<5	<5	<5	<5	<10	<10
	12/21/00*	<5	<5	<5	NS	NS	<10
	3/19/2001	<5	<5	<5	<5	<10	<10
	6/28/2001	<5	**28**	<5	NS	NS	<10
	12/18/2002	<1	<1	<1	NS	NS	<1
	3/5/2003	<5	<5	<5			<5
	6/16/2003	<5	<5	<5			<5
	9/24/2003	<5	<5	<5			<5
	12/22/2003	<5	<5	<5			<5

Table 2. Historical BTEX Analytical Data
Former Bertha Barber Tank Battery, Lea County, New Mexico

WELL ID	Sample Date	Benzene (ug/L)	Ethylbenzene (ug/L)	Toluene (ug/L)	o-Xylene (ug/L)	m&p-Xylenes (ug/L)	Total Xylenes (ug/L)
WQCC	-----	**10**	**750**	**750**	-----	-----	**620**
MW-10	8/17/1999	**12100**	**160**	**1730**	NS	NS	400
	9/22/1999	**2900**	**520**	**800**	NS	NS	600
MW-11	8/17/1999	<5	<5	<5	NS	NS	<10
	9/23/1999	<5	<5	<5	<5	<10	<10
	3/30/2000	<5	<5	<5	<5	<10	ND
	6/20/2000	<5	<5	<5	<5	<10	<10
(Duplicate)	6/20/2000	<5	<5	<5	<5	<10	<10
	9/28/2000	<5	<5	<5	<5	<10	<10
	12/21/2000	<5	<5	<5	NS	NS	**20**
	3/19/2001	<5	<5	<5	<5	<10	<10
(Duplicate)	3/19/2001	<5	<5	<5	<5	<10	<10
	6/28/2001	<5	<5	<5	NS	NS	<10
	9/27/2001	<5	<5	<5	NS	NS	<10
	12/26/2001	<5	<5	<5	NS	NS	<10
	3/22/2002	<5	<5	<5	NS	NS	<10
	6/28/2002	<5	<5	<5	NS	NS	<5
	9/25/2002	<5	<5	<5	NS	NS	<5
	12/18/2002	<1	<1	<1	NS	NS	<1
	3/5/2003	<1	<1	<1			<1
	6/16/2003	<5	<5	<5			<5
	9/24/2003	<5	<5	<5			<5
	12/22/2003	<1	<1	<1			<1
MW-12 (PZ-2)	8/17/1999	<5	<5	<5	NS	NS	<10
	9/22/1999	<5	<5	<5	NS	NS	<10
	3/30/2000	<5	<5	<5	<5	<10	ND
	6/20/2000	**7.3**	<5	<5	<5	<10	<10
	9/28/2000	<5	<5	<5	<5	<10	<10
	12/21/2000	<5	<5	<5	NS	NS	**20**
	3/19/2001	<5	<5	<5	<5	<10	<10
	6/28/2001^	NS	NS	NS	NS	NS	NS
	9/27/2001	<5	<5	<5	NS	NS	<10
	12/26/2001	<5	<5	<5	NS	NS	<10
	3/22/2002	<5	<5	<5	NS	NS	<10
	6/28/2002	<5	<5	<5	NS	NS	<5
	9/25/2002	<1	<1	<1	NS	NS	<1
	12/18/2002	<1	<1	<1	NS	NS	<1
	3/5/2003	<1	<1	<1			<1
	6/16/2003	<1	<1	<1			<1
	9/24/2003	<5	<5	<5			<5
	12//22/03	<1	<1	<1			<1

Table 2. Historical BTEX Analytical Data
Former Bertha Barber Tank Battery, Lea County, New Mexico

WELL ID	Sample Date	Benzene (ug/L)	Ethylbenzene (ug/L)	Toluene (ug/L)	o-Xylene (ug/L)	m&p-Xylenes (ug/L)	Total Xylenes (ug/L)
WQCC	-----	**10**	**750**	**750**	-----	-----	**620**
MW-13 (PZ-1)	8/17/1999	<5	<5	<5	NS	NS	<10
	9/23/1999	<5	<5	<5	NS	NS	<10
	3/30/2000	<5	**5**	<5	<5	<10	ND
	6/20/2000	<5	<5	<5	<5	<10	<10
	9/28/2000	<5	<5	<5	<5	<10	<10
	12/21/2000	<5	<5	<5	NS	NS	<10
	3/19/2001	<5	<5	<5	<5	<10	<10
	6/28/2001	<5	<5	<5	NS	NS	<10
	9/27/2001	<5	<5	<5	NS	NS	<10
	12/26/2001	<5	<5	<5	NS	NS	<10
	3/22/2002	<5	<5	<5	NS	NS	<10
	6/28/2002	<200	<200	<200	NS	NS	<200
	9/25/2002	<1	<1	<1	NS	NS	<1
Duplicate	9/25/2002	<1	<1	<1	NS	NS	<1
	12/18/2002	<1	<1	<1	NS	NS	<1
	3/5/2003	<1	<1	<1			<1
	6/16/2003	<1	<1	<1			<1
	9/24/2003	<5	<5	<5			<5
(Duplicate)	9/24/2003	<5	<5	<5			<5
	12//22/03	<1	<1	<1			<1
MW-14	12/18/2002	<1	<1	<1	NS	NS	<1
	3/5/2003	<1	<1	<1			<1
	6/16/2003	<1	<1	<1			<1
	9/24/2003	<5	<5	<5			<5
	12/22/2003	<1	<1	<1			<1
MW-15	12/18/2002	<1	<1	<1	NS	NS	<1
	3/5/2003	<1	<1	<1			<1
	6/16/2003	<1	<1	<1			<1
	9/24/2003	<5	<5	<5			<5
	12/22/2003	<1	<1	<1			<1
MW-16	12/18/2002	<1	<1	<1	NS	NS	<1
	3/5/2003	<5	<5	<5			<5
	6/16/2003	<1	<1	<1			<1
	9/24/2003	<5	<5	<5			<5
	12/22/2003	<5	<5	<5			<5

Table 2. Historical BTEX Analytical Data
Former Bertha Barber Tank Battery, Lea County, New Mexico

WELL ID	Sample Date	Benzene (ug/L)	Ethylbenzene (ug/L)	Toluene (ug/L)	o-Xylene (ug/L)	m&p-Xylenes (ug/L)	Total Xylenes (ug/L)
WQCC	-----	**10**	**750**	**750**	-----	-----	**620**
Livestock WW	3/19/2001	<5	<5	<5	<5	<10	<10
	6/28/2001	<5	<5	<5	NS	NS	<10
	9/27/2001	<5	<5	<5	NS	NS	<10
	12/26/2001	<5	<5	<5	NS	NS	<10
	3/22/2002	<5	<5	<5	NS	NS	<10
	6/28/2002	<5	<5	<5	NS	NS	<5
	9/25/2002	<1	<1	<1	NS	NS	<1
	12/18/2002	<5	<5	<5	NS	NS	<5
	3/5/2003	<5	<5	<5			<5
	6/16/2003	<1	<1	<1			<1
	9/24/2003	<5	<5	<5			<5
	12/22/2003	<1	<1	<1			<1
Rinsate	3/5/2003	<1	<1	<1			<1
	6/16/2003	<1	<1	<1			<1
	9/24/2003	<5	<5	<5			<5
	12/22/2003	<1	<1	<1			<1

Footnotes:

WQCC - New Mexico Water Quality Control Commission Ground Water Standards.
BTEX - Benzene, Toluene, Ethylbenzene and Total Xylenes.
ug/L - micrograms per liter.
NS - Constituent not speciated.
ND - Constituent was not detected during laboratory testing, and laboratory reporting limits are variable.
* - Data was originally labeled as MW-7, but is actually MW-9.
MW-7 was not sampled in 2000 due to the presence of phase separate hydrocarbon (PSH).
** - Question data because it appears to be more representative of the sample for MW-4 for the same event.

Table 3. Historical Analytical Data for Selected Dissolved Metals, Chlorides and TDS
Former Bertha Barber Tank Battery, Lea County, New Mexico

WELL ID	Sample Date	Dissolved Metals			Chloride (mg/L)	TDS (mg/L)
		Iron (mg/L)	Manganese (mg/L)	Barium (mg/L)		
WQCC	-----	**1.0**	**0.2**	**1.0**	**250**	**1,000**
MW-1	4/9/1999	**3.86**	**0.48**	**2.74**	**3600**	**6,100**
MW-2	4/9/1999	**1.54**	**0.26**	0.39	**2700**	**4,400**
	9/23/1999	NS	NS	NS	**2500**	NS
	9/24/2003	0.62	0.084	0.164	**590**	1,658
MW-3	4/9/1999	**4.66**	**0.37**	0.69	**2000**	**3,500**
	9/23/1999	NS	NS	NS	**1300**	NS
	9/28/2000	NS	NS	NS	**400**	NS
	12/21/2000	0.07	0.05	0.13	**490**	**1,300**
	3/19/2001	NS	NS	NS	**530**	NS
	9/27/2001	0.2	0.08	0.09	**620**	**1,600**
	9/25/2002	0.196	0.0865	<.100	**506**	**1,518**
	9/24/2003	0.228	0.067	0.099	**563**	**1,616**
MW-4	4/9/1999	**1.46**	**0.32**	**1.63**	**800**	**1,900**
	9/23/1999	NS	NS	NS	**510**	NS
	9/28/2000	NS	NS	NS	**600**	NS
(Duplicate)	9/28/2000	NS	NS	NS	**760**	NS
	12/21/2000	<0.05	0.06	**2.07**	**350**	**1,100**
	3/19/2001	NS	NS	NS	**660**	NS
	9/25/2002	NS	NS	NS		NS
	9/24/2003	<0.05	0.055	0.526	491	1,348
MW-5	4/9/1999	**47.2**	**0.97**	**15.3**	**2400**	**4,000**
	9/22/1999	NS	NS	NS	860	NS
	9/28/2000	NS	NS	NS	1200	NS
	12/21/2000	0.27	0.06	**2.84**	**760**	**1,700**
	3/19/2001	NS	NS	NS	**1600**	NS
	9/25/2002	NS	NS	NS		NS
	9/24/2003	0.102	0.041	0.255	581	1,532
(Duplicate)	9/24/2003	0.096	0.064	0.126	897	2,104
MW-6	8/17/1999	<0.05	**0.21**	0.14	**2460**	**4,700**
	9/22/1999	NS	NS	NS	**2400**	NS
	9/28/2000	NS	NS	NS	**1200**	NS
	12/21/2000	0.37	0.4	0.14	**1300**	**2,400**
	3/19/2001	NS	NS	NS	**1400**	NS
	9/27/2001	0.16	0.08	0.13	**2500**	**5,400**
	9/25/2002	0.118	0.0581	0.153	**2500**	**5,080**
	9/24/2003	0.08	0.061	0.132	**2440**	**4,645**

Table 3. Historical Analytical Data for Selected Dissolved Metals, Chlorides and TDS
Former Bertha Barber Tank Battery, Lea County, New Mexico

WELL ID	Sample Date	Dissolved Metals			Chloride (mg/L)	TDS (mg/L)
		Iron (mg/L)	Manganese (mg/L)	Barium (mg/L)		
WQCC	-----	**1.0**	**0.2**	**1.0**	**250**	**1,000**
MW-7	8/17/1999	<0.05	0.06	0.44	**1400**	**2,800**
	9/22/1999	NS	NS	NS	**1100**	NS
	9/25/2002	NS	NS	NS	NS	NS
	9/24/2003	0.35	0.056	0.19	708	1,800
MW-8	8/17/1999	0.8	**0.34**	**6.16**	**1860**	**3,300**
	9/23/1999	NS	NS	NS	**1900**	NS
	9/28/2000	NS	NS	NS	**1300**	NS
	12/21/2000	0.32	0.12	0.14	**1000**	**2,100**
	3/19/2001	NS	NS	NS	**970**	NS
	9/27/2001	0.36	0.08	0.25	**1000**	**2,500**
	9/25/2002	0.138	0.0797	0.189	**1090**	**2,392**
	9/24/2003	0.28	0.078	0.259	**1400**	**3,100**
MW-9	8/17/1999	0.11	**0.22**	0.21	**1100**	**2,300**
	9/23/1999	NS	NS	NS	**1100**	NS
	9/28/2000	NS	NS	NS	**820**	NS
	12/21/2000	<0.05	0.04	0.26	**520**	**1,400**
	3/19/2001	NS	NS	NS	**640**	NS
	9/25/2002	NS	NS	NS	NS	NS
	9/24/2003	**4.63**	0.129	0.786	593	1,692
MW-10	8/17/1999	0.61	0.17	0.14	**2370**	**4,400**
	9/22/1999	NS	NS	NS	**2200**	NS
	9/25/2002	NS	NS	NS	NS	NS
MW-11	8/17/1999	<0.05	0.17	0.14	**1020**	**2,300**
	9/23/1999	NS	NS	NS	**1100**	NS
	9/28/2000	NS	NS	NS	**1300**	NS
	12/21/2000	<0.05	0.09	0.14	**1400**	**2,700**
	3/19/2001	NS	NS	NS	**1500**	NS
Duplicate	3/19/2001	NS	NS	NS	**1700**	NS
	9/27/2001	0.26	0.12	0.24	**1600**	**3,800**
	9/25/2002	0.255	0.141	0.271	**1620**	**3,605**
	9/24/2003	0.282	0.145	0.225	**1600**	3,225
MW-12 (PZ-2)	8/17/1999	0.11	0.13	0.16	**4160**	**7,100**
	9/22/1999	NS	NS	NS	**4400**	NS
	9/28/2000	NS	NS	NS	**3800**	NS
	12/21/2000	0.1	0.05	0.15	**4000**	**6,100**
	3/19/2001	NS	NS	NS	**3700**	NS
	9/27/2001	0.23	0.06	0.13	**3200**	**6,500**
	9/25/2002	<0.050	0.0297	0.111	**3220**	**6,225**
	9/24/2003	<0.05	<0.025	0.114	**2550**	**5,210**

Table 3. Historical Analytical Data for Selected Dissolved Metals, Chlorides and TDS
Former Bertha Barber Tank Battery, Lea County, New Mexico

WELL ID	Sample Date	Dissolved Metals			Chloride (mg/L)	TDS (mg/L)
		Iron (mg/L)	Manganese (mg/L)	Barium (mg/L)		
WQCC	-----	**1.0**	**0.2**	**1.0**	**250**	**1,000**
MW-13 (PZ-1)	8/17/1999	<0.05	0.09	0.16	**1920**	**3,500**
	9/23/1999	NS	NS	NS	**1600**	NS
	9/28/2000	NS	NS	NS	**2200**	NS
	12/21/2000	0.06	0.02	0.05	**1700**	**2,900**
	3/19/2001	NS	NS	NS	**630**	NS
	9/27/2001	0.79	0.17	0.14	**3000**	**5,900**
	9/25/2002	0.476	0.147	0.107	**1670**	**3,660**
	DUP-1	0.355	0.109	<.100	**1130**	**2,625**
	9/24/2003	0.221	0.05	0.11	**711**	**1,688**
MW-14	9/24/2003	<0.05	<0.025	0.124	**777**	**1,734**
MW-15	9/24/2003	0.271	0.089	0.122	**1070**	**2,060**
MW-16	9/24/2003	1.26	0.228	0.161	**2350**	**4,740**
Rinsate	9/24/2003	<0.05	<0.025	<0.01	**<2.5**	**22**
Livestock WW	3/19/2001	NS	NS	NS	**660**	NS
	9/27/2001	**13.4**	**0.25**	0.21	**600**	**1,600**
	9/25/2002	**4.52**	**0.224**	0.192	**671**	**1,866**
	9/24/2003	**0.267**	**0.186**	0.248	**626**	**1,636**

Footnotes:

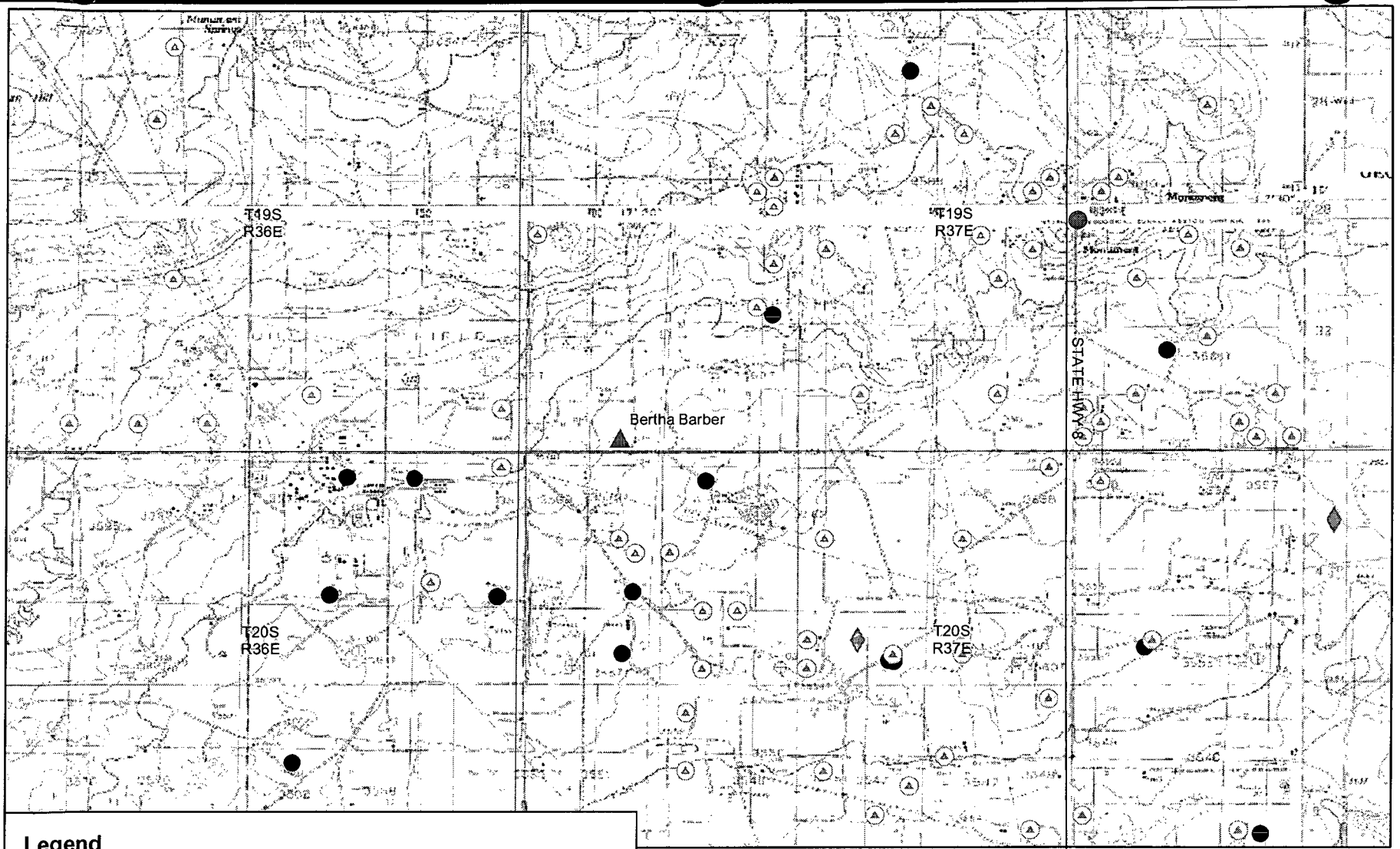
WQCC - New Mexico Water Quality Control Commission Ground Water Standards.
TDS - Total Dissolved Solids.
mg/L - milligrams per liter.
NS - Constituent not sampled during the sampling event.
* - Data was originally labeled as MW-7, but is actually MW-9.
MW-7 was not sampled in 2000 due to the presence of phase separate hydrocarbon (PSH).

Table 4. Historical PAH Analytical Data
Former Bertha Barber Tank Battery, Lea County, New Mexico

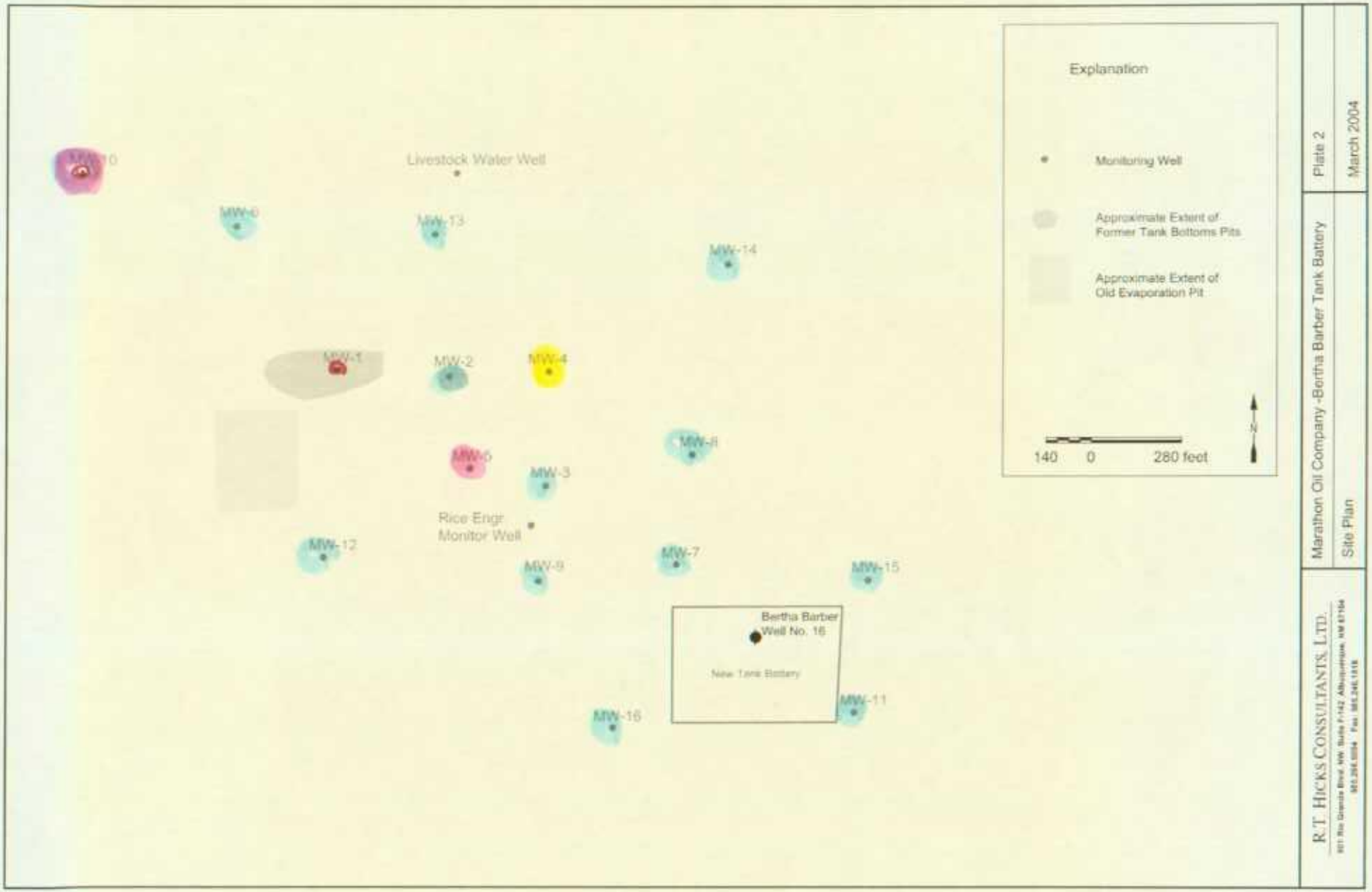
WELL ID	Sample Date	Fluorene (ug/L)	Indeno(1,2,3-cd)pyrene (ug/L)	Naphthalene (ug/L)	Phenanthrene (ug/L)	Pyrene (ug/L)	Anthracene (ug/L)	Benzo(b)fluoranthene (ug/L)	Fluoranthene (ug/L)	Chrysene (ug/L)	Benzo(a)anthracene (ug/L)	Benzo(a)pyrene (ug/L)	Benzo(ghi)perylene (ug/L)	Acenaphthylene (ug/L)	Acenaphthene (ug/L)	Dibenzo(a,h)anthracene (ug/L)	Benzo(k)fluoranthene (ug/L)
WQCC Standard				30								0.7					
MW-1	4/9/1999	<15	<1.5	<75	<15	<15	<15	1.6	<41	<15	6.5	<1.5	<1.5	<75	<75	<1.5	<1.5
MW-2	4/9/1999	<1.0	<0.1	<5	<1.0	<1.0	<1	<0.1	<1.0	<1.0	<0.10	<0.1	<0.1	<5	<5	<0.1	<0.1
	9/24/2003	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
MW-3	4/9/1999	<1.0	<0.1	<5.0	<1.0	<1.0	<1	<0.1	<1	<1	<0.1	<0.1	<0.1	<5	<5	<0.1	<0.1
	12/21/2000	<1	<0.1	<5	<1	<1	<1	<0.1	<1	<1	<0.1	<0.1	<0.1	<5	<5	<0.1	<0.1
	9/27/2001	<1	<0.1	<5	<1	<1	<1	<0.1	<1	<1	<0.1	<0.1	<0.1	<5	<5	<0.1	<0.1
	9/25/2002	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
	9/24/2003	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
MW-4	4/9/1999	1.2	<0.1	18.1	1	<1.0	<1.0	<0.1	1.4	<1.0	0.12	<0.1	<0.1	<5	<5	<0.1	<0.1
	12/21/2000	1.5	<0.1	<5.0	1.6	<1	<1.0	<0.1	4.2	<1	<0.1	<0.1	<0.1	<5	<5	<0.1	<0.1
	9/24/2003	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
MW-5	4/9/1999	<1.0	<0.1	<5.0	<1.0	<1.0	<1	<0.1	<1.0	<1	<0.1	<0.1	<0.1	<5	<5	<0.1	<0.1
	12/21/2000	<1	<0.1	<5.0	<1	<1	<1	<0.1	<1	<1	<0.1	<0.1	<0.1	<5	<5	<0.1	<0.1
	9/24/2003	0.24	<0.2	0.79	0.26	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
(Duplicate)	9/24/2003	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
MW-6	8/17/1999	<1	<0.1	<5	<1	<1.0	<1	<0.1	<1	<1	<0.1	<0.1	<0.1	<5	<5	<0.1	<0.1
	12/21/2000	<1	<0.1	<5	<1	<1.0	<1	<0.1	<1	<1	<0.1	<0.1	<0.1	<5	<5	<0.1	<0.1
	9/27/2001	<1	<0.1	<5	<1	<1.0	<1	<0.1	<1	<1	<0.1	<0.1	<0.1	<5	<5	<0.1	<0.1
	9/25/2002	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
	9/24/2003	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
MW-7	8/17/1999	<1	<0.1	<5	<1	<1	<1	<0.1	<1	<1	<0.1	<0.1	<0.1	<5	<5	<0.1	<0.1
	9/24/2003	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
MW-8	8/17/1999	<1.0	<0.1	<5	<1.0	<1.0	<1	<0.1	<1	<1	<0.1	<0.1	<0.1	<5	<5	<0.1	<0.1
	12/21/2000	<1	<0.1	<5	<1	<1	<1	<0.1	<1	<1	<0.1	<0.1	<0.1	<5	<5	<0.1	<0.1
	9/27/2001	<1	<0.1	<5	<1	<1	<1	<0.1	<1	<1	<0.1	<0.1	<0.1	<5	<5	<0.1	<0.1
	9/25/2002	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
	9/24/2003	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
MW-9	8/17/1999	<1	<0.1	<5	<1	<1	<1	<0.1	<1	<1	<0.1	<0.1	<0.1	<5	<5	<0.1	<0.1
	12/21/00*	<1	<0.1	<5	<1	<1	<1	<0.1	<1	<1	<0.1	<0.1	<0.1	<5	<5	<0.1	<0.1
	9/24/2003	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
MW-10	8/17/1999	<1	<0.1	<5.0	<1	<1	<1	<0.1	<1	<1	<0.1	<0.1	<0.1	<5	<5	<0.1	<0.1
MW-11	8/17/1999	<1	<0.1	<5	<1	<1	<1	<0.1	<1	<1	<0.1	<0.1	<0.1	<5	<5	<0.1	<0.1
	12/21/2000	<1	<0.1	<5	<1	<1	<1	<0.1	<1	<1	<0.1	<0.1	<0.1	<5	<5	<0.1	<0.1
	9/27/2001	<1	<0.1	<5	<1	<1	<1	<0.1	<1	<1	<0.1	<0.1	<0.1	<5	<5	<0.1	<0.1
	9/25/2002	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<.02	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
	9/24/2003	<.2	<.2	<.2	<.2	<.2	<.2	<.2	<.2	<.2	<.2	<.2	<.2	<.2	<.2	<.2	<.2
MW-12 (PZ-2)	8/17/1999	<1	<0.1	<5	<1	<1	<1	<0.1	<1	<1	<0.1	<0.1	<0.1	<5	<5	<0.1	<0.1
	12/21/2000	<1	<0.1	<5	<1	<1	<1	<0.1	<1	<1	<0.1	<0.1	<0.1	<5	<5	<0.1	<0.1
	9/27/2001	<1	<0.1	<5	<1	<1	<1	<0.1	<1	<1	<0.1	<0.1	<0.1	<5	<5	<0.1	<0.1
	9/25/2002	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
	9/24/2003	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
MW-13 (PZ-1)	8/17/1999	<1	<0.1	<5	<1	<1	<1	<0.1	<1	<1	<0.1	<0.1	<0.1	<5	<5	<0.1	<0.1
	12/21/2000	<1	<0.1	<5	<1	<1	<1	<0.1	<1	<1	<0.1	<0.1	<0.1	<5	<5	<0.1	<0.1
	9/27/2001	<1	<0.1	<5	<1	<1	<1	<0.1	<1	<1	<0.1	<0.1	<0.1	<5	<5	<0.1	<0.1
	9/25/2002	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Duplicate	9/25/2002	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
	9/24/2003	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Livestock WW	9/27/2001	<1	<0.1	<5	<1	<1	<1	<0.1	<1	<1	<0.1	<0.1	<0.1	<5	<5	<0.1	<0.1
	9/25/2002	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
	9/24/2003	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
MW-14	9/24/2003	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
MW-15	9/24/2003	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
MW-16	9/24/2003	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Rinsate	9/24/2003	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2

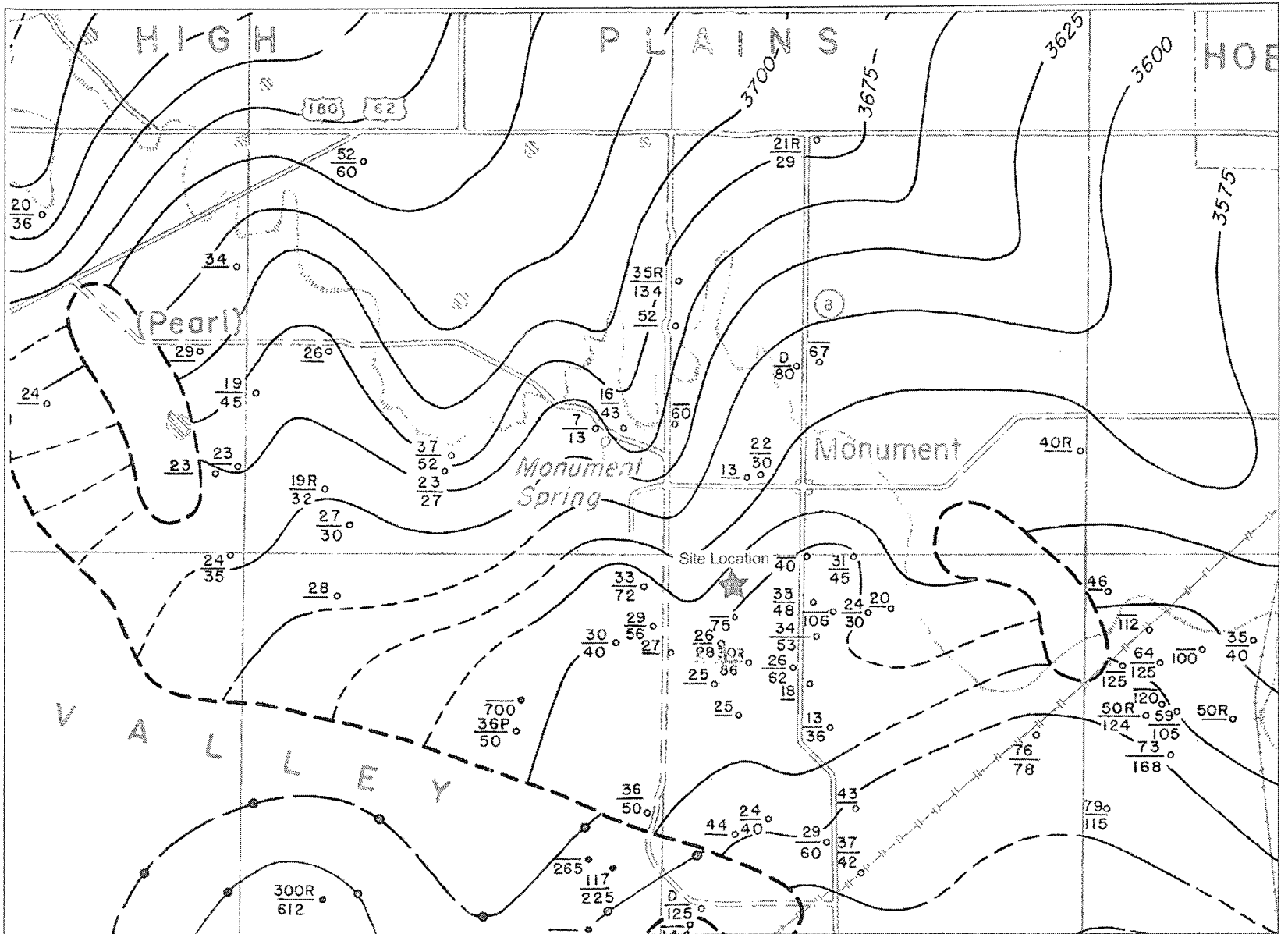
Footnotes:
PAH - Polynuclear aromatic hydrocarbons.
ug/L - micrograms per liter.
NS - Constituent not sampled during the sampling event.
ND - Constituent was not detected during laboratory testing, and laboratory reporting limits are variable.
* - Data was originally labeled as MW-7, but is actually MW-9.
MW-7 was not sampled in 2000 due to the presence of phase separate hydrocarbon (PSH).

PLATES



R.T. Hicks Consultants, LLC 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Location Map Showing Nearby Wells	Plate 1
	Marathon Oil Company - Bertha Barber Tank Battery	March 2004


Explanation
Monitoring Well
Approximate Extent of Former Tank Bottoms Pits
Approximate Extent of Old Evaporation Pit
140 0 280 feet
N
Livestock Water Well
MW-10
MW-6
MW-13
MW-14
MW-1
MW-2
MW-4
MW-8
MW-5
MW-3
Rice Engr Monitor Well
MW-12
MW-9
MW-7
MW-15
Bertha Barber Well No. 16
New Tank Battery
MW-11
MW-16
Plate 2
March 2004
Marathon Oil Company -Bertha Barber Tank Battery
Site Plan
R.T. HICKS CONSULTANTS, LTD.



map source: Geology and Ground-Water Conditions in Southern Lea County, New Mexico by Alexander Nicholson, Jr. & AlfredClebsch, Jr. (1961)

R.T. HICKS CONSULTANTS, LTD.
901 Rio Grande Blvd. NW Suite F-142 Albuquerque, NM 87104
505.266.5004 Fax: 505.246.1818

Marathon Oil Company - Bertha Barber Tank Battery

Regional Potentiometric Surface Map

Plate 3

March 2004

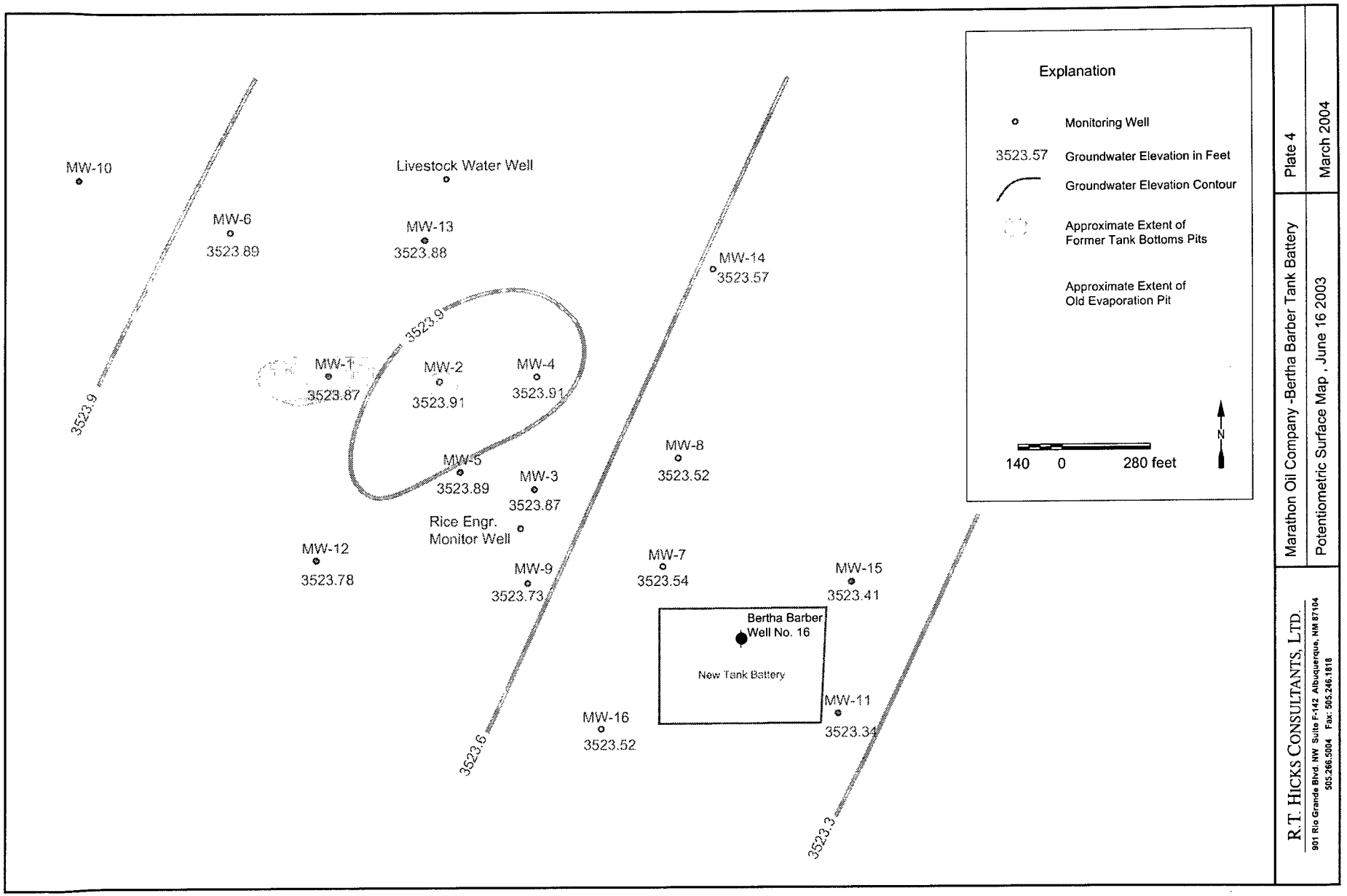


Plate 4

March 2004

Marathon Oil Company -Bertha Barber Tank Battery

Potentiometric Surface Map , June 16 2003

R.T. HICKS CONSULTANTS, LTD.
901 Rio Grande Blvd. NW Suite F-142 Albuquerque, NM 87104
505.266.5004 Fax: 505.246.1818

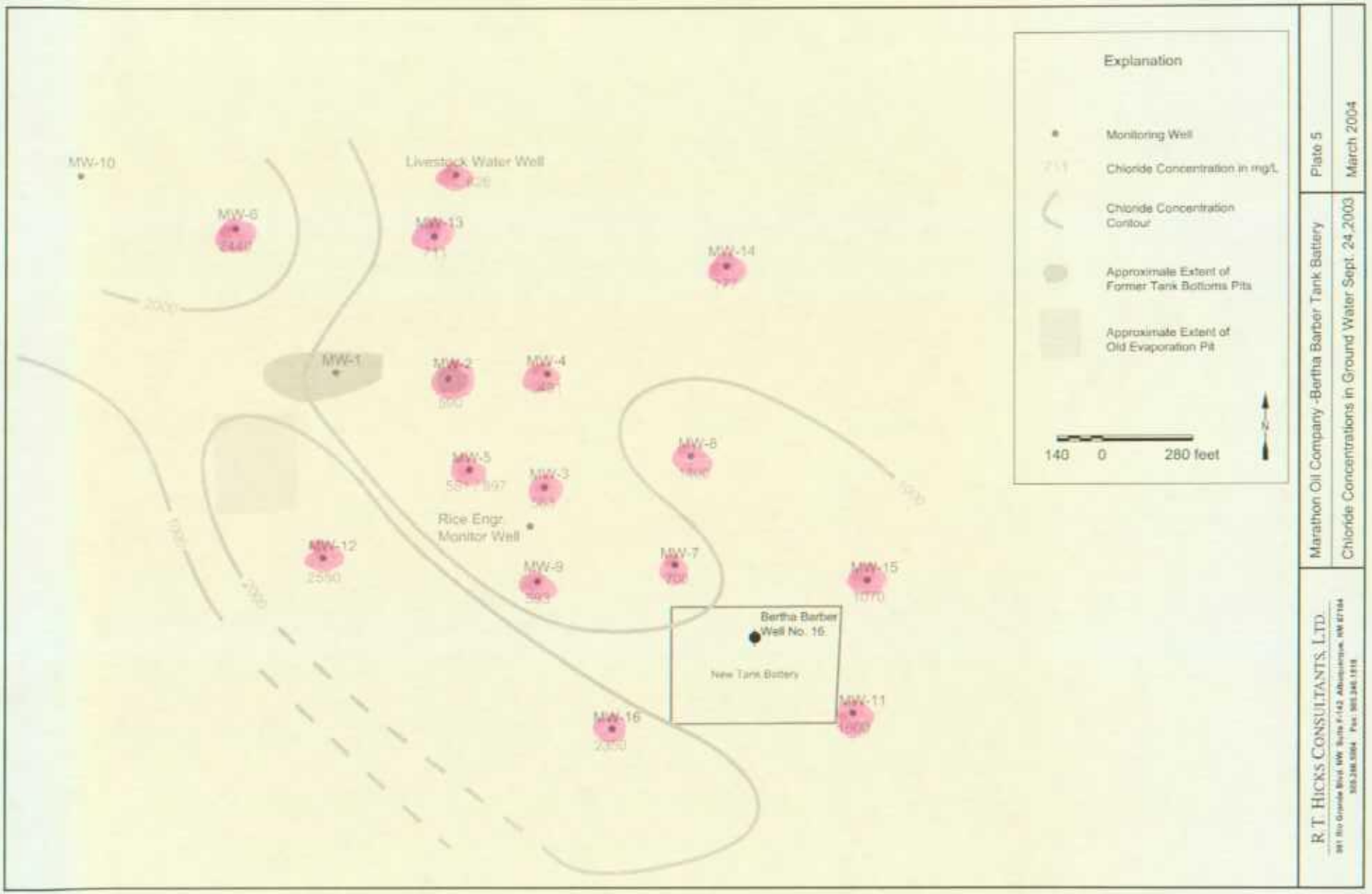


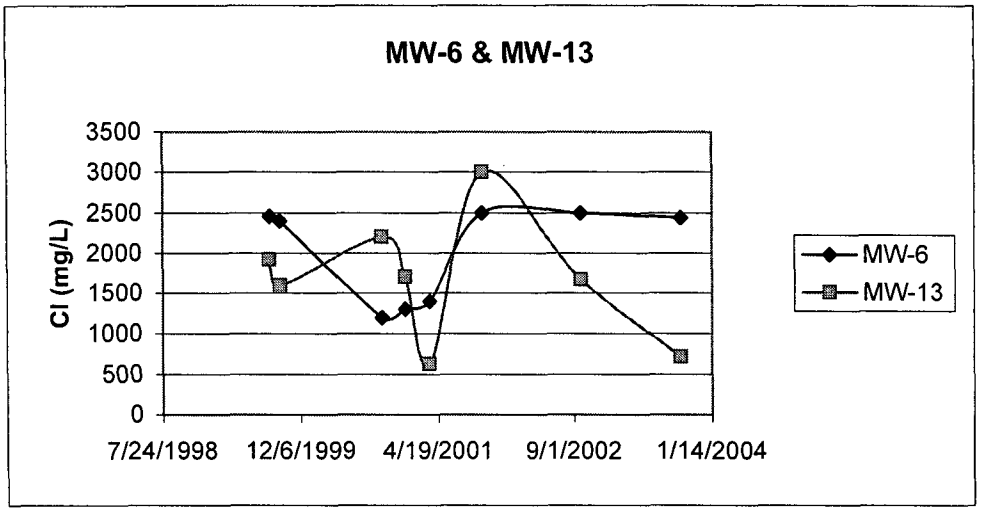
Plate 5

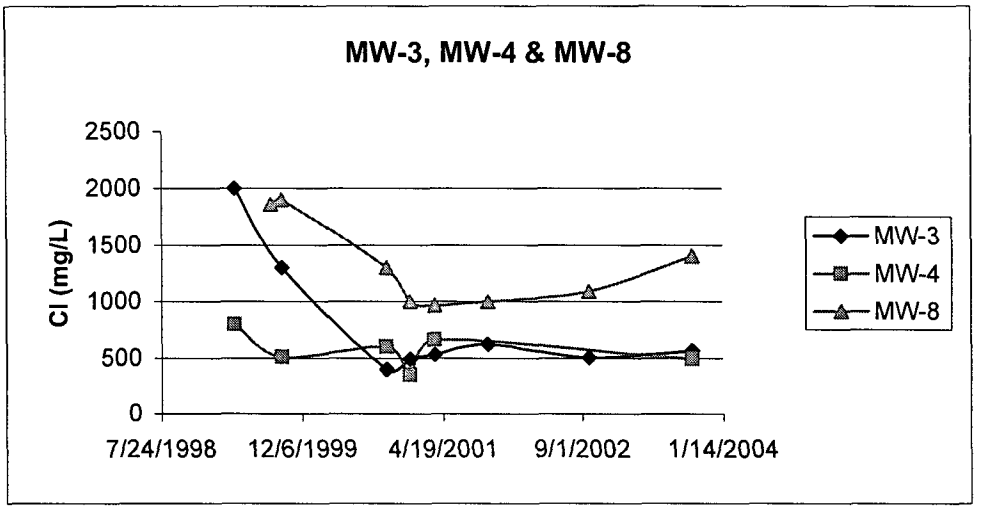
Marathon Oil Company -Bertha Barber Tank Battery

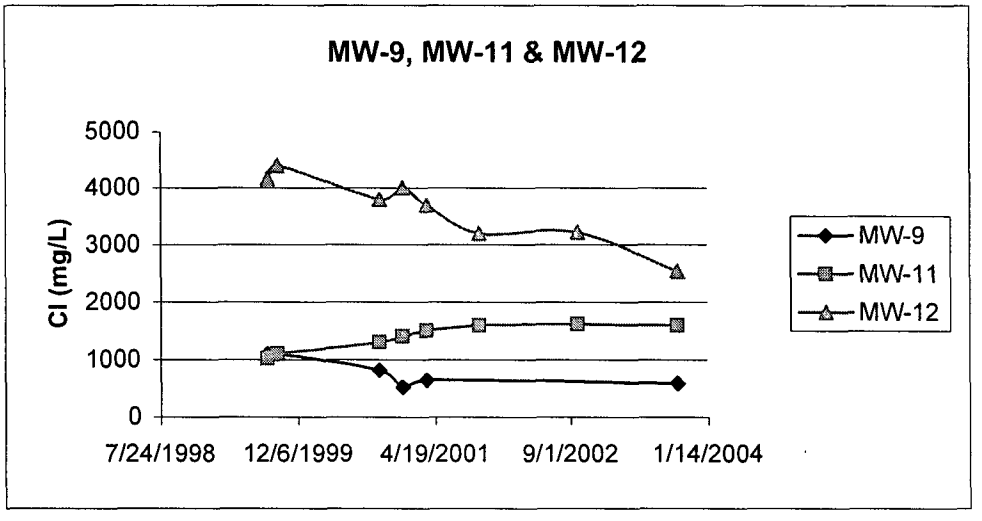
Chloride Concentrations in Ground Water Sept. 24,2003

March 2004

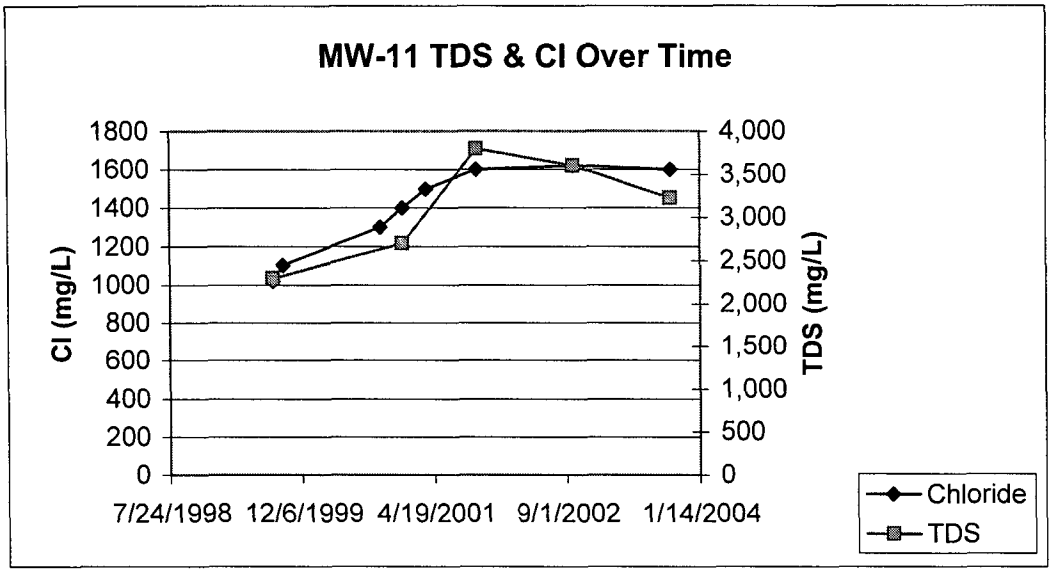
R.T. HICKS CONSULTANTS, LTD.
901 Rio Grande Blvd. NW, Suite F-142, Albuquerque, NM 87104
505.266.5004 Fax: 505.345.1918

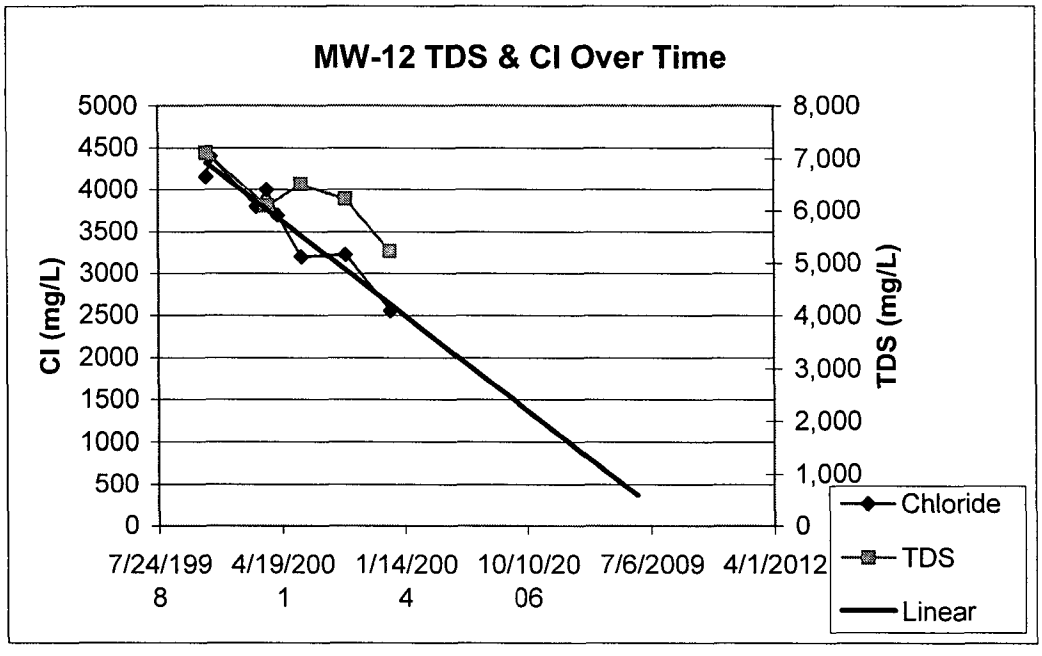






Bertha Barber	Plate 6
Chloride Over Time	March 2004





Bertha Barber	Plate 7
MW-11 and M-12, TDS and Chloride	March 2004

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

BILL RICHARDSON
Governor
Joanna Prukop
Cabinet Secretary

Lori Wrotenbery
Director
Oil Conservation Division

March 6, 2003

Mr. Aaron B. Wilson
Marathon Oil Company
P.O. Box 552
Midland, Texas 79702-0552

RE: ABATEMENT PLAN (AP-11)
BERTHA BARBER TANK BATTERY
MONUMENT, NEW MEXICO

Dear Mr. Wilson:

The New Mexico Oil Conservation Division (OCD) has reviewed Marathon Oil Company's (MOC) January 16, 2003 correspondence titled "FORMER BERTHA BARBER TANK BATTERY REMEDIATION PROJECT, LEA COUNTY, NEW MEXICO. This document requests that OCD provide MOC with a written statement indicating that MOC is not responsible for the phase separated hydrocarbons (PSH) found in upgradient well MW-10.

Monitor well MW-10 contains PSH and is located adjacent to a prior Dynegy pipeline leak site. MOC has a monitor well (MW-6) with no observable PSH and no detectable benzene contamination in ground water between MW-10 and other MOC monitor wells with PSH. Therefore, at this time, the OCD does not require that MOC address ground water contamination in the vicinity of MW-10 under the previously approved abatement plan for the site. Please be aware that, if future investigations show that contamination in the vicinity of MW-10 is a result of activities at the Bertha Barber Tank Battery, OCD will require MOC to include remediation of this area in MOC's abatement plan.

If you have any questions, please contact me at (505) 476-3491.

Sincerely,

William C. Olson
Hydrologist
Environmental Bureau

xc: Chris Williams, OCD Hobbs District Supervisor
Jim Cooper
J.D. Morris, Dynegy