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FLUOR DANIEL GTI

COMPREHENSIVE
SITE CHARACTERIZATION REPORT
INDIAN BASIN REMEDIATION PROJECT
NEW MEXICO
1991 - 1997

Project No. 023350232

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EXECUTIVE SUMMARY

In response to the New Mexico Oil Conservation Division (OCD)'s work plan approval letter of May 7, 1996, Fluor Daniel GTI, Inc. (Fluor Daniel GTI) has prepared this Comprehensive Site Characterization Report on behalf of Marathon Oil Company (Marathon) and other owners of the Indian Basin Gas Plant (Plant). The report summarizes site investigation and remediation activities conducted for the Indian Basin Remediation Project (IBRP) from 1991 through 1997.

The report provides the following information:

- Summary of the IBRP physical setting, release history, and surrounding land use
- Chronology of assessment and remediation activities performed from 1991 through 1997
- Description of regional and local hydrogeology and results of aquifer testing
- Comprehensive summary of soil and soil vapor analytical results
- Comprehensive summary of groundwater analytical results
- Summary of remediation progress
- Description of planned additional monitoring and remediation activities

Laboratory analytical data and reports not previously submitted to the OCD are provided in appendices and attachments.

In response to a condensate gathering pipeline release discovered in April 1991 near the Marathon-operated Plant, Marathon has installed 108 monitoring wells, two infiltration wells, one water supply well, and ten vapor extraction wells for the IBRP. Assessment data indicate that the subsurface geology of the IBRP is characterized by a discontinuous, heterogeneous alluvial fill material consisting of cobbles, boulders, sand, and silt, and the Queen Formation, a fractured bedrock formation consisting of interbedded sandstone, limestone, and dolomite. Two aquifers are present at the site. The Shallow Zone aquifer is present in the perched alluvial zone and upper fractured bedrock of the Queen Formation in contact with the perched zone. The Lower Queen aquifer is present at depth of 130 to 200 feet below ground surface, and is the regional groundwater aquifer.

Soil and groundwater analytical results indicate that the primary constituents present are separate-phase natural gas condensate and dissolved-phase benzene, toluene, ethylbenzene, and total xylenes (BTEX), semi-volatile organic compounds (SVOCs), chloride, and various dissolved metals and general chemistry parameters. The extent of condensate BTEX, chloride, and dissolved metals are adequately defined for assessment and remediation efforts. The extent of SVOCs in the Shallow Zone aquifer require additional assessment to determine more fully the nature and extent.

Remediation efforts have been ongoing at the IBRP since April 1991. The purpose of the remediation activities is to remove condensate and contain dissolved-phase compounds from further downgradient migration. The following activities have been conducted:

- Emergency excavation and pumping in Rocky Arroyo sumps and open excavations
- Condensate recovery via pneumatic skimmer pump in well MW-69
- Condensate recovery and groundwater containment in up to 20 Lower Queen wells via total fluids pumps and up to 4 pneumatic top-loading condensate pumps
- Soil vapor extraction in the Shallow Zone
- Vapor extraction in the Lower Queen bedrock (Barrier vapor extraction system [BVES])

From 1991 through May 1997, an estimated 9,700 barrels of condensate have been recovered, with the majority recovered from the initial emergency response activities and from wells MW-69 and MW-86. Approximately 190 million gallons of water have been pumped from the Lower Queen and 1 million gallons from the Shallow Zone aquifers. Current remediation activities are focused on containment of separate- and dissolved-phase hydrocarbon plumes; enhancing condensate recovery rates by the installation of top-loading pneumatic skimmer pumps in pumping wells; and the phased installation of the BVES in the Lower Queen. Because the volume of water withdrawn is strictly regulated, treated groundwater is infiltrated into upgradient wells in both aquifers. Infiltration serves additional benefits of oxygenating the aquifer for enhanced biodegradation of hydrocarbons and of pushing separate-phase hydrocarbons toward recovery wells.

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1.0 INTRODUCTION

1.1 Document Scope and Objective

Fluor Daniel GTI, Inc. (Fluor Daniel GTI) was contracted by Marathon Oil Company (Marathon) to prepare a Comprehensive Site Characterization Report for the Indian Basin Remediation Project (IBRP). This report is submitted in accordance with the New Mexico Oil Conservation Division (OCD)'s correspondence dated May 7, 1996 regarding work plans submitted by Marathon for additional groundwater investigation activities for the IBRP. The purpose of this document is to summarize all site characterization activities performed at the site since 1991. The following information is provided in this report:

- Summary of the IBRP physical setting, release history, and surrounding land use
- Chronology of assessment and remediation activities performed from 1991 through 1997
- Description of regional and local hydrogeology and results of aquifer testing
- Comprehensive summary of soil and soil vapor analytical results
- Comprehensive summary of groundwater analytical results
- Summary of remediation progress
- Description of planned additional monitoring and remediation activities

Per the OCD's verbal approval on July 7, 1997, laboratory certificates of analysis which have been previously submitted to the OCD are not included in this report. Chemical distribution data have been displayed graphically and summarized in tabular format. Laboratory analytical results, lithologic information, and reports not previously submitted to the OCD are provided in the supporting appendices and attachments.

1.2 Document Organization

This document is organized in the following manner: the remainder of section 1 summarizes the IBRP physical setting, known release history, surrounding land use, and IBRP chronology; section 2 describes the regional and local hydrogeologic setting, and summarizes known aquifer properties; section 3 presents investigation results for soil and groundwater; section 4 describes remediation progress to date; and section 5 provides a complete list of references. Supporting information is provided in tables, figures, and appendices. Reports not previously submitted to the OCD are provided as attachments.

1.3 Site Definition

The IBRP is located approximately 18 miles northwest of Carlsbad, New Mexico (figure 1-1), in all but the SW ¼ of Section 23, Section 24, the NE ¼ of the NE ¼ of Section 26, the N ½ of Section 25, and the N ½ of the SE ¼ of Section 25, Township 21 South, Range 23 East; the W ½ of the SW ¼ of Section 19, and the W ½ of the NW ¼ and the N ½ of the SW ¼ of Section 30, Township 21 South, Range 24 East, Eddy County, New Mexico. The IBRP is defined as the Marathon-operated Indian Basin Gas Plant (Plant) and the area surrounding the Plant within the limits of the defined extent of hydrocarbons in subsurface soil and groundwater. The site definition includes upgradient and downgradient monitoring, recovery, and infiltration wells installed for assessment, remediation, and water supply purposes.

The Plant primarily processes natural gas from the Indian Basin Morrow and Upper Pennsylvanian gas pools. Condensate is produced with the gas and separated at the wellhead, gathered, stabilized, and sold via truck from the loading area on the east side of the Plant. The condensate and produced water gathering system consists of 50 miles of underground pipeline. The liquid gathering system contains four primary low pressure lines that feed to the Plant.

1.4 Physical Setting

The IBRP lies in the eastern portion of Indian Basin. In the vicinity of the IBRP, the regional topography of Indian Basin dips eastward at about 50 feet per mile. Small intermittent streams traverse the basin in an east to northeasterly direction. The most prominent of these streams, Rocky Arroyo, is located directly south of the Plant (Figure 1-1). Rocky Arroyo is located in the 100-year flood plain, and exhibits a typical braided stream depositional pattern. The arroyo is comprised of two distinct stream beds separated by an in-channel gravel bar, which is vegetated and topographically situated at a higher elevation than either stream bed. The stream bed distribution is an expression of the structural surface of the Queen Formation bedrock, as discussed in section 2.

Indian Basin is arid, with monthly precipitation ranging from 0 inches to 7.6 inches and an average of 1.19 inches (as estimated from the rain gauge at the Plant). The average annual total is 14.3 inches. The greatest precipitation events typically occur in June through October, during seasonal thunderstorms. Temperatures range from a mean summer high of 80 degrees Fahrenheit (F) to a mean winter low of 40 degrees F, with an average annual temperature in the mid 60s.

Due to the low precipitation rates, low humidity, and high temperatures, the IBRP site exhibits a net negative evapotranspiration rate. Average annual shallow lake evaporation is approximately 82 inches (ESE, January 1992).

1.5 Surrounding Land Use

The land use and ownership within and adjacent to the IBRP is illustrated in figure 1-2. Adjacent lands are predominantly federal, managed by the Bureau of Land Management (BLM). In accordance with the Carlsbad Resource Management Plan (BLM's land use plan), the lands are designated to remain in federal ownership, and can only be used for the development of oil and gas resources and permitted livestock grazing. The closest private lands used for residential and agricultural/grazing purposes are located approximately 1 mile east of the IBRP. The location of known water supply wells in the vicinity of the IBRP are also illustrated in figure 1-2, and information regarding these wells is provided in table 1-1.

1.6 Project Chronology

Site assessment and remediation activities have been conducted at the IBRP since April 1991, when a subsurface release in the number 4 gathering line was detected where the line crosses Rocky Arroyo, approximately 0.2 miles south of the Plant. Based on production records, it is estimated that 35,000 barrels of condensate and 20,000 barrels of produced water were released over a five-month period from November 1990 to April 1991. To characterize the nature and extent of the subsurface release, 108 monitoring wells have been installed by Marathon from 1991 through 1997. In addition, over the past six years, up to 20 monitoring wells have been used at various times as groundwater/condensate recovery wells, and 10 soil vapor extraction wells, two infiltration wells, and one additional water supply well have been installed. The locations of all wells are illustrated in figure 1-3.

The project chronology follows, and pertinent site reports are referenced, with full references provided in section 5:

Date	Activity
April 12, 1991	Release discovered by Marathon in gathering line number 4 - Production shut down on 23 wells that produce to line.
April 12, 1991	Release reported to National Response Center, BLM, OCD.
April 12-16, 1991	Investigation, excavation, repair and testing of number 4 line at crossing point of Rocky Arroyo, 5 feet below arroyo channel bed. Line placed back in operation on April 16, 1991. 14 excavations installed in arroyo to delineate extent. 5 excavations completed with 24-inch conduit as product recovery sumps.
April 17-28, 1991	Soil vapor survey conducted in 200 ft by 200 ft grid in vicinity of release site to focus future assessment activities.
April 22, 1991	Written notification per Rule 116 to OCD and BLM.
April 29, 1991	*Site Characterization Plan* (Marathon, April 1991) submitted to OCD - summarized activities conducted from April 12 - 28, 1991, and proposed additional plans for investigation.
April -November 1991	Installation of Boreholes BH-1 through BH-97, 70 borings converted to monitoring wells MW-1 through MW-70. Water samples collected from supply wells at Plant (SW-1 and SW-2) and surrounding water supply wells and surface water on weekly to quarterly basis.

June 28, 1991	*Amended Site Characterization Plan* (Marathon, June 1991) submitted to OCD in response to OCD request for additional information.
September 1991	Condensate/groundwater recovery initiated from Lower Queen.
September - November 1991	Soil vapor extraction pilot test conducted in Shallow Zone in vicinity of MW-14 (methods and results summarized in *Soil Vapor Extraction Pilot Study,* ESE, January 1992).
September 1991-present	Condensate/groundwater recovery ongoing in Lower Queen.
September 1991-present	Quarterly groundwater monitoring conducted in selected wells, and reported in multiple Quarterly Progress Reports (see section 5).
November 15, 1991	Point-in-Time Sampling Analyses, September 19-29, 1991 submitted to OCD.
March 5, 1992	*Indian Basin Environmental Treatment Plan* (Marathon, March 1992) submitted to OCD.
March 5, 1992	Proposal to reduce rancher well sampling frequency (letter) submitted to OCD.
March 1992 to May 1994	Operation of Shallow Zone soil vapor extraction system.
August 1993	Monitoring wells MW-71 and MW-72 installed for downgradient definition and recovery purposes, respectively.
November 11, 1994	Indian Basin Treatment Plan Modification (letter report) submitted to OCD. Proposal to convert MW-61A from a pumping well to a downgradient monitoring well.
November - December 1994	Monitoring wells MW-73 through MW-76 installed for soil vapor extraction pilot tests of Lower Queen; MW-77 through MW-80 installed for delineation in Shallow Zone.
December 1994 - January 1995	Soil vapor extraction pilot tests conducted on Shallow Zone and Lower Queen Formation (GTI, March 1995).
January 5, 1995	OCD approval letter of Marathon's 1994 Indian Basin Treatment Plan Modification to convert MW-61A from a pumping well to a monitoring well.
June 1995	Pump test conducted in well MW-72 (GTI, November 1995) - submitted to OCD on February 26, 1996, with additional modeling runs.
September 1995	Wells MW-81 through MW-83 installed to further define extent of dissolved phase in Lower Queen, and for future use as pumping wells.

December 12, 1995	Work plan to conduct risk assessment to develop alternative abatement standards submitted to OCD (GTI, September 1995).
January 15, 1996	Indian Basin Plant Groundwater Discharge Plan (GW-21) Modification submitted to OCD to allow discharge of treated groundwater from the IBRP to the Shallow Zone and Lower Queen aquifers.
April 18, 1996	Indian Basin Plant Groundwater Discharge Plan Amended Modification submitted to OCD to address changes to the January 15, 1996 submittal.
May 3, 1996	Air permit application submitted to New Mexico Environment Department (NMED) for 2,400 SCFM barrier vapor extraction system (BVES).
May 9, 1996	OCD approval of Indian Basin Plant Groundwater Discharge Plan (GW-21) Modification.
June-July 1996	Wells MW-84, MW-85, MW-86, MW-94, IW-1, IW-2, SW-3 installed for Lower Queen containment, infiltration of treated water, and livestock water supply.
June - October 1996	Condensate recovery conducted in then Shallow Zone well MW-86.
August 1996	Well MW-87, MW-87A, MW-88, MW-89 installed for additional Lower Queen dissolved-phase delineation.
September 1996	Well MW-82 deepened and completed as Lower Queen Well.
September - October 1996	Gore-sorber survey conducted along Rocky Arroyo to focus downgradient Shallow Zone assessment (W.L. Gore, October 1996).
October 1996	Indian Basin Plant Assessment conducted (Indian Environmental Services [IES], December 1996)
October 1996	Well MW-86 deepened and completed as Lower Queen well.
November 18, 1996	Air permit No. 1859 issued for BVES.
December 1996	Vapor extraction wells VE-1 through VE-5 installed for BVES Blower Station No. 1.
January 24, 1997	Submittal of Proposed Groundwater Monitoring Plan Modification to OCD.
January 1997	Wells MW-90, MW-99, MW-100, MW-101, MW-102, MW-103, MW-105, MW-106, and MW-107 installed based on Gore-sorber survey for Shallow Zone downgradient delineation.
January 1997	Blower Station No. 1 installed and start up testing performed at northern edge of IBRP (Fluor Daniel GTI, April 1997).
March 12, 1997	OCD approval of the Proposed Groundwater Monitoring Plan Modification.

March 1997	Wells MW-95, MW-96, MW-97, MW-98 installed for additional Lower Queen dissolved-phase delineation in southeast part of plume.
March 1997	Selected wells sampled in special sampling event. Results submitted to OCD in April 25, 1997 letter report.
January - June 1997	Blower Station No. 1 operated continuously.
May - June 1997	Lower Queen wells MW-104, MW-108 and vapor extraction wells VE-16 through VE-20 installed.
May 1997	Shallow Zone well MW-46 sampled. Results presented in this report.
June 1997	Blower Station No. 4 installed with wells VE-17 through VE-20 connected and start-up testing performed along northern edge of Rocky Arroyo in southeast part of IBRP.

2.0 REGIONAL AND LOCAL HYDROGEOLOGY

2.1 Geologic Setting

The IBRP area is underlain by the Permian-aged Queen Formation, a carbonate facies consisting mainly of limestone, dolomite, and sandstone. The formation approaches 600 feet in thickness. The basal 100 feet and upper 50 feet of the Queen Formation are sandstone. The remaining section of the Queen consists of alternating sandstone, dolomite, and limestone (Cox, 1967). Outcrops of the Queen Formation in the vicinity of the IBRP are highly fractured and parted at bedding planes.

Alluvial deposits consisting of clayey silt, gravel, cobbles, and large boulders directly overlie the Queen Formation in the vicinity of the IBRP. These alluvial deposits range from 0 to approximately 25 feet in thickness. The deposits are comprised of 5 to 10 feet of clay and silty clay underlain mainly by boulders which are predominately clast-supported with clay, sand, gravel, and cobbles comprising the matrix. The boulders are predominately limestone or dolomite in composition.

Lithologic logs and well completion details for all borings installed for the IBRP since 1994 are provided in appendix A. The structure contour map, constructed on the top of the Queen Formation, is provided in figure 2-1. This map illustrates the local structural highs and lows of the bedrock. Figure 2-2 shows the locations of three geologic cross sections (A-A', B-B', C-C') presented in figures 2-3 through 2-5. The alluvium overlying the fractured bedrock is of variable thickness and mimics the bedrock structural highs and lows.

2.2 Hydrogeologic Setting

Two aquifers have been encountered at the site:

1) The "Shallow Zone" which is interpreted as occurring in alluvial gravels and the adjacent Upper Queen Formation (fractured bedrock) at depths between approximately 15 to 60 feet below grade (depending on topography); and

2) The Lower Queen Formation regional aquifer, which occurs between 130 and 200 feet below grade depending upon topography. The Lower Queen aquifer occurs in fractured limestone, sandstone, and dolomite, is confined to unconfined, and moderate to high yielding.

The gradient of the Shallow Zone is to the southeast (generally following the topography of the bedrock (figure 2-1), and the gradient of the Lower Queen is nearly flat and to the north-northeast under static conditions. The dip of the Queen Formation's bedding plane fractures is 2 to 3 degrees east.

At the IBRP site, the two aquifers are separated by approximately 150 feet of unsaturated fractured bedrock. The aquifers are partially connected via the fractures, as evidenced by partially saturated zones encountered during borehole installation.

Since 1991, 108 monitoring wells, 2 infiltration wells, 1 water supply well, and 10 vapor extraction wells have been drilled for the IBRP. The locations of all wells and borings are shown in figure 1-3. Well completion details for all wells at the site are summarized in table 2-1. The lithologic and well completion logs for wells drilled since 1994 are provided in appendix A. Surrounding water supply well locations are illustrated in figure 1-2, and known ownership and well completion information is summarized in table 1-1.

2.3 Fluid-Level Measurements

Fluid-level measurements have been conducted quarterly at the IBRP since 1991. Depth to groundwater has been measured to determine the groundwater gradient and flow direction in the Shallow Zone and Lower Queen aquifers, and to determine the effectiveness of the Lower Queen groundwater/condensate recovery system. A cumulative summary of fluid-level measurements is provided in appendix B, and hydrographs for selected wells in both aquifers are presented in appendix C. These hydrographs illustrate the change in groundwater elevation through time. In general, depth to groundwater fluctuates seasonally, in response to precipitation events. Typically, the site receives the highest precipitation between June and October. From the rain gauge monitored at the Plant since 1993, months with the highest precipitation were August 1994 (4.3 inches), June 1996 (3.95 inches), August 1996 (7.55 inches), and May 1997 (3.6 inches). The hydrographs show rebounds in water levels in both Shallow Zone and Lower Queen monitoring wells following these events.

In the Shallow Zone, the highest groundwater elevations occurred in July 1992, ranging from 3751.08 feet (MW-56) to 3798.49 feet (MW-52). The lowest groundwater elevations typically occur in April. In April 1997, groundwater elevations in the Shallow Zone ranged from 3740.11 feet (MW-56) to 3788.61 feet (MW-46). In the past year (April 1996 - April 1997), the difference between the high and low elevations in individual Shallow Zone wells ranged from 1.66 feet (MW-61) to 6.60 feet (MW-55).

In the Lower Queen aquifer, the highest groundwater elevations occurred in May and June 1992 with elevations ranging from 3632.27 feet (SW-2) to 3642.91 feet (MW-63). As in the Shallow Zone, the lowest groundwater elevations typically occur in April. In April 1997, groundwater elevations in the Lower Queen ranged from 3740.11 feet (MW-56) to 3788.61 feet (MW-46).

Groundwater elevation contour maps for May 1997 are presented in figures 2-6 and 2-7 for the Shallow Zone and Lower Queen aquifers, respectively. In the areas where groundwater is present in the Shallow Zone, groundwater flow is to the southeast, generally following the structural surface of the underlying bedrock. Localized highs in the bedrock result in dry areas where perched groundwater is not present.

In the Lower Queen, the groundwater gradient is generally to the north-northeast, at a nearly flat gradient of 0.003%. The gradient has been locally affected due to ongoing groundwater recovery and infiltration activities.

2.4 Aquifer Properties

2.4.1 Shallow Zone Aquifer Properties

During the initial site investigations conducted in 1991, slug tests were conducted in wells MW-54 and MW-55. Mean conductivity (K) values of 75.91 gallons per day per square foot (gpd/ft^2) in well MW-54 and 73.36 gpd/ft^2 in well MW-55 were calculated.

2.4.2 Lower Queen Aquifer Properties

Slug tests were conducted in Lower Queen wells MW-57, MW-59, and MW-60 in 1991. Mean conductivity values ranged from 6.28 gpd/ft^2 in MW-59 to 850.25 gpd/ft^2 in MW-60. Pump tests were also conducted in Lower Queen wells MW-58, MW-59, MW-62, MW-61A, and SW-2 in 1991. Mean conductivity values from this testing ranged from 6.30 gpd/ft^2 in MW-62 to 2,056.71 gpd/ft^2 in SW-2. This broad range reinforces the significance of the interconnectedness of fractures in bedrock permeability.

In June 1995, aquifer testing was conducted in the Lower Queen aquifer to determine optimum pumping rates for containment purposes. A step-drawdown test, constant-rate aquifer test, and recovery test were conducted on Lower Queen well MW-72, to evaluate aquifer transmissivity and storage coefficient. Aquifer parameters were subsequently used to simulate various extraction/infiltration scenarios to assist in optimizing the existing groundwater extraction system in the Lower Queen aquifer. Test procedures and analysis results were documented in the *Aquifer Testing and Groundwater Flow Modeling Report* (GTI, November 1995), previously submitted to the OCD. Using various aquifer analysis techniques, the estimated transmissivities for the various methods of analysis used ranged from 13,500 to 25,300 gallons per day per foot (gpd/ft) for fracture transmissivity (T_f), with a mean of 18,300 gpd/ft. The storage coefficient of the fractures (S_f) ranged from 3.6×10^{-4} to 4.8×10^{-4}, with a mean of 4.1×10^{-4}. The storage coefficient of the formation matrix (S_m) was calculated at 1.2×10^{-2}. Hydraulic conductivity (K) values ranged from 260 to 480 gpd/ft^2, with a mean of 350 gpd/ft^2, based on a 53-foot-thick aquifer.

3.0 INVESTIGATION RESULTS

Numerous investigations have been conducted at the IBRP to identify the nature and extent of subsurface hydrocarbons and inorganic compounds related to the 1991 release. This section summarizes the known distribution of organic and inorganic constituents in soil and groundwater at the site.

3.1 Soil Investigation Results

A GORE-SORBER℠ survey was conducted along Rocky Arroyo to define the extent of impacts from condensate to the southeast in the arroyo and assist in locating additional downgradient Shallow Zone monitoring wells. The results of the survey (W.L. Gore, October 1996) and a letter recommending well locations (Fluor Daniel GTI, November 4, 1996) are provided as attachments to this report.

Due to the nature of the subsurface (cobbles and bedrock), limited soil samples have been collected for laboratory analysis. Soil and rock samples were collected during the initial site investigation in 1991 for field screening of organic headspace vapors, but no laboratory analyses were conducted. In order to more fully characterize the IBRP, a limited site assessment was conducted by Indian Environmental Services (IES) within and adjacent to the Plant in October 1996. The results of the investigation are provided in the attached *Phase II Site Assessment Report* (IES, December 1996). Soil samples were collected at sampling intervals of 0 to 1 foot and 7 to 17 feet below ground surface and analyzed for mercury, polychlorinated biphenyls (PCBs), total volatile organic compounds (VOCs), and SVOCs, by EPA Methods 6010/8080/8260/8310, respectively. Soil sample locations and analytical results are summarized in appendix D, and complete laboratory analytical results are provided in the referenced report.

In summary, no mercury or PCBs were detected in any of the samples analyzed. Selected VOCs and SVOCs were present in concentrations ranging from 1 microgram per kilogram (ug/kg) to a maximum of 34,600 ug/kg xylenes in soil boring 35 at the capillary fringe (encountered at a depth of 15 feet below grade). The predominant constituents detected in the soil samples were benzene, toluene, ethylbenzene and total xylenes (BTEX), and naphthalenes (1- and 2-methylnaphthalenes). Low levels (generally less than 100 ug/kg) of other SVOCs, including acenaphthene, anthracene, benzo(a)pyrene, chrysene, and fluorene were detected in approximately 50% of the samples.

3.2 Groundwater Results

The Shallow Zone and Lower Queen groundwater have been sampled on a quarterly basis since 1991 for BTEX and chloride in accordance with an approved monitoring plan. In addition, samples have been collected from selected wells for analysis of SVOCs, metals, and inorganic water quality parameters of total dissolved solids (TDS), sulfate, and fluoride. Many of the Shallow Zone wells are dry or contain separate-phase condensate; therefore, no samples have been collected. Groundwater monitoring is performed to demonstrate complete characterization and containment of the condensate and dissolved-phase compounds present above applicable New Mexico Water Quality Control Commission (WQCC) standards.

3.2.1 VOCs/Condensate

3.2.1.1 Shallow Zone Distribution. The primary organic compounds present in the Shallow Zone groundwater are BTEX which occur in conjunction with the separate-phase condensate. Since 1991, benzene concentrations have ranged from not detected to a maximum concentration of 6,300 micrograms per liter (ug/l) in well MW-33 in September 1991. Toluene, ethylbenzene, and total xylene maximum concentrations of 6,600 ug/l, 1,200 ug/l and 7,137 ug/l, respectively, have historically been detected at the site. The February 1997 condensate and benzene distribution in the Shallow Zone is shown in figure 3-1. This figure illustrates that the extent of BTEX and condensate in the Shallow Zone are adequately defined. A cumulative historical summary of BTEX concentrations in Shallow Zone and Lower Queen wells is provided in table 3-1.

3.2.1.2 Lower Queen Distribution. The primary organic contaminants of concern in the Lower Queen are also condensate and BTEX. Since 1991, benzene concentrations have ranged from not-detected to a maximum concentration of 3,000 micrograms per liter (ug/l) in well MW-68 in January 1994. Maximum concentrations of toluene, ethylbenzene, and total xylene of 4,500 ug/l, 1,000 ug/l and 7,700 ug/l, respectively, have historically been detected at the site. The maximum BTEX concentrations detected in February 1997 in wells where separate-phase condensate was not observed were 42, 4.8, 8.4, and 46 ug/l, respectively. The February 1997 condensate and benzene distribution in the Lower Queen is illustrated in figure 3-2. This figure illustrates that the extent of BTEX and condensate in the Lower Queen are adequately defined.

3.2.2 SVOCs

Due to the nature of natural gas condensate, which is comprised primarily of low-boiling point hydrocarbon compounds, and the relatively low solubility of SVOCs, these compounds are not expected to be prevalent at the IBRP in groundwater. Samples have been collected for SVOCs on a limited basis to determine the presence or absence of SVOCs in the Shallow Zone and Lower Queen. Selected samples were analyzed for phenols during the March and July 1997 sampling events. Phenols were not detected in any of the wells. The distribution of detected SVOCs in the Shallow Zone and Lower Queen in 1996-1997 is illustrated in figure 3-3 and a cumulative historical summary of SVOC data is provided in table 3-2.

3.2.2.1 Shallow Zone Distribution. Samples have been collected from MW-10, MW-13, MW-19, MW-39, MW-41, MW-43, MW-45, MW-46, MW-49, MW-50, MW-54, MW-55, MW-56, MW-69, MW-79, MW-90, MW-91, MW-106, Sump A11, and Sump 16A, and analyzed by EPA Methods 8240, 8270, 8310, 610, and/or 601/602. Concentrations for individual compounds have ranged from not detected (at detection limits of 1 to 50 ug/l) to a maximum detected concentration of 65 ug/l total PAHs (naphthalenes plus mono-methylnaphthalenes) in well MW-46 in May 1997. In order to evaluate the likely maximum detected concentration of SVOCs in the Shallow Zone, a sample from well MW-46, the well with the maximum detected concentration of benzene in the Shallow Zone, was collected for analysis of SVOCs in May 1997. Various SVOCs (including acenaphthene, benzo(a)anthracene, naphthalenes, mono-methylnaphthalenes, and benzo(a) pyrene) were detected in MW-46. Additional groundwater samples circling MW-46 (including MW-39, MW-41, MW-43, MW-49, MW-50, MW-54, MW-55, MW-69, and MW-79) were analyzed for SVOCs using EPA Method 8310 during the July 1997 groundwater sampling event. No SVOCs were detected except for 12 ug/l of naphthalene in MW-55. Therefore, the extent of these detected SVOCs in the Shallow Zone has been fully defined.

3.2.2.2 Lower Queen Distribution. Samples have been collected from selected wells in the Lower Queen to determine the presence or absence of SVOCs. Samples have been collected from MW-60, MW-61A, MW-62, MW-67, MW-74, MW-87, MW-87A, MW-88, MW-89, MW-95, MW-96, MW-97, MW-98, MW-104, MW-108, and IW-2, and analyzed by EPA Methods 8240, 8270, 8310, 601/602, and/or 610. Concentrations have ranged from not detected (at detection limits of 1 to 25 ug/l) to a maximum detected concentration of 56.8 ug/l PAHs in well MW-74 in July 1997. No SVOCs have been detected in Lower Queen wells above applicable WQCC standards, and the downgradient extent of SVOCs in the Lower Queen has been completely defined by the existing monitoring well network.

3.2.3 Inorganic Compounds

In addition to the organic compounds, groundwater samples have been collected for analysis of various inorganic compounds which may be indicative of produced water and/or indicators of intrinsic bioremediation. During biodegradation, certain electron acceptors (e.g., dissolved oxygen, nitrate, sulfate, ferric iron, trivalent manganese) are consumed (reduced). Therefore, an inverse correlation between contaminant concentrations and these compounds is expected. Ferrous iron, which is the product of ferric iron reduction, dissolved manganese ($Mn^{2}+$), and alkalinity would be expected to increase in the area of highest contaminant concentrations if biodegradation is taking place. TDS is a function of alkalinity, and would also be expected to increase.

The following constituents have been sporadically detected above WQCC standards in the Shallow Zone and Lower Queen wells: barium, chloride, fluoride, dissolved iron, dissolved manganese, sulfate, and TDS. Historical summaries of all data collected for the wells are provided in tables 3-3 through 3-9, respectively, and distribution maps for 1996-1997 data are provided in figures 3-4 through 3-8. In general, the highest inorganic concentrations were detected in 1991 in sumps and wells located directly downgradient of the gathering pipeline release point. More recently, the highest concentrations of inorganic constituents are located immediately downgradient of the Plant.

3.2.3.1 Shallow Zone Distribution

Chloride

Chloride is sampled quarterly in all wells that are sampled for BTEX. In the Shallow Zone, concentrations have ranged from 1.7 mg/l to a maximum concentration of 17,000 mg/l in Sump A10 in April 1991. In the most recent groundwater sampling event in May 1997, the maximum chloride concentration was 150 ug/l in well MW-77. Figure 3-4 illustrates the distribution of chloride in Shallow Zone groundwater based on the more comprehensive February 1997 sample results. The highest concentrations are in wells immediately downgradient from the Plant, with the maximum concentration of 410 mg/l in MW-49. Well MW-55 is the most downgradient well containing chloride (270 mg/l) above the WQCC standard of 250 mg/l. Extrapolating concentration contours, chloride delineation is essentially complete in the Shallow Zone.

TDS

TDS have been analyzed in wells MW-1, MW-10, MW-13, MW-18, MW-19, MW-21, MW-26, MW-38, MW-41, MW-43, MW-44, MW-45, MW-46, MW-47, MW-49, MW-50, MW-56, Sump A10, Sump A11, MW-90, MW-91, MW-106, the Lyman well, and the Biebble well. Figure 3-6 illustrates the distribution of TDS in Shallow Zone groundwater based on the 1996-1997 data. Concentrations in these Shallow Zone wells have ranged from 263 mg/l to a maximum of 26,200 mg/l in Sump A11 in April 1991. The maximum TDS concentration detected in 1996-1997 sampling events was 5,900 mg/l in well MW-50 in March 1997. Delineation of TDS to the WQCC standard of 1,000 mg/l is not complete (the most downgradient well is MW-56 containing 1,200 mg/l), although a trend of decreasing concentrations with distance from the Plant is apparent.

Barium

Barium analyses have been conducted on Shallow Zone wells MW-10, MW-13, MW-19, MW-41, MW-43, MW-45, MW-46, MW-49, MW-50, MW-56, Sump A11, Sump 16A, the Lyman well, and the Biebble well. Figure 3-8 illustrates the distribution of barium and other inorganic compounds in groundwater based on the 1996-1997 data. Concentrations have ranged from 0.02 milligrams per liter (mg/l) to a maximum concentration of 1.80 mg/l in well MW-19 in September 1991. With the exception of the 1.80 mg/l in MW-19 in September 1991, all other values for barium in Shallow Zone groundwater have been below the WQCC standard of 1.0 mg/l. Barium analyses have not been performed since 1991.

Fluoride

Fluoride samples have been collected from Shallow Zone wells MW-13, MW-41, MW-46, MW-49, MW-50, MW-56, MW-90, MW-91, MW-106, the Lyman well and the Biebble well. Figure 3-8 illustrates the distribution of fluoride and other inorganic compounds in groundwater based on the 1996-1997 data. Concentrations have ranged from 0.19 mg/l to a maximum of 1.5 mg/l in wells MW-41 and MW-56 in March 1997. Fluoride delineation is complete in the Shallow Zone, and all concentrations have been below the WQCC standard of 1.6 mg/l. Marathon proposes to discontinue monitoring for fluoride in the Shallow Zone groundwater.

Dissolved Iron and Manganese

Dissolved iron and manganese have been analyzed in samples from Shallow Zone wells MW-10, MW-13, MW-19, MW-38, MW-41, MW-43, MW-44, MW-45, MW-46, MW-47, MW-49, MW-50, MW-56, Sump A11, Sump 16A, the Lyman well, and the Biebble well. Figure 3-8 illustrates the distribution of iron and manganese, as well as other inorganic compounds, in groundwater based on the 1996-1997 data. Iron concentrations have ranged from not detected at 0.05 mg/l to a maximum concentration of 54 mg/l in well MW-45 in September 1991. Manganese concentrations have ranged from less than 0.01 mg/l to 7.78 mg/l in well MW-49 in June 1991. While many of the iron and manganese concentrations exceed the respective WQCC standards of 1.0 mg/l and 0.2 mg/l, elevated concentrations of these metals are indicative of increased biological activity. Additional monitoring may be conducted to evaluate natural attenuation of hydrocarbons.

Sulfate

Sulfate analysis has been conducted on samples from wells MW-10, MW-13, MW-19, MW-38, MW-41, MW-43, MW-44, MW-45, MW-46, MW-47, MW-49, MW-56, MW-90, MW-91, MW-106, Sump A11, Sump 16A, the Lyman well, and the Biebble well. Figure 3-8 illustrates the distribution of sulfate and other inorganic compounds in groundwater based on the 1996-1997 data. Sulfate concentrations have ranged from not detected at 5 mg/l to a maximum concentration of 3,600 in well MW-50 in March 1997. The extent of sulfate in the Shallow Zone groundwater has been fully defined. The concentrations exceeding the WQCC standard of 600 mg/l are immediately downgradient of the Plant (in wells MW-49 and MW-50).

3.2.3.2 Lower Queen Distribution

Chloride

Chloride is sampled quarterly in all wells that are sampled for BTEX. In the Lower Queen wells, concentrations have ranged from not detected at 5.0 mg/l to a maximum concentration of 636 mg/l in well SW-2 in December 1991. During the most recent groundwater sampling event in May 1997, the maximum chloride concentration was 140 ug/l in well MW-87A. Figure 3-5 illustrates the distribution of chloride in the Lower Queen aquifer based on the February 1997 sample results. The extent of chloride in groundwater is fully defined and no concentrations above the corresponding WQCC standard of 250 mg/l are present or have been observed since July 1993. No further monitoring of chloride is warranted. Marathon proposes to cease monitoring for chloride in Lower Queen wells, since eight consecutive quarters of concentration data from all compliance wells have been documented to be below the WQCC standard.

TDS

TDS have been analyzed in wells MW-57, MW-60, MW-61A, MW-62, MW-87, MW-88, MW-89, IW-2, and SW-1. Concentrations in these wells have ranged from 330 mg/l to a maximum of 1,200 mg/l in MW-88 in August 1996. Figure 3-7 illustrates the distribution of TDS in the Lower Queen aquifer based on 1996-1997 data. With the exception of 1,200 mg/l TDS in MW-88 for August 1996 (which was lower in February 1997 at 970 mg/l), all TDS concentrations are below the corresponding WQCC standard of 1,000 mg/l. The extent of TDS in the Lower Queen groundwater is fully defined. No further monitoring of TDS is warranted; therefore Marathon proposes to cease monitoring for TDS in Lower Queen wells.

Barium

Barium analyses have been conducted on wells MW-57, MW-60, MW-61A, MW-62, and SW-1. Figure 3-8 illustrates the distribution of barium and other inorganic compounds in groundwater based on the 1996-1997 data. Concentrations have ranged from 0.02 mg/l to a maximum of 2.85 mg/l in well MW-62 in September 1991. Although barium data in the Lower Queen aquifer is very limited, the concentrations in MW-60 located downgradient of MW-62 (where the maximum concentration was detected) were well below the WQCC standard of 1.0 mg/l, completing delineation. Barium analyses have not been conducted since 1991.

Fluoride

Fluoride samples have been collected from Lower Queen wells MW-57, MW-60, MW-61A, MW-88, MW-89, MW-95, MW-96, MW-97, MW-98, and SW-1. Figure 3-8 illustrates the distribution of fluoride and other inorganic compounds in groundwater based on the 1996-1997 data. Concentrations have ranged from 0.80 mg/l to a maximum of 1.6 mg/l in well MW-61A in July 1991. Fluoride delineation is complete in the Lower Queen aquifer, and all concentrations have been at or below the WQCC standard of 1.6 mg/l. Marathon proposes to discontinue monitoring for fluoride in the Lower Queen wells.

Dissolved Iron and Manganese

Dissolved iron and manganese have been analyzed in samples from Lower Queen wells MW-57, MW-60, MW-61A, MW-62, and SW-1. Figure 3-8 illustrates the distribution of iron and manganese, as well as other inorganic compounds, in groundwater based on the 1996-1997 data. Iron concentrations have ranged from not detected at 0.05 mg/l to a maximum concentration of 4.81 mg/l in September 1991. Manganese concentrations have ranged from not detected at 0.01 mg/l to 0.81 mg/l in well MW-62 in September 1991. Recent iron and manganese data from the Lower Queen aquifer are very limited. Since these metals are indicators of biological activity, additional monitoring may be conducted to evaluate natural attenuation of hydrocarbons.

Sulfate

Sulfate analysis has been conducted on samples from wells MW-57, MW-60, MW-61A, MW-62, MW-88, MW-89, and SW-1. Figure 3-8 illustrates the distribution of sulfate and other inorganic compounds in groundwater based on the 1996-1997 data. Sulfate concentrations have ranged from 19 mg/l to a maximum concentration of 390 mg/l in well MW-88 in February 1997. The extent of sulfate in the Lower Queen aquifer is fully defined and no concentrations have exceeded the WQCC standard of 600 mg/l. Marathon proposes to cease monitoring for sulfate in the Lower Queen wells.

3.3 Contaminant Transport Pathways

As illustrated in figures 3-1 through 3-8, separate-phase condensate and organic and inorganic dissolved-phase constituents are present in both the Shallow Zone and Lower Queen aquifers. A conceptual model to describe the contaminant transport pathways that exist at the IBRP has been developed and is illustrated in figure 3-9. During the gathering pipeline number 4 release in 1990/1991, condensate and produced water were released in the alluvial material five feet below the bottom of Rocky Arroyo and then migrated by gravity flow to the southeast within the Shallow Zone. In areas where the perched groundwater zone was absent and as the saturated thickness of the Shallow Zone decreased, condensate moves into the fractures of the Queen Formation, and subsequently moves downward along vertical and horizontal bedding plane fractures to the Lower Queen water table. Condensate and dissolved-phase constituents then move north-northeastward with the regional gradient in the Lower Queen aquifer.

The 1996 Phase II Site Assessment data (IES, December 1996) and condensate/dissolved-phase hydrocarbon data indicate that residual sources of condensate and other hydrocarbons are present in the near-surface and unsaturated Shallow Zone of the Plant.

4.0 REMEDIATION ACTIVITIES

Remediation activities to recover released condensate and to prevent the migration of condensate and dissolved-phase concentrations have been ongoing at the IBRP since April 1991. The following activities have been conducted since 1991:

- Emergency excavation and pumping in Rocky Arroyo sumps and open excavations
- Condensate recovery via pneumatic pump skimmer in well MW-69
- Condensate recovery and groundwater containment in up to 20 Lower Queen wells via total fluids pumps and up to 4 pneumatic top-loading condensate pumps
- Soil vapor extraction in the Shallow Zone
- Vapor extraction in the Lower Queen bedrock BVES

Each of these activities is briefly summarized in the following sections. The total recovered volume of condensate from all methods is graphically displayed in figure 4-1, and recovery rates are summarized by month in table 4-1. From 1991 through June 1997, an estimated 9,700 barrels of condensate have been recovered.

4.1 Emergency Response Pumping/Sump Recovery

Immediately following discovery of the gathering pipeline number 4 release, Marathon recovered condensate from open excavations in Rocky Arroyo in April 1991 through July 1991. Approximately 3,700 barrels of condensate were recovered, with an additional 465 barrels attributed to evaporation from the open sumps and excavations. In addition, during a five-month period in early 1993, pumping was conducted in Sumps A11 and 16A. An additional cumulative total of 10 barrels was recovered during that time from the sumps.

4.2 Shallow Zone Skimming from Wells MW-69 and MW-86

4.2.1 MW-69 Condensate Recovery

Based on the measurable thickness of condensate in well MW-69, a pneumatic product skimmer system was installed in well MW-69 in March 1994. MW-69 is completed in the fractured bedrock at the top of the Queen Formation. With the exception of maintenance and repair, the pump has been operated continuously and is currently recovering approximately 0 to 2 barrels per month. Cumulatively, 181 barrels of condensate have been recovered from MW-69 through October 1996, when MW-69 was connected to the Lower Queen fluid gathering system and product from MW-69 began being commingled with the Lower Queen pump and treat system product recovery.

4.2.2 MW-86 Condensate Recovery

While installing well MW-86, elevated concentrations of VOCs were detected. Drilling was discontinued at a depth of 120 feet in the Shallow Zone. The open borehole yielded recoverable quantities of condensate, and therefore total fluids pumping was initiated in the borehole in the second quarter of 1996. When condensate recovery rates decreased, the well was completed in the Lower Queen in October 1996. The well is currently used as a total fluids recovery well. Prior to deepening the well, 164 barrels of condensate were recovered.

4.3 Lower Queen Total Fluids/Dual-Phase Recovery

In September 1991, total fluids pumping was initiated in the Lower Queen for condensate recovery and containment purposes. Since 1991; an estimated total of 194 million gallons of water and 658 barrels of condensate have been recovered from up to 19 wells. Recovered fluids are pumped to a separation tank for condensate and water separation. Recovered condensate is sent to the Plant. Recovered groundwater is treated by air stripping to remove dissolved-phase hydrocarbons. From 1991 through 1996, the treated water was utilized as process water in the Plant and disposed in the Plant's Class II injection wells. In 1995-1996, dual-phase pumping systems were installed in selected Lower Queen wells to enhance condensate recovery rates. Additional wells were added to the system from 1992 through 1997, and the current treatment system has a design capacity of 210 gallons per minute. The current remediation system layout is depicted in figure 4-2. Since August 1996, treated groundwater has been routed to infiltration wells completed in the Shallow Zone (MW-45 and MW-51) and Lower Queen (IW-2), under Modified Groundwater Discharge Plan GW-21. Well IW-1, initially installed as an infiltration well, is currently used as a recovery well, due to the presence of separate-phase condensate. The pumping rates for the recovery wells for the last three months (April - June 1997) are summarized in table 4-2. The cumulative groundwater recovery rate is approximately 150 gallons per minute from all active Lower Queen recovery wells.

Groundwater recovery wells are permitted by the New Mexico State Engineer's Office (NMSEO). Wells are metered and monthly reports of Shallow Zone and Lower Queen groundwater withdrawal and infiltration volumes are provided to the NMSEO. Because the volume of water withdrawn is strictly regulated, treated groundwater is infiltrated into upgradient wells in both aquifers. Infiltration serves additional benefits of oxygenating the aquifer for enhanced biodegradation of hydrocarbons and of pushing separate-phase hydrocarbons toward recovery wells.

Two water supply wells SW-1 and SW-2 have historically been operated at the Indian Basin Plant for industrial process water. SW-1 is currently active, and is pumped at a rate of approximately 50 gallons per minute. SW-2 is currently idle and is being used as a monitoring well. In addition, a new water supply well, SW-3 was installed in 1996 by Marathon to supply water for livestock grazing. SW-3 is located upgradient of the Plant and is pumped intermittently at a rate of less than one gallon per minute.

4.4 Shallow Zone Vapor Extraction

Based on pilot testing of the Shallow Zone in 1991 and in 1995, an effective radius of influence of approximately 70 feet can be induced in the alluvial sediments of the Shallow Zone, at a flow rate of 160 to 170 standard cubic feet per minute (SCFM) and 14 to 25 inches of water applied vacuum.

A portable Shallow Zone vapor extraction system (SVES) was operated from March 1992 to May 1994 to remove residual concentrations of hydrocarbon in the unsaturated Shallow Zone alluvium. The system consisted of a trailer-mounted 100 SCFM blower capable of 50 inches of water vacuum. The system was operated on various Shallow Zone monitoring wells, including MW-16, MW-17, MW-18, MW-19, MW-20, MW-21, MW-35, and MW-56, located downgradient of the Plant and north of Rocky Arroyo. During the period of operation, 135 barrels of condensate as calculated by effluent vapor concentrations and flow rates were removed by volatilization and discharged. This condensate removal rate does not include any destruction of condensate by enhanced biodegradation. It is likely that additional mass was removed by this mechanism within the area of influence of the system.

4.5 Lower Queen Vapor Extraction

In 1995, vapor extraction pilot testing was conducted on wells MW-73, MW-67, and MW-68 completed in the Lower Queen. The pilot testing indicated an effective radius of influence of 400 to 2,000 feet could be induced, at flow rates of 95 to 150 SCFM and 2 to 9.5 inches of mercury applied vacuum.

Based on the pilot testing, a BVES was designed and permitted in 1996. An air quality permit application was submitted to the NMED on May 3, 1996. Air Quality Permit No. 1859, dated November 18, 1996, allows the construction and operation of a 2,400 SCFM system (four blower stations at 600 SCFM per blower station) and 25 vapor extraction wells. The permit allows an emission rate of 55 lbs/hr or 250 tons per year of volatile organic compounds. If emissions increase beyond these rates, emission controls are required and the permit includes conditions for treatment via catalytic oxidation, thermal oxidation, or carbon adsorption. The air permit is currently being revised to include the Shallow Zone SVES and the groundwater treatment system air stripper emissions.

The BVES is intended to:

1) Intercept and remove subsurface migrating vapors that could potentially condense and impact currently clean groundwater;

2) Remove volatile components which are serving as residual source; and,

3) Enhance in situ bioremediation.

The proposed system design includes four equipment compounds (blower stations) to be installed in a phased approach along the perimeter of the downgradient edge of the dissolved-phase plume or in areas where significant residual source is present in the Lower Queen.

In conjunction with the BVES design, several laboratory tests were conducted to test the ability of vapors to impact groundwater at the site. The tests showed that condensate in the more downgradient portion of the free-phase plume (MW-72) is orders of magnitude less volatile than more upgradient product (MW-86). This indicates a degraded or weathered product in areas distant from the source. As the condensate weathers, it is less able to impact groundwater because the more soluble components are lost. The condensate volatilization analyses are provided in appendix F.

In late 1996, Marathon installed the northernmost blower station of the BVES (Blower Station No. 1), using wells VE-1 through VE-5 and existing well MW-61A. The layout of the system is shown in figure 4-2. The system consists of a trailer-mounted, Suterbilt 6L, 25 horsepower, 460 V blower with an 88-gallon moisture knockout, an outlet silencer, an inlet filter, and a vacuum relief valve.

In January 1997, the blower station was started up. Details of system startup are provided in the startup pilot testing report (Fluor Daniel GTI, April 1997). The following observations were made and results obtained from the startup testing.

- Well VE-1 had the highest field-measured contaminant levels, up to 55.3 ppmv.
- The hydrocarbon concentrations that were measured by the PID during the long-term test on well VE-1 were low and steady (Figure 2) indicating that the mass removal of the system is limited by the time necessary for contaminants to diffuse into continuous fractures.
- No H_2S was detected from any well during the test.
- There is a significant amount of methane coming from the subsurface, indicating the anaerobic decay of hydrocarbons.
- Vapor extraction appears to be stimulating aerobic biodegradation in the subsurface.
- The mass removal rate from the combined system measured with field instruments during the test was 0.165 lbs/hr. The mass emission rate based on the laboratory data was 2.01 lbs/hr.
- The steady state flowrate measured during the test was 299 SCFM.
- The vapor extraction system was able to deliver high vacuum to each well head.

Blower Station No. 1 was operated continuously from January - June 1997. An estimated 13 barrels of condensate were removed during this time period.

Based on the relatively low mass removal rate produced by Blower Station No. 1, a revised layout was recommended for Blower Station No. 4, located along the northern edge of Rocky Arroyo. The revised layout is designed to test the effectiveness of the BVES in an area of fresher condensate. Wells VE-16 through VE-20 were installed in May - June 1997. The new VE wells were connected to the blower station in June 1997, and startup testing was conducted the week of June 23, 1997. Results of startup and recommendations for future blower station positions will be provided in a subsequent report.

5.0 GROUNDWATER MONITORING PLAN MODIFICATION

The following are proposed changes to the Groundwater Monitoring Plan dated January 24, 1997. The proposed monitoring program is presented in Table 5-1.

For the Shallow Zone, 33 wells will be gauged quarterly (January, April, July and October) for depth to water and thickness of separate-phase hydrocarbons. These wells will be sampled on a semiannual basis (January and July) for analysis of BTEX by EPA Method 8020. As discussed in Section 3.2.3.1 of the report, no continued monitoring of inorganic compounds is proposed.

For the Lower Queen aquifer, 38 wells will be gauged quarterly (January, April, July and October) for depth to water and thickness of separate-phase hydrocarbons. Ten downgradient wells (MW-60, MW-61A, MW-66, MW-71, MW-87, MW-87A, MW-88, MW-89, MW-96, and MW-97) will be sampled quarterly; five wells within the hydrocarbon plume (MW-57, MW-59, MW-62, MW-64, and MW-67) will be sampled semiannually (January and July); eight wells located upgradient of the hydrocarbon plume (MW-63, MW-65A, MW-70, MW-95, MW-98, SW-1, SW-2, and SW-3) will be sampled annually (January). Groundwater samples from the quarterly, semiannual, and annual monitoring events will be analyzed for BTEX by EPA Method 8020. As discussed in Section 3.2.3.2 of this report, no continued monitoring of inorganic compounds is proposed.

6.0 REFERENCES

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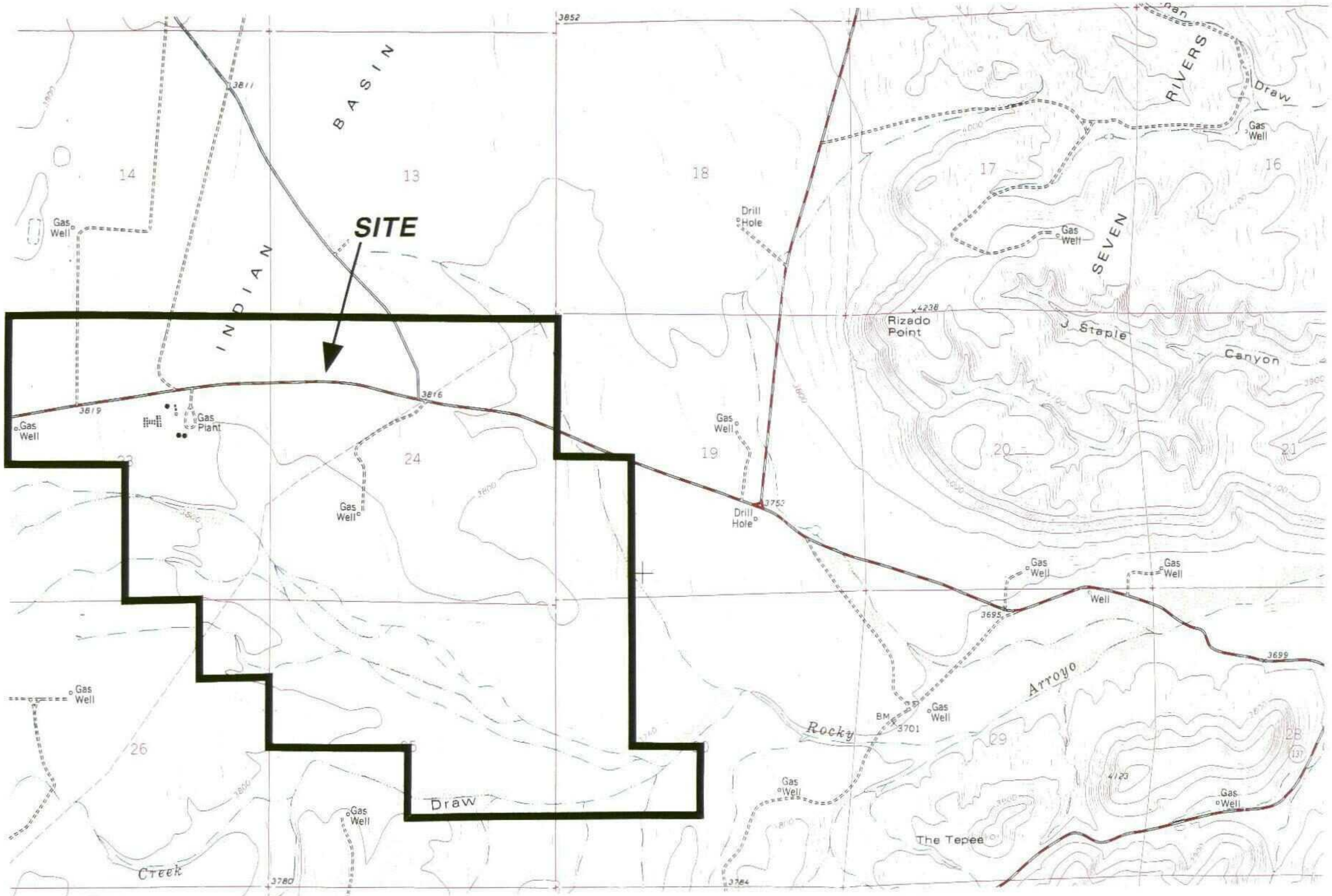


LEGEND

SITE BOUNDARIES

NEW MEXICO
QUADRANGLE LOCATION

N

1,000 0 2,000
SCALE IN FEET

MARTHA CREEK, N. MEX.
NE/4 BANDANNA POINT 15' QUADRANGLE
N3222.5–W10430/7.5
1978
AMS 5048 I NE – SERIES V881

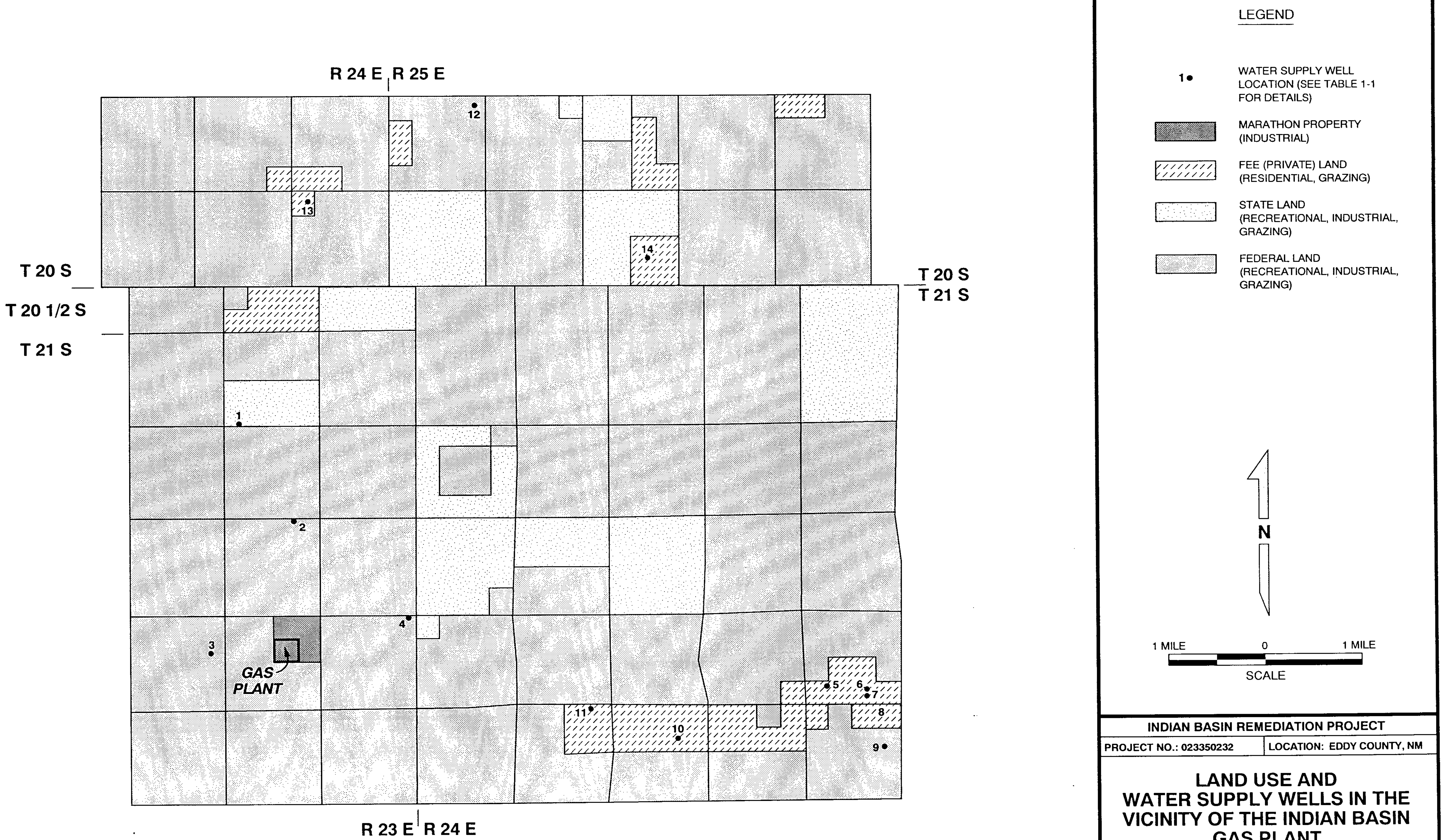
INDIAN BASIN REMEDIATION PROJECT	
PROJECT NO.: 023350232	LOC.: 18 MILES NW OF CARLSBAD, NM

SITE LOCATION/ TOPOGRAPHIC MAP

DRAWN BY: JU	DATE: 7/28/97	CHECKED BY:	DATE:
FOLDER: Marathon Oil FILE: TopoSite		APPROVED BY:	DATE:

FIGURE 1-1

FLUOR DANIEL GTI



INDIAN BASIN REMEDIATION PROJECT

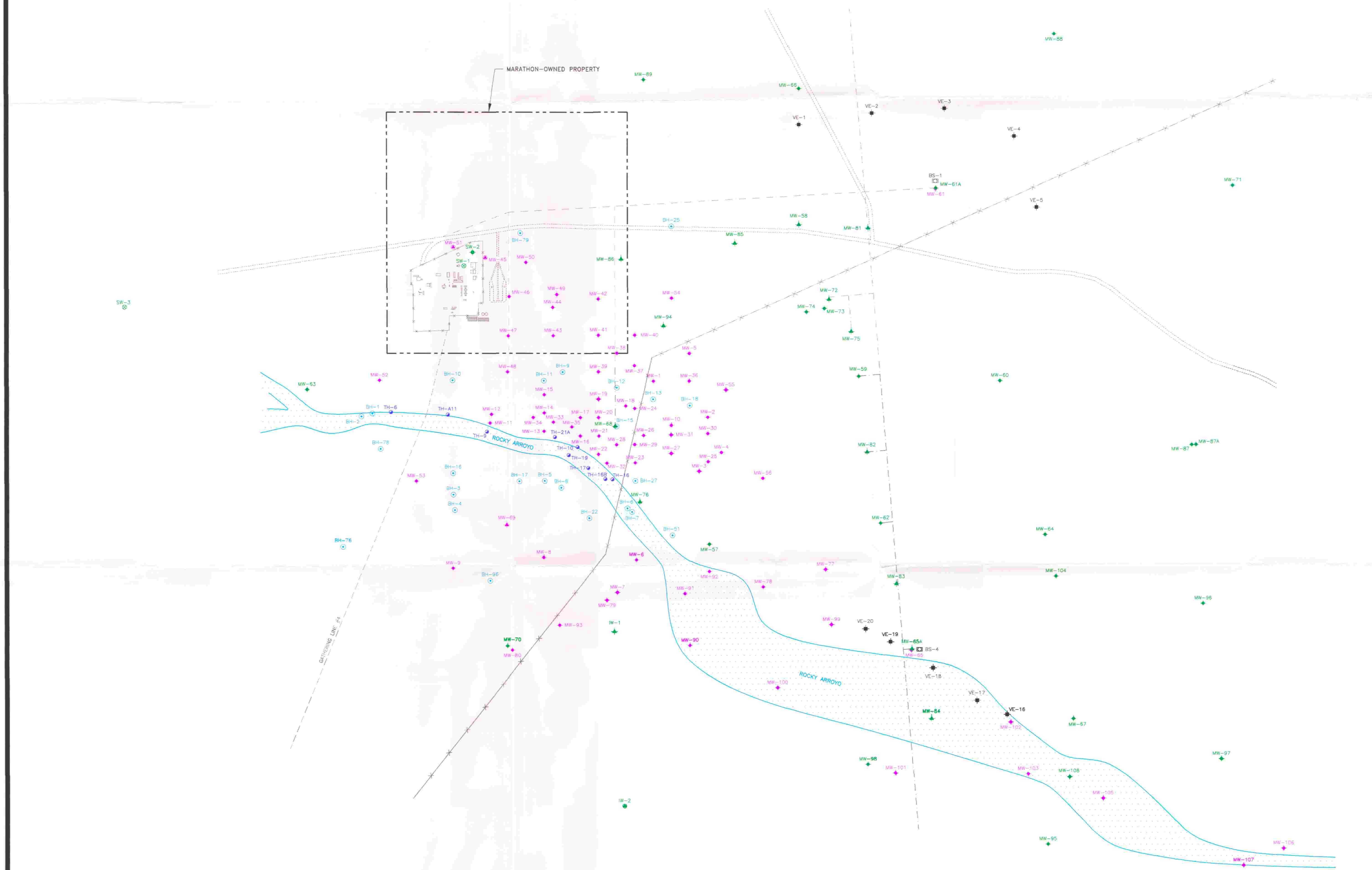
PROJECT NO.: 023350232	LOCATION: EDDY COUNTY, NM

LAND USE AND WATER SUPPLY WELLS IN THE VICINITY OF THE INDIAN BASIN GAS PLANT

DRAWN BY: JU	DATE: 8/21/97	CHECKED BY:	DATE:
FOLDER: Marathon Oil FILE: Land Use		APPROVED BY:	DATE:

FIGURE 1-2

FLUOR DANIEL GTI



NO.	DATE	BY	REVISION

N

LEGEND

- TEST HOLE
- BORE HOLE
- MONITORING WELL (SHALLOW GROUNDWATER)
- INFILTRATION WELL (SHALLOW GROUNDWATER)
- RECOVERY WELL (SHALLOW GROUNDWATER)
- MONITORING WELL (LOWER QUEEN)
- INFILTRATION WELL (LOWER QUEEN)
- INDUSTRIAL SUPPLY WELL (LOWER QUEEN)
- RECOVERY WELL (LOWER QUEEN)
- VAPOR EXTRACTION WELL
- BLOWER STATION
- FENCE
- POWER LINES

SIGNATURE	DATE
REVIEW ENGR:	
PROJECT ENGR:	
PROJECT MGR:	
CLIENT:	

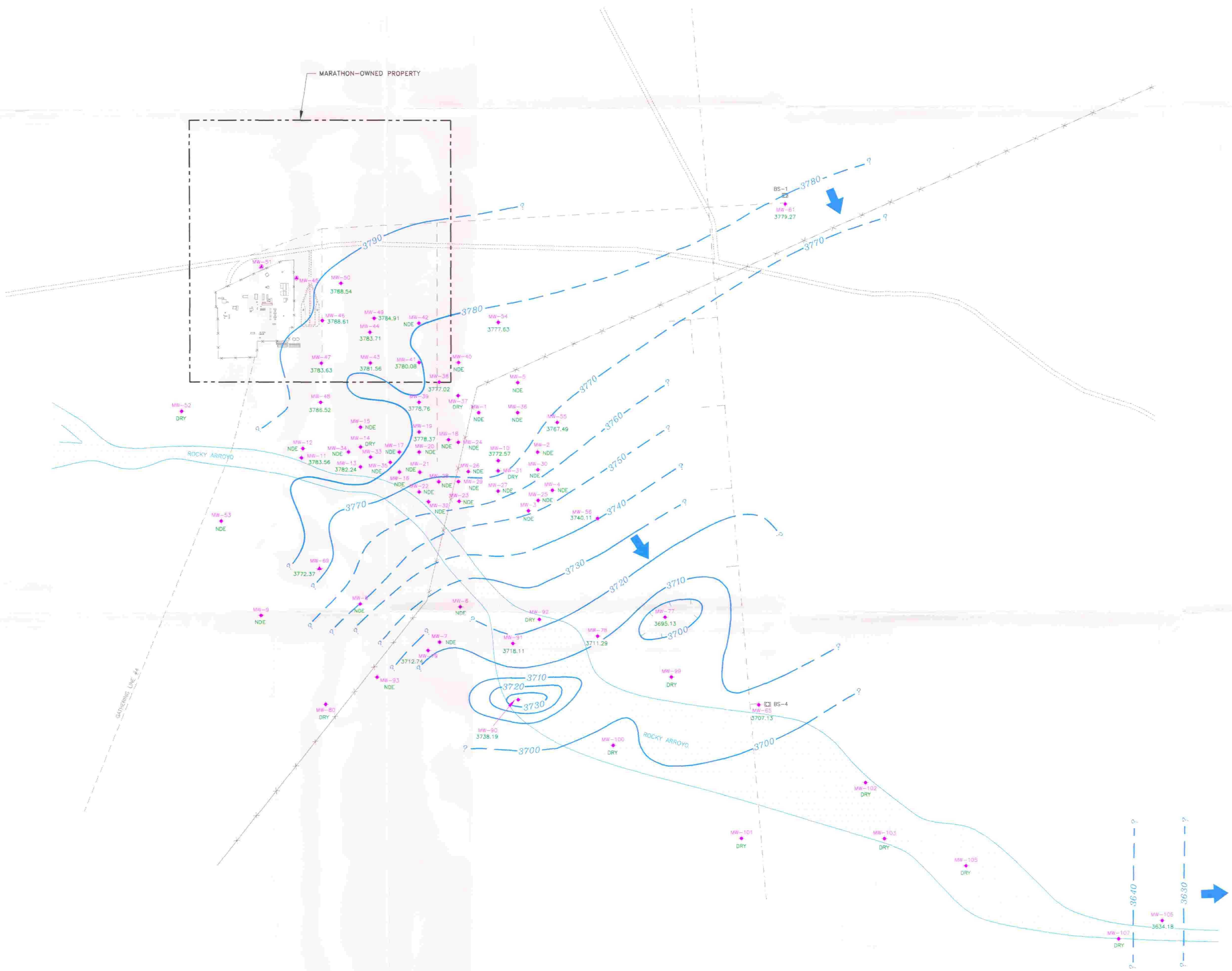
500 0 500 1000
SCALE FEET

FLUOR DANIEL GTI
2501 YALE BLVD. SE, SUITE 204
ALBUQUERQUE, NM 87106 (505) 242-3113

MARATHON OIL COMPANY
INDIAN BASIN REMEDIATION PROJECT
EDDY COUNTY, NEW MEXICO

SITE MAP

DESIGNED BY: RAD	DETAILED BY: SWL	CHECKED BY: TB
DRAWING DATE: 8/8/97	ACAD FILE: 0232SITE (1:500)	
PROJECT NO.: 02335 0232	CONTRACT:	
FIGURE: **1-3**	REVISION:	



NO.	DATE	BY	REVISION

N

LEGEND

- MONITORING WELL (SHALLOW GROUNDWATER)
- INFILTRATION WELL (SHALLOW GROUNDWATER)
- RECOVERY WELL (SHALLOW GROUNDWATER)
- BLOWER STATION
- FENCE
- POWER LINES
- GROUNDWATER FLOW DIRECTION
- GROUNDWATER ELEVATION CONTOUR
- NDE — NOT DEEP ENOUGH
- 3767.49 — GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL

NOTE:
CONTOUR INTERVAL = 10 FT.

SIGNATURE		DATE
REVIEW ENGR:		
PROJECT ENGR:		
PROJECT MGR:		
CLIENT:		

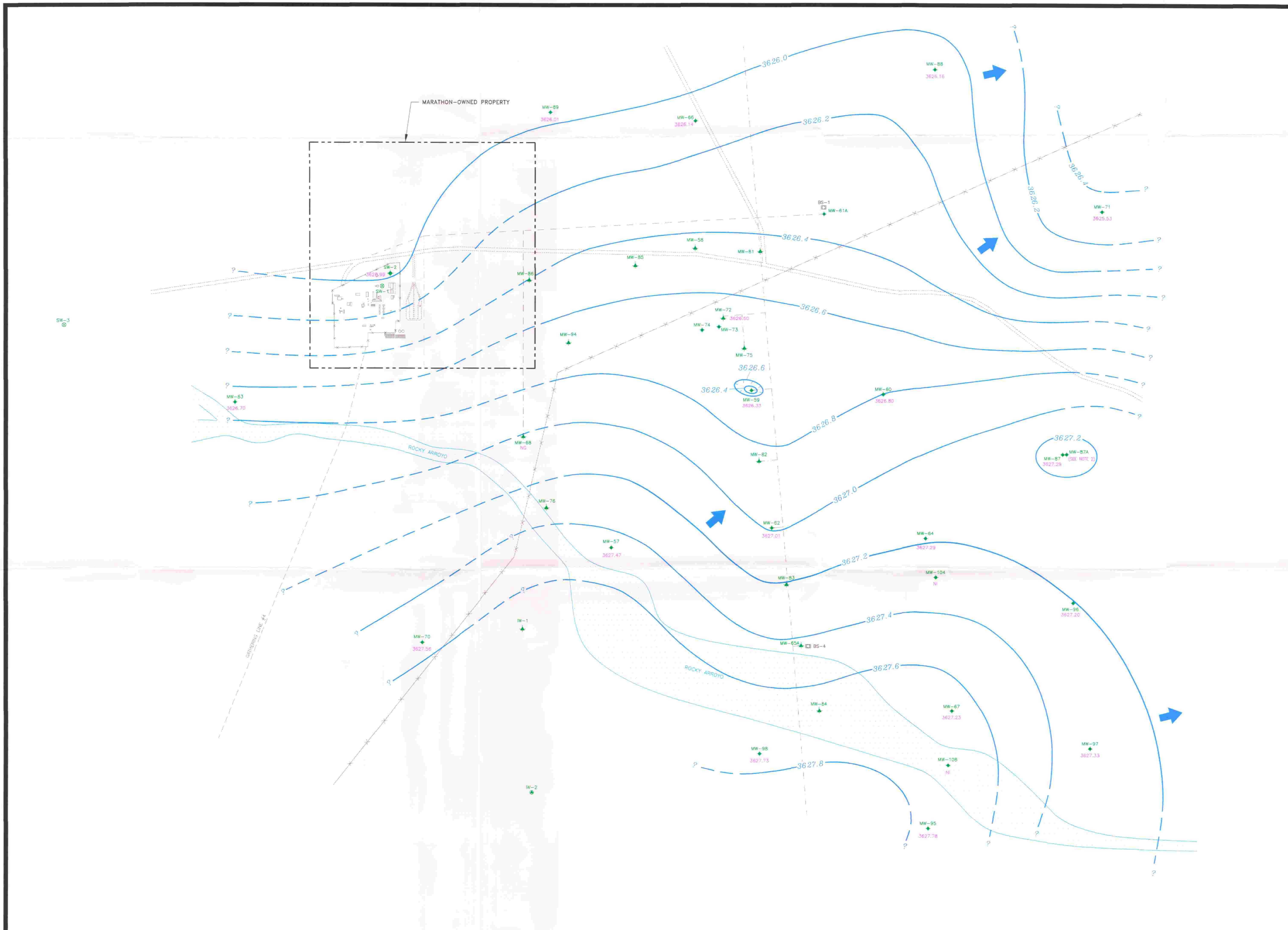
500 0 500 1000
SCALE FEET

FLUOR DANIEL GTI
2501 YALE BLVD. SE, SUITE 204
ALBUQUERQUE, NM 87106 (505) 242-3113

MARATHON OIL COMPANY
INDIAN BASIN REMEDIATION PROJECT
EDDY COUNTY, NEW MEXICO

SHALLOW ZONE GROUNDWATER ELEVATION CONTOUR MAP APRIL-MAY 1997

DESIGNED BY: RAD	DETAILED BY: SWL	CHECKED BY: TB
DRAWING DATE: 8/8/97	ACAD FILE: 0232SHAL (1:500)	
PROJECT NO.: 02335 0232	CONTRACT:	
FIGURE: 2-6	REVISION:	



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NO.	DATE	BY	REVISION

N

LEGEND

- MONITORING WELL (LOWER QUEEN)
- INFILTRATION WELL (LOWER QUEEN)
- INDUSTRIAL SUPPLY WELL (LOWER QUEEN)
- RECOVERY WELL (LOWER QUEEN)
- BLOWER STATION
- FENCE
- POWER LINES
- GROUNDWATER FLOW DIRECTION
- GROUNDWATER ELEVATION CONTOUR
- 3627.29 GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
- NI NOT INSTALLED
- NG NOT GAUGED

NOTES:

1. CONTOUR INTERVAL 0.2 FT
2. CONFINED AQUIFER WELL COMPLETION-DATA NOT AVAILABLE

SIGNATURE	DATE
REVIEW ENGR:	
PROJECT ENGR:	
PROJECT MGR:	
CLIENT:	

500 0 500 1000
SCALE FEET

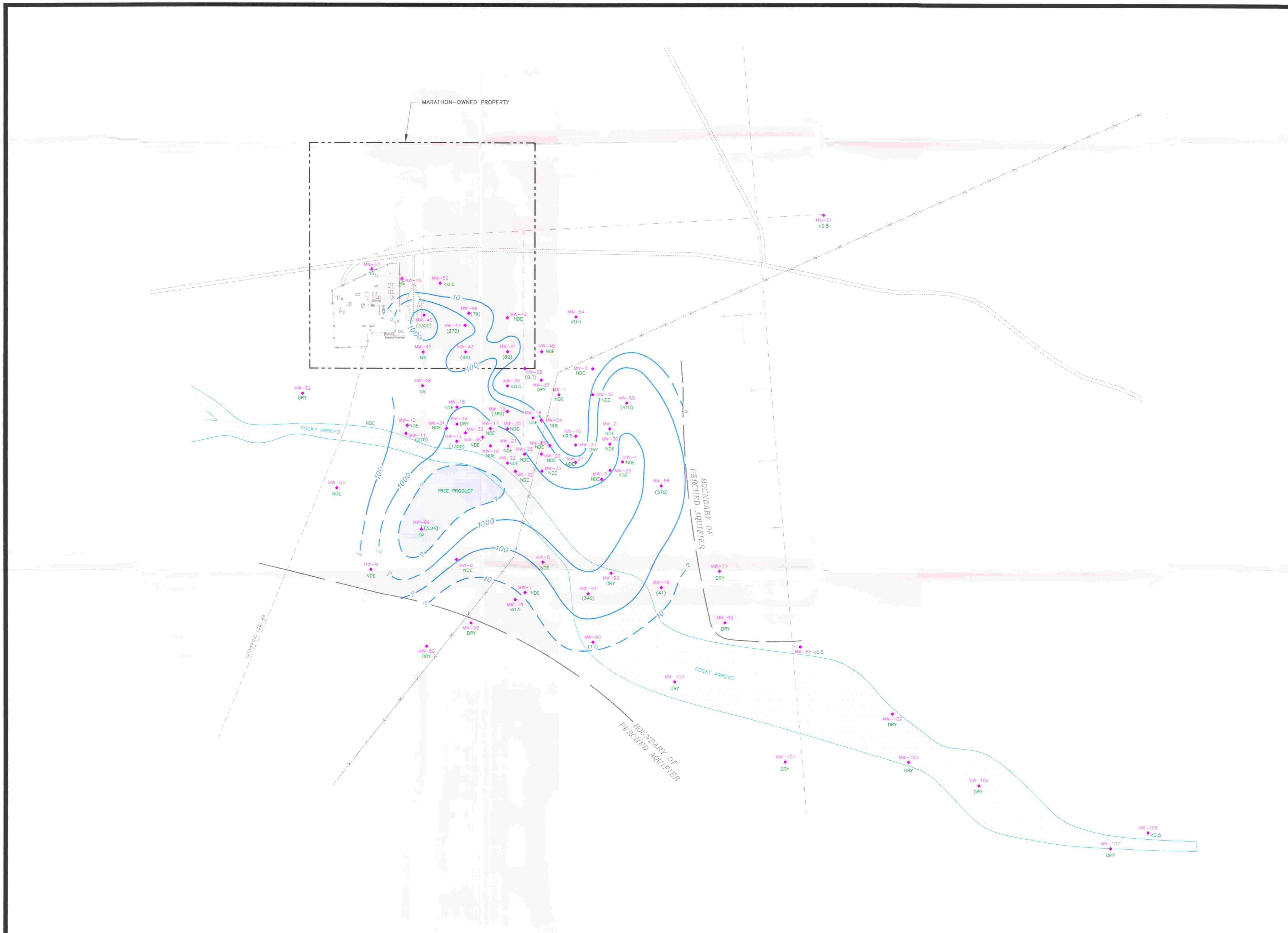
FLUOR DANIEL GTI
2501 YALE BLVD. SE, SUITE 204
ALBUQUERQUE, NM 87106 (505) 242-3113

MARATHON OIL COMPANY
INDIAN BASIN REMEDIATION PROJECT
EDDY COUNTY, NEW MEXICO

LOWER QUEEN GROUNDWATER ELEVATION CONTOUR MAP APRIL-MAY 1997

DESIGNED BY:	DETAILED BY:	CHECKED BY:
RAD	SWL	TB

DRAWING DATE: 8/8/97	ACAD FILE: 0232LQUEEN (1:500)
PROJECT NO.: 02335 0232	CONTRACT:
FIGURE: **2-7**	REVISION:



NO.	DATE	BY	REVISION

N

LEGEND

- MONITORING WELL (SHALLOW GROUNDWATER)
- INFILTRATION WELL (SHALLOW GROUNDWATER)
- RECOVERY WELL (SHALLOW GROUNDWATER)
- FENCE
- POWER LINES
- INTERPRETED CONCENTRATION ISOPLETH FOR BENZENE IN ug/L. CONTOUR INTERVALS ARE LOG(10) SCALE.
- FP FREE PRODUCT
- NS NOT SAMPLED
- NDE NOT DEEP ENOUGH
- (370) BENZENE CONCENTRATION IN ug/L

SIGNATURE	DATE
REVIEW ENGR:	
PROJECT ENGR:	
PROJECT MGR:	
CLIENT:	

500 0 500 1000
SCALE FEET

FLUOR DANIEL GTI

2501 YALE BLVD. SE, SUITE 204
ALBUQUERQUE, NM 87106 (505) 242-3113

MARATHON OIL COMPANY
INDIAN BASIN REMEDIATION PROJECT
EDDY COUNTY, NEW MEXICO

SHALLOW ZONE BENZENE/ CONDENSATE DISTRIBUTION MAP FEBRUARY 1997

DESIGNED BY: RAD	DETAILED BY: SWL	CHECKED BY: TB
DRAWING DATE: 8/8/97	ACAD FILE: 0232BENZS (1:500)	
PROJECT NO.: 02335 0232	CONTRACT:	
FIGURE: **3-1**	REVISION:	

NO.	DATE	BY	REVISION

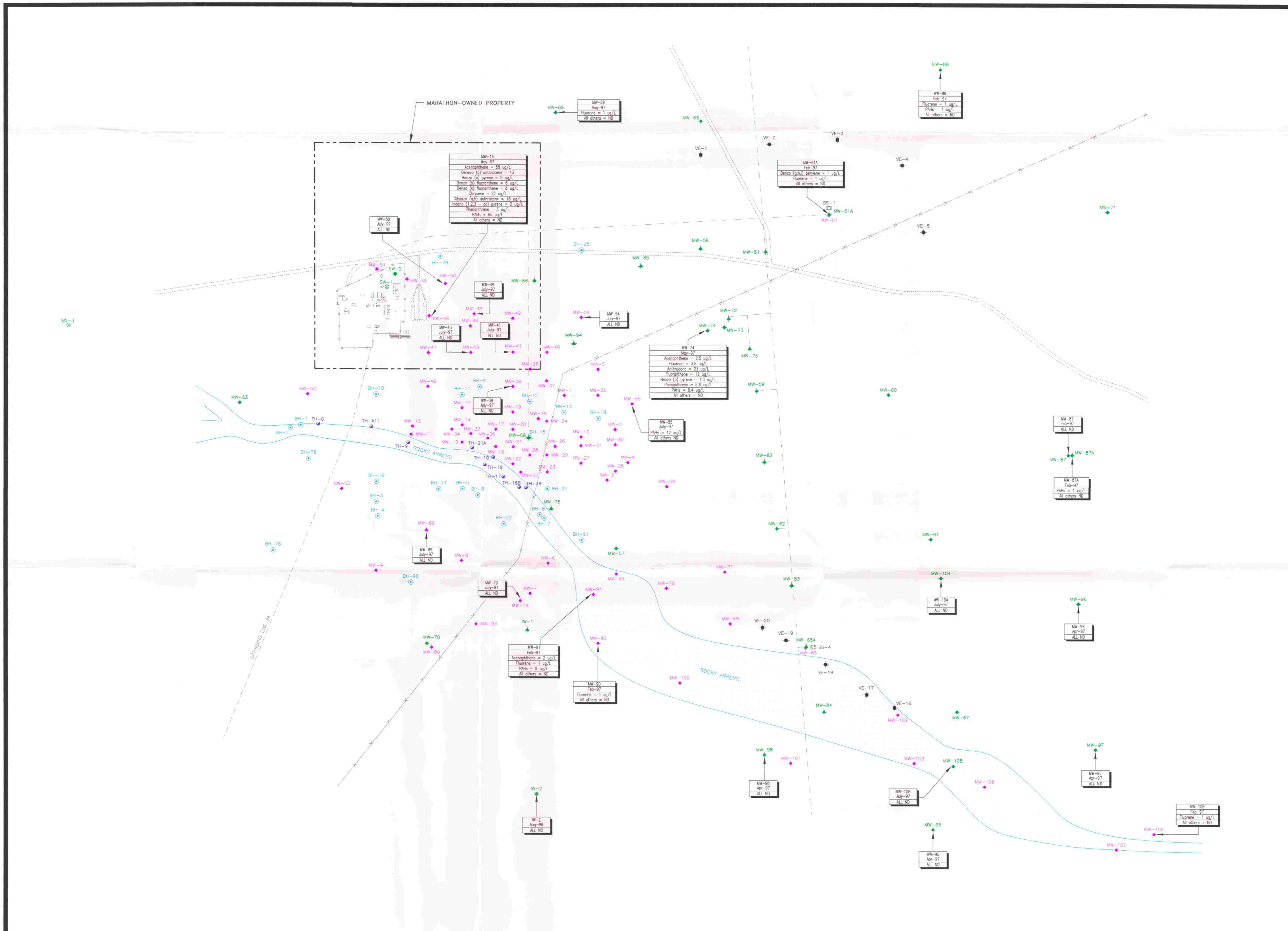
SIGNATURE	DATE
REVIEW ENGR:	
PROJECT ENGR:	
PROJECT MGR:	
CLIENT:	

FLUOR DANIEL GTI
2501 YALE BLVD. SE, SUITE 204
ALBUQUERQUE, NM 87106 (505) 242-3113

MARATHON OIL COMPANY
INDIAN BASIN REMEDIATION PROJECT
EDDY COUNTY, NEW MEXICO

LOWER QUEEN BENZENE/ CONDENSATE DISTRIBUTION MAP FEBRUARY 1997

DESIGNED BY: RAD	DETAILED BY: SWL	CHECKED BY: TB
DRAWING DATE: 8/8/97	ACAD FILE: 0232BENZL (1:500)	
PROJECT NO.: 02335 0232	CONTRACT:	
FIGURE: 3-2	REVISION:	



NO.	DATE	BY	REVISION

LEGEND

- TEST HOLE
- BORE HOLE
- MONITORING WELL (SHALLOW GROUNDWATER)
- INFILTRATION WELL (SHALLOW GROUNDWATER)
- RECOVERY WELL (SHALLOW GROUNDWATER)
- MONITORING WELL (LOWER QUEEN)
- INFILTRATION WELL (LOWER QUEEN)
- INDUSTRIAL SUPPLY WELL (LOWER QUEEN)
- RECOVERY WELL (LOWER QUEEN)
- VAPOR EXTRACTION WELL
- BLOWER STATION
- FENCE
- POWER LINES
- SEMI-VOLATILE ORGANIC COMPOUND ANALYTE RESULTS

NOTE:
1. SEE TABLE 3-2 FOR METHOD NUMBERS AND DETECTED ANALYTES.

SIGNATURE	DATE
REVIEW ENGR:	
PROJECT ENGR:	
PROJECT MGR:	
CLIENT:	

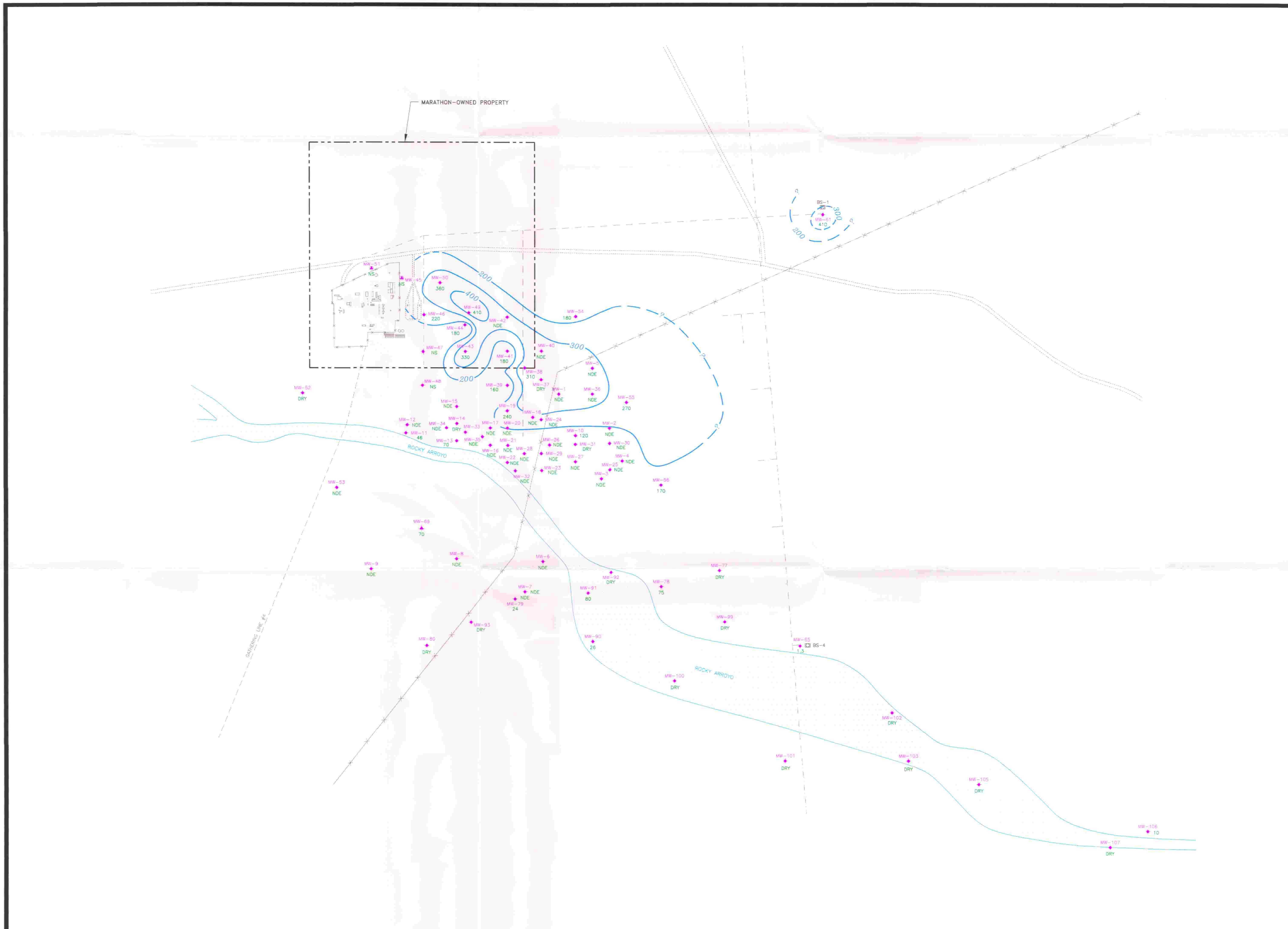
500 0 500 1000
SCALE FEET

FLUOR DANIEL GTI
2501 YALE BLVD. SE, SUITE 204
ALBUQUERQUE, NM 87106 (505) 242-3113

MARATHON OIL COMPANY
INDIAN BASIN REMEDIATION PROJECT
EDDY COUNTY, NEW MEXICO

SHALLOW ZONE LOWER QUEEN/SVOC DISTRIBUTION MAP 1996-1997

DESIGNED BY: RAD	DETAILED BY: SWL	CHECKED BY: TB
DRAWING DATE: 8/8/97	ACAD FILE: 0232SVOC (1:500)	
PROJECT NO.: 02335 0232	CONTRACT:	
FIGURE: **3-3**	REVISION:	



NO.	DATE	BY	REVISION

N

LEGEND

- MONITORING WELL (SHALLOW GROUNDWATER)
- INFILTRATION WELL (SHALLOW GROUNDWATER)
- RECOVERY WELL (SHALLOW GROUNDWATER)
- BLOWER STATION
- FENCE
- POWER LINES
- INTERPRETED CONCENTRATION ISOPLETH FOR CHLORIDE
- NDE — NOT DEEP ENOUGH
- NS — NOT SAMPLED

NOTE:
1. CONTOUR INTERVAL: 100 mg/L

SIGNATURE	DATE
REVIEW ENGR:	
PROJECT ENGR:	
PROJECT MGR:	
CLIENT:	

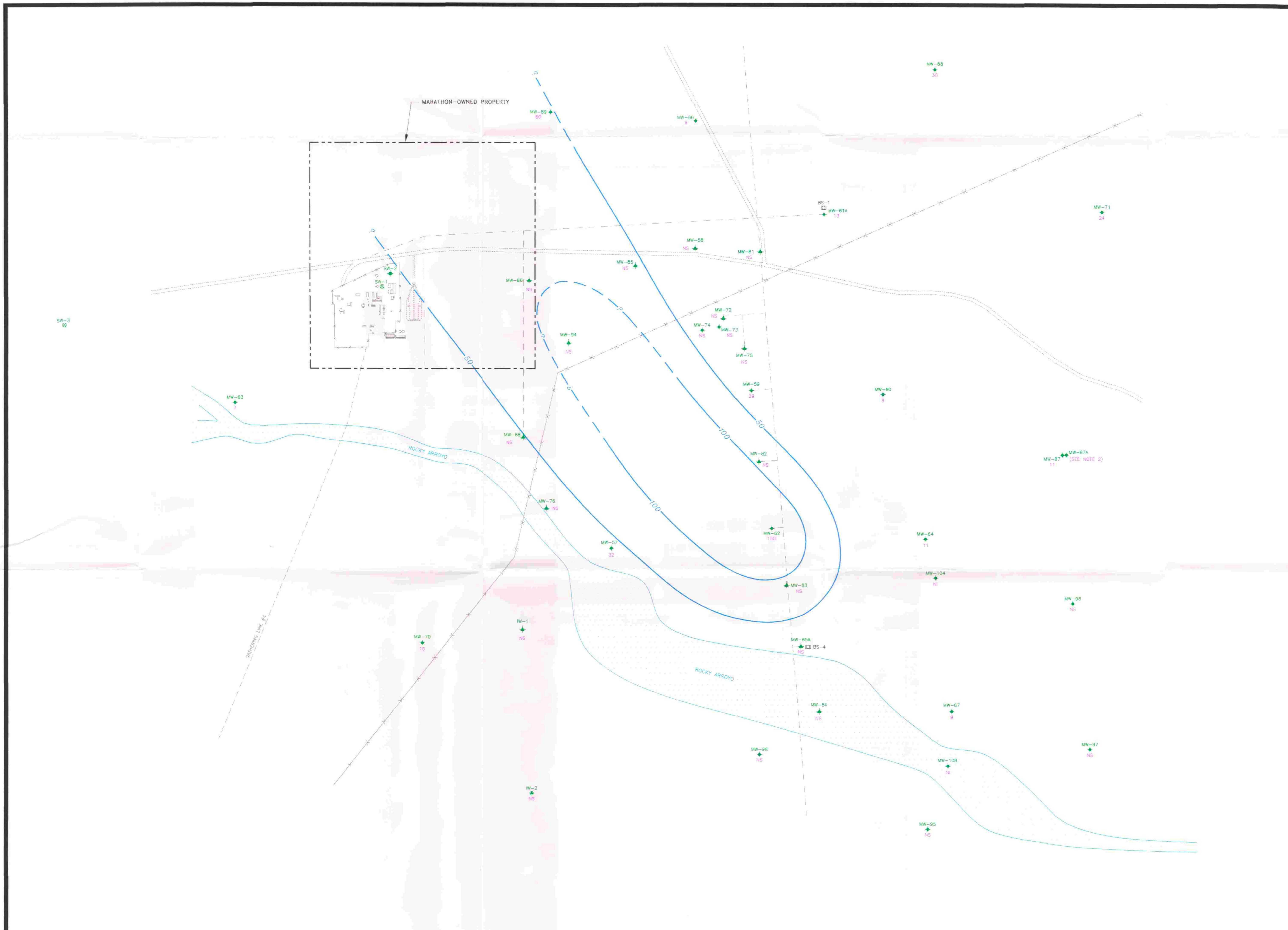
SCALE 500 0 500 1000 FEET

FLUOR DANIEL GTI
2501 YALE BLVD. SE, SUITE 204
ALBUQUERQUE, NM 87106 (505) 242-3113

MARATHON OIL COMPANY
INDIAN BASIN REMEDIATION PROJECT
EDDY COUNTY, NEW MEXICO

SHALLOW ZONE CHLORIDE DISTRIBUTION MAP FEBRUARY 1997

DESIGNED BY: RAD	DETAILED BY: SWL	CHECKED BY: TB
DRAWING DATE: 8/8/97	ACAD FILE: 0232CHLS (1:500)	
PROJECT NO.: 02335 0232	CONTRACT:	
FIGURE: **3-4**	REVISION:	



NO.	DATE	BY	REVISION

N

LEGEND

- MONITORING WELL (LOWER QUEEN)
- INFILTRATION WELL (LOWER QUEEN)
- INDUSTRIAL SUPPLY WELL (LOWER QUEEN)
- RECOVERY WELL (LOWER QUEEN)
- BLOWER STATION
- FENCE
- POWER LINES
- INTERPRETED CONCENTRATION ISOPLETH FOR CHLORIDES IN ug/L. Cl = 20 ug/L
- NI — NOT INSTALLED
- NS — NOT SAMPLED
- 11 — CHLORIDE IN mg/L

NOTES:

1. CONTOUR INTERVAL: 10 ug/L
2. CONFINED AQUIFER WELL COMPLETION–DATA NOT USABLE.

SIGNATURE	DATE
REVIEW ENGR:	
PROJECT ENGR:	
PROJECT MGR:	
CLIENT:	

500 0 500 1000
SCALE FEET

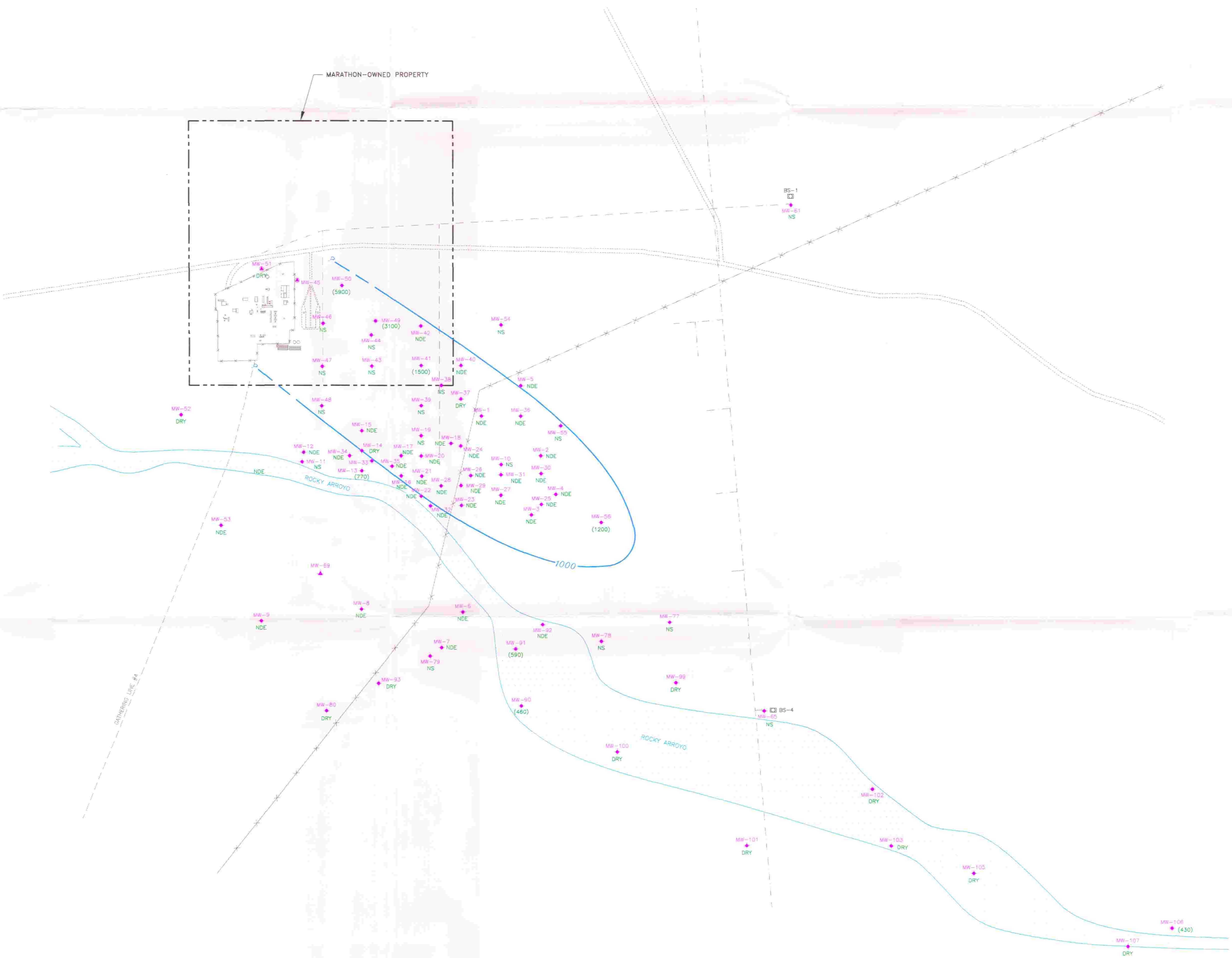
FLUOR DANIEL GTI
2501 YALE BLVD. SE, SUITE 204
ALBUQUERQUE, NM 87106 (505) 242-3113

MARATHON OIL COMPANY
INDIAN BASIN REMEDIATION PROJECT
EDDY COUNTY, NEW MEXICO

LOWER QUEEN CHLORIDE DISTRIBUTION MAP FEBRUARY 1997

DESIGNED BY: RAD	DETAILED BY: SWL	CHECKED BY: TB
DRAWING DATE: 8/8/97	ACAD FILE: 0232CHLL (1:500)	
PROJECT NO.: 02335 0232	CONTRACT:	
FIGURE: **3-5**	REVISION:	

NO.	DATE	BY	REVISION



LEGEND

- ◆ MONITORING WELL (SHALLOW GROUNDWATER)
- ▲ INFILTRATION WELL (SHALLOW GROUNDWATER)
- ▲ RECOVERY WELL (SHALLOW GROUNDWATER)
- ▫ BLOWER STATION
- —x—x— FENCE
- — — — POWER LINES
- ~ INTERPRETED CONCENTRATION ISOPLETH FOR TOTAL DISSOLVED SOLIDS.
- NDE NOT DEEP ENOUGH
- NS NOT SAMPLED
- (1200) TOTAL DISSOLVED SOLIDS IN mg/L

NOTES:

1. DATA COLLECTED 1996–1997

SIGNATURE	DATE
REVIEW ENGR:	
PROJECT ENGR:	
PROJECT MGR:	
CLIENT:	

500 0 500 1000
SCALE FEET

FLUOR DANIEL GTI

2501 YALE BLVD. SE, SUITE 204
ALBUQUERQUE, NM 87106 (505) 242-3113

MARATHON OIL COMPANY
INDIAN BASIN REMEDIATION PROJECT

EDDY COUNTY, NEW MEXICO

SHALLOW ZONE TOTAL DISSOLVED SOLIDS DISTRIBUTION MAP 1996-1997

DESIGNED BY: RAD	DETAILED BY: SWL	CHECKED BY: TB
DRAWING DATE: 8/8/97	ACAD FILE: 0232TDSS (1:500)	
PROJECT NO.: 02335 0232	CONTRACT:	
FIGURE: **3-6**	REVISION:	

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NO.	DATE	BY	REVISION

N

LEGEND

- MONITORING WELL (LOWER QUEEN)
- INFILTRATION WELL (LOWER QUEEN)
- INDUSTRIAL SUPPLY WELL (LOWER QUEEN)
- RECOVERY WELL (LOWER QUEEN)
- BLOWER STATION
- FENCE
- POWER LINES
- (810) TOTAL DISSOLVED SOLIDS IN mg/L
- NS NOT SAMPLED

NOTE:
1. DATA COLLECTED 1996-1997

SIGNATURE	DATE
REVIEW ENGR:	
PROJECT ENGR:	
PROJECT MGR:	
CLIENT:	

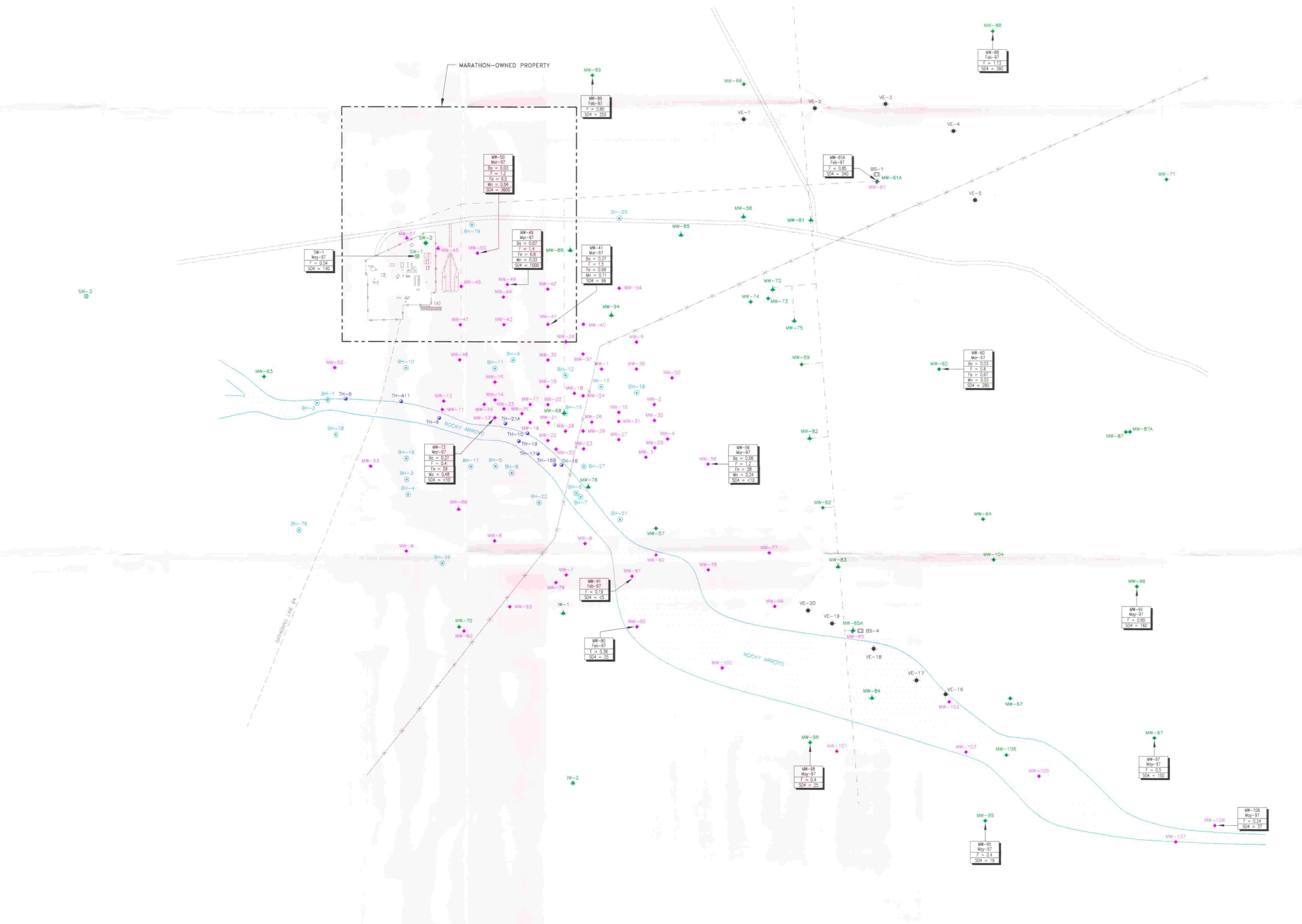
500 0 500 1000
SCALE FEET

FLUOR DANIEL GTI
2501 YALE BLVD. SE, SUITE 204
ALBUQUERQUE, NM 87106 (505) 242-3113

MARATHON OIL COMPANY
INDIAN BASIN
REMEDIATION PROJECT
EDDY COUNTY, NEW MEXICO

LOWER QUEEN
TOTAL DISSOLVED SOLIDS
DISTRIBUTION MAP
1996-1997

DESIGNED BY: RAD	DETAILED BY: SWL	CHECKED BY: TG
DRAWING DATE: 8/8/97	ACAD FILE: 0232TDSL (1:500)	
PROJECT NO.: 02335 0232	CONTRACT:	
FIGURE: **3-7**	REVISION:	



NO.	DATE	BY	REVISION

N

LEGEND

- TEST HOLE
- BORE HOLE
- MONITORING WELL (SHALLOW GROUNDWATER)
- INFILTRATION WELL (SHALLOW GROUNDWATER)
- RECOVERY WELL (SHALLOW GROUNDWATER)
- MONITORING WELL (LOWER QUEEN)
- INFILTRATION WELL (LOWER QUEEN)
- INDUSTRIAL SUPPLY WELL (LOWER QUEEN)
- RECOVERY WELL (LOWER QUEEN)
- VAPOR EXTRACTION WELL
- BLOWER STATION
- FENCE
- POWER LINES

CONCENTRATIONS ARE IN mg/L:
Ba = BARIUM
F = FLUORIDE
Fe = IRON
Mn = MANGANESE
SO4 = SULFATE

SIGNATURE	DATE
REVIEW ENGR:	
PROJECT ENGR:	
PROJECT MGR:	
CLIENT:	

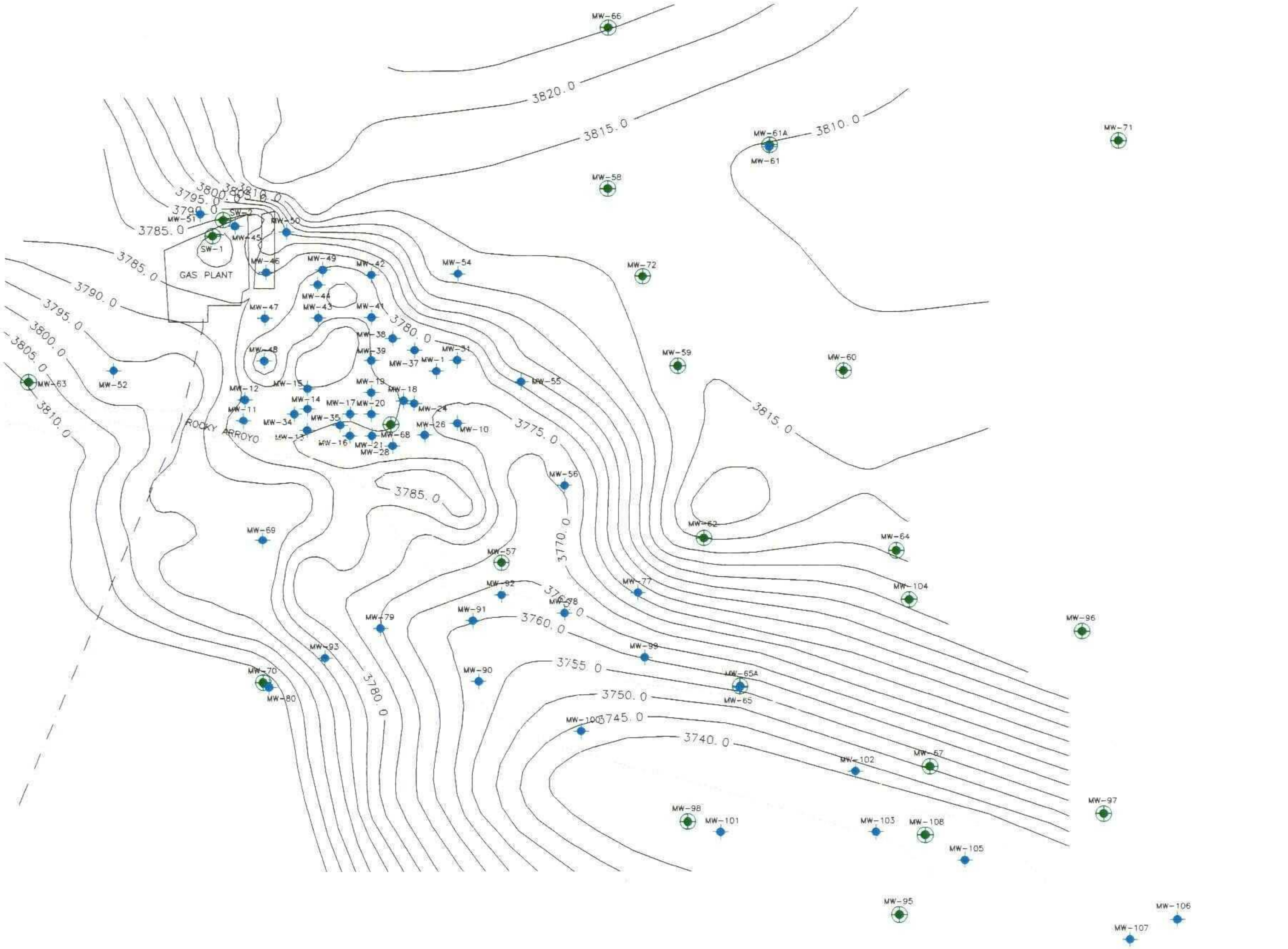
500 0 500 1000
SCALE FEET

FLUOR DANIEL GTI
2501 YALE BLVD. SE, SUITE 204
ALBUQUERQUE, NM 87106 (505) 242-3113

MARATHON OIL COMPANY
INDIAN BASIN REMEDIATION PROJECT
EDDY COUNTY, NEW MEXICO

SHALLOW ZONE LOWER QUEEN/INORGANIC DISTRIBUTION MAP 1996-1997

DESIGNED BY: RAD	DETAILED BY: SWL	CHECKED BY: TB
DRAWING DATE: 8/8/97	ACAD FILE: 0232INOG (1:500)	
PROJECT NO.: 02335 0232	CONTRACT:	
FIGURE: 3-8	REVISION:	



LEGEND

- UPPER AQUIFER MONITOR WELL
- LOWER AQUIFER MONITOR WELL
- CONDENSATE LINE
- —3800.0— DOLOMITE CONTOUR (CONTOUR INTERVAL = 5 FT)

N

1,000 FT 0 1,000 FT

SCALE

INDIAN BASIN REMEDIATION PROJECT

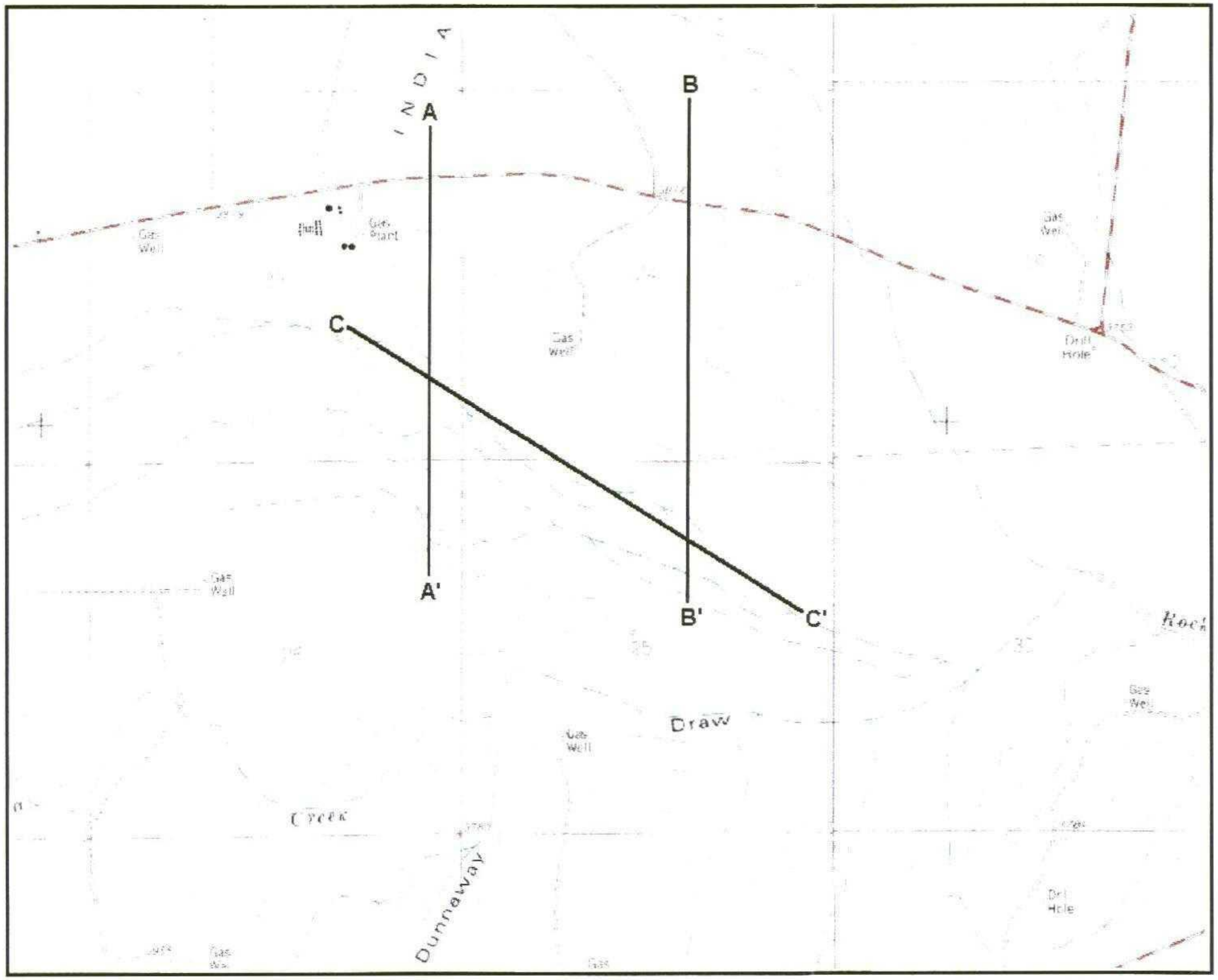
PROJECT NO.: 023350232	LOC.: 18 MILES NW OF CARLSBAD, NM

STRUCTURE CONTOUR MAP OF TOP OF BEDROCK

DRAWN BY: CW	DATE: 7/23/97	CHECKED BY:	DATE:
FOLDER: Marathon Oil FILE: Bedrock 0174-DOL		APPROVED BY:	DATE:

FIGURE 2-1

FLUOR DANIEL GTI



SOURCE: USGS MARTHA CREEK QUADRANGLE, NEW MEXICO – EDDY CO. 7.5 MINUTE SERIES, 1981

LEGEND

LINES OF CROSS SECTION

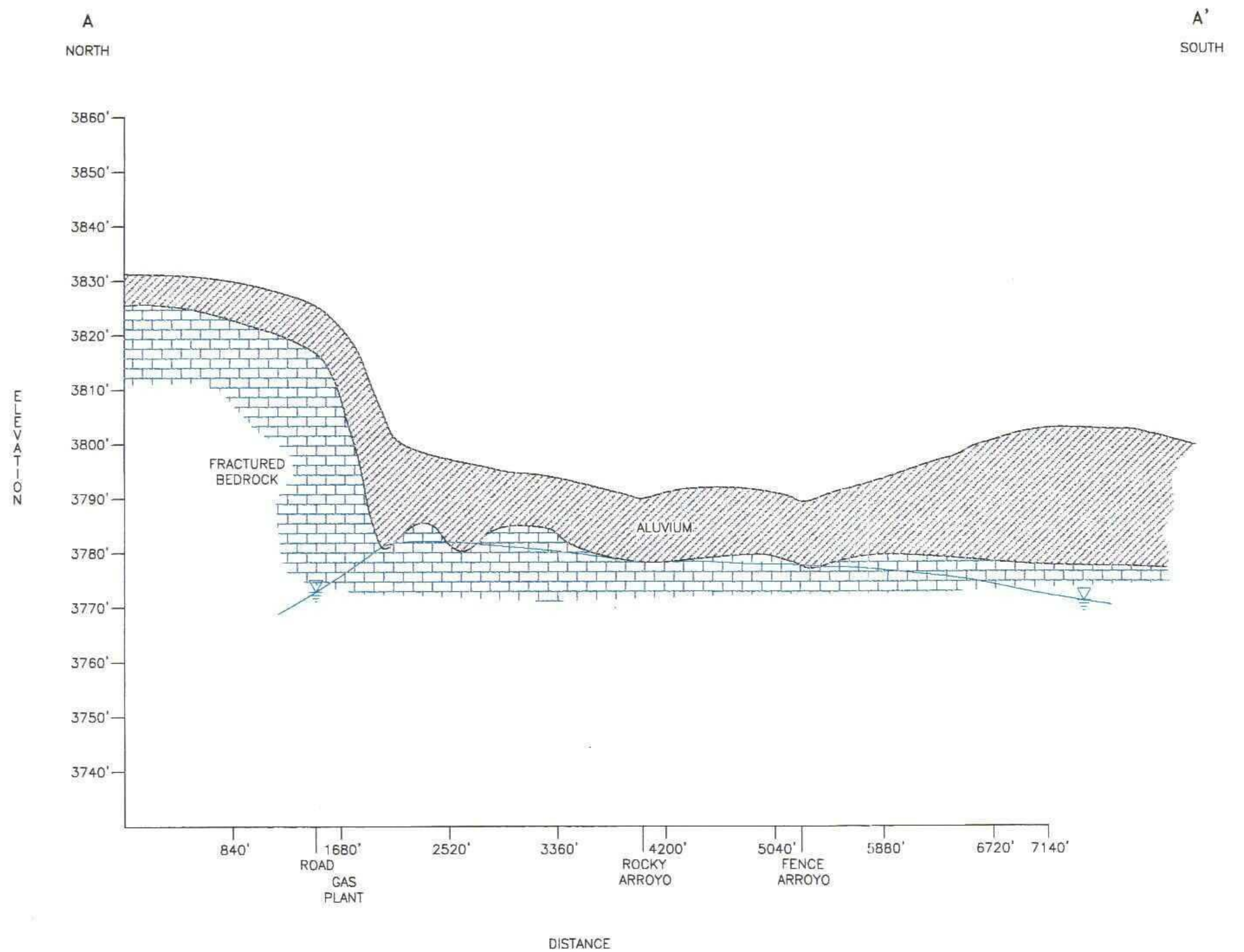
N

2,000 FT 0 2,000 FT

SCALE

INDIAN BASIN REMEDIATION PROJECT			
PROJECT NO.: 023350232		LOCATION: EDDY COUNTY, NM	
CROSS SECTION LOCATION MAP			
DRAWN BY: JU	DATE: 7/9/97	CHECKED BY:	DATE:
FOLDER: Marathon Oil FILE: X-sect		APPROVED BY:	DATE:
FIGURE 2-2		FLUOR DANIEL GTI	

0174-SLB

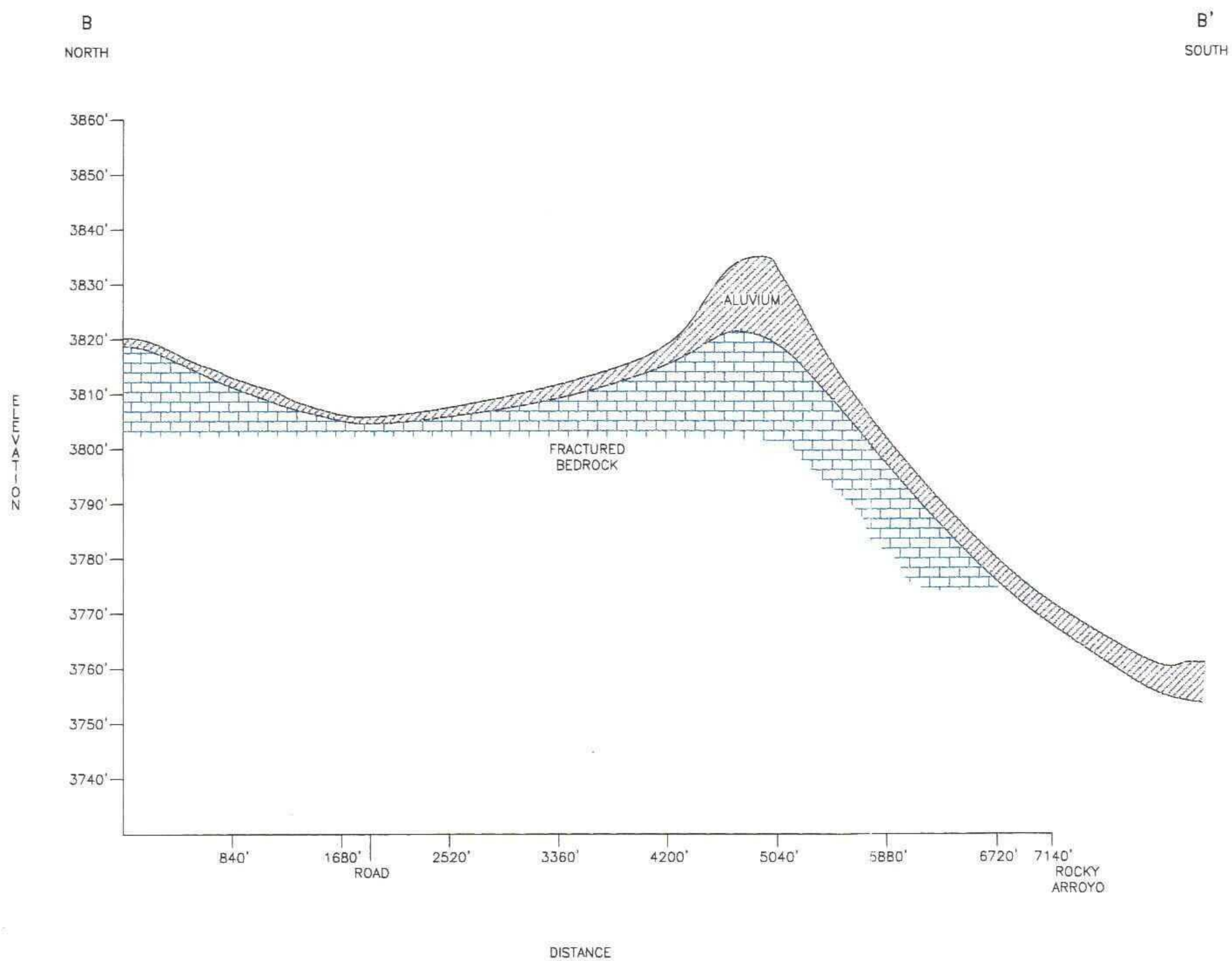


INDIAN BASIN REMEDIATION PROJECT	
PROJECT NO.: 023350232	LOCATION: EDDY COUNTY, NM

CROSS SECTION A-A'

DRAWN BY: JU	DATE: 7/9/97	CHECKED BY:	DATE:
FOLDER: Marathon Oil FILE: X-sect A-A'		APPROVED BY:	DATE:
FIGURE 2-3		FLUOR DANIEL GTI	

0174-CXA

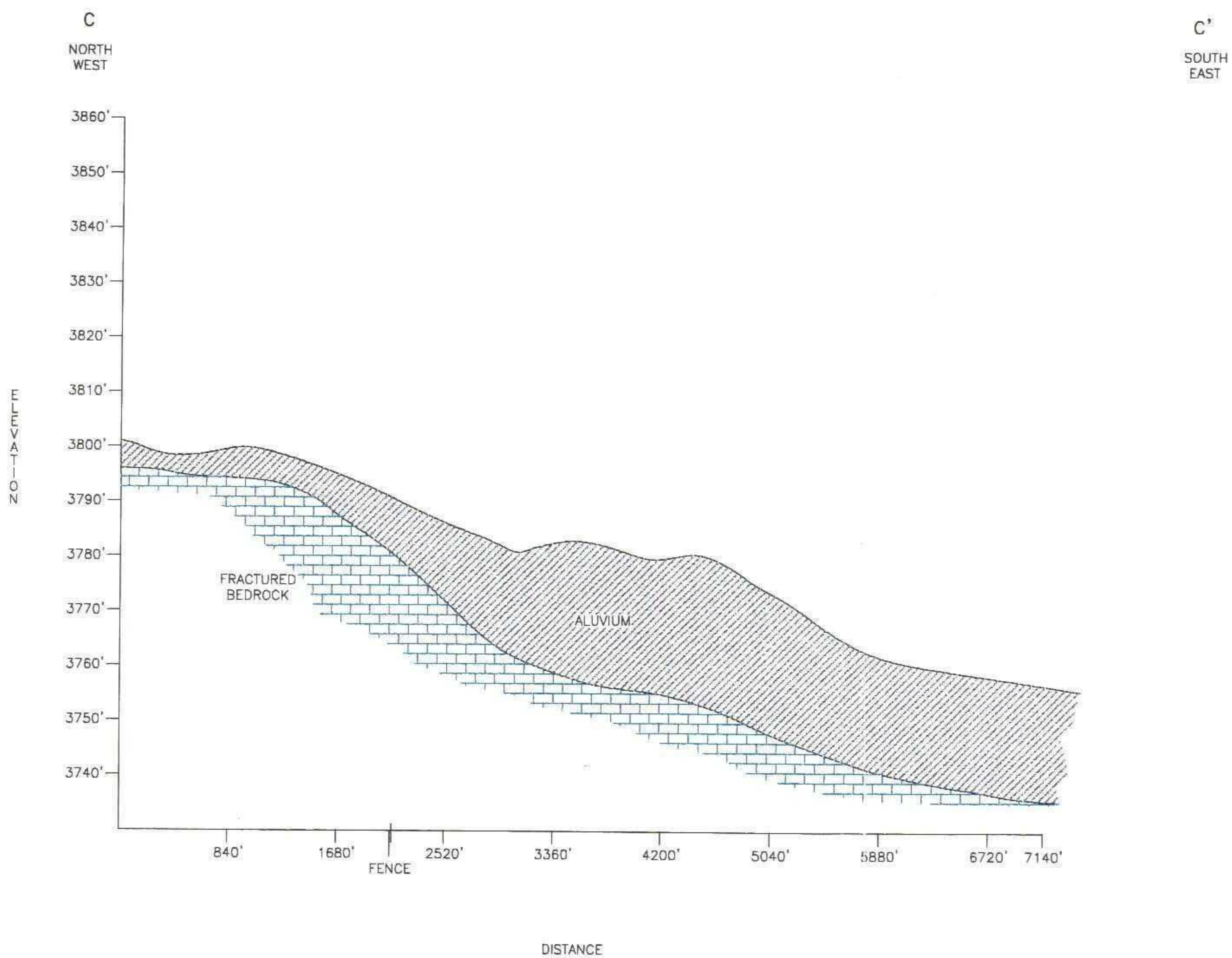


0174-CXB

INDIAN BASIN REMEDIATION PROJECT	
PROJECT NO.: 023350232	LOCATION: EDDY COUNTY, NM

CROSS SECTION B-B'

DRAWN BY: JU	DATE: 7/9/97	CHECKED BY:	DATE:
FOLDER: Marathon Oil FILE: X-sect B-B'		APPROVED BY:	DATE:
FIGURE 2-4		FLUOR DANIEL GTI	



INDIAN BASIN REMEDIATION PROJECT

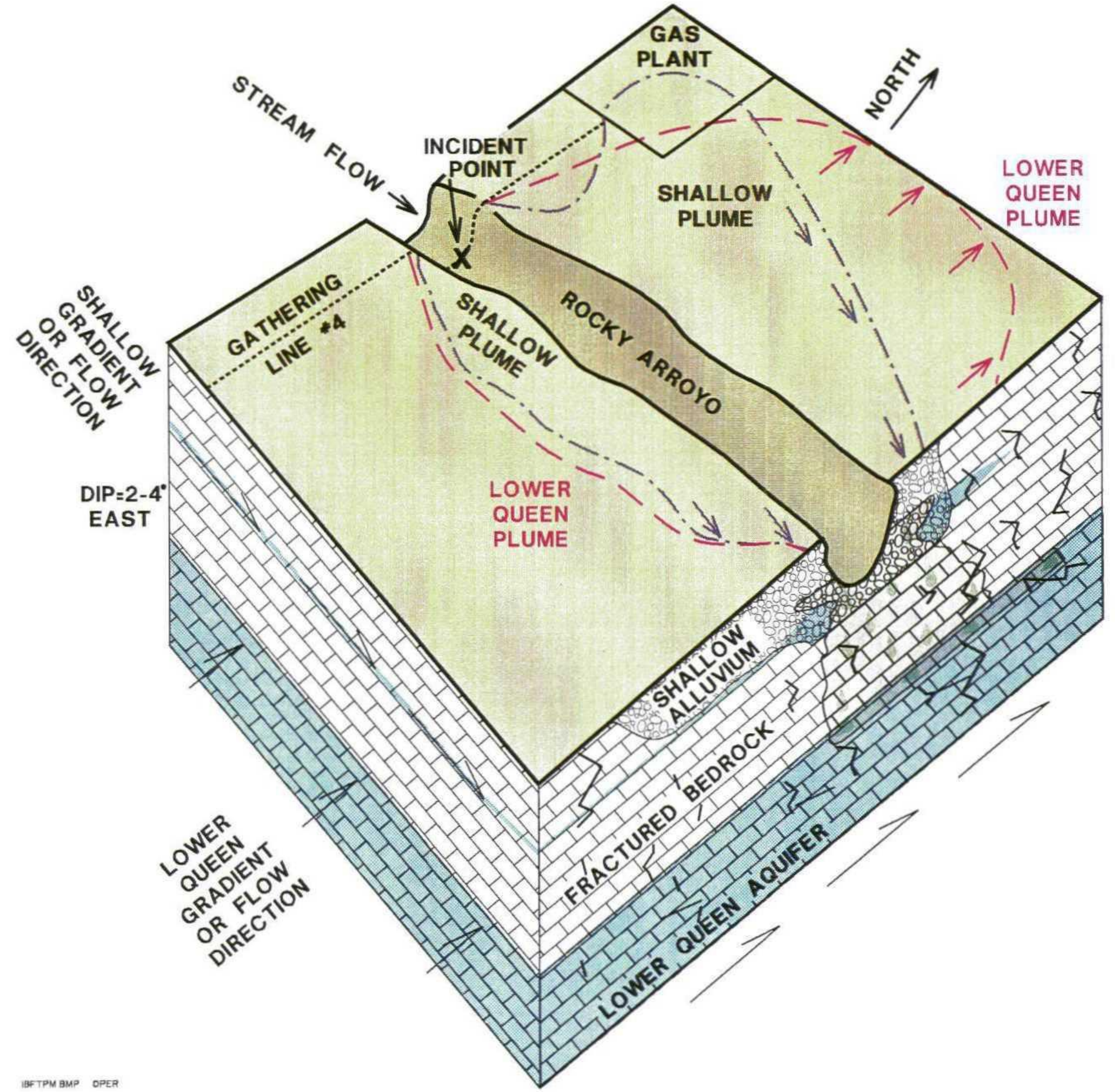
PROJECT NO.: 023350232	LOCATION: EDDY COUNTY, NM

CROSS SECTION C-C'

DRAWN BY: JU	DATE: 7/9/97	CHECKED BY:	DATE:
FOLDER: Marathon Oil FILE: X-sect C-C'		APPROVED BY:	DATE:
FIGURE 2-5		FLUOR DANIEL GTI	

0174-CXC

CONTAMINANT TRANSPORT PATHWAY

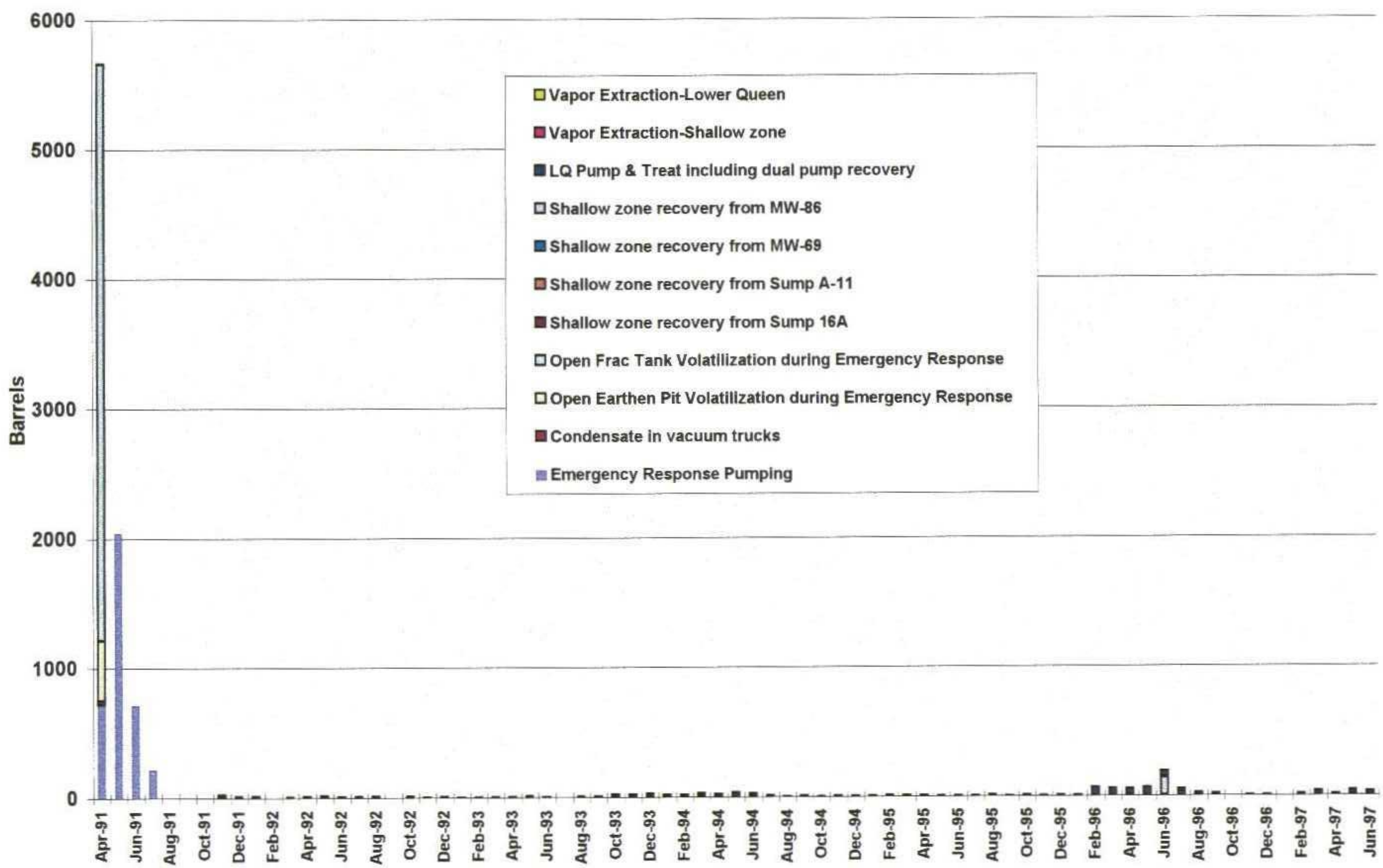


IBFTPM BMP DPER

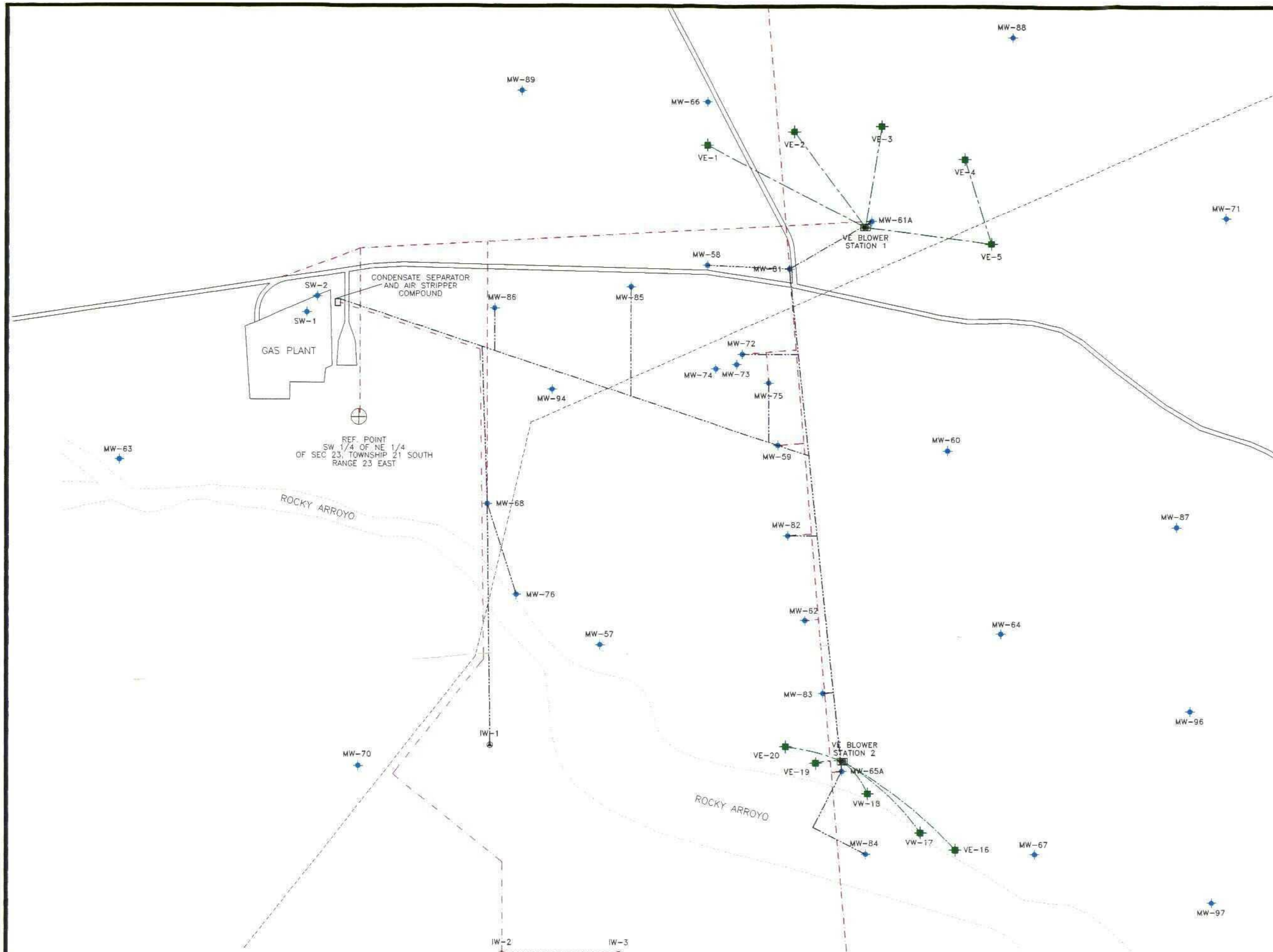
/zpswrk/ibftpm27155052.dgn

INDIAN BASIN REMEDIATION PROJECT			
PROJECT NO.: 023350232		LOCATION: EDDY COUNTY, NM	
CONCEPTUAL MODEL OF CONTAMINANT TRANSPORT PATHWAYS			
DRAWN BY: JU	DATE: 7/9/97	CHECKED BY:	DATE:
FOLDER: Marathon Oil FILE: Concept		APPROVED BY:	DATE:
FIGURE 3-9		FLUOR DANIEL GTI	

Figure 4-1. Indian Basin Remediation Project Hydrocarbon Recovery



FLUOR DANIEL GTI



NO.	DATE	BY	REVISION

EXPLANATION

- LOWER QUEEN MONITOR WELL
- VAPOR EXTRACTION WELL
- VAPOR EXTRACTION BLOWER STATION
- INJECTION WELL
- FENCING
- OVERHEAD ELECTRIC LINE
- 4" OR 6" SDR-17 POLYETHYLENE ABOVE GRADE VAPOR EXTRACTION PIPING
- GROUNDWATER CONDENSATE AND GATHERING LINE
- TREATED GROUNDWATER DISCHARGE LINE
- PROPOSED TREATED GROUNDWATER DISCHARGE LINE

N

0 400 800
APPROX. SCALE IN FEET

SIGNATURE	DATE
REVIEW ENGR:	
PROJECT ENGR:	
PROJECT MGR:	
CLIENT:	

FLUOR DANIEL GTI
1100 EAST UNIVERSITY DRIVE SUITE 116
TEMPE, ARIZONA (602) 966-0808

MARATHON OIL COMPANY
INDIAN BASIN REMEDIATION PROJECT
EDDY COUNTY, NEW MEXICO

REMEDIATION SYSTEM LAYOUT

DESIGNED BY:	DETAILED BY:	CHECKED BY:
C. WRIGHT	DEN HOLMES	

DRAWING DATE: 07-14-97	ACAD FILE: 0232-Y2
PROJECT NO.: 023350232	CONTRACT:
DRAWING: 4-2	REVISION:

Table 1-1
Water Supply Wells in the Vicinity of the Indian Basin Remediation Project
Carlsbad, New Mexico

Figure 3 Designation	SEO Location Description	Well Owner	Well Depth (ft)	Use	Formation/Aquifer	Depth-to-water (ft)	Date of Mermnt
1	21.23.2.33434	Forrest Lee	NS	Stock	possible Queen	146.8	10/6/87
2	21.23.14.21221	Forrest Lee	25	Stock	alluvial of Roswell Basin*	14.6	1/12/54
3	21.23.22.241444	Dean Lee	256	Stock	lower Queen	213	11/3/92
4	21.23.24.22221	David Bradley	>31	Stock	alluvial of Carlsbad Basin	13	11/3/92
5	21.24.23.332232	Walter Biebelle	145	Stock/Domestic	alluvial of Carlsbad Basin/Seven Rivers	NS	NS
6	21.24.23.43233	William Shafer	300	Domestic	alluvial of Carlsbad Basin/Yates	50	8/17/65
7	21.24.23.43411	Earnest Shafer, Sr.	60	Domestic	alluvial of Carlsbad Basin	54	10/6/87
8	21.24.26.22230	Gerold Elmore	66	Domestic	alluvial of Carlsbad Basin	38	8/17/65
9	21.24.26.24323	William Shafer	69	NS	alluvial of Carlsbad Basin?	40	11/19/92
10	21.24.28.23232	William Shafer	138	Stock	alluvial of Carlsbad Bason/upper Queen	83	11/4/92
11	21.24.29.221112	Shafer (Biebelle)	70	Commercial OWD/stock/ domestic	alluvial of Carlsbad Basin	37	11/3/92
12	20.24.25.22233	Foster	275	Stock	Queen?**	265	2/11/94
13	20.24.35.11231	Foster	NS	Stock	Unknown	167	1/17/63
14	20.25.32.41	Howell	NS	NS	Unknown	NS	NS

Notes:

Data based on well logs on file at NMSEO, Roswell office (information provided by Marathon)
NS = Not specified
SEO = State Engineer's Office
* = SEO files indicate completion in Grayburg
** = SEO files indicated completion in Artesia Group, but SEO field representative indicates that this formation designation is used when the aquifer is unknown.

dg/MOC-02/tab1.wpd

FLUOR DANIEL GTI

TABLE 2-1: WELL COMPLETION DETAILS (Completed)

LOWER QUEEN WELLS									
Well	Well Type	TOC Elev. (ft AMSL)	Top of 1.25-inch piezometer piping Elev. (ft AMSL)	Total Depth (ft TOC)	Well Casing ID (in)	Surface Casing Depth (ft TOC)	Well Screen Slot (in)	Well Screen Interval Top (ft TOC)	Well Screen Interval Bottom (ft TOC)
MW-57	monitoring	3787.70		179.30	4	47.00	0.02	157.10	176.54
MW-58	recovery	3824.07		234.10	7.875	**	OH	NA	NA
MW-59	monitoring	3819.59		211.29	4	30.18	0.02	182.52	208.30
MW-60	monitoring	3815.28		226.08	4	29.62	0.02	172.86	222.34
MW-61A	monitoring	3819.90		214.00	4	69.95	0.02	173.50	213.30
MW-62	monitoring	3819.90		224.69	4	30.00	0.02	177.00	222.50
MW-63	monitoring	3826.16		221.68	4	40.00	0.02	175.39	219.79
MW-64	monitoring	3798.57		204.36	4	40.00	0.02	156.68	201.13
MW-65A	recovery	3763.26		168.56	4	70.00	0.02	115.34	166.00
MW-66	monitoring	3828.98		237.86	4	40.00	0.02	184.81	234.52
MW-67	monitoring	3765.87		168.54	4	40.00	0.02	114.78	165.11
MW-68	recovery	3797.83		200.00	4	120.00	0.02	148.38	199.69
MW-70	monitoring	3822.57		228.14	4	112.00	0.02	175.32	224.37
MW-71	monitoring	3778.05		235.41	4	69.20	0.02	167.07	234.75
MW-72	dual recovery	3819.32		236.55	8	39.50	0.02	177.32	235.38
MW-73	monitoring	3820.09		222.5	7.875	10.00	OH	NA	NA
MW-74	monitoring	3820.82		222.5	7.875	10.00	OH	NA	NA
MW-75	dual recovery	3816.12		222.5	7.875	12.25	OH	NA	NA
MW-76	recovery	3796.01		222.5	7.875	9.00	OH	NA	NA
MW-81	dual recovery	3817.03	3817.03	228.5	7.875	73.50	OH	NA	NA
MW-82	recovery	3825.07	3825.07	252.5	7.875	68.75	OH	NA	NA
MW-83	recovery	3794.12	3794.12	205.8	7.875	41.50	OH	NA	NA
MW-84	recovery	-	3759.60	172.5	7.875	67.50	OH	NA	NA
MW-85	dual recovery	-	3824.93	237.5	7.875	77.50	OH	NA	NA
MW-86	recovery	3823.99		227.5	7.875	77.50	OH	NA	NA
MW-87	monitoring	3740.50		173.1	4	NA	0.04	148.10	168.10
MW-87A	monitoring	3739.53		132.0	7.875	12.00	OH	NA	NA
MW-88	monitoring	3789.70		177.65	7.875	62.00	0.04	142.00	176.75
MW-89	monitoring	3827.68		232.53	4	NA	0.04	189.75	230.00
MW-94	recovery	-	3821.48	230.1	7.875	67.50	OH	NA	NA
MW-95	monitoring	3746.26		147.5	4	33.50	0.04	111.00	141.00
MW-96	monitoring	3739.80		137.5	4	12.50	0.04	97.50	127.50
MW-97	monitoring	3750.16		150.5	4	12.50	0.04	107.50	137.50
MW-98	monitoring	3770.15		142.5	4	12.50	0.04	128.00	158.00
MW-104	monitoring*	3793.64	NA	222.5	8	37.50	OH	NA	NA
MW-108	monitoring*	3747.13	NA	172.5	8	42.00	OH	NA	NA
IW-1	recovery	3808.55		232.5	11	75.50	OH	NA	NA
IW-2	infiltration	3835.86		302.5	11	161.50	OH	NA	NA
SW-1	recovery	3808.19	NA	255.0	10		OH	NA	NA
SW-2	monitoring	3808.79	NA	292.0	10		OH	163.00	292.00
SW-3	recovery	3842.29		232.7	7.875	84.00	OH	NA	NA
VE-1	vapor extraction	***	NA	214.0	7.875	80.00	OH	NA	NA
VE-2	vapor extraction	***	NA	210.0	7.875	75.00	OH	NA	NA
VE-3	vapor extraction	***	NA	184.0	7.875	72.50	OH	NA	NA
VE-4	vapor extraction	***	NA	183.0	7.875	57.50	OH	NA	NA
VE-5	vapor extraction	***	NA	168.0	7.875	57.50	OH	NA	NA
VE-16	vapor extraction	3750.96	NA	152.5	7.875	45.00	OH	NA	NA
VE-17	vapor extraction	3756.73	NA	132.5	7.875	42.50	OH	NA	NA
VE-18	vapor extraction	3756.82	NA	165.5	7.875	40.00	OH	NA	NA
VE-19	vapor extraction	3761.18	NA	152.5	7.875	40.00	OH	NA	NA
VE-20	vapor extraction	3768.41	NA	162.5	7.875	40.00	OH	NA	NA

* may change to recovery

*** these wells have not been surveyed.

AMSL = *above mean sea level*

TOC = top of casing datum

OH = open hole

NA = not applicable

TABLE 2-1: WELL COMPLETION DETAILS

SHALLOW ZONE WELLS							
Well ID	Well Type	TOC Elev. (ft AMSL)	Total Depth (ft TOC)	Well Casing ID (in)	Well Screen Slot (in)	Well Screen Interval Top (ft TOC)	Well Screen Interval Bottom (ft TOC)
MW-1	monitoring	3792.50	16.10	2	0.01	10.06	14.66
MW-2	monitoring	3788.72	15.52	2	0.01	5.61	15.24
MW-3	monitoring	3787.50	16.90	2	0.01	6.87	16.61
MW-4	monitoring	3785.880	18.68	2	0.01	8.65	18.39
MW-5	monitoring	3801.69	12.77	2	0.01	7.86	12.77
MW-6	monitoring	3785.17	13.66	2	0.01	8.69	13.66
MW-7	monitoring	3784.46	17.01	2	0.01	7.23	17.01
MW-8	monitoring	3795.04	16.97	2	0.01	7.19	16.97
MW-9	monitoring	3807.85	13.65	2	0.01	8.74	13.31
MW-10	monitoring	3790.78	19.08	4	0.02	8.97	18.43
MW-11	monitoring	3806.96	24.85	4	0.02	14.68	24.16
MW-12	monitoring	3809.86	25.21	2	0.01	15.13	24.91
MW-13	monitoring	3801.58	22.07	2	0.01	11.64	21.42
MW-14	monitoring	3803.61	24.30	4	0.02	14.18	23.63
MW-15	monitoring	3803.59	19.47	2	0.01	9.39	19.17
MW-16	monitoring	3801.04	22.66	4	0.02	12.71	22.23
MW-17	monitoring	3799.55	19.75	2	0.01	9.71	19.47
MW-18	monitoring	3795.82	17.42	4	0.02	7.21	16.84
MW-19	monitoring	3797.21	19.11	4	0.02	8.96	18.53
MW-20	monitoring	3797.59	16.89	2	0.01	6.89	16.69
MW-21	monitoring	3798.21	23.31	2	0.01	12.74	22.88
MW-22	monitoring	3799.20	17.30	2	0.01	7.29	16.80
MW-23	monitoring	3794.48	12.08	2	0.01	7.04	11.64
MW-24	monitoring	3794.09	14.09	2	0.01	9.05	13.67
MW-25	monitoring	3786.97	10.27	2	0.01	4.94	9.80
MW-26	monitoring	3793.01	21.11	2	0.01	11.11	20.56
MW-27	monitoring	3790.93	18.23	2	0.01	13.16	17.79
MW-28	monitoring	3797.03	18.59	2	0.01	8.74	18.26
MW-29	monitoring	3794.06	14.76	2	0.01	9.68	14.37
MW-30	monitoring	3788.30	14.82	2	0.01	7.8	14.82
MW-31	monitoring	3791.15	19.93	4	0.02	7.945	19.93
MW-32	monitoring	3797.47	16.77	2	0.01	11.87	16.56
MW-33	monitoring	3802.48	20.29	4	0.02	10.14	19.70
MW-34	monitoring	3806.00	19.97	2	0.01	10.12	19.64
MW-35	monitoring	3800.81	20.71	4	0.02	15.78	20.33
MW-36	monitoring	3792.94	8.77	2	0.01	6.96	8.61
MW-37	monitoring	3795.03	20.83	4	0.02	10.24	19.90
MW-38	monitoring	3797.32	20.57	4	0.02	10.4	19.98
MW-39	monitoring	3796.20	20.54	4	0.02	10.17	19.74
MW-40	monitoring	3803.12	12.15	2	0.01	7.02	12.07
MW-41	monitoring	3799.04	24.04	4	0.02	13.87	23.43
MW-42	monitoring	3804.73	22.00	2	0.01	11.53	21.56
MW-43	monitoring	3802.05	24.55	4	0.02	14.40	23.95
MW-44	monitoring	3804.14	25.24	4	0.02	15.09	24.64
MW-45	infiltration	3808.68	26.62	2	0.01	11.58	26.13
MW-46	monitoring	3805.54	20.24	4	0.02	9.69	19.24
MW-47	monitoring	3805.09	21.79	2	0.01	11.75	21.29
MW-48	monitoring	3806.18	19.98	2	0.01	9.94	19.49
MW-49	monitoring	3805.61	25.91	2	0.01	15.82	25.45
MW-50	monitoring	3813.35	37.15	2	0.01	22.11	36.66
MW-51	infiltration	3810.86	20.06	2	0.01	10.02	19.57
MW-52	monitoring	3817.49	21.44	2	0.01	11.4	20.95
MW-53	monitoring	3809.92	15.32	2	0.01	8.59	15.14

TABLE 2-1: WELL COMPLETION DETAILS (continued)

SHALLOW ZONE WELLS (continued)							
Well ID	Well Type	TOC Elev. (ft AMSL)	Total Depth (ft TOC)	Well Casing ID (in)	Well Screen Slot (in)	Well Screen Interval Top (ft TOC)	Well Screen Interval Bottom (ft TOC)
MW-54	monitoring	3823.86	78.15	4	0.02	42.92	77.45
MW-55	monitoring	3794.40	66.32	4	0.02	21.43	66.08
MW-56	monitoring	3782.45	43.76	4	0.02	28.79	43.53
MW-61	monitoring	3816.20	57.97	4	0.02	47.83	57.28
MW-65	monitoring	3763.31	57.69	4	0.02	37.58	57.01
MW-69	recovery	3805.11	51.27	4	0.02	16.56	50.49
MW-77	monitoring	3775.48	82.20	7.875	OH	-	-
MW-78	monitoring	3785.82	86.62	7.875	OH	-	-
MW-79	monitoring	3788.39	82.90	7.875	OH	-	-
MW-80	monitoring	3821.64	91.80	7.875	OH	-	-
MW-90	monitoring	3781.73	62.50	4	0.04	12.50	62.50
MW-91	monitoring	3783.07	72.50	4	0.04	12.50	72.50
MW-92	monitoring	3785.29	72.50	4	0.04	12.50	72.50
MW-93	monitoring	3817.50	72.50	4	0.04	12.50	72.50
MW-99	monitoring	3770.05	72.50	4	0.04	12.50	72.50
MW-100	monitoring	3773.31	72.50	4	0.04	12.50	72.50
MW-101	monitoring	3762.71	72.50	4	0.04	12.50	72.50
MW-102	monitoring	3753.69	82.50	4	0.04	12.50	82.50
MW-103	monitoring	3743.14	72.50	4	0.04	12.50	72.50
MW-105	monitoring	3736.93	82.50	4	0.04	12.50	82.50
MW-106	monitoring	3721.97	94.50	4	0.04	12.50	94.5
MW-107	monitoring	3726.27	72.50	4	0.04	12.50	72.50
Sump A10	monitoring	3800.99	13.42	24	-	-	-
Sump 16A	monitoring	3785.14	17.45	24	-	-	-

AMSL=above mean sea level
TOC= top of casing datum

TABLE 3-1. CUMULATIVE BENZENE, TOLUENE, ETHYLBENZENE, AND TOTAL XYLENES (BTEX) IN GROUNDWATER: 1991 - 1997

	Benzene (ug/L) using EPA Method 8020 unless indicated otherwise																											
WELL	May-91	Jun-91	Jul-91	Sep-91	Dec-91	Apr-92	Jul-92	Oct-92	Jan-93	Apr-93	Jul-93	Oct-93	Jan-94	Apr-94	Jul-94	Oct-94	Jan-95	Apr-95	Jul-95	Oct-95	Jan-96	Apr-96	Jul-96	Aug-96	Oct-96	Feb-97	May-97	WELL
MW-1	500	NS	NS	250	200	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-1
MW-2	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-2
MW-3	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	DRY	DRY	DRY	MW-3
MW-4	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-4
MW-5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	DRY	DRY	DRY	MW-5
MW-6	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	DRY	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	NS	NS	DRY	DRY	MW-6
MW-7	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	DRY	DRY	DRY	MW-7
MW-8	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	DRY	DRY	DRY	MW-8
MW-9	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	DRY	DRY	DRY	MW-9
MW-10	5500	NS	NS	2300	2300	1840	1842**	2100	NS	NS	DRY	DRY	BD	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	DRY	<0.5	NS	MW-10
MW-11	NS	NS	NS	3000	3800	3573	2199**	2755	2746*	FP	FP	FP	FP	FP	FP	1800	DRY	NS	95	NS	1000	650	500	NS	270	270	NS	MW-11
MW-12	NS	NS	NS	3800	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-12
MW-13	NS	NS	NS	3100	3000	3501	2708**	NS	NS	NS	NS	NS	NS	NS	NS	NS	FP	FP	FP	FP	FP	FP	NS	NS	1100	1300	NS	MW-13
MW-14	NS	NS	NS	5100**	NS	NS	NS	NS	NS	PUMP	PUMP	FP	FP	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-14
MW-15	NS	NS	NS	5100	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-15
MW-16	NS	NS	NS	1700	NS	NS	NS	NS	NS	514*	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-16
MW-17	NS	NS	NS	2000	NS	NS	NS	NS	NS	1500	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-17
MW-18	NS	NS	NS	4300	3700	2900	2700	3300	NS	NS	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-18
MW-19	NS	NS	NS	4700	NS	3240	3000	2756	NS	3926*	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	DRY	NS	NS	NS	140	360	NS	MW-19
MW-20	NS	NS	NS	110	NS	NS	NS	NS	NS	NS	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-20
MW-21	9	NS	NS	1000	1100	NS	NS	NS	NS	114*	FP	NS	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-21
MW-22	NS	NS	NS	4	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-22
MW-23	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-23
MW-24	NS	NS	NS	3400	NS	NS	4353**	NS	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	DRY	DRY	DRY	MW-24
MW-25	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-25
MW-26	NS	NS	NS	3100	3000	NS	2000	1860	1708*	861*	FP	FP	FP	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-26
MW-27	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-27
MW-28	NS	NS	NS	2200	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-28
MW-29	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	DRY	DRY	DRY	MW-29
MW-30	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-30
MW-31	NS	NS	NS	<1	NS	NS	332**	9	NS	NS	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-31
MW-32	NS	NS	NS	200	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	DRY	DRY	DRY	MW-32
MW-33	NS	NS	NS	6300	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-33
MW-34	NS	NS	NS	2500	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-34
MW-35	NS	NS	NS	5700	NS	NS	NS	NS	NS	NS	FP	FP	FP	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-35
MW-36	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-36
MW-37	NS	<25	NS	150	NS	NS	NS	NS	NS	NS	27*	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-37
MW-38	500	NS	NS	15	15	67	37*	166	NS	NS	DRY	DRY	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	0.6	0.7	NS	MW-38
MW-39	<1	<1	NS	880	NS	NS	NS	NS	14	29*	24*	DRY	<2.5	<0.5	<0.5	DRY	<5.0	NS	NS	NS	NS	NS	NS	NS	20	<0.5	NS	MW-39
MW-40	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-40
MW-41	NS	NS	300	200	170	NS	NS	NS	NS	NS	12	8.9	5.3	0.6	1.4	3.2	13	4.8	<0.5	1.8	<5.0	1.7	<0.5	NS	8.1	82	NS	MW-41
MW-42	NS	NS	NS	<1	<1	NS	NS	NS	NS	NS	NS	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-42
MW-43	NS	<10	NS	<5	NS	NS	NS	NS	NS	NS	25	DRY	<0.5	<0.5	<0.5	0.8	3.0	0.6	3.0	1.2	1.4	4.4	8.2	NS	230	64.0	NS	MW-43

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TABLE 3-1. CUMULATIVE BENZENE, TOLUENE, ETHYLBENZENE, AND TOTAL XYLENES (BTEX) IN GROUNDWATER: 1991 - 1997

(continued)

Benzene (ug/L) using EPA Method 8020 unless indicated otherwise

WELL	May-91	Jun-91	Jul-91	Sep-91	Dec-91	Apr-92	Jul-92	Oct-92	Jan-93	Apr-93	Jul-93	Oct-93	Jan-94	Apr-94	Jul-94	Oct-94	Jan-95	Apr-95	Jul-95	Oct-95	Jan-96	Apr-96	Jul-96	Aug-96	Oct-96	Feb-97	May-97	WELL
MW-44	NS	50	NS	59	NS	6	97	12	14	7	6	3.6	12	22	36	130	63	19	5.8	120	51	26	83	NS	33	270	NS	MW-44
MW-45	NS	<1	NS	<1	<1	NS	NS	NS	NS	NS	<3	<3	<0.5	<0.5	<0.5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-45
MW-46	NS	NS	300	140	25	NS	NS	NS	NS	NS	NS	DRY	NS	NS	DRY	NS	DRY	NS	NS	NS	NS	NS	NS	NS	900	3300	5000	MW-46
MW-47	NS	550	NS	2600	2200	NS	NS	NS	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	1500	DRY	DRY	MW-47
MW-48	NS	NS	NS	<1	<1	NS	47	NS	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	<0.5	DRY	DRY	MW-48
MW-49	NS	<10	NS	35	NS	NS	NS	NS	NS	NS	210	68	13	82	150	78	220	120	17	240	160	87	370	NS	95	79	NS	MW-49
MW-50	NS	<1	NS	<1	<1	7	4	8	8	<1	<3	9	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NS	<0.5	<0.5	NS	MW-50
MW-51	NS	NS	NS	800	<1	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-51
MW-52	NS	NS	NS	<1	NS	NS	5	NS	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	DRY	DRY	DRY	MW-52
MW-53	NS	NS	NS	<1	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	DRY	DRY	DRY	MW-53
MW-54	NS	NS	NS	<1	<1	10	8	62	14	10	<3	17	8.6	<0.5	15	19	<0.5	<0.5	<0.5	0.7	<0.5	<0.5	<0.5	NS	0.9	<0.5	NS	MW-54
MW-55	NS	<50	NS	940	400	297	483	215	390	412	625	581	290	370	360	910	650	420	350	100	650	370	800	NS	520	410	NS	MW-55
MW-56	NS	2100	2000	2200	1000	NS	1114	1026	1128	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	1000	370	NS	MW-56
MW-61	NS	NS	NS	<1	NS	NS	NS	NS	NS	NS	NS	NS	1.4	<0.5	3.2	<5.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NS	<0.5	<0.5	NS	MW-61
MW-65	NS	NS	NS	<1	NS	NS	NS	NS	NS	NS	<3	DRY	DRY	DRY	NS	<0.5	NS	NS	NS	NS	NS	NS	<0.5	NS	<0.5	<0.5	<0.5	MW-65
MW-69	NS	NS	NS	1700	2100	NS	568	1598	1284	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	NS	NS	NS	FP	FP	MW-69
MW-77	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS	<0.5	NS	<0.5	<0.5	8.0	NS	160	DRY	8.4	MW-77
MW-78	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	32	41	20	MW-78
MW-79	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	110	14	<5	16	10	2.4	3.2	NS	1.7	<0.5	<0.5	MW-79
MW-80	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	DRY	DRY	DRY	MW-80
MW-90	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	17	1.1	MW-90
MW-91	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	340	NS	MW-91
MW-92	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY	MW-92
MW-93	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY	MW-93
MW-99	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY	MW-99
MW-100	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY	MW-100
MW-101	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY	MW-101
MW-102	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY	MW-102
MW-103	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY	MW-103
MW-105	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY	MW-105
MW-106	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	<0.5	<0.5	MW-106
MW-107	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY	MW-107
SUMP A10	NS	NS	NS	940	FP	FP	FP	FP	FP	FP	DRY	DRY	DRY	DRY	NS	NS	DRY	DRY	DRY	<0.5	DRY	NS	DRY	NS	DRY	DRY	DRY	SUMP A10
SUMP A11	NS	NS	NS	1400	2900	3465	1258	2742	FP	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	SUMP A11
SUMP 16A	NS	NS	NS	240	2000	1332	1495	632	741	707	DRY	DRY	DRY	DRY	DRY	170	2.0	NS	DRY	130	NS	0.8	5.1	NS	NS	NS	NS	SUMP 16A
SUMP 21A	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	SUMP 21A
Lyman well	NS	NS	NS	<1	<1	<1	<1	<1	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NS	<0.5	<0.5	NS	Lyman well
Biebble well	NS	NS	NS	<1	<1	<1	<1	<1	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NS	<0.5	<0.5	NS	Biebble well
U. Indian Hills Spring W	NS	NS	NS	<1	<1	<1	<1	<1	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NS	<0.5	<0.5	NS	U. Indian Hills Spring W
Lower Queen Wells																												Lower Queen Wells
MW-57	NS	NS	<1	1600	350	127	948**	15	21*	8*	6*	<0.5	<0.5	<0.5	0.7	1.1	4.3	<0.5	<0.5	64	16	<0.5	2.8	NS	54	<0.5	NS	MW-57
MW-58	NS	NS	NS	40	90	203	178**	190	192*	55*	25*	50*	FP	<2.5	2.0	6.7	FP	2.2	FP	FP	FP	FP	DRY	NS	110	NS	NS	MW-58
MW-59	NS	NS	NS	540	420	42	268**	99	26*	10*	FP	10*	FP	<2.5	13	4.1	FP	FP	FP	FP	FP	FP	FP	NS	FP	FP	FP	MW-59

dg/moc-05/btexta1.xls

TABLE 3-1. CUMULATIVE BENZENE, TOLUENE, ETHYLBENZENE, AND TOTAL XYLENES (BTEX) IN GROUNDWATER: 1991 - 1997

(continued)

Benzene (ug/L) using EPA Method 8020 unless indicated otherwise

WELL	May-91	Jun-91	Jul-91	Sep-91	Dec-91	Apr-92	Jul-92	Oct-92	Jan-93	Apr-93	Jul-93	Oct-93	Jan-94	Apr-94	Jul-94	Oct-94	Jan-95	Apr-95	Jul-95	Oct-95	Jan-96	Apr-96	Jul-96	Aug-96	Oct-96	Feb-97	May-97	WELL
MW-60	NS	NS	NS	33	<1	5	17	32	138*	17*	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NS	2.5	<0.5	<0.5	MW-60
MW-61A	NS	NS	NS	190	10	6	60	470	585*	2821*	FP	FP	FP	<0.5	<0.5	4.8	16	FP	FP	FP	<0.5	<0.5	<0.5	NS	1.7	42	330	MW-61A
MW-62	NS	NS	NS	2200	1400	263	357**	212	78*	33*	98*	10*	4.1	<2.5	4.3	13	FP	7.5	FP	FP	FP	FP	FP	NS	FP	FP	FP	MW-62
MW-63	NS	NS	NS	<1	<1	5	12**	4	12*	<1	4*	14*	<0.5	<0.5	1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NS	<0.5	<0.5	NS	MW-63
MW-64	NS	NS	NS	150	130	245	115**	37	6	5*	2	18*	1.7	<0.5	<0.5	<0.5	12	18	17	25	14	10	FP	NS	FP	FP	FP	MW-64
MW-65A	NS	NS	NS	680	150	26	413**	11	3*	4*	<1*	7*	<0.5	<0.5	<0.5	1.7	<0.5	<0.5	NS	FP	FP	FP	FP	NS	NS	NS	NS	MW-65A
MW-66	NS	NS	NS	<1	<1	4	8**	12	3*	<3*	8*	13*	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NS	<0.5	<0.5	<0.5	MW-66
MW-67	NS	NS	NS	280	320	5	69	3	8*	7*	7*	<0.5	<0.5	<0.5	<0.5	<0.5	1.0	1.8	<0.5	6.1	4.8	3.4	95.0	NS	FP	14	NS	MW-67
MW-68	NS	NS	NS	240	1900	2470	160**	2205	376*	650	150	374*	3000	120	260	FP	FP	FP	FP	FP	FP	FP	FP	NS	FP	NS	NS	MW-68
MW-70	NS	NS	NS	<1	<1	3	<1	11	<3*	9*	<1*	25*	<0.5	<0.5	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NS	<0.5	<0.5	NS	MW-70
MW-71	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	8*	<0.5	<0.5	<0.5	1.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NS	<0.5	5.2	<0.5	MW-71
MW-72	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	FP	FP	<2.5	18	FP	FP	FP	FP	FP	FP	FP	FP	NS	FP	FP	FP	MW-72
MW-73	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	FP	FP	FP	FP	FP	FP	FP	NS	FP	FP	FP	MW-73
MW-74	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	FP	FP	FP	FP	FP	FP	FP	NS	FP	FP	FP	MW-74
MW-75	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	FP	FP	FP	FP	FP	FP	FP	NS	FP	NS	NS	MW-75
MW-76	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	FP	FP	FP	FP	FP	FP	NS	NS	<0.5	FP	FP	MW-76
MW-81	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	FP	FP	FP	FP	NS	FP	NS	NS	MW-81
MW-82	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	280	FP	FP	FP	NS	FP	NS	NS	MW-82
MW-83	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	FP	FP	FP	FP	NS	FP	FP	FP	MW-83
MW-86	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS	NS	NS	MW-86
MW-87	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	<0.5	<0.5	<0.5	<0.5	MW-87
MW-87A	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	<0.5	0.9	<0.5	MW-87A
MW-88	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	<0.5	<0.5	<0.5	<0.5	MW-88
MW-89	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	<0.5	<0.5	<0.5	<0.5	MW-89
MW-95	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	<0.5	MW-95
MW-96	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	<0.5	MW-96
MW-97	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	<0.5	MW-97
MW-98	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	5.8	MW-98
IW-1	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS	NS	NS	NS	FP	FP	FP	FP	FP	IW-1
IW-2	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS	NS	NS	NS	NS	<0.5	NS	NS	NS	IW-2
SW-1	NS	NS	NS	<1	<1	5	17.5*	16	6*	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.8	<0.5	<0.5	NS	<0.5	<0.5	NS	SW-1
SW-2	NS	NS	NS	<1	<1	11	7*	69	47*	4	NS	NS	NS	NS	NS	NS	<0.5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	SW-2
SW-3	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	<0.5	NS	<0.5	NS	NS	SW-3
L. Queen Max. Conc.	NS	NS	NS	2200	1900	2470	948	2205	585	2821	FP	FP	3000	120	260	FP	FP	FP	FP	FP	FP	FP	FP	NS	FP	FP	FP	L. Queen Max. Conc.
Shallow Max. Conc.	NS	NS	NS	6300	3800	3573	4353	3300	2746	3926	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	NS	1500	3300	5000	Shallow Max. Conc.
East Air Stripper Influent	NI	NI	NI	NI	NI	378	350	360	170	140	120	34	14	13	11	450	89	42	58	92	170	<5.0	120	NS	25	60	NS	East Air Stripper Influent
East Air Stripper Effluent	NI	NI	NI	NI	NI	4	4	4	33	4	4	3.9	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	2.8	3.4	24	28	NS	0.5	2.7	NS	East Air Stripper Effluent
West Air Stripper Influent	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	120	NS	64	68	NS	West Air Stripper Influent
West Air Stripper Effluent	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	29	NS	0.7	2.3	NS	West Air Stripper Effluent
WELL	May-91	Jun-91	Jul-91	Sep-91	Dec-91	Apr-92	Jul-92	Oct-92	Jan-93	Apr-93	Jul-93	Oct-93	Jan-94	Apr-94	Jul-94	Oct-94	Jan-95	Apr-95	Jul-95	Oct-95	Jan-96	Apr-96	Jul-96	Aug-96	Oct-96	Feb-97	May-97	WELL

* High Performance Liquid Chromatography (HPLC)

TABLE 3-1. CUMULATIVE BENZENE, TOLUENE, ETHYLBENZENE, AND TOTAL XYLENES (BTEX) IN GROUNDWATER: 1991 - 1997

(continued)

	Benzene (ug/L) using EPA Method 8020 unless indicated otherwise																											
WELL	May-91	Jun-91	Jul-91	Sep-91	Dec-91	Apr-92	Jul-92	Oct-92	Jan-93	Apr-93	Jul-93	Oct-93	Jan-94	Apr-94	Jul-94	Oct-94	Jan-95	Apr-95	Jul-95	Oct-95	Jan-96	Apr-96	Jul-96	Aug-96	Oct-96	Feb-97	May-97	WELL
** Average of more than one sample result using HPLC.																												
FP = Free Product (Condensate)																												
NS = Not Sampled																												
NI = Not Installed																												

TABLE 3-1. CUMULATIVE BENZENE, TOLUENE, ETHYLBENZENE, AND TOTAL XYLENES (BTEX) IN GROUNDWATER: 1991 - 1997

(continued)

Toluene (ug/L) using EPA Method 8020 unless indicated otherwise

WELL	Sep-91	Dec-91	Apr-92	Jul-92	Oct-92	Jan-93	Apr-93	Jul-93	Oct-93	Jan-94	Apr-94	Jul-94	Oct-94	Jan-95	Apr-95	Jul-95	Oct-95	Jan-96	Apr-96	Jul-96	Aug-96	Oct-96	Feb-97	May-97	WELL
MW-1	100	200	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-1
MW-2	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-2
MW-3	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	DRY	DRY	DRY	MW-3
MW-4	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-4
MW-5	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	DRY	DRY	DRY	MW-5
MW-6	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	DRY	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	NS	NS	DRY	DRY	MW-6
MW-7	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	DRY	DRY	DRY	MW-7
MW-8	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	DRY	DRY	DRY	MW-8
MW-9	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	DRY	DRY	DRY	MW-9
MW-10	400	<100	106	101	144	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	DRY	<0.5	NS	MW-10
MW-11	5200	5800	2979	2440	1896	1821	FP	FP	FP	FP	FP	FP	<50	DRY	NS	<0.5	NS	32	38	46	NS	15	20	NS	MW-11
MW-12	6400	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-12
MW-13	2500	750	142	136	NS	NS	NS	NS	NS	NS	NS	NS	NS	FP	FP	FP	FP	FP	FP	NS	NS	520	130	NS	MW-13
MW-14	<100	NS	NS	NS	NS	NS	NS	NS	FP	FP	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-14
MW-15	1000	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-15
MW-16	3800	NS	NS	NS	NS	NS	53*	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-16
MW-17	650	NS	NS	NS	NS	NS	58*	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-17
MW-18	<100	<100	82	22	115	NS	NS	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-18
MW-19	<100	NS	347	40	73	NS	130*	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	DRY	NS	NS	NS	5.9	980	NS	MW-19
MW-20	12	NS	NS	NS	NS	NS	NS	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-20
MW-21	1800	20	NS	NS	NS	NS	19*	FP	NS	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-21
MW-22	<1	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-22
MW-23	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-23
MW-24	1300	NS	NS	27	NS	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	DRY	DRY	DRY	MW-24
MW-25	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-25
MW-26	3200	<100	NS	48	59	82	62*	FP	FP	FP	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-26
MW-27	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-27
MW-28	150	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-28
MW-29	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	DRY	DRY	DRY	MW-29
MW-30	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-30
MW-31	<1	NS	NS	36	32	NS	NS	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-31
MW-32	10	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	DRY	DRY	DRY	MW-32
MW-33	4900	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-33
MW-34	1800	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-34
MW-35	1100	NS	NS	NS	NS	NS	NS	FP	FP	FP	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-35
MW-36	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-36
MW-37	40	NS	NS	NS	NS	NS	NS	7	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-37
MW-38	32	<1	17	34	18	NS	NS	DRY	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	<0.5	<0.5	NS	MW-38
MW-39	20	NS	NS	NS	NS	6	15	3	23	<2.5	<0.5	<0.5	DRY	7.1	NS	NS	NS	NS	NS	NS	NS	<0.5	<0.5	NS	MW-39
MW-40	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-40
MW-41	40	30	NS	NS	NS	NS	NS	<5.0	<0.5	<5.0	<0.5	31	44	<5.0	<0.5	<0.5	8.0	10	9.8	6.1	NS	2.4	6.2	NS	MW-41
MW-42	<1	<1	NS	NS	NS	NS	NS	NS	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-42
MW-43	<5	NS	NS	NS	NS	NS	NS	17	11	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	4.0	2.4	3.1	4.3	5.7	NS	2.1	8.1	NS	MW-43

TABLE 3-1. CUMULATIVE BENZENE, TOLUENE, ETHYLBENZENE, AND TOTAL XYLENES (BTEX) IN GROUNDWATER: 1991 - 1997

(continued)

Toluene (ug/L) using EPA Method 8020 unless indicated otherwise

WELL	Sep-91	Dec-91	Apr-92	Jul-92	Oct-92	Jan-93	Apr-93	Jul-93	Oct-93	Jan-94	Apr-94	Jul-94	Oct-94	Jan-95	Apr-95	Jul-95	Oct-95	Jan-96	Apr-96	Jul-96	Aug-96	Oct-96	Feb-97	May-97	WELL
MW-44	<25	NS	22	25	34	18	15	16	<0.5	<5.0	<2.5	<5.0	<25	<5.0	2.0	<0.5	<50	14	11	99	NS	2.7	26	NS	MW-44
MW-45	<1	<1	NS	NS	NS	NS	NS	6	3	<0.5	<0.5	<0.5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-45
MW-46	40	30	NS	NS	NS	NS	NS	NS	DRY	NS	NS	DRY	NS	DRY	NS	NS	NS	NS	NS	NS	NS	33	550	1200	MW-46
MW-47	100	<50	NS	NS	NS	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	59	DRY	DRY	MW-47
MW-48	2	5	NS	18	NS	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	<0.5	DRY	DRY	MW-48
MW-49	20	NS	NS	NS	NS	NS	NS	27	26	<5.0	<0.5	<5.0	49	<5.0	<0.5	<0.5	<50	130	23	220	NS	16	66	NS	MW-49
MW-50	<1	<1	18	167	10	5	<1	12	16	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NS	<0.5	<0.5	NS	MW-50
MW-51	3700	<1	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-51
MW-52	<1	NS	NS	31	NS	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	DRY	DRY	DRY	MW-52
MW-53	<1	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	DRY	DRY	DRY	MW-53
MW-54	<1	<1	10	44	7	4	<3*	<3*	35*	<0.5	<0.5	1.2	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NS	<0.5	<0.5	NS	MW-54
MW-55	40	25	24	36	56	68	20*	21*	27*	<2.5	<2.5	5.5	<5.0	<5.0	<2.5	<5.0	6.1	15	13	35	NS	32	20	NS	MW-55
MW-56	400	2000	NS	64	47	40	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	23	12	NS	MW-56
MW-61	<1	<1	NS	NS	NS	NS	NS	NS	NS	1.0	<0.5	<0.5	23	0.7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NS	<0.5	<0.5	NS	MW-61
MW-65	<1	<1	NS	NS	NS	NS	NS	6*	DRY	DRY	DRY	NS	<0.5	NS	NS	NS	NS	NS	NS	<0.5	NS	<0.5	<0.5	<0.5	MW-65
MW-69	4800	1100	NS	56	71	49	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	NS	NS	NS	FP	FP	MW-69
MW-77	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS	<0.5	NS	3.1	3.8	14	NS	320	DRY	70	MW-77
MW-78	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	15	7.9	42	MW-78
MW-79	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	<5.0	<0.5	74	4.0	6.7	7.3	6.3	NS	5.8	<0.5	<0.5	MW-79
MW-80	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	DRY	DRY	DRY	MW-80
MW-90	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	<0.5	<0.5	MW-90
MW-91	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	14	NS	MW-91
MW-92	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY	MW-92
MW-93	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY	MW-93
MW-99	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY	MW-99
MW-100	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY	MW-100
MW-101	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY	MW-101
MW-102	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY	MW-102
MW-103	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY	MW-103
MW-105	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY	MW-105
MW-106	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	<0.5	<0.5	MW-106
MW-107	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY	MW-107
SUMP A10	340	FP	FP	FP	FP	FP	FP	DRY	DRY	DRY	DRY	NS	NS	DRY	DRY	DRY	2.9	DRY	NS	DRY	NS	DRY	DRY	DRY	SUMP A10
SUMP A11	1300	3500	3303	1710	2235	FP	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	SUMP A11
SUMP 16A	55	1000	203	2028	87	40	881*	DRY	DRY	DRY	DRY	DRY	<2.5	5.1	NS	DRY	<13	NS	1.5	0.9	NS	NS	NS	NS	SUMP 16A
SUMP 21A	2000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	SUMP 21A
Lyman well	<1	<1	<1	<1	<1	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NS	<0.5	<0.5	NS	Lyman well
Biebble well	<1	<1	<1	<1	<1	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NS	<0.5	<0.5	NS	Biebble well
U. Indian Hills Spring W	<1	<1	<1	<1	<1	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NS	<0.5	<0.5	NS	U. Indian Hills Spring W
Lower Queen Wells																									Lower Queen Wells
MW-57	460	<10	29	422	33	40	21*	8*	1.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.8	1.7	1.5	0.9	1.0	NS	2.8	0.9	NS	MW-57
MW-58	50	40	32	58	49	30	16*	42*	21*	FP	<2.5	29	<5.0	FP	<0.5	FP	FP	FP	FP	DRY	NS	320	NS	NS	MW-58
MW-59	60	40	12	45	37	<3	14*	FP	13*	FP	<2.5	69	3.7	FP	FP	FP	FP	FP	FP	FP	NS	FP	FP	FP	MW-59

TABLE 3-1. CUMULATIVE BENZENE, TOLUENE, ETHYLBENZENE, AND TOTAL XYLENES (BTEX) IN GROUNDWATER: 1991 - 1997

(continued)

Toluene (ug/L) using EPA Method 8020 unless indicated otherwise

WELL	Sep-91	Dec-91	Apr-92	Jul-92	Oct-92	Jan-93	Apr-93	Jul-93	Oct-93	Jan-94	Apr-94	Jul-94	Oct-94	Jan-95	Apr-95	Jul-95	Oct-95	Jan-96	Apr-96	Jul-96	Aug-96	Oct-96	Feb-97	May-97	WELL
MW-60	2	<1	9	1	109	4	16*	<0.5	1.0	<0.5	<0.5	1.3	0.6	<0.5	<0.5	4.9	<0.5	<0.5	<0.5	<0.5	NS	0.9	<0.5	<0.5	MW-60
MW-61A	5	10	7	<10	17	82	173*	FP	FP	FP	<0.5	<0.5	4.5	<5.0	FP	FP	FP	<0.5	<0.5	<0.5	NS	1.7	3.4	59	MW-61A
MW-62	100	<200	48	13	19	18	15*	12*	20*	<2.5	<2.5	32	13	FP	30	FP	FP	FP	FP	FP	NS	FP	FP	FP	MW-62
MW-63	<1	<1	6	28	7	4	<1	<3*	48*	0.7	<0.5	9.6	2.6	<0.5	<0.5	1.0	<0.5	<0.5	<0.5	<0.5	NS	<0.5	<0.5	NS	MW-63
MW-64	6	<10	32	19	61	2	11*	<0.5	12*	<0.5	<0.5	0.5	0.5	<0.5	<0.5	1.1	1.7	2.2	2.0	FP	NS	FP	FP	FP	MW-64
MW-65A	190	15	15	235	<3	<3	9*	3*	3*	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NS	FP	FP	FP	FP	NS	NS	NS	NS	MW-65A
MW-66	<1	<1	7	25	36	6	5*	4*	60*	<0.5	<0.5	0.6	3.0	<0.5	<0.5	0.9	<0.5	<0.5	0.8	<0.5	NS	<0.5	<0.5	<0.5	MW-66
MW-67	5	<10	8	<10	9	3	18*	<3*	0.9	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	1.8	3.6	0.9	110	NS	FP	4.8	NS	MW-67
MW-68	280	4500	3370	267	3327	944	1900	230	628*	820	61	170	FP	FP	FP	FP	FP	FP	FP	FP	NS	FP	NS	NS	MW-68
MW-70	<1	<1	17	3	40	<3	20*	11*	19*	0.6	<0.5	<0.5	4.3	2.3	<0.5	0.8	<0.5	<0.5	<0.5	<0.5	NS	<0.5	<0.5	NS	MW-70
MW-71	NI	NI	NI	NI	NI	NI	NI	NI	5*	1.3	<0.5	3.0	6.8	<0.5	66	1.2	<0.5	<0.5	<0.5	<0.5	NS	<0.5	1.3	<0.5	MW-71
MW-72	NI	NI	NI	NI	NI	NI	NI	NI	FP	FP	<2.5	<0.5	FP	FP	FP	FP	FP	FP	FP	FP	NS	FP	FP	FP	MW-72
MW-73	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	FP	FP	FP	FP	FP	FP	FP	NS	FP	FP	FP	MW-73
MW-74	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	FP	FP	FP	FP	FP	FP	FP	NS	FP	FP	FP	MW-74
MW-75	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	FP	FP	FP	FP	FP	FP	FP	NS	FP	NS	NS	MW-75
MW-76	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	FP	FP	FP	FP	FP	FP	NS	NS	<0.5	FP	FP	MW-76
MW-81	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	FP	FP	FP	FP	NS	FP	NS	NS	MW-81
MW-82	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	<50	FP	FP	FP	NS	FP	NS	NS	MW-82
MW-83	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	FP	FP	FP	FP	NS	FP	FP	FP	MW-83
MW-86	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-86
MW-87	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	20	<0.5	<0.5	<0.5	MW-87
MW-87A	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	<0.5	<0.5	<0.5	MW-87A
MW-88	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	1.1	<0.5	<0.5	<0.5	MW-88
MW-89	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	1.1	<0.5	<0.5	<0.5	MW-89
MW-95	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	<0.5	MW-95
MW-96	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	<0.5	MW-96
MW-97	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	<0.5	MW-97
MW-98	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	3.5	MW-98
IW-1	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS	NS	NS	NS	NS	NS	FP	FP	FP	IW-1
IW-2	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS	NS	NS	NS	NS	<0.5	NS	NS	NS	IW-2
SW-1	<1	<1	6	69	15	<3	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	4.5	<0.5	<0.5	NS	<0.5	<0.5	NS	SW-1
SW-2	<1	<1	12	38	37	6	<1	NS	NS	NS	NS	NS	NS	<0.5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	SW-2
SW-3	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	<0.5	NS	<0.5	NS	NS	SW-3
L. Queen Max. Conc.	460	4500	3370	422	3327	944	1900	FP	628*	820	61	170	FP	FP	FP	FP	FP	FP	FP	FP	NS	FP	FP	FP	L. Queen Max. Conc.
Shallow Max. Conc.	6600	5800	3303	2028	2235	1821	881	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	NS	520	980	1200	Shallow Max. Conc.
East Air Stripper Influent	NI	NI	1340	110	890	330	140	330	57	<10	4.9	<5.0	170	<5.0	25	<5.0	6.2	61	79	10	NS	36	8.4	NS	East Air Stripper Influent
East Air Stripper Effluent	NI	NI	2.5	7	4	83	21	27	4	<0.5	<0.5	15	1.9	49	<0.5	<5.0	7.1	13	3.4	5.2	NS	0.5	<0.5	NS	East Air Stripper Effluent
West Air Stripper Influent	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	18	NS	26	8.5	NS	West Air Stripper Influent
West Air Stripper Effluent	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	16	NS	2.9	7.9	NS	West Air Stripper Effluent
WELL	Sep-91	Dec-91	Apr-92	Jul-92	Oct-92	Jan-93	Apr-93	Jul-93	Oct-93	Jan-94	Apr-94	Jul-94	Oct-94	Jan-95	Apr-95	Jul-95	Oct-95	Jan-96	Apr-96	Jul-96	Aug-96	Oct-96	Feb-97	May-97	WELL

* High Performance Liquid Chromatography (HPLC)

TABLE 3-1. CUMULATIVE BENZENE, TOLUENE, ETHYLBENZENE, AND TOTAL XYLENES (BTEX) IN GROUNDWATER: 1991 - 1997

(continued)

	Toluene (ug/L) using EPA Method 8020 unless indicated otherwise																								
WELL	Sep-91	Dec-91	Apr-92	Jul-92	Oct-92	Jan-93	Apr-93	Jul-93	Oct-93	Jan-94	Apr-94	Jul-94	Oct-94	Jan-95	Apr-95	Jul-95	Oct-95	Jan-96	Apr-96	Jul-96	Aug-96	Oct-96	Feb-97	May-97	WELL
** Average of more than one sample result using HPLC.																									
P = Pump																									
FP = Free Product (Condensate)																									
NS = Not Sampled																									
NI = Not Installed																									

TABLE 3-1. CUMULATIVE BENZENE, TOLUENE, ETHYLBENZENE, AND TOTAL XYLENES (BTEX) IN GROUNDWATER: 1991 - 1997

(continued)

Ethylbenzene (ug/L) using EPA Method 8020 unless indicated otherwise

WELL	Sep-91	Dec-91	Apr-92	Jul-92	Oct-92	Jan-93	Apr-93	Jul-93	Oct-93	Jan-94	Apr-94	Jul-94	Oct-94	Jan-95	Apr-95	Jul-95	Oct-95	Jan-96	Apr-96	Jul-96	Aug-96	Oct-96	Feb-97	May-97	WELL
MW-1	NS	300	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-1
MW-2	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-2
MW-3	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	DRY	DRY	DRY	MW-3
MW-4	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-4
MW-5	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	DRY	DRY	DRY	MW-5
MW-6	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	DRY	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	NS	NS	DRY	DRY	MW-6
MW-7	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	DRY	DRY	DRY	MW-7
MW-8	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	DRY	DRY	DRY	MW-8
MW-9	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	DRY	DRY	DRY	MW-9
MW-10	NS	200	<3	482	436	NS	NS	DRY	DRY	BD	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	DRY	<0.5	NS	MW-10
MW-11	NS	500	484	463	<3	475	FP	FP	FP	FP	FP	FP	450	DRY	NS	4.4	NS	190	84	370	NS	230	81	NS	MW-11
MW-12	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-12
MW-13	NS	500	<3	597	NS	NS	NS	NS	NS	NS	NS	NS	NS	FP	FP	FP	FP	FP	FP	NS	NS	1200	690	NS	MW-13
MW-14	NS	NS	NS	NS	NS	NS	PUMP	PUMP	FP	FP	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-14
MW-15	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-15
MW-16	NS	NS	NS	NS	NS	NS	39*	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-16
MW-17	NS	NS	NS	NS	NS	NS	230	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-17
MW-18	NS	600	750	600	870	NS	NS	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-18
MW-19	NS	NS	807	800	758	NS	16*	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	DRY	NS	NS	NS	5.2	1100	NS	MW-19
MW-20	NS	NS	NS	NS	NS	NS	NS	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-20
MW-21	NS	<50	NS	NS	NS	NS	38*	FP	NS	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-21
MW-22	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-22
MW-23	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-23
MW-24	NS	NS	NS	55	NS	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	DRY	DRY	DRY	MW-24
MW-25	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-25
MW-26	NS	400	NS	390	567	399	600*	FP	FP	FP	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-26
MW-27	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-27
MW-28	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-28
MW-29	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	DRY	DRY	DRY	MW-29
MW-30	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-30
MW-31	NS	NS	NS	11	10	NS	NS	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-31
MW-32	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	DRY	DRY	DRY	MW-32
MW-33	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-33
MW-34	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-34
MW-35	NS	NS	NS	NS	NS	NS	NS	FP	FP	FP	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-35
MW-36	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-36
MW-37	NS	NS	NS	NS	NS	NS	NS	<3*	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-37
MW-38	NS	15	55	25	242	NS	NS	DRY	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	<0.5	<0.5	NS	MW-38
MW-39	NS	NS	NS	NS	NS	<5	4*	<3*	<3*	8.4	4	5.9	DRY	250	NS	NS	NS	NS	NS	NS	NS	<0.5	<0.5	NS	MW-39
MW-40	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-40
MW-41	NS	400	NS	NS	NS	NS	NS	22	17	27	3.8	4.9	0.7	42	19	1.1	2.6	<5.0	5.5	3.6	NS	5.8	7.2	NS	MW-41
MW-42	<1	<1	NS	NS	NS	NS	NS	NS	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-42
MW-43	15	NS	NS	NS	NS	NS	NS	<3*	<3*	<0.5	1.2	1.5	2.3	5.5	2.8	5.8	3.8	6.6	1.3	4.4	NS	4.3	18	NS	MW-43

TABLE 3-1. CUMULATIVE BENZENE, TOLUENE, ETHYLBENZENE, AND TOTAL XYLENES (BTEX) IN GROUNDWATER: 1991 - 1997

(continued)

	Ethylbenzene (ug/L) using EPA Method 8020 unless indicated otherwise																							
WELL	Sep-91	Dec-91	Apr-92	Jul-92	Oct-92	Jan-93	Apr-93	Jul-93	Oct-93	Jan-94	Apr-94	Jul-94	Oct-94	Jan-95	Apr-95	Jul-95	Oct-95	Jan-96	Apr-96	Jul-96	Aug-96	Oct-96	Feb-97	May-97	WELL
MW-44	220	NS	24	102	96	65	18*	<3*	19	7.2	3.3	12	120	140	71	16	240	130	74	280	NS	20	53	NS	MW-44
MW-45	NS	<1	NS	NS	NS	NS	NS	7*	<3*	<0.5	<0.5	<0.5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-45
MW-46	NS	95	NS	NS	NS	NS	NS	NS	DRY	NS	NS	DRY	NS	DRY	NS	NS	NS	NS	NS	NS	NS	440	1000	230	MW-46
MW-47	NS	<50	NS	NS	NS	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	200	DRY	DRY	MW-47
MW-48	NS	10	NS	6	NS	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	<0.5	DRY	DRY	MW-48
MW-49	30	NS	NS	NS	NS	NS	NS	42*	9*	15	11	32	40	46	24	3.5	59	120	18	190	NS	36	45	NS	MW-49
MW-50	<1	<1	<3	7	3	<3	<1	10*	<3*	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NS	<0.5	<0.5	NS	MW-50
MW-51	NS	<1	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-51
MW-52	NS	NS	NS	4	NS	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	DRY	DRY	DRY	MW-52
MW-53	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	DRY	DRY	DRY	MW-53
MW-54	<1	<1	<3	23	195	15	<3*	<3*	16*	7.4	<0.5	8.5	29	<0.5	<0.5	<0.5	1.7	<0.5	<0.5	<0.5	NS	0.6	<0.5	NS	MW-54
MW-55	140	<25	15	64	92	90	89*	8*	102*	89	33	16	480	400	260	270	70	430	310	520	NS	460	230	NS	MW-55
MW-56	NS	3000	NS	962	<3	10	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	94	51	NS	MW-56
MW-61	<1	<1	NS	NS	NS	NS	NS	NS	NS	1.7	0.5	<0.5	14	2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NS	<0.5	<0.5	NS	MW-61
MW-65	<1	<1	NS	NS	NS	NS	NS	<3*	DRY	DRY	DRY	NS	<0.5	NS	NS	NS	NS	NS	NS	<0.5	NS	<0.5	<0.5	<0.5	MW-65
MW-69	300	150	NS	1785	<3	309	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	NS	NS	NS	FP	FP	MW-69
MW-77	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS	1.9	NS	<0.5	0.8	19	NS	150	DRY	8.3	MW-77
MW-78	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	9.1	7.4	12	MW-78
MW-79	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	8.5	10	7.7	<2.5	1.4	1.0	0.9	NS	1.0	<0.5	<0.5	MW-79
MW-80	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	DRY	DRY	DRY	MW-80
MW-90	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	15	<0.5	MW-90
MW-91	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	50	NS	MW-91
MW-92	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY	MW-92
MW-93	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY	MW-93
MW-99	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY	MW-99
MW-100	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY	MW-100
MW-101	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY	MW-101
MW-102	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY	MW-102
MW-103	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY	MW-103
MW-105	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY	MW-105
MW-106	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	<0.5	<0.5	MW-106
MW-107	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY	MW-107
SUMP A10	80	FP	FP	FP	FP	FP	FP	DRY	DRY	DRY	DRY	NS	NS	DRY	DRY	DRY	<0.5	DRY	NS	DRY	NS	DRY	DRY	DRY	SUMP A10
SUMP A11	NS	300	306	423	<3	FP	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	SUMP A11
SUMP 16A	<5	<500	<3	280	<3	96	298*	DRY	DRY	DRY	DRY	DRY	120	2.4	NS	DRY	98	NS	3.8	1.2	NS	NS	NS	NS	SUMP 16A
SUMP 21A	150	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	SUMP 21A
Lyman well	<1	<1	<1	<1	<1	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NS	<0.5	<0.5	NS	Lyman well
Biebble well	<1	<1	<1	<1	<1	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NS	<0.5	<0.5	NS	Biebble well
U. Indian Hills Spring W	<1	<1	<1	<1	<1	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NS	<0.5	<0.5	NS	U. Indian Hills Spring W
Lower Queen Wells																									Lower Queen Wells
MW-57	NS	<10	<3	112	<3	165	15*	<3*	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.7	1.0	<0.5	<0.5	NS	3.4	<0.5	NS	MW-57
MW-58	NS	20	56	32	26	23	31*	14*	212*	FP	7.4	4.5	15.0	FP	2.1	FP	FP	FP	FP	DRY	NS	940	NS	NS	MW-58
MW-59	240	240	20	110	44	55	12*	FP	89*	FP	3.3	0.5	23	FP	FP	FP	FP	FP	FP	FP	NS	FP	FP	FP	MW-59

TABLE 3-1. CUMULATIVE BENZENE, TOLUENE, ETHYLBENZENE, AND TOTAL XYLENES (BTEX) IN GROUNDWATER: 1991 - 1997

(continued)

Ethylbenzene (ug/L) using EPA Method 8020 unless indicated otherwise

WELL	Sep-91	Dec-91	Apr-92	Jul-92	Oct-92	Jan-93	Apr-93	Jul-93	Oct-93	Jan-94	Apr-94	Jul-94	Oct-94	Jan-95	Apr-95	Jul-95	Oct-95	Jan-96	Apr-96	Jul-96	Aug-96	Oct-96	Feb-97	May-97	WELL
MW-60	<1	<1	<3	<1	36	260	<3*	<0.5	0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NS	<0.5	0.5	<0.5	MW-60
MW-61A	NS	5	<3	3	<3	397	817*	FP	FP	FP	0.5	<0.5	3.7	30	FP	FP	FP	<0.5	<0.5	<0.5	NS	1.3	8.4	<25	MW-61A
MW-62	NS	400	170	184	416	74	16*	70*	20*	13	4.4	7.5	11	FP	12	FP	FP	FP	FP	FP	NS	FP	FP	FP	MW-62
MW-63	<1	<1	<3	3	17	<3	<1	<3*	11*	<0.5	<0.5	1.4	1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NS	<0.5	<0.5	NS	MW-63
MW-64	26	40	82	10	<3	1	5*	<0.5	<3*	<0.5	<0.5	<0.5	0.6	5.1	18	9.8	13	9.3	4.3	FP	NS	FP	FP	FP	MW-64
MW-65A	20	<1	<3	93	<3	<3	3*	<3*	<3*	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NS	FP	FP	FP	FP	NS	NS	NS	NS	MW-65A
MW-66	<1	<1	<3	7	<3	3	5*	<3*	4*	<0.5	<0.5	<0.5	1.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NS	<0.5	<0.5	<0.5	MW-66
MW-67	<5	<10	<3	20	<3	<3	7*	<3*	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	0.6	<0.5	28	NS	FP	1.9	NS	MW-67
MW-68	40	500	550	49	<3	246	330	110	286*	1000	170	220	FP	FP	FP	FP	FP	FP	FP	FP	NS	FP	NS	NS	MW-68
MW-70	<1	<1	<3	1	63	8	<3*	3*	19*	<0.5	<0.5	<0.5	1.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NS	<0.5	<0.5	NS	MW-70
MW-71	NI	NI	NI	NI	NI	NI	NI	NI	4*	<0.5	<0.5	0.7	2.7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NS	<0.5	0.8	<0.5	MW-71
MW-72	NI	NI	NI	NI	NI	NI	NI	NI	FP	FP	4.7	5.1	FP	FP	FP	FP	FP	FP	FP	FP	NS	FP	FP	FP	MW-72
MW-73	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	FP	FP	FP	FP	FP	FP	FP	NS	FP	FP	FP	MW-73
MW-74	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	FP	FP	FP	FP	FP	FP	FP	NS	FP	FP	FP	MW-74
MW-75	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	FP	FP	FP	FP	FP	FP	FP	NS	FP	NS	NS	MW-75
MW-76	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	FP	FP	FP	FP	FP	FP	NS	NS	<0.5	FP	FP	MW-76
MW-81	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	FP	FP	FP	FP	NS	FP	NS	NS	MW-81
MW-82	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	450	FP	FP	FP	NS	FP	NS	NS	MW-82
MW-83	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	FP	FP	FP	FP	NS	FP	FP	FP	MW-83
MW-86	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS	NS	NS	NS	NS	MW-86
MW-87	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	<0.5	<0.5	<0.5	<0.5	MW-87
MW-87A	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	<0.5	0.7	<0.5	MW-87A
MW-88	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	0.5	<0.5	<0.5	<0.5	MW-88
MW-89	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	<0.5	<0.5	<0.5	<0.5	MW-89
MW-95	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	<0.5	MW-95
MW-96	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	<0.5	MW-96
MW-97	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	<0.5	MW-97
MW-98	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	1.5	MW-98
IW-1	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS	NS	NS	NS	NS	NS	NS	FP	FP	FP	IW-1
IW-2	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS	NS	NS	NS	NS	NS	<0.5	NS	NS	NS	IW-2
SW-1	<1	NS	<3	<3	<3	<3	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.5	<0.5	<0.5	NS	<0.5	<0.5	NS	SW-1
SW-2	<1	NS	<3	<1	25	7	<1	NS	NS	NS	NS	NS	NS	<0.5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	SW-2
SW-3	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	<0.5	NS	<0.5	NS	NS	SW-3
L. Queen Max. Conc.	NS	NS	NS	NS	416	397	817	FP	FP	1000	170	220	FP	FP	FP	FP	FP	FP	FP	FP	NS	FP	FP	FP	L. Queen Max. Conc.
Shallow Max.Conc.	NS	NS	NS	NS	870	475	600	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	NS	1200	1100	230	Shallow Max.Conc.
East Air Stripper Influent	NI	NI	273	41	280	160	120	130	24	20	7.5	9.1	210	99	46	68	110	280	61	94	NS	13	55	NS	East Air Stripper Influent
East Air Stripper Effluent	NI	NI	4	4	4	88	4	4	5	12	0.6	1.8	5.6	3.1	0.5	<5.0	4.1	4.1	21	22	NS	1.0	2.1	NS	East Air Stripper Effluent
West Air Stripper Influent	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	100	NS	13	61	NS	West Air Stripper Influent
West Air Stripper Effluent	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	32	NS	1.5	1.3	NS	West Air Stripper Effluent
WELL	Sep-91	Dec-91	Apr-92	Jul-92	Oct-92	Jan-93	Apr-93	Jul-93	Oct-93	Jan-94	Apr-94	Jul-94	Oct-94	Jan-95	Apr-95	Jul-95	Oct-95	Jan-96	Apr-96	Jul-96	Aug-96	Oct-96	Feb-97	May-97	WELL

* High Performance Liquid Chromatography (HPLC)

TABLE 3-1. CUMULATIVE BENZENE, TOLUENE, ETHYLBENZENE, AND TOTAL XYLENES (BTEX) IN GROUNDWATER: 1991 - 1997

(continued)

	Ethylbenzene (ug/L) using EPA Method 8020 unless indicated otherwise																								
WELL	Sep-91	Dec-91	Apr-92	Jul-92	Oct-92	Jan-93	Apr-93	Jul-93	Oct-93	Jan-94	Apr-94	Jul-94	Oct-94	Jan-95	Apr-95	Jul-95	Oct-95	Jan-96	Apr-96	Jul-96	Aug-96	Oct-96	Feb-97	May-97	WELL
** Average of more than one sample result using HPLC.																									
P = Pump																									
FP = Free Product (Condensate)																									
NS = Not Sampled																									
NI = Not Installed																									
VE=Vapor Extraction																									

[redacted]

TABLE 3-1. CUMULATIVE BENZENE, TOLUENE, ETHYLBENZENE, AND TOTAL XYLENES (BTEX) IN GROUNDWATER: 1991 - 1997

(continued)

	Total Xylene (ug/L) using EPA Method 8020 unless indicated otherwise																								
WELL	Sep-91	Dec-91	Apr-92	Jul-92	Oct-92	Jan-93	Apr-93	Jul-93	Oct-93	Jan-94	Apr-94	Jul-94	Oct-94	Jan-95	Apr-95	Jul-95	Oct-95	Jan-96	Apr-96	Jul-96	Aug-96	Oct-96	Feb-97	May-97	WELL
MW-1	NS	100	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-1
MW-2	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-2
MW-3	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	DRY	DRY	DRY	MW-3
MW-4	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-4
MW-5	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	DRY	DRY	DRY	MW-5
MW-6	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	DRY	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	NS	NS	NS	DRY	MW-6
MW-7	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	DRY	DRY	DRY	MW-7
MW-8	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	DRY	DRY	DRY	MW-8
MW-9	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	DRY	DRY	DRY	MW-9
MW-10	NS	2500	2415	2183	759	NS	NS	DRY	DRY	BD	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	DRY	<0.5	NS	MW-10
MW-11	NS	5200	6714	3693	5196	4280	FP	FP	FP	FP	FP	FP	3500	DRY	DRY	250	NS	2800	2800	2300	NS	1600	1400	NS	MW-11
MW-12	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-12
MW-13	NS	3300	7137	2247	NS	NS	NS	NS	NS	NS	NS	NS	NS	FP	FP	FP	FP	FP	FP	NS	NS	2800	1000	NS	MW-13
MW-14	NS	NS	NS	NS	NS	NS	NS	NS	FP	FP	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-14
MW-15	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-15
MW-16	NS	NS	NS	NS	NS	NS	2134*	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-16
MW-17	NS	NS	NS	NS	NS	NS	2900	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-17
MW-18	NS	1900	1200	55	187	NS	NS	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-18
MW-19	NS	NS	326	41	166	NS	82*	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	DRY	NS	NS	NS	17	5600	NS	MW-19
MW-20	NS	NS	NS	NS	NS	NS	NS	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-20
MW-21	NS	1000	NS	NS	NS	NS	38*	FP	NS	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-21
MW-22	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-22
MW-23	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-23
MW-24	NS	NS	NS	708	NS	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	DRY	DRY	DRY	MW-24
MW-25	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-25
MW-26	NS	3700	NS	1400	1774	1083	2014*	FP	FP	FP	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-26
MW-27	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-27
MW-28	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-28
MW-29	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	DRY	DRY	DRY	MW-29
MW-30	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-30
MW-31	NS	NS	NS	54	18	NS	NS	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-31
MW-32	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	DRY	DRY	DRY	MW-32
MW-33	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-33
MW-34	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-34
MW-35	NS	NS	NS	NS	NS	NS	NS	FP	FP	FP	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-35
MW-36	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-36
MW-37	NS	NS	NS	NS	NS	NS	NS	<3*	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-37
MW-38	NS	<1	7	56	24	NS	NS	DRY	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	0.7	0.7	NS	MW-38
MW-39	NS	NS	NS	NS	NS	<5	11*	<3*	10*	70	38	78	DRY	80	NS	NS	NS	NS	NS	NS	NS	<0.5	<0.5	NS	MW-39
MW-40	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-40
MW-41	NS	<10	NS	NS	NS	NS	NS	<5.0	<0.5	140	7.4	<0.5	90	23	33	6.3	18	14	6.7	1.7	NS	5.5	9.1	NS	MW-41
MW-42	<1	<1	NS	NS	NS	NS	NS	NS	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-42
MW-43	10	NS	NS	NS	NS	NS	NS	3*	<3*	<0.5	14	7.1	17	15	14	5.9	5.5	5.3	5.3	7.0	NS	3.6	28.0	NS	MW-43

TABLE 3-1. CUMULATIVE BENZENE, TOLUENE, ETHYLBENZENE, AND TOTAL XYLENES (BTEX) IN GROUNDWATER: 1991 - 1997

(continued)

Total Xylene (ug/L) using EPA Method 8020 unless indicated otherwise

WELL	Sep-91	Dec-91	Apr-92	Jul-92	Oct-92	Jan-93	Apr-93	Jul-93	Oct-93	Jan-94	Apr-94	Jul-94	Oct-94	Jan-95	Apr-95	Jul-95	Oct-95	Jan-96	Apr-96	Jul-96	Aug-96	Oct-96	Feb-97	May-97	WELL
MW-44	<25	NS	2	96	24	<1	14*	18*	5.6	14	11	14	77	26	16	5.6	260	15	6.3	310	NS	2.6	48	NS	MW-44
MW-45	NS	<1	NS	NS	NS	NS	NS	4*	3*	<0.5	<0.5	<0.5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-45
MW-46	NS	10	NS	NS	NS	NS	NS	NS	DRY	NS	NS	DRY	NS	DRY	NS	NS	NS	NS	DRY	NS	NS	59	1400	<100	MW-46
MW-47	NS	<50	NS	NS	NS	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	250	DRY	DRY	MW-47
MW-48	NS	<1	NS	18	NS	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	1.0	DRY	DRY	MW-48
MW-49	25	NS	NS	NS	NS	NS	NS	30*	20*	110	10	27	300	97	26	3.4	130	570	32	630	NS	12	160	NS	MW-49
MW-50	<1	<1	17	11	2	5	<1	4*	<3*	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NS	<0.5	<0.5	NS	MW-50
MW-51	NS	<1	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-51
MW-52	NS	NS	NS	5	NS	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	DRY	DRY	DRY	MW-52
MW-53	NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	DRY	DRY	DRY	MW-53
MW-54	<1	<1	14	195	630	113	8*	3*	24*	<0.5	<0.5	8.7	6.3	<0.5	<0.5	<0.5	3.0	<0.5	<0.5	<0.5	NS	<0.5	<0.5	NS	MW-54
MW-55	<20	<25	34	66	26	32	18*	50*	18*	<2.5	<2.5	120	<5.0	41	21	22	15	29	22	99	NS	84	64	NS	MW-55
MW-56	NS	6000	NS	49	839	804	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	92	51	NS	MW-56
MW-61	1	<1	NS	NS	NS	NS	NS	NS	NS	1.1	<0.5	0.8	160	0.8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NS	<0.5	<0.5	NS	MW-61
MW-65	<1	<1	NS	NS	NS	NS	NS	3*	DRY	DRY	DRY	NS	<0.5	NS	NS	NS	NS	NS	NS	<0.5	NS	<0.5	<0.5	<0.5	MW-65
MW-69	4600	4200	NS	1966	2879	1931	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	NS	NS	NS	FP	FP	MW-69
MW-77	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS	2.8	NS	7.1	2.5	35	NS	1000	DRY	52	MW-77
MW-78	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	35	12	23	MW-78
MW-79	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	61	53	62	3.7	4.9	2.7	6.3	NS	4.2	<0.5	<0.5	MW-79
MW-80	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	DRY	DRY	DRY	MW-80
MW-90	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	1.4	<0.5	MW-90
MW-91	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	55	NS	MW-91
MW-92	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY	MW-92
MW-93	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY	MW-93
MW-99	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY	MW-99
MW-100	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY	MW-100
MW-101	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY	MW-101
MW-102	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY	MW-102
MW-103	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY	MW-103
MW-105	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY	MW-105
MW-106	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	<0.5	<0.5	MW-106
MW-107	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY	MW-107
SUMP A10	1300	FP	FP	FP	FP	FP	FP	DRY	DRY	DRY	DRY	NS	NS	DRY	DRY	DRY	<0.5	DRY	DRY	DRY	NS	DRY	DRY	DRY	SUMP A10
SUMP A11	NS	4000	4158	3416	3408	FP	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	SUMP A11
SUMP 16A	220	3500	3679	3442	1821	1355	4226*	DRY	DRY	DRY	DRY	DRY	680	32	NS	DRY	780	NS	27	7.7	NS	NS	NS	NS	SUMP 16A
SUMP 21A	1900	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	SUMP 21A
Lyman well	<1	<1	<1	<1	<1	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.6	<0.5	<0.5	<0.5	NS	<0.5	<0.5	NS	Lyman well
Biebble well	<1	<1	<1	<1	<1	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NS	0.5	<0.5	NS	Biebble well
U. Indian Hills Spring W	<1	<1	<1	<1	<1	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	1.2	<0.5	<0.5	<0.5	NS	<0.5	<0.5	NS	U. Indian Hills Spring W
Lower Queen Wells																									Lower Queen Wells
MW-57	NS	<10	16	876	78	19	16*	<3*	1.2	<0.5	<0.5	1.8	4.0	1.3	<0.5	<0.5	5.0	4.2	<0.5	1.4	NS	13	<0.5	NS	MW-57
MW-58	NS	80	68	44	57	39	9*	13*	555*	FP	27	27	39	FP	6.8	FP	FP	FP	FP	DRY	NS	10000	NS	NS	MW-58
MW-59	520	420	20	232	46	10	5*	FP	433*	FP	25	73	37	FP	FP	FP	FP	FP	FP	FP	NS	FP	FP	FP	MW-59

TABLE 3-1. CUMULATIVE BENZENE, TOLUENE, ETHYLBENZENE, AND TOTAL XYLENES (BTEX) IN GROUNDWATER: 1991 - 1997

(continued)

Total Xylene (ug/L) using EPA Method 8020 unless indicated otherwise

WELL	Sep-91	Dec-91	Apr-92	Jul-92	Oct-92	Jan-93	Apr-93	Jul-93	Oct-93	Jan-94	Apr-94	Jul-94	Oct-94	Jan-95	Apr-95	Jul-95	Oct-95	Jan-96	Apr-96	Jul-96	Aug-96	Oct-96	Feb-97	May-97	WELL
MW-60	<1	<1	4	1	57	6	12*	<0.5	1.0	<0.5	<0.5	3.5	4.9	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NS	<0.5	0.8	<0.5	MW-60
MW-61A	NS	75	13	8	2351	2368	3993*	FP	FP	FP	3.8	2.5	37	220	FP	FP	FP	0.8	<0.5	<0.5	NS	9.4	46	850	MW-61A
MW-62	NS	2400	298	301	1692	207	24*	204*	32*	44	26	26	39	FP	30	FP	FP	FP	FP	FP	NS	FP	FP	FP	MW-62
MW-63	<1	<1	8	20	33	13	<1	<3*	39*	0.7	<0.5	13	8.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NS	<0.5	<0.5	NS	MW-63
MW-64	130	160	331	40	96	4	9*	<0.5	71*	0.9	<0.5	3.6	5.6	13	41	23	32	23	7.9	FP	NS	FP	FP	FP	MW-64
MW-65A	250	15	12	551	67	11	8*	<3*	<3*	<0.5	<0.5	<0.5	<0.5	0.7	0.5	NS	FP	FP	FP	FP	NS	NS	NS	NS	MW-65A
MW-66	<1	<1	4	11	34	20	<3*	<3*	29*	0.6	<0.5	0.8	17	<0.5	<0.5	<0.5	3.5	<0.5	1.0	0.5	NS	<0.5	<0.5	<0.5	MW-66
MW-67	65	<10	12	116	73	12	19*	<3*	1.1	<0.5	<0.5	3.0	4.3	1.1	1.3	0.6	4.2	4.7	2.5	280	NS	FP	41.0	NS	MW-67
MW-68	800	4000	3866	746	4721	2376	4000	1100	2398*	7700	1300	2000	FP	FP	FP	FP	FP	FP	FP	FP	NS	FP	NS	NS	MW-68
MW-70	<1	<1	8	13	60	5	4*	<3*	18*	<0.5	<0.5	<0.5	12	2.4	1.1	<0.5	<0.5	<0.5	<0.5	<0.5	NS	<0.5	<0.5	NS	MW-70
MW-71	NI	NI	NI	NI	NI	NI	NI	NI	16*	0.5	<0.5	6.2	31	<0.5	<0.5	1.9	7.3	<0.5	<0.5	<0.5	NS	<0.5	1.3	<0.5	MW-71
MW-72	NI	NI	NI	NI	NI	NI	NI	NI	FP	FP	15	2.8	FP	FP	FP	FP	FP	FP	FP	FP	NS	FP	FP	FP	MW-72
MW-73	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	FP	FP	FP	FP	FP	FP	FP	NS	FP	FP	FP	MW-73
MW-74	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	FP	FP	FP	FP	FP	FP	FP	NS	FP	FP	FP	MW-74
MW-75	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	FP	FP	FP	FP	FP	FP	FP	NS	FP	NS	NS	MW-75
MW-76	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	FP	FP	FP	FP	FP	FP	NS	NS	<0.5	FP	FP	MW-76
MW-81	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	FP	FP	FP	FP	NS	FP	NS	NS	MW-81
MW-82	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	910	FP	FP	FP	NS	FP	NS	NS	MW-82
MW-83	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	FP	FP	FP	FP	NS	FP	FP	FP	MW-83
MW-86	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS	NS	NS	NS	NS	NS	NS	MW-86
MW-87	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	0.5	<0.5	<0.5	<0.5	MW-87
MW-87A	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	<0.5	1.5	<0.5	MW-87A
MW-88	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	1.0	<0.5	<0.5	<0.5	MW-88
MW-89	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	<0.5	<0.5	<0.5	<0.5	MW-89
MW-95	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	<0.5	MW-95
MW-96	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	<0.5	MW-96
MW-97	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	<0.5	MW-97
MW-98	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	26	MW-98
IW-1	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS	NS	NS	NS	NS	FP	FP	FP	IW-1
IW-2	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS	NS	NS	NS	<0.5	NS	NS	NS	IW-2
SW-1	<1	NS	14	67	10	<3	<1	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	1.2	8.7	<0.5	<0.5	NS	<0.5	<0.5	NS	SW-1
SW-2	<1	NS	5	24	61	9	<1	NS	NS	NS	NS	NS	NS	<0.5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	SW-2
SW-3	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	<0.5	NS	<0.5	NS	NS	SW-3
L. Queen Max. Conc.	NS	4000	3866	876	4721	2376	4000	1100	2398*	7700	1300	2000	FP	FP	FP	FP	FP	FP	FP	FP	NS	FP	FP	FP	L. Queen Max. Conc.
Shallow Max. Conc.	NS	6000	7137	3442	5196	4280	4226	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	NS	2800	5600	52	Shallow Max. Conc.
East Air Stripper Influent	NI	NI	2535	420	2640	1360	850	980	380	260	140	70	2800	140	400	270	220	1200	490	430	NS	120	250	NS	East Air Stripper Influent
East Air Stripper Effluent	NI	NI	40.3	4	50	75	27	4	5	<2.5	3.1	17	30	29	2.3	33	20	23	130	130	NS	6.5	9.9	NS	East Air Stripper Effluent
West Air Stripper Influent	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	450	NS	160	270	NS	West Air Stripper Influent
West Air Stripper Effluent	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	170	NS	13	5.7	NS	West Air Stripper Effluent
WELL	Sep-91	Dec-91	Apr-92	Jul-92	Oct-92	Jan-93	Apr-93	Jul-93	Oct-93	Jan-94	Apr-94	Jul-94	Oct-94	Jan-95	Apr-95	Jul-95	Oct-95	Jan-96	Apr-96	Jul-96	Aug-96	Oct-96	Feb-97	May-97	WELL

* High Performance Liquid Chromatography (HPLC)

TABLE 3-1. CUMULATIVE BENZENE, TOLUENE, ETHYLBENZENE, AND TOTAL XYLENES (BTEX) IN GROUNDWATER: 1991 - 1997																								
(continued)																								
	Total Xylene (ug/L) using EPA Method 8020 unless indicated otherwise																							
WELL	Sep-91	Dec-91	Apr-92	Jul-92	Oct-92	Jan-93	Apr-93	Jul-93	Oct-93	Jan-94	Apr-94	Jul-94	Oct-94	Jan-95	Apr-95	Jul-95	Oct-95	Jan-96	Apr-96	Jul-96	Aug-96	Oct-96	Feb-97	May-97	WELL
** Average of more than one sample result using HPLC.																									
P = Pump																									
FP = Free Product (Condensate)																									
NS = Not Sampled																									
NI = Not Installed																									
VE=Vapor Extraction																									

TABLE 3-2
CUMULATIVE SEMI-VOLATILE ORGANIC COMPOUNDS ANALYTICAL RESULTS IN GROUNDWATER
1991-1997

WELL ID	Sample Date	EPA Method	SVOCS in (ug/L) Acenaphthene	Benzo (a) anthracene	Benzo (a) pyrene	Benzo (b) fluoranthene	Benzo (g,h,i)-perylene	Benzo (k) fluoranthene	Chrysene	Dibenzo (a,h)-anthracene	Fluorene	Indeno (1,2,3-cd)pyrene	Phenanthrene	Fluoranthene	Pyrene	Naphthalene	1-methyl-naphthalene	2-methyl-naphthalene	PAHs*
SHALLOW ZONE WELLS																			
MW-10	09/21/91	8240	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<50	NA	NA	<50
MW-13	09/21/91	8240	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<50	NA	NA	<50
MW-19	09/21/91	8240	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<50	NA	NA	<50
MW-39	07/18/97	8310	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-41	07/18/97	8310	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-43	09/19/91	8240	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5	NA	NA	<5
	07/18/97	8310	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-45	09/24/91	8240	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5	NA	NA	<5
MW-46	05/29/97	8310	58	13	5	6	<1	8	22	16	<1	2	3	<1	<1	5	31	29	65
MW-49	07/18/97	8310	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-50	07/18/97	8310	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-54	07/16/97	8310	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-55	07/16/97	8310	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	12	<1	<1	12
MW-56	09/25/91	8240	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<25	NA	NA	<25
MW-69	07/18/97	8310	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-79	07/17/97	8310	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-90	02/10/97	8310	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	<1	<1	<1
MW-91	02/11/97	8310	2	<1	<1	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	2	5	2	9
MW-106	02/11/97	8310	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	<1	<1	<1
SUMP A11	09/21/91	8240	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<10	NA	NA	<10
SUMP 16A	09/21/91	8240	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5	NA	NA	<5
LOWER QUEEN WELLS																			
MW-60	07/19/91	8270	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	NA	NA	<10
	07/07/92	601/602	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.8	<1.0	<1.0	1.8
MW-61A	09/27/91	8240	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5	NA	NA	<5
	07/07/92	601/602	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	27.3	<10	<10	27.3
	02/06/97	8310	<1	<1	<1	<1	1	<1	<1	<1	1	<1	<1	<1	<1	<1	<1	<1	<1
MW-62	09/26/91	8240	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<25	NA	NA	<25
MW-67	07/07/92	601/602	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<10	<10	<10	<10
MW-74	07/18/97	8310	2.5	1.3	<1	<1	<1	<1	<1	<1	3.8	<1	5.6	23	12	8.4	<1	<1	8.4
MW-87	02/09/97	8310	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	08/22/96	8310	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-87A	02/09/97	8310	19	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-88	02/05/97	8310	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	1	<1	<1	1
	08/22/96	8310	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-89	02/05/97	8310	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	<1	<1	<1
	08/22/96	8310	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	<1	<1	<1
MW-95	04/30/97	8310	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-96	04/30/97	8310	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-97	04/30/97	8310	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-98	04/30/97	8310	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-104	07/17/97	8310	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-108	07/1897	8310	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
IW-2	08/22/96	8310	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Pipeline #4 water	02/08/91	610	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	NA	NA	<10

NA = not analyzed
* PAH = naphthalene + mono-methylnaphthalenes

TABLE 3-2
CUMULATIVE SEMI-VOLATILE ORGANIC COMPOUNDS ANALYTICAL RESULTS IN GROUNDWATER
1991 - 1997

	phenol (mg/L) using EPA Method 420.1 unless indicated otherwise								
WELL	May-91	Jul-91	9/19/91	9/21/91	9/24/91	9/25/91	9/26/91	9/27/91	Mar-97
MW-1	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-2	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-3	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-4	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-5	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-6	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-7	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-8	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-9	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-10	NS	NS	NS	**0.07**	NS	**0.48**	NS	NS	NS
MW-11	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-12	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-13	NS	NS	NS	**0.06**	NS	**0.12**	NS	NS	**<0.006**
MW-14	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-15	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-16	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-17	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-18	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-19	NS	NS	NS	**<0.05**	NS	**0.55**	NS	NS	NS
MW-20	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-21	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-22	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-23	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-24	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-25	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-26	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-27	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-28	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-29	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-30	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-31	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-32	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-33	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-34	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-35	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-36	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-37	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-38	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-39	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-40	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-41	NS	NS	NS	NS	NS	NS	NS	NS	**<0.003**
MW-42	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-43	NS	NS	**<0.05**	NS	NS	**<0.05**	NS	NS	NS
MW-44	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-45	NS	NS	NS	**<0.05**	**<0.05**	NS	NS	NS	NS
MW-46	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-47	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-48	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-49		NS	NS	NS	NS	NS	NS	NS	**<0.003**
MW-50	NS	NS	NS	NS	NS	NS	NS	NS	**<0.003**
MW-51	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-52	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-53	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-54	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-55	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-56	NS	NS	NS	**<0.05**	NS	**<0.05**	NS	NS	**<0.003**
MW-61	NS	NS	NS	NS	NS	NS	NS	NS	NS

TABLE 3-2
CUMULATIVE SEMI-VOLATILE ORGANIC COMPOUNDS ANALYTICAL RESULTS IN GROUNDWATER 1991 - 1997 (continued)

	phenol (mg/L) using EPA Method 420.1 unless indicated otherwise								
WELL	May-91	Jul-91	9/19/91	9/21/91	9/24/91	9/25/91	9/26/91	9/27/91	Mar-97
MW-65	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-69	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-77	NI	NI	NI	NI	NI	NI	NI	NI	NS
MW-78	NI	NI	NI	NI	NI	NI	NI	NI	NS
MW-79	NI	NI	NI	NI	NI	NI	NI	NI	NS
MW-80	NI	NI	NI	NI	NI	NI	NI	NI	DRY
MW-90	NI	NI	NI	NI	NI	NI	NI	NI	NS
MW-91	NI	NI	NI	NI	NI	NI	NI	NI	NS
MW-92	NI	NI	NI	NI	NI	NI	NI	NI	DRY
MW-93	NI	NI	NI	NI	NI	NI	NI	NI	DRY
MW-99	NI	NI	NI	NI	NI	NI	NI	NI	DRY
MW-100	NI	NI	NI	NI	NI	NI	NI	NI	DRY
MW-101	NI	NI	NI	NI	NI	NI	NI	NI	DRY
MW-102	NI	NI	NI	NI	NI	NI	NI	NI	DRY
MW-103	NI	NI	NI	NI	NI	NI	NI	NI	DRY
MW-105	NI	NI	NI	NI	NI	NI	NI	NI	DRY
MW-106	NI	NI	NI	NI	NI	NI	NI	NI	NS
MW-107	NI	NI	NI	NI	NI	NI	NI	NI	DRY
SUMP A10	NS	NS	NS	NS	NS	NS	NS	NS	DRY
SUMP A11	NS	NS	NS	**< 0.05**	NS	NS	NS	NS	NS
SUMP 16A	NS	NS	NS	**< 0.05**	NS	NS	**< 0.05**	NS	NS
Lyman well	NS	NS	NS	NS	NS	NS	NS	NS	NS
Biebble well	NS	NS	NS	NS	NS	NS	NS	NS	NS
U. Indian Hills Spring W	NS	NS	NS	NS	NS	NS	NS	NS	NS
Lower Queen Wells									
MW-57	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-58	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-59	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-60	**< 0.014***	NS	NS	NS	NS	NS	NS	NS	**< 0.004**
MW-61A	NS	NS	NS	NS	NS	NS	NS	**< 0.05**	NS
MW-62	NS	NS	NS	NS	NS	NS	**< 0.05**	NS	NS
MW-63	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-64	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-65A	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-66	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-67	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-68	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-70	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-71	NI	NI	NI	NI	NI	NI	NI	NI	NS
MW-72	NI	NI	NI	NI	NI	NI	NI	NI	NS
MW-73	NI	NI	NI	NI	NI	NI	NI	NI	NS
MW-74	NI	NI	NI	NI	NI	NI	NI	NI	NS
MW-75	NI	NI	NI	NI	NI	NI	NI	NI	NS
MW-76	NI	NI	NI	NI	NI	NI	NI	NI	NS
MW-81	NI	NI	NI	NI	NI	NI	NI	NI	NS
MW-82	NI	NI	NI	NI	NI	NI	NI	NI	NS
MW-83	NI	NI	NI	NI	NI	NI	NI	NI	NS
SW-1	NS	NS	NS	NS	NS	NS	NS	NS	NS
SW-2	NS	NS	NS	NS	NS	NS	NS	NS	NS
L. Queen Max. Conc.									
Shallow Max. Conc.									
WELL	May-91	Jul-91	9/19/91	9/21/91	9/24/91	9/25/91	9/26/91	9/27/91	Mar-97

*EPA Method 8270
P = Pump
FP = Free Product (Condensate)
NS = Not Sampled
NI = Not Installed
VE=Vapor Extraction

TABLE 3-3
CUMULATIVE BARIUM ANALYTICAL RESULTS IN GROUNDWATER
1991-1997

	barium (mg/L) using EPA Method 6010 or 200.7 unless indicated otherwise									
WELL	May-91	Jul-91	09/19/91	Sep-91	09/24/91	09/25/91	09/26/91	09/27/91	Mar-97	May-97
MW-1	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-2	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-3	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-4	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-6	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-7	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-8	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-9	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-10	NS	NS	NS	**0.97**	NS	NS	NS	NS	NS	NS
MW-11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-13	NS	NS	NS	**0.74**	NS	NS	NS	**0.65**	**0.37**	NS
MW-14	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-16	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-17	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-18	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-19	NS	NS	NS	**1.80**	NS	NS	NS	NS	NS	NS
MW-20	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-21	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-22	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-23	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-24	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-25	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-26	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-27	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-28	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-29	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-30	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-31	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-32	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-33	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-34	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-35	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-36	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-37	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-38	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-39	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-40	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-41	NS	NS	NS	NS	NS	NS	NS	NS	**0.37**	NS
MW-42	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-43	NS	NS	**0.16**	**0.15**	NS	NS	NS	NS	NS	NS
MW-44	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-45	NS	NS	NS	NS	**0.07**	NS	NS	NS	NS	NS
MW-46	NS	NS	NS	NS	NS	NS	NS	NS	NS	**0.31**
MW-47	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-48	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-49	NS	NS	NS	NS	NS	NS	NS	NS	**0.07**	NS

TABLE 3-3
CUMULATIVE BARIUM ANALYTICAL RESULTS
IN GROUNDWATER
1991-1997 (continued)

	barium (mg/L) using EPA Method 6010 or 200.7 unless indicated otherwise									
WELL	May-91	Jul-91	09/19/91	Sep-91	09/24/91	09/25/91	09/26/91	09/27/91	Mar-97	May-97
MW-50	NS	NS	NS	NS	NS	NS	NS	**0.02**	**0.03**	NS
MW-51	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-52	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-53	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-54	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-55	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-56	NS	NS	NS	NS	NS	**0.68**	NS	NS	**0.66**	NS
MW-61	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-65	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-69	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-77	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS
MW-78	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS
MW-79	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS
MW-80	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS
MW-90	NI	NI	NI	NI	NI	NI	NI	NS	NS	NS
MW-91	NI	NI	NI	NI	NI	NI	NI	NS	NS	NS
MW-92	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY
MW-93	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY
MW-99	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY
MW-100	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY
MW-101	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY
MW-102	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY
MW-103	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY
MW-105	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY
MW-106	NI	NI	NI	NI	NI	NI	NI	NS	NS	NS
MW-107	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY
SUMP A10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SUMP A11	NS	NS	NS	NS	NS	NS	**0.18**	NS	NS	NS
SUMP 16A	NS	NS	NS	**0.08**	NS	NS	NS	NS	NS	NS
Lyman well	NS	**0.02**	NS	NS	NS	NS	NS	NS	NS	NS
Biebble well	NS	**0.03**	NS	NS	NS	NS	NS	NS	NS	NS
U. Indian Hills Spring W	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Lower Queen Wells										
MW-57	NS	**0.15**	NS	NS	NS	NS	NS	NS	NS	NS
MW-58	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-59	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-60	NS	**0.04**	NS	NS	NS	NS	NS	NS	**0.03**	NS
MW-61A	NS	**0.13**	NS	NS	NS	NS	NS	**0.02**	NS	NS
MW-62	NS	NS	NS	NS	NS	NS	**2.85**	NS	NS	NS
MW-63	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-64	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-65A	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-66	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-67	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-68	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-70	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-71	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS
MW-72	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS
MW-73	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS
MW-74	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS

TABLE 3-3
CUMULATIVE BARIUM ANALYTICAL RESULTS
IN GROUNDWATER
1991-1997 (continued)

	barium (mg/L) using EPA Method 6010 or 200.7 unless indicated otherwise									
WELL	May-91	Jul-91	09/19/91	Sep-91	09/24/91	09/25/91	09/26/91	09/27/91	Mar-97	May-97
MW-75	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS
MW-76	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS
MW-81	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS
MW-82	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS
MW-83	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS
SW-1	NS	**0.03**	NS	NS	NS	NS	NS	NS	NS	NS
SW-2	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Line #4 Water	**0.05**	NS	NS	NS	NS	NS	NS	NS	NS	NS
WELL	May-91	Jul-91	09/19/91	Sep-91	09/24/91	09/25/91	09/26/91	09/27/91	Mar-97	May-97

NS = Not Sampled

NI = Not Installed

TABLE 3-4
CUMULATIVE CHLORIDE ANALYTICAL RESULTS
IN GROUNDWATER: 1991-1997

	Chloride (mg/L) using EPA Method 352.4 unless indicated otherwise																												
WELL	Apr-91	May-91	Jun-91	Jul-91	Sep-91	Dec-91	Apr-92	Jul-92	Oct-92	Jan-93	Apr-93	Jul-93	Oct-93	Jan-94	Apr-94	Jul-94	Oct-94	Jan-95	Apr-95	Jul-95	Oct-95	Jan-96	Apr-96	Jul-96	08/22/96	Oct-96	Feb-97	May-97	WELL
MW-1	2000	310			85	152	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-1
MW-2					NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-2
MW-3					NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	DRY	DRY	DRY	MW-3
MW-4					NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-4
MW-5					NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	MW-5
MW-6					NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	DRY	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	NS	NS	NS	NS	MW-6
MW-7					NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	DRY	DRY	DRY	MW-7
MW-8					NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	DRY	DRY	DRY	MW-8
MW-9					NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	DRY	DRY	DRY	MW-9
MW-10		60			330	323	319	240	312	NS	NS	DRY	DRY	BD	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	120		MW-10
MW-11					573	790	653	270	239	544	NS	NS	NS	NS	NS	NS	130	DRY	NS	260	NS	120	120	37	NS	16	46	NS	MW-11
MW-12					251	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-12
MW-13					1460	780	1240	269	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	45	70	NS	MW-13
MW-14					289	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-14
MW-15					172	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-15
MW-16					94	NS	NS	NS	NS	NS	246	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-16
MW-17					422	NS	NS	NS	NS	NS	306	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-17
MW-18		310			301	406	464	109	408	NS	NS	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-18
MW-19		320		466	363	NS	463	90	420	NS	NS	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	DRY	NS	NS	NS	96	240	NS	MW-19
MW-20					336	NS	NS	NS	NS	NS	NS	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-20
MW-21		230			97	343	NS	NS	NS	NS	283	NS	NS	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-21
MW-22					28	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-22
MW-23					NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-23
MW-24					454	NS	NS	455	NS	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	DRY	DRY	DRY	MW-24
MW-25					NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-25
MW-26		440			328	356	NS	164	222	177	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-26
MW-27					NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-27
MW-28					106	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-28
MW-29					NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	DRY	DRY	DRY	MW-29
MW-30					NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-30
MW-31					3.8	NS	NS	337	296	NS	NS	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-31
MW-32					90	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	DRY	DRY	DRY	MW-32
MW-33					573	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-33
MW-34					978	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-34
MW-35					521	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-35

TABLE 3-4
CUMULATIVE CHLORIDE ANALYTICAL RESULTS
IN GROUNDWATER: 1991-1997 (continued)

	Chloride (mg/L) using EPA Method 352.4 unless indicated otherwise																											
WELL	Apr-91	May-91	Jun-91	Jul-91	Sep-91	Dec-91	Apr-92	Jul-92	Oct-92	Jan-93	Apr-93	Jul-93	Oct-93	Jan-94	Apr-94	Jul-94	Oct-94	Jan-95	Apr-95	Jul-95	Oct-95	Jan-96	Apr-96	Jul-96	Aug-96	Oct-96	Feb-97	May-97	WELL
MW-36					NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-36
MW-37			52		66	NS	NS	NS	NS	NS	NS	173	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-37
MW-38		60	38		101	111	127	147	128	NS	NS	DRY	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	280	310	NS	MW-38
MW-39		9.6	244		262	NS	NS	NS	NS	231	83	296	277	260	220	198	DRY	194	NS	NS	NS	NS	NS	NS	NS	140	160	NS	MW-39
MW-40					NS	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-40
MW-41			29	38	123	108	NS	NS	NS	NS	NS	242	264	370	290	259	300	326	300	270	240	270	260	250	NS	250	180	NS	MW-41
MW-42					605	571	NS	NS	NS	NS	NS	NS	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-42
MW-43			94		94	NS	NS	NS	NS	NS	NS	232	230	260	250	266	270	280	280	270	220	280	280	270	NS	380	330	NS	MW-43
MW-44			33		246	NS	660	263	356	300	365	445	543	490	440	430	360	360	410	400	520	580	530	480	NS	32	180	NS	MW-44
MW-45			451		170	296	NS	NS	NS	NS	NS	434	408	440	430	429	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-45
MW-46			152	45	136	139	NS	NS	NS	NS	NS	NS	DRY	NS	NS	DRY	NS	DRY	NS	NS	NS	NS	NS	NS	NS	170	220	132	MW-46
MW-47			51		274	433	NS	NS	NS	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	700	DRY	DRY	MW-47
MW-48					414	400	NS	431	NS	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	200	DRY	DRY	MW-48
MW-49			310		273	NS	NS	NS	NS	NS	NS	399	397	400	380	368	380	389	390	380	350	410	400	360	NS	36	410	NS	MW-49
MW-50			376		384	380	397	379	370	337	955	347	292	320	290	290	290	314	320	310	240	290	330	310	NS	360	360		MW-50
MW-51					405	38	NS	NS	NS	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-51
MW-52					4.4	NS	NS	3	NS	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	DRY	DRY	DRY	MW-52
MW-53					8.5	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	DRY	DRY	DRY	MW-53
MW-54					99	87	151	80	55	134	145	146	122	140	102	135	130	32	102	95	110	120	140	110	NS	110	180	NS	MW-54
MW-55			200		628	501	385	273	292	300	301	312	287	320	310	299	390	321	320	300	250	370	310	350	NS	210	270		MW-55
MW-56			100	102	248	197	NS	248	183	269	NS	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	270	170	NS	MW-56
MW-61					416	413	NS	NS	NS	NS	NS	NS	NS	420	450	387	400	439	420	400	300	420	450	370	NS	420	410	NS	MW-61
MW-65					1.7	3	NS	NS	NS	NS	NS	4	DRY	DRY	DRY	NS	5.9	NS	NS	NS	NS	NS	NS	5	NS	3	1.3	2	MW-65
MW-69					98	154	NS	15	43	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	70	NS	MW-69
MW-77	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS	110	NS	120	120	100	NS	140	DRY	150	MW-77
MW-78	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	31	75	59	MW-78
MW-79	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	36	33	31	30	23	30	17	NS	20	24	24	MW-79
MW-80	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY	DRY	DRY	DRY	DRY	DRY	NS	DRY	DRY	DRY	MW-80
MW-90	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	26	25	MW-90
MW-91	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	80	NS	MW-91
MW-92	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY	MW-92
MW-93	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY	MW-93
MW-99	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY	MW-99
MW-100	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY	MW-100
MW-101	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY	MW-101
MW-102	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY	MW-102
MW-103	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY	MW-103
MW-105	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY	MW-105
MW-106	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	10	4	MW-106
MW-107	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY	MW-107
SUMP A10	17000	3750	NS	NS	199	NS	NS	NS	NS	NS	NS	DRY	DRY	DRY	DRY	NS	4.2	DRY	DRY	DRY	3	DRY	DRY	DRY	NS	DRY	DRY	DRY	SUMP A10
SUMP A11	12800			1470	342	670	433	60	124	NS	NS	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	SUMP A11
SUMP 16A		190		49	11.7	683	522	82	225	229	218	DRY	DRY	DRY	DRY	DRY	128	90.0	NS	DRY	63	NS	NS	14	NS	NS	NS	NS	SUMP 16A

TABLE 3-4
CUMULATIVE CHLORIDE ANALYTICAL RESULTS IN GROUNDWATER: 1991-1997 (continued)

	Chloride (mg/L) using EPA Method 352.4 unless indicated otherwise																												
WELL	Apr-91	May-91	Jun-91	Jul-91	Sep-91	Dec-91	Apr-92	Jul-92	Oct-92	Jan-93	Apr-93	Jul-93	Oct-93	Jan-94	Apr-94	Jul-94	Oct-94	Jan-95	Apr-95	Jul-95	Oct-95	Jan-96	Apr-96	Jul-96	Aug-96	Oct-96	Feb-97	May-97	WELL
SUMP 21A		8250			495	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	SUMP 21A
Lyman well				20	10.6	12.2	12.6	14.6	15.5	13.2	13.0	15.0	14.6	13	12.5	12	14	11	13	11	12	9	11.1	9	NS	10	11		Lyman well
Biebble well				14	8.2	9.5	13.5	7.8	10.1	10.6	11.4	13.3	10.4	11	10.5	15	13	8	10.8	10	13	9	10.5	11	NS	11	10		Biebble well
U. Indian Spgs W.					8.0	9.7	16.2	8.5	13.5	11.4	13.5	12.9	10.3	11	14	8	13	10	13	12	14	10	10.9	10	NS	8	11		U. Indian Spgs W.
L. Queen																													L. Queen
MW-57			15.2	21	43	32	117	63	67	131	80	72	73.6	64	58	48	60	35	31	37	47	44	44	30	NS	30	32		MW-57
MW-58					74	124	156	149	155	175	133	133	59	NS	48	38	11	26	29	NS	NS	NS	NS	NS	NS	38	NS	NS	MW-58
MW-59					77	149	52	55	69	46	29	NS	56	NS	30	<5.0	25	12	NS	NS	NS	NS	NS	NS	NS	NS	29		MW-59
MW-60				13	12.0	10	10	10	14	6	9	10.7	13.5	9.5	9.0	<5.0	9.1	20	8.8	9	9	16	12.7	12	NS	12	9	10	MW-60
MW-61A					10	12	12	12	13	12	15	NS	NS	NS	10.7	8	11	32	NS	NS	NS	9	10.2	7	NS	NS	13	11	MW-61A
MW-62					238	247	218	236	285	202	207	459	181	160	139	129	130	152	128	NS	NS	NS	NS	NS	NS	NS	150		MW-62
MW-63					9.2	8	14	7	1	3	5.6	3	4	5.7	5.5	<5.0	6.2	9	6.9	7	12	10	10.2	10	NS	7	7		MW-63
MW-64					10.7	18	13	13	12	10.2	10	12.0	8	10	10	<5.0	10.2	20	12	11	12	12	11.6	NS	NS	NS	11		MW-64
MW-65A					6.2	22	33	18	35	35	26	19	17	18	15	10	18	12	13	NS	NS	NS	12.6	NS	NS	NS	NS	NS	MW-65A
MW-66					9.2	9	8	8	8	12	8	15	7	9.0	8.7	<5.0	8.8	6	8.9	8	9	10	9.6	6	NS	7	9	9	MW-66
MW-67					3.6	7	6	3	9	4	8	6	9.5	8.6	7.6	<5.0	7.9	<5.0	13	6	6	11	7.4	7	NS	NS	9		MW-67
MW-68					25	39	82	15	30	27	27	28	27	31	30	29	32	34	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-68
MW-70					10.4	10	8	9.2	17	8	8	8	11	10	9.5	8.0	9.5	9.0	9.7	9	10	11	9.7	8	NS	10	10		MW-70
MW-71	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	15	18	17	<5.0	22	<5.0	16	22	21	18	23	26	NS	30	24	17	MW-71
MW-72	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS	32	32	NS	52	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-72
MW-73	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-73
MW-74	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-74
MW-75	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-75
MW-76	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	MW-76
MW-81	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS	NS	NS	NS	NS	NS	NS	MW-81
MW-82	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	76	NS	NS	NS	NS	NS	NS	NS	MW-82
MW-83	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS	NS	NS	NS	NS	NS	NS	MW-83
MW-86	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS	NS	NS	MW-86
MW-87	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	11	12	11	13	MW-87
MW-87A	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	110	150	140	MW-87A
MW-88	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	35	25	30	26	MW-88
MW-89	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	63	63	60	58	MW-89
MW-95	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	MW-95
MW-96	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	MW-96
MW-97	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	MW-97
MW-98	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	MW-98
IW-1	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS	NS	NS	NS	NS	NS	NS	IW-1
IW-2	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	7	NS	NS	NS	IW-2
SW-1				19	18.4	17.3	16	19	25	NS	20	21	21.3	22	22	22	22	33	23	25	24	25	27	22	NS	23	21	NS	SW-1
SW-2					13.2	636	10	20	252	344	363	NS	NS	NS	NS	NS	NS	81	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	SW-2
SW-3	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	24	NS	24	NS	NS	SW-3
L. Queen Max. Conc.						636	218	236	285	344	363	459	181	160	139	129	130	152	128	37	76	44	44	30		110	150	140	L QN Max
Shallow Max. Conc.						790	1240	455	420	544	955	445	543	490	450	430	400	439	420	400	520	580	530	480		700	410	150	Shall. Max
Line #4 Water		12000										NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	Line #4
WELL	Apr-91	May-91	Jun-91	Jul-91	Sep-91	Dec-91	Apr-92	Jul-92	Oct-92	Jan-93	Apr-93	Jul-93	Oct-93	Jan-94	Apr-94	Jul-94	Oct-94	Jan-95	Apr-95	Jul-95	Oct-95	Jan-96	Apr-96	Jul-96	Aug-96	Oct-96	Feb-97	May-97	WELL

P = Pump
NS = Not Sampled
NI = Not Installed
VE=Vapor Extraction

TABLE 3-5
CUMULATIVE FLUORIDE ANALYTICAL RESULTS
IN GROUNDWATER
1991-1997

	fluoride (mg/L) using EPA Method 340.1 or 340.2 unless indicated otherwise				
WELL	May-91	Jul-91	Feb-97	Mar-97	May-97
MW-1	NS	NS	NS	NS	NS
MW-2	NS	NS	NS	NS	NS
MW-3	NS	NS	NS	NS	NS
MW-4	NS	NS	NS	NS	NS
MW-5	NS	NS	NS	NS	NS
MW-6	NS	NS	NS	NS	NS
MW-7	NS	NS	NS	NS	NS
MW-8	NS	NS	NS	NS	NS
MW-9	NS	NS	NS	NS	NS
MW-10	NS	NS	NS	NS	NS
MW-11	NS	NS	NS	NS	NS
MW-12	NS	NS	NS	NS	NS
MW-13	NS	NS	NS	**0.4**	NS
MW-14	NS	NS	NS	NS	NS
MW-15	NS	NS	NS	NS	NS
MW-16	NS	NS	NS	NS	NS
MW-17	NS	NS	NS	NS	NS
MW-18	NS	NS	NS	NS	NS
MW-19	NS	NS	NS	NS	NS
MW-20	NS	NS	NS	NS	NS
MW-21	NS	NS	NS	NS	NS
MW-22	NS	NS	NS	NS	NS
MW-23	NS	NS	NS	NS	NS
MW-24	NS	NS	NS	NS	NS
MW-25	NS	NS	NS	NS	NS
MW-26	NS	NS	NS	NS	NS
MW-27	NS	NS	NS	NS	NS
MW-28	NS	NS	NS	NS	NS
MW-29	NS	NS	NS	NS	NS
MW-30	NS	NS	NS	NS	NS
MW-31	NS	NS	NS	NS	NS
MW-32	NS	NS	NS	NS	NS
MW-33	NS	NS	NS	NS	NS
MW-34	NS	NS	NS	NS	NS
MW-35	NS	NS	NS	NS	NS
MW-36	NS	NS	NS	NS	NS
MW-37	NS	NS	NS	NS	NS
MW-38	NS	NS	NS	NS	NS
MW-39	NS	NS	NS	NS	NS
MW-40	NS	NS	NS	NS	NS
MW-41	NS	NS	NS	**1.5**	NS
MW-42	NS	NS	NS	NS	NS
MW-43	NS	NS	NS	NS	NS
MW-44	NS	NS	NS	NS	NS
MW-45	NS	NS	NS	NS	NS
MW-46	NS	NS	NS	NS	**1.3**
MW-47	NS	NS	NS	NS	NS
MW-48	NS	NS	NS	NS	NS
MW-49	NS	NS	NS	**1.4**	NS

TABLE 3-5
CUMULATIVE FLUORIDE ANALYTICAL RESULTS
IN GROUNDWATER
1991-1997 (continued)

WELL	fluoride (mg/L) using EPA Method 340.1 or 340.2 unless indicated otherwise				
	May-91	Jul-91	Feb-97	Mar-97	May-97
MW-50	NS	NS	NS	1.2	NS
MW-51	NS	NS	NS	NS	NS
MW-52	NS	NS	NS	NS	NS
MW-53	NS	NS	NS	NS	NS
MW-54	NS	NS	NS	NS	NS
MW-55	NS	NS	NS	NS	NS
MW-56	NS	NS	NS	**1.5**	NS
MW-61	NS	NS	NS	NS	NS
MW-65	NS	NS	NS	NS	NS
MW-69	NS	NS	NS	NS	NS
MW-77	NI	NI	NS	NS	NS
MW-78	NI	NI	NS	NS	NS
MW-79	NI	NI	NS	NS	NS
MW-80	NI	NI	NS	DRY	DRY
MW-90	NI	NI	**0.36**	NS	NS
MW-91	NI	NI	**0.19**	NS	NS
MW-92	NI	NI	NI	DRY	DRY
MW-93	NI	NI	NI	DRY	DRY
MW-99	NI	NI	NI	DRY	DRY
MW-100	NI	NI	NI	DRY	DRY
MW-101	NI	NI	NI	DRY	DRY
MW-102	NI	NI	NI	DRY	DRY
MW-103	NI	NI	NI	DRY	DRY
MW-105	NI	NI	NI	DRY	DRY
MW-106	NI	NI	**0.24**	NS	NS
MW-107	NI	NI	NI	DRY	DRY
SUMP A10	NS	NS	NS	DRY	DRY
SUMP A11	NS	NS	NS	NS	NS
SUMP 16A	NS	NS	NS	NS	NS
Lyman well	NS	**1.3**	NS	NS	NS
Biebble well	NS	**1.4**	NS	NS	NS
U. Indian Hills Spring W	NS	NS	NS	NS	NS
Lower Queen Wells					
MW-57	NS	**<1.0**	NS	NS	NS
MW-58	NS	NS	NS	NS	NS
MW-59	NS	NS	NS	NS	NS
MW-60	NS	NS	NS	0.8	NS
MW-61A	NS	**1.6**	**0.85**	NS	NS
MW-62	NS	NS	NS	NS	NS
MW-63	NS	NS	NS	NS	NS
MW-64	NS	NS	NS	NS	NS
MW-65A	NS	NS	NS	NS	NS
MW-66	NS	NS	NS	NS	NS
MW-67	NS	NS	NS	NS	NS
MW-68	NS	NS	NS	NS	NS
MW-70	NS	NS	NS	NS	NS
MW-71	NI	NI	NS	NS	NS
MW-72	NI	NI	NS	NS	NS
MW-73	NI	NI	NS	NS	NS
MW-74	NI	NI	NS	NS	NS
MW-75	NI	NI	NS	NS	NS
MW-76	NI	NI	NS	NS	NS
MW-81	NI	NI	NS	NS	NS
MW-82	NI	NI	NS	NS	NS
MW-83	NI	NI	NS	NS	NS
MW-87	NI	NI	NS	NS	NS

TABLE 3-5
CUMULATIVE FLUORIDE ANALYTICAL RESULTS IN GROUNDWATER
1991-1997 (continued)

	fluoride (mg/L) using EPA Method 340.1 or 340.2 unless indicated otherwise				
WELL	May-91	Jul-91	Feb-97	Mar-97	May-97
MW-87A	NI	NI	NS	NS	NS
MW-88	NI	NI	**1.13**	NS	NS
MW-89	NI	NI	**0.80**	NS	NS
MW-95	NI	NI	NI	NI	**0.4**
MW-96	NI	NI	NI	NI	**0.8**
MW-97	NI	NI	NI	NI	**0.5**
MW-98	NI	NI	NI	NI	**0.4**
SW-1	NS	**1.3**	**0.54**	NS	NS
SW-2	NS	NS	NS	NS	NS
WELL	May-91	Jul-91	Feb-97	Mar-97	May-97

Notes:

NS = Not Sampled

NI = Not Installed

TABLE 3-6
CUMULATIVE IRON ANALYTICAL RESULTS
IN GROUNDWATER
1991-1997

	dissolved iron (mg/L) using EPA Method 6010 or 200.7 unless indicated otherwise											
WELL	Apr-91	May-91	Jun-91	Jul-91	09/19/91	Sep-91	09/24/91	09/25/91	09/26/91	09/27/91	Mar-97	May-97
MW-1	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-2	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-3	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-4	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-6	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-7	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-8	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-9	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-10	NS	NS	NS	NS	NS	**6.99**	NS	NS	NS	NS	NS	NS
MW-11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-13	NS	NS	NS	NS	NS	**7.02**	NS	NS	NS	**6.25**	**29**	NS
MW-14	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-16	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-17	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-18	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-19	NS	**45.4**	NS	NS	NS	**1.39**	NS	NS	NS	NS	NS	NS
MW-20	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-21	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-22	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-23	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-24	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-25	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-26	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-27	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-28	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-29	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-30	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-31	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-32	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-33	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-34	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-35	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-36	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-37	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-38	NS	**0.08**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-39	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-40	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-41	NS	NS	**4.00**	NS	NS	NS	NS	NS	NS	NS	**0.69**	NS
MW-42	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-43	NS	NS	**9.65**	NS	3.29	**4.04**	NS	NS	NS	NS	NS	NS
MW-44	NS	NS	**9.28**	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-45	NS	NS	**40.1**	NS	NS	NS	**54.0**	NS	NS	NS	NS	NS
MW-46	NS	NS	**1.14**	NS	NS	NS	NS	NS	NS	NS	NS	**<0.05**
MW-47	NS	NS	**0.16**	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-48	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-49	NS	NS	**2.50**	NS	NS	NS	NS	NS	NS	NS	**6.8**	NS

TABLE 3-6
CUMULATIVE IRON ANALYTICAL RESULTS
IN GROUNDWATER
1991-1997 (continued)

	dissolved iron (mg/L) using EPA Method 6010 or 200.7 unless indicated otherwise											
WELL	Apr-91	May-91	Jun-91	Jul-91	09/19/91	Sep-91	09/24/91	09/25/91	09/26/91	09/27/91	Mar-97	May-97
MW-50	NS	NS	41.5	NS	NS	NS	NS	NS	NS	0.90	6.5	NS
MW-51	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-52	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-53	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-54	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-55	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-56	NS	NS	NS	NS	NS	NS	NS	11.7	NS	NS	28	NS
MW-61	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-65	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-69	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-77	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS
MW-78	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS
MW-79	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS
MW-80	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS
MW-90	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS	NS
MW-91	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS	NS
MW-92	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY
MW-93	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY
MW-99	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY
MW-100	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY
MW-101	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY
MW-102	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY
MW-103	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY
MW-105	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY
MW-106	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS	NS
MW-107	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY
SUMP A10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SUMP A11	0.75	NS	NS	NS	NS	NS	NS	NS	0.50	NS	NS	NS
SUMP 16A	NS	NS	NS	NS	NS	0.73	NS	NS	NS	NS	NS	NS
Lyman well	NS	NS	NS	<0.05	NS	NS	NS	NS	NS	NS	NS	NS
Biebble well	NS	NS	NS	<0.05	NS	NS	NS	NS	NS	NS	NS	NS
U. Indian Hills Spring	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Lower Queen Wells												
MW-57	NS	NS	NS	<0.05	NS	NS	NS	NS	NS	NS	NS	NS
MW-58	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-59	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-60	NS	NS	NS	<0.05	NS	NS	NS	NS	NS	NS	0.67	NS
MW-61A	NS	NS	NS	<0.05	NS	NS	NS	NS	NS	0.22	NS	NS
MW-62	NS	NS	NS	NS	NS	NS	NS	NS	4.81	NS	NS	NS
MW-63	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-64	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-65A	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-66	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-67	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-68	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-70	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-71	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS
MW-72	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS
MW-73	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS
MW-74	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS
MW-75	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS

TABLE 3-6
CUMULATIVE IRON ANALYTICAL RESULTS
IN GROUNDWATER
1991-1997 (continued)

	dissolved iron (mg/L) using EPA Method 6010 or 200.7 unless indicated otherwise											
WELL	Apr-91	May-91	Jun-91	Jul-91	09/19/91	Sep-91	09/24/91	09/25/91	09/26/91	09/27/91	Mar-97	May-97
MW-76	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS
MW-81	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS
MW-82	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS
MW-83	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS
SW-1	NS	NS	NS	**<0.05**	NS	NS	NS	NS	NS	NS	NS	NS
SW-2	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Line #4 Water	NS	**0.09**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
WELL	Apr-91	May-91	Jun-91	Jul-91	09/19/91	Sep-91	09/24/91	09/25/91	09/26/91	09/27/91	Mar-97	May-97

NS = Not Sampled

NI = Not Installed

TABLE 3-7
CUMULATIVE SUMMARY OF MANGANESE IN GROUNDWATER
1991-1997

	dissolved manganese (mg/L) using EPA Method 6010 unless indicated otherwise											
WELL	Apr-91	May-91	Jun-91	Jul-91	09/19/91	Sep-91	09/24/91	09/25/91	09/26/91	09/27/91	Mar-97	May-97
MW-1	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-2	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-3	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-4	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-6	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-7	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-8	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-9	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-10	NS	NS	NS	NS	NS	**0.44**	NS	NS	NS	NS	NS	NS
MW-11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-13	NS	NS	NS	NS	NS	**0.36**	NS	NS	NS	**0.31**	**0.48**	NS
MW-14	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-16	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-17	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-18	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-19	NS	**2.24**	NS	NS	NS	**0.20**	NS	NS	NS	NS	NS	NS
MW-20	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-21	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-22	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-23	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-24	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-25	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-26	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-27	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-28	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-29	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-30	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-31	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-32	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-33	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-34	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-35	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-36	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-37	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-38	NS	**0.15**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-39	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-40	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-41	NS	NS	**0.53**	NS	NS	NS	NS	NS	NS	NS	**0.11**	NS
MW-42	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-43	NS	NS	**2.70**	NS	**0.32**	**0.43**	NS	NS	NS	NS	NS	NS
MW-44	NS	NS	**1.14**	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-45	NS	NS	**1.40**	NS	NS	NS	**2.03**	NS	NS	NS	NS	NS
MW-46	NS	NS	**0.71**	NS	NS	NS	NS	NS	NS	NS	NS	**0.068**
MW-47	NS	NS	**0.64**	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-48	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-49	NS	NS	**7.78**	NS	NS	NS	NS	NS	NS	NS	**0.33**	NS
MW-50	NS	NS	**2.14**	NS	NS	NS	NS	NS	NS	**0.45**	**0.64**	NS

TABLE 3-7
CUMULATIVE SUMMARY OF MANGANESE IN GROUNDWATER
1991-1997 (continued)

	dissolved manganese (mg/L) using EPA Method 6010 unless indicated otherwise										
WELL	Apr-91	May-91	Jun-91	Jul-91	09/19/91	Sep-91	09/24/91	09/25/91	09/26/91	09/27/91	Mar-97	May-97
MW-51	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-52	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-53	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-54	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-55	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-56	NS	NS	NS	NS	NS	NS	NS	**0.17**	NS	NS	**0.24**	NS
MW-61	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-65	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-69	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-77	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS
MW-78	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS
MW-79	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS
MW-80	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS
MW-90	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS	NS
MW-91	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS	NS
MW-92	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY
MW-93	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY
MW-99	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY
MW-100	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY
MW-101	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY
MW-102	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY
MW-103	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY
MW-105	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY
MW-106	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS	NS
MW-107	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY
SUMP A10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SUMP A11	**0.40**	NS	NS	NS	NS	NS	NS	NS	**0.34**	NS	NS	NS
SUMP 16A	NS	NS	NS	NS	NS	**0.18**	NS	NS	NS	NS	NS	NS
Lyman well	NS	NS	NS	**<0.01**	NS	NS	NS	NS	NS	NS	NS	NS
Biebble well	NS	NS	NS	**<0.01**	NS	NS	NS	NS	NS	NS	NS	NS
U. Indian Hills Spring	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Lower Queen Wells												
MW-57	NS	NS	NS	**<0.01**	NS	NS	NS	NS	NS	NS	NS	NS
MW-58	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-59	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-60	NS	NS	NS	**0.05**	NS	NS	NS	NS	NS	NS	**0.03**	NS
MW-61A	NS	NS	NS	**0.13**	NS	NS	NS	NS	NS	**0.15**	NS	NS
MW-62	NS	NS	NS	NS	NS	NS	NS	NS	**0.81**	NS	NS	NS
MW-63	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-64	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-65A	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-66	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-67								NS	NS	NS	NS	NS
MW-68	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-70	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-71	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS
MW-72	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS
MW-73	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS
MW-74	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS
MW-75	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS
MW-76	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS

TABLE 3-7
CUMULATIVE SUMMARY OF MANGANESE
IN GROUNDWATER
1991-1997 (continued)

	dissolved manganese (mg/L) using EPA Method 6010 unless indicated otherwise											
WELL	Apr-91	May-91	Jun-91	Jul-91	09/19/91	Sep-91	09/24/91	09/25/91	09/26/91	09/27/91	Mar-97	May-97
MW-81	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS
MW-82	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS
MW-83	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NS	NS
SW-1	NS	NS	NS	<0.01	NS	NS	NS	NS	NS	NS	NS	NS
SW-2	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Line #4 Water	NS	0.04	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
WELL	Apr-91	May-91	Jun-91	Jul-91	09/19/91	Sep-91	09/24/91	09/25/91	09/26/91	09/27/91	Mar-97	May-97

NS = Not Sampled

NI = Not Installed

TABLE 3-8
CUMULATIVE SULFATE ANALYTICAL RESULTS IN GROUNDWATER
1991-1997

	sulfate (mg/L) using EPA Method 375.3 or 375.4 unless indicated otherwise							
WELL	Apr-91	May-91	Jun-91	Jul-91	Sep-91	Feb-97	Mar-97	May-97
MW-1	NS	NS	NS	NS	NS	NS	NS	NS
MW-2	NS	NS	NS	NS	NS	NS	NS	NS
MW-3	NS	NS	NS	NS	NS	NS	NS	NS
MW-4	NS	NS	NS	NS	NS	NS	NS	NS
MW-5	NS	NS	NS	NS	NS	NS	NS	NS
MW-6	NS	NS	NS	NS	NS	NS	NS	NS
MW-7	NS	NS	NS	NS	NS	NS	NS	NS
MW-8	NS	NS	NS	NS	NS	NS	NS	NS
MW-9	NS	NS	NS	NS	NS	NS	NS	NS
MW-10	NS	NS	NS	NS	**<10**	NS	NS	NS
MW-11	NS	NS	NS	NS	NS	NS	NS	NS
MW-12	NS	NS	NS	NS	NS	NS	NS	NS
MW-13	NS	NS	NS	NS	**<10**	NS	**<10**	NS
MW-14	NS	NS	NS	NS	NS	NS	NS	NS
MW-15	NS	NS	NS	NS	NS	NS	NS	NS
MW-16	NS	NS	NS	NS	NS	NS	NS	NS
MW-17	NS	NS	NS	NS	NS	NS	NS	NS
MW-18	NS	NS	NS	NS	NS	NS	NS	NS
MW-19	NS	**16**	NS	NS	**<10**	NS	NS	NS
MW-20	NS	NS	NS	NS	NS	NS	NS	NS
MW-21	NS	NS	NS	NS	NS	NS	NS	NS
MW-22	NS	NS	NS	NS	NS	NS	NS	NS
MW-23	NS	NS	NS	NS	NS	NS	NS	NS
MW-24	NS	NS	NS	NS	NS	NS	NS	NS
MW-25	NS	NS	NS	NS	NS	NS	NS	NS
MW-26	NS	NS	NS	NS	NS	NS	NS	NS
MW-27	NS	NS	NS	NS	NS	NS	NS	NS
MW-28	NS	NS	NS	NS	NS	NS	NS	NS
MW-29	NS	NS	NS	NS	NS	NS	NS	NS
MW-30	NS	NS	NS	NS	NS	NS	NS	NS
MW-31	NS	NS	NS	NS	NS	NS	NS	NS
MW-32	NS	NS	NS	NS	NS	NS	NS	NS
MW-33	NS	NS	NS	NS	NS	NS	NS	NS
MW-34	NS	NS	NS	NS	NS	NS	NS	NS
MW-35	NS	NS	NS	NS	NS	NS	NS	NS
MW-36	NS	NS	NS	NS	NS	NS	NS	NS
MW-37	NS	NS	NS	NS	NS	NS	NS	NS
MW-38	NS	**<10**	NS	NS	NS	NS	NS	NS
MW-39	NS	NS	NS	NS	NS	NS	NS	NS
MW-40	NS	NS	NS	NS	NS	NS	NS	NS
MW-41	NS	NS	**41**	--NS	NS	NS	**98**	NS
MW-42	NS	NS	NS	NS	NS	NS	NS	NS
MW-43	NS	NS	**47**	NS	**370**	NS	NS	NS
MW-44	NS	NS	**33**	NS	NS	NS	NS	NS
MW-45	NS	NS	**2940**	NS	**2090**	NS	NS	NS
MW-46	NS	NS	**20**	NS	NS	NS	NS	**106**
MW-47	NS	NS	**23**	NS	NS	NS	NS	NS
MW-48	NS	NS	NS	NS	NS	NS	NS	NS
MW-49	NS	NS	**1800**	NS	NS	NS	**1000**	NS
MW-50	NS	NS	**3420**	NS	NS	NS	**3600**	NS
MW-51	NS	NS	NS	NS	NS	NS	NS	NS
MW-52	NS	NS	NS	NS	NS	NS	NS	NS
MW-53	NS	NS	NS	NS	NS	NS	NS	NS

TABLE 3-8
CUMULATIVE SULFATE ANALYTICAL RESULTS IN GROUNDWATER
1991-1997 (continued)

	sulfate (mg/L) using EPA Method 375.3 or 375.4 unless indicated otherwise							
WELL	Apr-91	May-91	Jun-91	Jul-91	Sep-91	Feb-97	Mar-97	May-97
MW-54	NS	NS	NS	NS	NS	NS	NS	NS
MW-55	NS	NS	NS	NS	NS	NS	NS	NS
MW-56	NS	NS	NS	NS	**<10**	NS	**<10**	NS
MW-61	NS	NS	NS	NS	NS	NS	NS	NS
MW-65	NS	NS	NS	NS	NS	NS	NS	NS
MW-69	NS	NS	NS	NS	NS	NS	NS	NS
MW-77	NI	NI	NI	NI	NI	NS	NS	NS
MW-78	NI	NI	NI	NI	NI	NS	NS	NS
MW-79	NI	NI	NI	NI	NI	NS	NS	NS
MW-80	NI	NI	NI	NI	NI	NS	NS	NS
MW-90	NI	NI	NI	NI	NI	**25**	NS	NS
MW-91	NI	NI	NI	NI	NI	**<5**	NS	NS
MW-92	NI	NI	NI	NI	NI	NI	DRY	DRY
MW-93	NI	NI	NI	NI	NI	NI	DRY	DRY
MW-99	NI	NI	NI	NI	NI	NI	DRY	DRY
MW-100	NI	NI	NI	NI	NI	NI	DRY	DRY
MW-101	NI	NI	NI	NI	NI	NI	DRY	DRY
MW-102	NI	NI	NI	NI	NI	NI	DRY	DRY
MW-103	NI	NI	NI	NI	NI	NI	DRY	DRY
MW-105	NI	NI	NI	NI	NI	NI	DRY	DRY
MW-106	NI	NI	NI	NI	NI	**37**	NS	NS
MW-107	NI	NI	NI	NI	NI	NI	DRY	DRY
SUMP A10	NS	NS	NS	NS	NS	NS	NS	NS
SUMP A11	**613**	NS	NS	NS	**<10**	NS	NS	NS
SUMP 16A	NS	NS	NS	NS	**<10**	NS	NS	NS
Lyman well	NS	NS	NS	**450**	NS	NS	NS	NS
Biebble well	NS	NS	NS	**250**	NS	NS	NS	NS
U. Indian Hills Spring W	NS	NS	NS	NS	NS	NS	NS	NS
Lower Queen Wells								
MW-57	NS	NS	NS	**60**	NS	NS	NS	NS
MW-58	NS	NS	NS	NS	NS	NS	NS	NS
MW-59	NS	NS	NS	NS	NS	NS	NS	NS
MW-60	NS	NS	NS	**383**	NS	NS	**280**	NS
MW-61A	NS	NS	NS	**347**	**335**	**340**	NS	NS
MW-62	NS	NS	NS	NS	**19**	NS	NS	NS
MW-63	NS	NS	NS	NS	NS	NS	NS	NS
MW-64	NS	NS	NS	NS	NS	NS	NS	NS
MW-65A	NS	NS	NS	NS	NS	NS	NS	NS
MW-66	NS	NS	NS	NS	NS	NS	NS	NS
MW-67	NS	NS	NS	NS	NS	NS	NS	NS
MW-68	NS	NS	NS	NS	NS	NS	NS	NS
MW-70	NS	NS	NS	NS	NS	NS	NS	NS
MW-71	NI	NI	NI	NI	NI	NS	NS	NS
MW-72	NI	NI	NI	NI	NI	NS	NS	NS
MW-73	NI	NI	NI	NI	NI	NS	NS	NS
MW-74	NI	NI	NI	NI	NI	NS	NS	NS
MW-75	NI	NI	NI	NI	NI	NS	NS	NS
MW-76	NI	NI	NI	NI	NI	NS	NS	NS
MW-81	NI	NI	NI	NI	NI	NS	NS	NS
MW-82	NI	NI	NI	NI	NI	NS	NS	NS
MW-83	NI	NI	NI	NI	NI	NS	NS	NS
MW-87	NI	NI	NI	NI	NI	NS	NS	NS
MW-87A	NI	NI	NI	NI	NI	NS	NS	NS

TABLE 3-8
CUMULATIVE SULFATE ANALYTICAL RESULTS IN GROUNDWATER
1991-1997 (continued)

	sulfate (mg/L) using EPA Method 375.3 or 375.4 unless indicated otherwise							
WELL	Apr-91	May-91	Jun-91	Jul-91	Sep-91	Feb-97	Mar-97	May-97
MW-88	NI	NI	NI	NI	NI	**390**	NS	NS
MW-89	NI	NI	NI	NI	NI	**250**	NS	NS
MW-95	NI	NI	NI	NI	NI	NI	NI	**19**
MW-96	NI	NI	NI	NI	NI	NI	NI	**160**
MW-97	NI	NI	NI	NI	NI	NI	NI	**150**
MW-98	NI	NI	NI	NI	NI	NI	NI	**25**
SW-1	NS	NS	NS	**164**	NS	**140**	NS	NS
SW-2	NS	NS	NS	NS	NS	NS	NS	NS
Line #4 Water	NS	**1960**	NS	NS	NS	NS	NS	NS
WELL	04/01/91	05/01/91	06/01/91	07/01/91	09/01/91	02/01/97	03/01/97	05/01/97

NS = Not Sampled

NI = Not Installed

TABLE 3-9
CUMULATIVE TOTAL DISSOLVED SOLIDS IN GROUNDWATER
1991-1997

	TDS (mg/L) using EPA Method 160.1 unless indicated otherwise								
WELL	Apr-91	May-91	Jun-91	Jul-91	Sep-91	Aug-96	Feb-97	Mar-97	May-97
MW-1	NS	820	NS	NS	NS	NS	NS	NS	NS
MW-2	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-3	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-4	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-5	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-6	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-7	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-8	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-9	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-10	NS	1600	NS	NS	1440	NS	NS	NS	NS
MW-11	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-12	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-13	NS	NS	NS	NS	2790	NS	NS	770	NS
MW-14	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-15	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-16	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-17	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-18	NS	1580	NS	NS	NS	NS	NS	NS	NS
MW-19	NS	1500	NS	NS	1460	NS	NS	NS	NS
MW-20	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-21	NS	1220	NS	NS	NS	NS	NS	NS	NS
MW-22	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-23	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-24	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-25	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-26	NS	1650	NS	NS	NS	NS	NS	NS	NS
MW-27	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-28	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-29	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-30	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-31	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-32	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-33	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-34	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-35	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-36	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-37	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-38	NS	790	NS	NS	NS	NS	NS	NS	NS
MW-39	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-40	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-41	NS	NS	758	NS	NS	NS	NS	1500	NS
MW-42	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-43	NS	NS	1300	NS	1600	NS	NS	NS	NS
MW-44	NS	NS	641	NS	NS	NS	NS	NS	NS
MW-45	NS	NS	5440	NS	3920	NS	NS	NS	NS
MW-46	NS	NS	1220	NS	NS	NS	NS	NS	1300
MW-47	NS	NS	652	NS	NS	NS	NS	NS	NS
MW-48	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-49	NS	NS	3910	NS	NS	NS	NS	3100	NS
MW-50	NS	NS	6070	NS	NS	NS	NS	5900	NS
MW-51	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-52	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-53	NS	NS	NS	NS	NS	NS	NS	NS	NS

TABLE 3-9
CUMULATIVE TOTAL DISSOLVED SOLIDS IN GROUNDWATER
1991-1997 (continued)

	TDS (mg/L) using EPA Method 160.1 unless indicated otherwise								
WELL	Apr-91	May-91	Jun-91	Jul-91	Sep-91	Aug-96	Feb-97	Mar-97	May-97
MW-54	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-55	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-56	NS	NS	NS	NS	**1220**	NS	NS	**1200**	NS
MW-61	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-65	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-69	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-77	NI	NI	NI	NI	NI	NS	NS	NS	NS
MW-78	NI	NI	NI	NI	NI	NS	NS	NS	NS
MW-79	NI	NI	NI	NI	NI	NS	NS	NS	NS
MW-80	NI	NI	NI	NI	NI	NS	NS	NS	NS
MW-90	NI	NI	NI	NI	NI	NI	**460**	NS	NS
MW-91	NI	NI	NI	NI	NI	NI	**590**	NS	NS
MW-92	NI	NI	NI	NI	NI	NI	NI	DRY	DRY
MW-93	NI	NI	NI	NI	NI	NI	NI	DRY	DRY
MW-99	NI	NI	NI	NI	NI	NI	NI	DRY	DRY
MW-100	NI	NI	NI	NI	NI	NI	NI	DRY	DRY
MW-101	NI	NI	NI	NI	NI	NI	NI	DRY	DRY
MW-102	NI	NI	NI	NI	NI	NI	NI	DRY	DRY
MW-103	NI	NI	NI	NI	NI	NI	NI	DRY	DRY
MW-105	NI	NI	NI	NI	NI	NI	NI	DRY	DRY
MW-106	NI	NI	NI	NI	NI	NI	**430**	NS	NS
MW-107	NI	NI	NI	NI	NI	NI	NI	DRY	DRY
SUMP A10	NS	**8780**	NS	NS	NS	NS	NS	NS	NS
SUMP A11	**26200**	NS	NS	NS	**1050**	NS	NS	NS	NS
SUMP 16A	NS	**876**	NS	NS	**263**	NS	NS	NS	NS
SUMP 21A	NS	**16000**	NS	NS	NS	NS	NS	NS	NS
Lyman well	NS	NS	NS	**980***	NS	NS	NS	NS	NS
Biebble well	NS	NS	NS	**1000**	NS	NS	NS	NS	NS
U. Indian Hills Sprg W.	NS	NS	NS	NS	NS	NS	NS	NS	NS
Lower Queen Wells									
MW-57	NS	NS	NS	**460**	NS	NS	NS	NS	NS
MW-58	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-59	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-60	NS	NS	NS	**860***	NS	NS	NS	**760**	NS
MW-61A	NS	NS	NS	**805**	**755**	NS	**840**	NS	NS
MW-62	NS	NS	NS	NS	**1120**	NS	NS	NS	NS
MW-63	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-64	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-65A	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-66	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-67	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-68	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-70	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-71	NI	NI	NI	NI	NI	NS	NS	NS	NS
MW-72	NI	NI	NI	NI	NI	NS	NS	NS	NS
MW-73	NI	NI	NI	NI	NI	NS	NS	NS	NS
MW-74	NI	NI	NI	NI	NI	NS	NS	NS	NS
MW-75	NI	NI	NI	NI	NI	NS	NS	NS	NS
MW-76	NI	NI	NI	NI	NI	NS	NS	NS	NS
MW-81	NI	NI	NI	NI	NI	NS	NS	NS	NS
MW-82	NI	NI	NI	NI	NI	NS	NS	NS	NS
MW-83	NI	NI	NI	NI	NI	NS	NS	NS	NS
MW-87	NI	NI	NI	NI	NI	**810**	NS	NS	NS
MW-87A	NI	NI	NI	NI	NI	NS	NS	NS	NS
MW-88	NI	NI	NI	NI	NI	**1200**	**970**	NS	NS
MW-89	NI	NI	NI	NI	NI	**900**	**840**	NS	NS
MW-95	NI	NI	NI	NI	NI	NI	NI	NI	**370**
MW-96	NI	NI	NI	NI	NI	NI	NI	NI	**560**
MW-97	NI	NI	NI	NI	NI	NI	NI	NI	**550**

TABLE 3-9
CUMULATIVE TOTAL DISSOLVED SOLIDS IN GROUNDWATER
1991-1997 (continued)

	TDS (mg/L) using EPA Method 160.1 unless indicated otherwise								
WELL	Apr-91	May-91	Jun-91	Jul-91	Sep-91	Aug-96	Feb-97	Mar-97	May-97
MW-98	NI	NI	NI	NI	NI	NI	NI	NI	**330**
IW-2	NI	NI	NI	NI	NI	**370**	NS	NS	NS
SW-1	NS	NS	NS	**583**	NS	NS	**520**	NS	NS
SW-2	NS	NS	NS	NS	NS	NS	NS	NS	NS
Line #4 Water	NS	**23900**	NS	NS	NS	NS	NS	NS	NS
WELL	Apr-91	May-91	Jun-91	Jul-91	Sep-91	Aug-96	Feb-97	Mar-97	May-97

* calculated by APHA Method 1030F

** Average of more than one sample result using HPLC.

NS = Not Sampled

NI = Not Installed

TABLE 4-1
SUMMARY OF CONDENSATE RECOVERY, INDIAN BASIN REMEDIATION PROJECT

	Apr-91	May-91	Jun-91	Jul-91	Aug-91	Sep-91	Oct-91	Nov-91	Dec-91	Jan-92	Feb-92	Mar-92	Apr-92	May-92	Jun-92	Jul-92	Aug-92
Emergency Response Pumping	717.3	2041	714	220	0												
Condensate in vacuum trucks	33																
Open Earthen Pit Volatilization during Emergency Response	465																
Open Frac Tank Volatilization during Emergency Response	4447																
Shallow zone recovery from Sump 16A																	
Shallow zone recovery from Sump A-11																	
Shallow zone recovery from MW-69																	
Shallow zone recovery from MW-86																	
LQ Pump & Treat including dual pump recovery								26.0	12.5	13.0	1.5	3.1	4.8	8.5	1.2	7.3	7.9
Vapor Extraction-Shallow zone												5.1	4.9	5.1	4.9	5.1	5.1
Vapor Extraction-Lower Queen																	
Monthly Recovery (bbl)	5662.3	2041.0	714.0	220.0	0	0	0	26.0	12.5	13.0	1.5	8.2	9.7	13.6	6.1	12.4	13.0
Cumulative Recovery (bbl)	5662.3	7703.3	8417.3	8637.3	8637.3	8637.3	8637.3	8663.3	8675.8	8688.8	8690.3	8698.5	8708.2	8721.8	8727.9	8740.3	8753.3
Condensate Remaining (1991 Leak)	29337.7	27296.7	26582.7	26362.7	26362.7	26362.7	26362.7	26336.7	26324.2	26311.2	26309.7	26301.5	26291.8	26278.2	26272.1	26259.7	26246.7

NI = not installed

TABLE 4-1
SUMMARY OF CONDENSATE RECOVERY, INDIAN BASIN REMEDIATION PROJECT
(continued)

	Sep-92	Oct-92	Nov-92	Dec-92	Jan-93	Feb-93	Mar-93	Apr-93	May-93	Jun-93	Jul-93	Aug-93	Sep-93	Oct-93	Nov-93	Dec-93	Jan-94
Emergency Response Pumping																	
Condensate in vacuum trucks																	
Open Earthen Pit Volatilization during Emergency Response																	
Open Frac Tank Volatilization during Emergency Response																	
Shallow zone recovery from Sump 16A									3.4	0	0	0	0	0	0	0	0
Shallow zone recovery from Sump A-11					1.2	2.6	2.8	0	0	0	0	0	0	0	0	0	0
Shallow zone recovery from MW-69												1.8	4.7	6.2	8.8	15.3	5.4
Shallow zone recovery from MW-86																	
LQ Pump & Treat including dual pump recovery	0	4.8	0.6	0.8	0	0.3	1.9	0	1.1	0.8	1.6	4.7	3.7	5.5	1.6	1.8	2.5
Vapor Extraction-Shallow zone	0.5	5.1	4.9	5.1	4.2	0	0	3.7	5.1	4.6	0	0	0	10.6	12.2	12.7	10.1
Vapor Extraction-Lower Queen																	
Monthly Recovery (bbl)	0.5	9.9	5.5	5.9	5.4	2.9	4.7	3.7	9.6	5.4	1.6	6.4	8.3	22.3	22.6	29.8	18.0
Cumulative Recovery (bbl)	8753.8	8763.7	8769.2	8775.1	8780.5	8783.4	8788.1	8791.8	8801.4	8806.8	8808.4	8814.8	8823.1	8845.5	8868.1	8897.8	8915.8
Condensate Remaining (1991 Leak)	26246.2	26236.3	26230.8	26224.9	26219.5	26216.6	26211.9	26208.2	26198.6	26193.2	26191.6	26185.2	26176.9	26154.5	26131.9	26102.2	26084.2

NI = not installed

TABLE 4-1
SUMMARY OF CONDENSATE RECOVERY, INDIAN BASIN REMEDIATION PROJECT
(continued)

	Feb-94	Mar-94	Apr-94	May-94	Jun-94	Jul-94	Aug-94	Sep-94	Oct-94	Nov-94	Dec-94	Jan-95	Feb-95	Mar-95	Apr-95	May-95
Emergency Response Pumping																
Condensate in vacuum trucks																
Open Earthen Pit Volatilization during Emergency Response																
Open Frac Tank Volatilization during Emergency Response																
Shallow zone recovery from Sump 16A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Shallow zone recovery from Sump A-11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Shallow zone recovery from MW-69	6.7	17.8	10.8	30.1	23.8	6.9	0.0	6.1	3.1	3.1	0.7	1.1	7.6	5.0	1.5	1.6
Shallow zone recovery from MW-86																
LQ Pump & Treat including dual pump recovery	4.2	3.2	2.3	2.6	2.9	4.1	1.9	1.6	1.5	3.9	3.8	5.1	2.6	2.1	5.3	2.5
Vapor Extraction-Shallow zone	9.6	9	8	0	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Extraction-Lower Queen																
Monthly Recovery (bbl)	20.5	30.0	21.1	32.7	26.7	11.0	1.9	7.7	4.6	7.0	4.5	6.2	10.2	7.1	6.8	4.1
Cumulative Recovery (bbl)	8936.3	8966.3	8987.5	9020.2	9046.9	9057.9	9059.8	9067.5	9072.1	9079.1	9083.6	9089.8	9100.0	9107.1	9113.9	9118.0
Condensate Remaining (1991 Leak)	26063.7	26033.7	26012.5	25979.8	25953.1	25942.1	25940.2	25932.5	25927.9	25920.9	25916.4	25910.2	25900.0	25892.9	25886.1	25882.0

NI = not installed

TABLE 4-1
SUMMARY OF CONDENSATE RECOVERY, INDIAN BASIN REMEDIATION PROJECT
(continued)

	Jun-95	Jul-95	Aug-95	Sep-95	Oct-95	Nov-95	Dec-95	Jan-96	Feb-96	Mar-96	Apr-96	May-96	Jun-96	Jul-96	Aug-96	Sep-96
Emergency Response Pumping																
Condensate in vacuum trucks																
Open Earthen Pit Volatilization during Emergency Response																
Open Frac Tank Volatilization during Emergency Response																
Shallow zone recovery from Sump 16A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Shallow zone recovery from Sump A-11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Shallow zone recovery from MW-69	1.5	1.0	1.0	0.1	0	0	0	0	0	1.2	7.9	0.1	0	0	0	0
Shallow zone recovery from MW-86												0	139.0	25.0	0	0
LQ Pump & Treat including dual pump recovery	2.3	4.1	9.9	3.9	6.3	5.3	8.8	7.9	65.9	56.0	45.5	64.8	49.0	27.5	22.3	16.4
Vapor Extraction-Shallow zone	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Extraction-Lower Queen																
Monthly Recovery (bbl)	3.8	5.1	10.9	4.0	6.3	5.3	8.8	7.9	65.9	57.2	53.4	64.9	188.0	52.5	22.3	16.4
Cumulative Recovery (bbl)	9121.8	9126.9	9137.8	9141.8	9148.1	9153.4	9162.1	9170.0	9235.9	9293.1	9346.6	9411.4	9599.4	9652.0	9674.3	9690.7
Condensate Remaining (1991 Leak)	25878.2	25873.1	25862.2	25858.2	25851.9	25846.6	25837.9	25830.0	25764.1	25706.9	25653.4	25588.6	25400.6	25348.0	25325.7	25309.3

NI = not installed

TABLE 4-1
SUMMARY OF CONDENSATE RECOVERY, INDIAN BASIN REMEDIATION PROJECT
(concluded)

	Oct-96	Nov-96	Dec-96	Jan-97	Feb-97	Mar-97	Apr-97	May-97	Jun-97	TOTAL RECOVERY (bbls)	
Emergency Response Pumping										3692.3	Emergency Response Pumping
Condensate in vacuum trucks										33.0	Condensate in vacuum trucks
Open Earthen Pit Volatilization during Emergency Response										465.0	Open Earthen Pit Volatilization during Emergency Response
Open Frac Tank Volatilization during Emergency Response										4447.0	Open Frac Tank Volatilization during Emergency Response
Shallow zone recovery from Sump 16A	0	0	0	0	0	0	0	0	0	3.4	Shallow zone recovery from Sump 16A
Shallow zone recovery from Sump A-11	0	0	0	0	0	0	0	0	0	6.6	Shallow zone recovery from A-11
Shallow zone recovery from MW-69	0	0	0	0	0	0	0	0	0	180.8	Shallow zone recovery from MW-69
Shallow zone recovery from MW-86	0	0	0	0	0	0	0	0	0	164.0	Shallow zone recovery from MW-86
LQ Pump & Treat including dual pump recovery	0.7	2.6	4.0	1.2	7.2	32.2	9.7	37.8	28.3	686.7	LQ Pump & Treat including dual pump recovery
Vapor Extraction-Shallow zone	0	0	0	0	0	0	0	0	0	135.6	Vapor Extraction-Shallow zone
Vapor Extraction-Lower Queen			NI	0.1	3.9	2.1	3.1	2.4	1.2	12.9	Vapor Extraction-Lower Queen
Monthly Recovery (bbl)	0.7	2.6	4.0	1.3	11.1	34.3	12.8	40.2	29.5		Monthly Recovery
Cumulative Recovery (bbl)	9691.4	9694.0	9698.0	9699.3	9710.4	9744.7	9757.5	9797.8	9827.3		Cumulative Recovery
Condensate Remaining (1991 Leak)	25308.6	25306.0	25302.0	25300.7	25289.6	25255.3	25242.5	25202.2	25172.7		Condensate Remaining (1991 Leak)

NI = not installed

TABLE 4-2
SUMMARY OF TOTAL FLUIDS PUMPING RATES AND INFILTRATION RATES

Lower Queen Wells

Week Ending 6/30/97	1 month	3 months	Well ID	Well Type
9.73	9.20	9.04	MW-58	drawdown recovery
0.00	0.00	0.00	MW-61A	monitoring
0.00	0.00	0.00	MW-59	monitoring
0.00	0.00	0.00	MW-62	monitoring
4.98	4.88	4.68	MW-65A	drawdown recovery
0.43	2.66	3.04	MW-68	drawdown recovery
11.31	13.79	12.45	MW-72	dual recovery
12.43	13.37	15.11	MW-75	dual recovery
17.26	16.39	13.09	MW-76	drawdown recovery
16.02	16.53	15.64	MW-81	dual recovery
10.12	8.41	8.15	MW-82	drawdown recovery
10.51	10.16	9.98	MW-83	drawdown recovery
16.10	17.54	15.88	MW-84	drawdown recovery
18.80	12.57	14.85	MW-85	dual recovery
2.91	2.88	3.72	MW-86	drawdown recovery
18.03	16.84	15.74	MW-94	drawdown recovery
8.73	8.35	6.50	IW-1	drawdown recovery
54.96	57.15	44.48	SW-1	gas plant industrial use water
0.04	0.06	0.16	SW-3	stock watering water recovery
212.35	210.77	192.51	**Total Recovery**	
157.36	153.58	147.87	**Total Recovery without SW-1 and SW-3**	
161.31	151.57	142.16	**IW-2 (Infiltration into Lower Queen)**	

Shallow Wells

Week Ending 6/30/97	1 month	3 months	Well ID	Well Type
0.25	0.24	0.10	MW-69	product skimming condensate and water (recovery)
0.00	0.00	0.20	MW-45	Infiltration
0.68	0.78	0.92	MW-51	Infiltration

Note: All data in gallons per minute (gpm)

TABLE 5-1: GROUNDWATER MONITORING PLAN MODIFICATION

SHALLOW ZONE WELLS										
Well ID	Well Type	Sampling Frequency	Gauge Frequency	TOC Elev. (ft AMSL)	Total Depth (ft TOC)	Well Casing ID (in)	Well Screen Slot (in)	Well Screen Interval Top (ft TOC)	Well Screen Interval Bottom (ft TOC)	Laboratory Program
MW-1	monitoring	NS	NG	3792.50	16.10	2	0.01	10.06	14.66	
MW-2	monitoring	NS	NG	3788.72	15.52	2	0.01	5.61	15.24	
MW-3	monitoring	NS	NG	3787.50	16.90	2	0.01	6.87	16.61	
MW-4	monitoring	NS	NG	3785.880	18.68	2	0.01	8.65	18.39	
MW-5	monitoring	NS	NG	3801.69	12.77	2	0.01	7.86	12.77	
MW-6	monitoring	NS	NG	3785.17	13.66	2	0.01	8.69	13.66	
MW-7	monitoring	NS	NG	3784.46	17.01	2	0.01	7.23	17.01	
MW-8	monitoring	NS	NG	3795.04	16.97	2	0.01	7.19	16.97	
MW-9	monitoring	NS	NG	3807.85	13.65	2	0.01	8.74	13.31	
MW-10	monitoring	semiannul	quarterly	3790.78	19.08	4	0.02	8.97	18.43	BTEX
MW-11	monitoring	semiannual	quarterly	3806.96	24.85	4	0.02	14.68	24.16	BTEX
MW-12	monitoring	NS	NG	3809.86	25.21	2	0.01	15.13	24.91	
MW-13	monitoring	semiannual	quarterly	3801.58	22.07	2	0.01	11.64	21.42	BTEX
MW-14	monitoring	NS	NG	3803.61	24.30	4	0.02	14.18	23.63	
MW-15	monitoring	NS	NG	3803.59	19.47	2	0.01	9.39	19.17	
MW-16	monitoring	NS	NG	3801.04	22.66	4	0.02	12.71	22.23	
MW-17	monitoring	NS	NG	3799.55	19.75	2	0.01	9.71	19.47	
MW-18	monitoring	NS	NG	3795.82	17.42	4	0.02	7.21	16.84	
MW-19	monitoring	semiannual	quarterly	3797.21	19.11	4	0.02	8.96	18.53	
MW-20	monitoring	NS	NG	3797.59	16.89	2	0.01	6.89	16.69	
MW-21	monitoring	NS	NG	3798.21	23.31	2	0.01	12.74	22.88	
MW-22	monitoring	NS	NG	3799.20	17.30	2	0.01	7.29	16.80	
MW-23	monitoring	NS	NG	3794.48	12.08	2	0.01	7.04	11.64	
MW-24	monitoring	NS	NG	3794.09	14.09	2	0.01	9.05	13.67	
MW-25	monitoring	NS	NG	3786.97	10.27	2	0.01	4.94	9.80	
MW-26	monitoring	NS	NG	3793.01	21.11	2	0.01	11.11	20.56	
MW-27	monitoring	NS	NG	3790.93	18.23	2	0.01	13.16	17.79	
MW-28	monitoring	NS	NG	3797.03	18.59	2	0.01	8.74	18.26	
MW-29	monitoring	NS	NG	3794.06	14.76	2	0.01	9.68	14.37	
MW-30	monitoring	NS	NG	3788.30	14.82	2	0.01	7.8	14.82	
MW-31	monitoring	NS	NG	3791.15	19.93	4	0.02	7.945	19.93	
MW-32	monitoring	NS	NG	3797.47	16.77	2	0.01	11.87	16.56	
MW-33	monitoring	NS	NG	3802.48	20.29	4	0.02	10.14	19.70	
MW-34	monitoring	NS	NG	3806.00	19.97	2	0.01	10.12	19.64	
MW-35	monitoring	NS	NG	3800.81	20.71	4	0.02	15.78	20.33	
MW-36	monitoring	NS	NG	3792.94	8.77	2	0.01	6.96	8.61	
MW-37	monitoring	NS	NG	3795.03	20.83	4	0.02	10.24	19.90	
MW-38	monitoring	semiannual	quarterly	3797.32	20.57	4	0.02	10.4	19.98	BTEX

TABLE 5-1: GROUNDWATER MONITORING PLAN MODIFICATION (Continued)

Well ID	Well Type	Sampling Frequency	Gauge Frequency	TOC Elev. (ft AMSL)	Total Depth (ft TOC)	Well Casing ID (in)	Well Screen Slot (in)	Well Screen Interval Top (ft TOC)	Well Screen Interval Bottom (ft TOC)	Laboratory Program
SHALLOW ZONE WELLS (continued)										
MW-39	monitoring	semiannual	quarterly	3796.20	20.54	4	0.02	10.17	19.74	BTEX
MW-40	monitoring	NS	NG	3803.12	12.15	2	0.01	7.02	12.07	
MW-41	monitoring	semiannual	quarterly	3799.04	24.04	4	0.02	13.87	23.43	BTEX
MW-42	monitoring	NS	NG	3804.73	22.00	2	0.01	11.53	21.56	
MW-43	monitoring	semiannual	quarterly	3802.05	24.55	4	0.02	14.40	23.95	BTEX
MW-44	monitoring	semiannual	quarterly	3804.14	25.24	4	0.02	15.09	24.64	BTEX
MW-45	infiltration	NS	NG	3808.68	26.62	2	0.01	11.58	26.13	
MW-46	monitoring	semiannual	quarterly	3805.54	20.24	4	0.02	9.69	19.24	BTEX
MW-47	monitoring	semiannual	quarterly	3805.09	21.79	2	0.01	11.75	21.29	BTEX
MW-48	monitoring	semiannual	quarterly	3806.18	19.98	2	0.01	9.94	19.49	BTEX
MW-49	monitoring	semiannual	quarterly	3805.61	25.91	2	0.01	15.82	25.45	BTEX
MW-50	monitoring	semiannual	quarterly	3813.35	37.15	2	0.01	22.11	36.66	BTEX
MW-51	infiltration	NS	NG	3810.86	20.06	2	0.01	10.02	19.57	
MW-52	monitoring	semiannual	quarterly	3817.49	21.44	2	0.01	11.4	20.95	BTEX
MW-53	monitoring	NS	NG	3809.92	15.32	2	0.01	8.59	15.14	
MW-54	monitoring	semiannual	quarterly	3823.86	78.15	4	0.02	42.92	77.45	BTEX
MW-55	monitoring	semiannual	quarterly	3794.40	66.32	4	0.02	21.43	66.08	BTEX
MW-56	monitoring	semiannual	quarterly	3782.45	43.76	4	0.02	28.79	43.53	BTEX
MW-61	monitoring	semiannual	quarterly	3816.20	57.97	4	0.02	47.83	57.28	BTEX
MW-65	monitoring	semiannual	quarterly	3763.31	57.69	4	0.02	37.58	57.01	BTEX
MW-69	recovery	semiannual	quarterly	3805.11	51.27	4	0.02	16.56	50.49	BTEX
MW-77	monitoring	NS	quarterly	3775.48	82.20	7.875	OH	-	-	BTEX
MW-78	monitoring	semiannual	quarterly	3785.82	86.62	7.875	OH	-	-	BTEX
MW-79	monitoring	semiannual	quarterly	3788.39	82.90	7.875	OH	-	-	BTEX
MW-80	monitoring	NS	quarterly	3821.64	91.80	7.875	OH	-	-	BTEX
MW-90	monitoring	semiannual	quarterly	3781.73	62.50	4	0.04	12.50	62.50	BTEX
MW-91	monitoring	semiannual	quarterly	3783.07	72.50	4	0.04	12.50	72.50	BTEX
MW-92	monitoring	NS	quarterly	3785.29	72.50	4	0.04	12.50	72.50	BTEX
MW-93	monitoring	NS	quarterly	3817.50	72.50	4	0.04	12.50	72.50	BTEX
MW-99	monitoring	semiannual	quarterly	3770.05	72.50	4	0.04	12.50	72.50	BTEX
MW-100	monitoring	semiannual	quarterly	3773.31	72.50	4	0.04	12.50	72.50	BTEX
MW-101	monitoring	semiannual	quarterly	3762.71	72.50	4	0.04	12.50	72.50	BTEX
MW-102	monitoring	semiannual	quarterly	3753.69	82.50	4	0.04	12.50	82.50	BTEX
MW-103	monitoring	semiannual	quarterly	3743.14	72.50	4	0.04	12.50	72.50	BTEX
MW-105	monitoring	semiannual	quarterly	3736.93	82.50	4	0.04	12.50	82.50	BTEX
MW-106	monitoring	semiannual	quarterly	3721.97	94.50	4	0.04	12.50	94.5	BTEX
MW-107	monitoring	semiannual	quarterly	3726.27	72.50	4	0.04	12.50	72.50	BTEX
Sump A10	monitoring	NS	NG	3800.99	13.42	24	-	-	-	
Sump 16A	monitoring	NS	NG	3785.14	17.45	24	-	-	-	

TABLE 5-1: GROUNDWATER MONITORING PLAN MODIFICATION (Continued)

LOWER QUEEN WELLS												
Well	Well Type	Sampling Frequency	Gauge Frequency	TOC Elev. (ft AMSL)	Top of 1.25-inch piezometer piping Elev. (ft AMSL)	Total Depth (ft TOC)	Well Casing ID (in)	Surface Casing Depth (ft TOC)	Well Screen Slot (in)	Well Screen Interval Top (ft TOC)	Well Screen Interval Bottom (ft TOC)	Laboratory Program
MW-57	monitoring	semiannual	quarterly	3787.70		179.30	4	47.00	0.02	157.10	176.54	BTEX
MW-58	recovery	NS	quarterly*	3824.07		234.10	7.875	?	OH	NA	NA	NA
MW-59	monitoring	semiannual	quarterly	3819.59		211.29	4	30.18	0.02	182.52	208.30	BTEX
MW-60	monitoring	quarterly	quarterly	3815.28		226.08	4	29.62	0.02	172.86	222.34	BTEX
MW-61A	monitoring	quarterly	quarterly	3819.90		214.00	4	69.95	0.02	173.50	213.30	BTEX
MW-62	monitoring	semiannual	quarterly	3819.90		224.69	4	30.00	0.02	177.00	222.50	BTEX
MW-63	monitoring	annually	quarterly	3626.16		221.68	4	40.00	0.02	175.39	219.79	BTEX
MW-64	monitoring	semiannual	quarterly	3798.57		204.36	4	40.00	0.02	156.68	201.13	BTEX
MW-65A	recovery	annually	NG	3763.26		168.56	4	70.00	0.02	115.34	166.00	BTEX
MW-66	monitoring	quarterly	quarterly	3828.98		237.86	4	40.00	0.02	184.81	234.52	BTEX
MW-67	monitoring	semiannual	quarterly	3765.87		168.54	4	40.00	0.02	114.78	165.11	BTEX
MW-68	recovery	NS	NG	3797.83		200.00	4	120.00	0.02	148.38	199.69	NA
MW-70	monitoring	annually	quarterly	3822.57		228.14	4	112.00	0.02	175.32	224.37	BTEX
MW-71	monitoring	quarterly	quarterly	3778.05		235.41	4	69.20	0.02	167.07	234.75	BTEX
MW-72	dual recovery	NS	quarterly*	3819.32		236.55	8	39.50	0.02	177.32	235.38	NA
MW-73	monitoring	NS	quarterly	3820.09		222.5	7.875	10.00	OH	NA	NA	NA
MW-74	monitoring	NS	quarterly	3820.82		222.5	7.875	10.00	OH	NA	NA	NA
MW-75	dual recovery	NS	quarterly*	3816.12		222.5	7.875	12.25	OH	NA	NA	NA
MW-76	monitoring	NS	quarterly*	3796.01		222.5	7.875	9.00	OH	NA	NA	NA
MW-81	*dual recovery*	NS	*quarterly**	3817.03	3817.03	228.5	7.875	73.50	OH	NA	NA	NA
MW-82	recovery	NS	quarterly*	3825.07	3825.07	252.5	7.875	68.75	OH	NA	NA	NA
MW-83	recovery	NS	quarterly*	3794.12	3794.12	205.8	7.875	41.50	OH	NA	NA	NA
MW-84	recovery	NS	quarterly*	-	3759.60	172.5	7.875	67.50	OH	NA	NA	NA
MW-85	dual recovery	NS	quarterly*	-	3824.93	237.5	7.875	77.50	OH	NA	NA	NA
MW-86	recovery	NS	quarterly*	3823.99		227.5	7.875	77.50	OH	NA	NA	NA
MW-87	monitoring	quarterly	quarterly	3740.50		173.1	4	NA	0.04	148.10	168.10	BTEX
MW-87A	monitoring	quarterly	quarterly	3739.53		132.0	7.875	12.00	OH	NA	NA	BTEX
MW-88	monitoring	quarterly	quarterly	3789.70		177.65	7.875	62.00	0.04	142.00	176.75	BTEX
MW-89	monitoring	quarterly	quarterly	3827.68		232.53	4	NA	0.04	189.75	230.00	BTEX
MW-94	recovery	NS	quarterly*	-	3821.48	230.1	7.875	67.50	OH	NA	NA	NA
MW-95	monitoring	annually	quarterly	3746.26		147.5	4	33.50	0.04	111.00	141.00	BTEX
MW-96	monitoring	quarterly	quarterly	3739.80		137.5	4	12.50	0.04	97.50	127.50	BTEX
MW-97	monitoring	quarterly	quarterly	3750.16		150.5	4	12.50	0.04	107.50	137.50	BTEX
MW-98	monitoring	annually	quarterly	3770.15		142.5	4	12.50	0.04	128.00	158.00	BTEX
MW-104	monitoring*	NS	quarterly	3793.64	NA	222.5	8	37.50	OH	NA	NA	NA
MW-108	monitoring*	NS	quarterly	3747.13	NA	172.5	8	42.00	OH	NA	NA	NA

TABLE 5-1: GROUNDWATER MONITORING PLAN MODIFICATION (Completed)

LOWER QUEEN WELLS (completed)												
Well	Well Type	Sampling Frequency	Gauge Frequency	TOC Elev. (ft AMSL)	Top of 1.25-inch piezometer piping Elev. (ft AMSL)	Total Depth (ft TOC)	Well Casing ID (in)	Surface Casing Depth (ft TOC)	Well Screen Slot (in)	Well Screen Interval Top (ft TOC)	Well Screen Interval Bottom (ft TOC)	Laboratory Program
IW-1	recovery	NS	quarterly*	3808.55		232.5	11	75.50	OH	NA	NA	NA
IW-2	infiltration	NS	quarterly*	3835.86		302.5	11	161.50	OH	NA	NA	NA
SW-1	recovery	annually	NG	3808.19	NA	255.0	10		OH	NA	NA	BTEX
SW-2	monitoring	annually	quarterly	3808.79	NA	292.0	10		OH	163.00	292.00	BTEX
SW-3	recovery	annually	quarterly*	3842.29		232.7	7.875	84.00	OH	NA	NA	BTEX
VE-1	vapor extraction	NS	NG	***	NA	214.0	7.875	80.00	OH	NA	NA	NA
VE-2	vapor extraction	NS	NG	***	NA	210.0	7.875	75.00	OH	NA	NA	NA
VE-3	vapor extraction	NS	NG	***	NA	184.0	7.875	72.50	OH	NA	NA	NA
VE-4	vapor extraction	NS	NG	***	NA	183.0	7.875	57.50	OH	NA	NA	NA
VE-5	vapor extraction	NS	NG	***	NA	168.0	7.875	57.50	OH	NA	NA	NA
VE-16	vapor extraction	NS	NG	3750.96	NA	152.5	7.875	45.00	OH	NA	NA	NA
VE-17	vapor extraction	NS	NG	3756.73	NA	132.5	7.875	42.50	OH	NA	NA	NA
VE-18	vapor extraction	NS	NG	3756.82	NA	165.5	7.875	40.00	OH	NA	NA	NA
VE-19	vapor extraction	NS	NG	3761.18	NA	152.5	7.875	40.00	OH	NA	NA	NA
VE-20	vapor extraction	NS	NG	3768.41	NA	162.5	7.875	40.00	OH	NA	NA	NA

* may change to recovery
*** these wells have not been surveyed.
AMSL = above mean sea level
TOC = top of casing datum
OH = open hole
NA = not applicable
NS = not sampled
NG = not gauged